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DR. P. S. RAMACHANDRIER

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CONTENTS

February, 1941

	PAGE		PAGE
Addresses and Articles		Editorial	
Chemotherapy of Malaria		Blood Transfusion	... 35
Dr. G. V. JOGLEKAR, F.R.C.S., D.L.O.	... 25	Current Comments	
Leprosy in Fyzabad District		Newer concepts of dry labour—Eosino-	
Dr. P. J. CHANDY, B.A., L.C.P., A.S.	... 27	philia in tuberculosis—Clinical diagnosis	
Some Diseases Transferable from Animals		of pulmonary embolism and infarction	
to Men		—Gastric syphilis	... 36-37
Dr. SYED EJAZ HUSSAIN	... 28	Medico-Legal Notes	
The Injection Treatment of Hernia		Determination of age by X-ray examina-	
Dr. M. L. SANENA	... 30	tion	
The Need for an Early Diagnosis of		Dr. G. B. SAHAY, B.Sc., M.B., D.T.M.	... 37
Glaucoma		FOREIGN MEDICAL NEWS	... 39
Dr. S. KANTHIMATHY NATHAN	... 31	INDIAN MEDICAL NEWS	... 42
Non-surgical Treatment of Glaucoma		REVIEWS & REPORTS	... 46
Dr. R. S. AGARWAL	... 33	EPITOME	... 47
Ascariasis with Special Reference to		ABSTRACTS	... 48
Tea Garden Practice in Assam			
Dr. H. C. DASS, L.M.F.	... 34		

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SUPPLEMENT TO THE INDIAN MEDICAL JOURNAL

MADRAS

FEBRUARY 15, 1941

Vol. 3, No. 2

CONTENTS

	Page		Page
Planning of Medical Relief for Our People		Associations Circulars	13
A. Viswanathan	9	Association Notes	14
Medical Councils	10	Association Audit Report (1939-1940)	18

Planning of Medical Relief for Our People

● A. Viswanathan, Madras

INTRODUCTION

The organised medical profession in our country, as represented chiefly by the Indian Medical Association and the All-India Medical Licentiates' Association, has been, for some time past, discussing the feasibility of introduction of Compulsory Health Insurance or Socialised Medicine, or both, as an effective means of extensive medical relief to our people, and incidentally as a solvent to the unemployment among qualified medical men.

This subject was again discussed at the last Conferences of both the Associations without reaching any conclusion; and no conclusion could be reached because of the extreme complexity of the subject, and the absence of reliable data regarding the actual number of unemployed doctors, the financial solvency of the employer and the employee, the extent of possible co-operation by the capitalists, the provincial governments and the local bodies, the state of industrial medical relief and the actual extent of the existing systems of medical relief to the civilian population.

Even our ideas of Health Insurance and Socialised Medicine are so nebulous and unsubstantial that many of us are carried away more by slogans than by a real desire to study these systems of medical relief at close quarters and to evolve one which would be suitable to our economic, social and political conditions.

Thus we have Health Insurance enthusiasts who are in haste for its introduction in our country without knowing the history of Health Insurance as in vogue in Europe before the present War; and without knowing the reasons why the American Medical Association has been stoutly opposing its introduction in the U. S. A. as contemplated by its President; and how the recent Australian Health Insurance Act had to be revoked, immediately after passing it, owing to the opposition of the general practitioners in that country.

We have also the advocates of Socialised Medicine. But what it exactly means, none of us could tell except

that it is in vogue in the U. S. S. R. And few of us realise that unless the Government of our country is after the pattern of the U. S. S. R., it is very difficult to absorb, or even to imitate, the vital features of Socialised Medicine.

We must realise that there is a great discontent among the British doctors in the working of the scheme of Compulsory Health Insurance and that but for the alertness and influence of the British Medical Association the panel doctors would have had a worse fate than what is actually theirs to-day.

We must also realise that very few of us have a personal knowledge of Socialised Medicine as practised in Russia except the one derived from publications by globe-trotters of varied assortments.

Yet some definite and extensive scheme of medical relief has to be evolved in our country in order to save millions from preventable deaths and to harness the services of a large number of our medical men for this purpose. In evolving any such scheme we have necessarily to take note, without undue condemnation, of many factors such as:

- (1) The recent renaissance of indigenous systems of medicine,
- (2) The relative popularity of the different systems of medicine among our people,
- (3) The tax-paying capacity of our people at present *vis a vis* the required amenities of medical relief,
- (4) The part which the State is prepared to play in the matter of extensive medical relief under any new scheme,
- (5) The availability of qualified doctors,
- (6) How far the present mortality is due to insufficient public health measures, such as water-supply, dwelling quarters, etc., and to insufficient or absent medical relief in terms of curative medicine.

These are but a few specimens of actual difficulties that we will confront with while chalking out a new programme of medical relief. Many more could be added with sufficient justification, but it is not my intention to baffle my reader's understanding and to make him despond regarding the future of medical relief in our country.

Certainly we can evolve a scheme, necessarily limited at present but which could bear continuous expansion in future.

Considering the great area of our country; its huge population; the very low average income per head exclusive of the semi-starving population; the heavy burden of agricultural taxation; the concentration of the rich and the middle classes in the urban areas, it is obvious that the new extended scheme of medical relief has to cover: (1) Those who can afford to pay for medical relief, (2) Those who can afford to pay only a moiety for medical relief, (3) Those who cannot afford to pay anything at all for medical relief.

For the first category of persons, private medical relief would be the best suited; for the second, Compulsory Health Insurance would be inevitable; and for the third, Socialised Medicine adapted to our conditions would be unavoidable.

It is difficult to solve the problem of medical relief on an all-India basis and on an unitary plan. Every province must set up its own organisation based on the three broad classification of the people, and the system of relief most suitable to each one of these categories should be adopted and developed.

How this could be planned, and how far the Western models could be adapted to our best advantage will be discussed in the succeeding chapters. The traditions and temperament of our people, our social and political obstacles, the need for adjustment between the old and the new, between the West and the East will necessarily be taken into account in our planning of medical relief for our people.

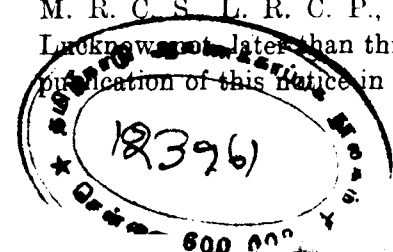
But if the readers ask when and how this plan could be put into effect, I have no answer to give. It all depends on the strength of public opinion and the moral and material responsiveness of the Government which rules us.

PRIZE NOTICE

A prize worth Rs. 25 will be awarded to the best writer of any essay on "How to improve the health conditions in the rural area".

The competition is open to all the Medical Licentiates of the United Provinces.

The essay should reach Dr. P. Chandra, M. R. C. S. L. R. C. P., Red Cross Bldgs., Lucknow, not later than three months of the publication of this notice in the Journal.



Medical Councils

Bengal Medical Council

Appendix to the Proceedings of the Penal and Ethical Cases Committee, dated the 22nd July, 1940 (item 5)

PART IV—SOME LEGAL MATTERS OF GENERAL INFORMATION FOR MEDICAL PRACTITIONERS

1. CALCUTTA MUNICIPAL ACT, 1923 (as amended)
Section 435: Every medical practitioner who, in the course of his practice, becomes cognizant of the existence of any dangerous disease in any private or public dwelling-house, other than a public hospital, shall give information of the same with the least practicable delay to the Health Officer in such form and with such details as the Health Officer may, from time to time, require.

"Dangerous disease" means—

- cholera, plague, small-pox, cerebrospinal meningitis and diphtheria; and
- any other epidemic, endemic or infectious disease which the Local Government may, by notification in the Calcutta Gazette, declare to be a dangerous disease for the purpose of this Act.

Section 453: Any medical practitioner in attendance during the last illness of any person dying in Calcutta shall, within three days of his becoming cognizant in the course of such attendance of the death of such person, send a written notice to the Health Officer, as nearly as may be in the form prescribed in Schedule XXII, stating, to the best of his judgment, the cause of death.

2. BENGAL MUNICIPAL ACT, 1932

Section 377: A medical practitioner or a person practising the medical profession and in the course of such practice becoming cognizant of the existence of any dangerous disease in any building other than a public hospital, shall give true and correct information to such officer as the Commissioner may direct, respecting the existence of such disease.

Section 447: Whenever a birth or death occurs in any hospital within the limits of any municipality in respect of which the Local Government has directed that all births and deaths shall be registered under the Bengal Births and Deaths Registration Act, 1873, it shall be the duty of the medical officer in charge of such hospital forthwith to send a notice in writing of the occurrence of such birth or death to the Commissioners in such form as the Local Government may prescribe and in such case no other person shall be required to give information of such birth or death to a Registrar under the said Act or to a Sub-Registrar under this Act.

3. BENGAL VACCINATION ACT, 1880

Section 5: If any medical practitioner shall be of opinion that any child is not in a fit state to be vaccinated, he shall forthwith deliver to the parent or guardian of such a certificate under his hand according to the form of Schedule A hereto annexed or to the like effect, that the child is then in a state unfit for vaccination.

Section 6: If any medical practitioner finds—
(a) that a child brought for vaccination has already had small-pox, or
(b) that a child who has been three times unsuccessfully vaccinated is unsuceptible of successful vaccination,

he shall deliver to the parent or guardian certificate under his hand, according to the form in Schedule B hereto annexed, or to the like effect.

4. DANGEROUS DRUGS ACT, 1920

A medical practitioner possessing or selling medicinal opium or of any preparation containing morphine, diacetyl morphine or cocaine, in contravention of the Government rules prescribing the limits.

5. POISONOUS ACT, 1909

Contravening the Rules under the Poisonous Act.

6. BENGAL EXCISE ACT

Section 18: Possession of any intoxicant which has not been obtained from licensed vendor.

("Intoxicant" means the leaves, small stalks and flowering tops of Indian hemp plant (*caralis sativa* L.) including *bhany*, *sidhi* or *ganja*; charas; any mixture with or without neutral materials, if any of the above forms of intoxicating drug or drink made therefrom; and any other intoxicating or narcotic substance or any fermenting agent which the Provincial Government may specify as "intoxicant").

Section 53: If any chemist, druggist, apothecary or keeper of a dispensary allows any intoxicant which has not been bona-fide medicated for medicinal purposes, to be consumed in his business premises by any person not employed in his business.

7. INDIAN PORT HEALTH RULES, 1938 (UNDER THE INDIAN PORTS ACTS, 1908)

Rule 8: "Every medical practitioner, who becomes cognizant that any passenger on board or any member of the crew or any person employed on board any vessel in the port is suffering from any of the diseases specified in rule 3, shall immediately give notice thereof by telephone and in writing to the Health Officer."

(The diseases specified in rule 3 are plague, cholera, yellow fever, typhus, small-pox, chicken-pox, cerebrospinal meningitis, diphtheria, relapsing fever, jigger and influenzal pneumonia).

8. INDIAN PENAL CODE

Section 269: Whoever unlawfully or negligently does any act which is, and which he knows or has reason to believe to be likely to spread the infection of any disease dangerous to life.

Section 274: Adulteration of drug or medicinal preparation.

Section 275: Selling or offering for sale the same.

Section 276: Whoever knowingly sells or offers or exposes for sale or issue from a dispensary for medicinal purpose any drug or medicinal preparation, as a different drug or medicinal preparation.

Section 284: Whoever does, with any poisonous substance, any act in a manner so rash or negligent as to endanger human life, or to be likely to cause hurt or injury to any person; or knowingly or negligently omits to take such order with any poisonous substance in his possession as is sufficient to guard against probable danger to human life for such poisonous substance.

Punjab Medical Council

Proceedings of a Meeting of the Punjab Medical Council held in the Committee Room of the Office of the Inspector-General of Civil Hospitals, Punjab, Lahore, on Saturday the 16th of November, 1940, at 10 A.M.

The nomination of Dr. Sher Bahadur Khan, M.B., B.S., Registrar, Lady Reading Hospital, Peshawar, as a member of the Punjab Medical Council *cice* Khan Sahib Dr. Abdul Samad, was recorded.

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

Report of the Sub-Committee appointed to report on the rules for the L.M.S., of the Punjab State Medical Faculty.

After considerable discussion it was resolved that the syllabus of L.M.S., drafted by the Punjab State Medical Faculty be approved provided it fulfils the minimum requirements laid down by the Medical Council of India and if there are any deficiencies they should be removed.

Carried.

(b) Inspection report on the various Medical Schools in the Punjab by a Sub-Committee of the Punjab Medical Council.

The President informed the Council that the Schools have been inspected by him and Dr. Vishwa Nath on behalf of the Punjab Medical Council and as the inspection reports are not yet ready they may be

considered at the next meeting of the Punjab Medical Council.

Resolved that the reports on the various Medical Schools be considered at the next meeting of the Punjab Medical Council.

(c) Report of the Sub-Committee on the Balance-Sheet for the year 1939.

Resolved that the report be considered at the next meeting of the Punjab Medical Council.

(d) Report of the Joint Sub-Committee appointed to consider the question of office building.

Resolved that the recommendations of the Sub-Committee be approved and the President may be authorised to shift the office from its present building if a suitable accommodation on the same rent is available; provided the house does not belong to any member of the Council or the Faculty.

Considered Punjab Government Letter No. 2607-M-40/35456, dated the 30th August, 1940, regarding the reduction in the registration fee and the President's letter No. 1136-M.C./551-G., dated the 13th September, 1940, and its reply contained in Punjab Government letter No. 4640-M-40/41440, dated the 19th of October, 1940.

The proposal that the Council should wait for one year and see the repercussions on its finance and then to address the Government in the matter to reduce the registration fee to Rs. 15/- was carried.

Considered the questionnaire issued by the Punjab Government Committee on Homeopathic System of Medicine.

Resolved that a Sub-Committee consisting of the following members be appointed to consider and draft replies to the questionnaire issued by the Punjab Government Committee on Homeopathic System of Medicine:—

1. Dr. Vishwa Nath.
2. R. B. Dr. Maharaj Krishna Kapur.
3. Dr. B. J. Sahni.

Considered the recommendations of the Executive Committee held on the 31st of October, 1940.

Resolved that the recommendations of the Executive Committee (appendix) be approved subject to following amendments:—

- (1) that Dr. Sheikh Mohammed Ali be warned to be careful in future and that the explanation of Dr. Mrs. S. M. Ali be called for in the matter.
- (2) that the President be also appointed a member of the Sub-Committee appointed to frame rules for the visitation of examinations.
- (3) that the President may waive the condition of 3 clear days' notice as mentioned in rule (a) of the rules for the inspection of documents.
- (4) that the word "unqualified" be deleted.

Considered the case of Dr. Bashir Mahmood on whom prescribed notice to appear before the Council was served.

Dr. Bashir Mahmood did not appear in person but sent in his legal representative.

The Registrar read to the Council the notice of inquiry addressed to Dr. Bashir Mahmood and stated the facts of the case.

The legal representative of Dr. Bashir Mahmood was then asked to state the case of his client.

Upon the conclusion of the case, the Council deliberated on it in private and at the conclusion of deliberations the President called upon the Council to vote on the question whether Dr. Bashir Mahmood is guilty of infamous conduct in a professional respect.

The Council unanimously found Dr. Bashir Mahmood guilty of infamous conduct in a professional respect and resolved that the name of Dr. Bashir Mahmood be removed from the Punjab Medical Register till such time he comes in person and clear his position before the Council.

Considered the case of Dr. Amar Singh on whom prescribed notice to appear before the Council was served.

Dr. Amar Singh did not appear in person nor sent his legal representative.

The Council unanimously resolved that the consideration of his case be postponed till the next meeting of the Council.

Punjab Government Notification No. 2795-M-40/26457 dated the 18th of June, 1940, regarding attendance of meetings of the Council by registered medical practitioners was read and recorded and it was resolved that ordinarily registered practitioners who may intend to attend meetings of the Council should send their applications to the President at least 24 hours before the date of the meeting.

Judgements in the cases of following unqualified medical practitioners was read and recorded:—

Kartar Singh—unlawfully declared himself as a registered medical practitioner. Fined Rs. 20/-.

N. S. Sabherwal—unlawfully declared himself as "M. C. P. S." Fined Rs. 50/- or in default 50 days' imprisonment.

After considerable discussion it was resolved that the constitution of the Punjab Medical Council be amended as under:—

- (a) One member to be returned by the staff of each constituent Medical Schools and Colleges in the Punjab affiliated to the Punjab University and the Punjab State Medical Faculty.
- (b) One member to be returned by the Punjab State Medical Faculty.
- (c) Three members to be nominated by the Punjab Government including the President.
- (d) 11 members by election. 6 from amongst the registered practitioners who are Graduates or Licentiates in Medicine of the University of the Punjab. 1 from amongst the registered practitioners who are registered under the British Medical Acts. 3 from amongst the registered practitioners who are Licentiates (as defined in Section 5 (1) (e) of the present Act) and 1 from amongst all other registered practitioners.

No Government servant to be allowed to contest any seat by election.

- (e) The offices of the President and the Vice-President to be determined by election but during the first four years which should be the life of the Council the President will be nominated by Government.

ASSOCIATION CIRCULARS

President's Appeal to all the Branches and Members of the Association

Just after the 30th Conference of our Association, I wish to convey my personal appreciation of the very valuable services rendered by the delegates of Branches and the Office-bearers, who graced the Bombay Conference last month with their presence and contributed in no small measure to the success of the same.

I extend to these delegates and the various office-bearers, who have retired or been newly elected, my heartiest thanks for their kind help to me during the Conference days.

As I said on the closing day, and in my presidential address, let all who have returned back to their respective stations take up the work of the Association in right earnest and put in something substantial before we meet again at the end of the year. Let co-operation and sacrifice be our determination and let our leaders in the provinces where the question of medical education is not yet solved combine together and evolve their lines of action by placing the Association's points of view in the forefront of their future programme.

Lastly, in order to make our organisation more lively and helpful to our brethren, may I invite constructive suggestions from the well-wishers and members of our Association?

I wish all friends a happy and eventful year in 1941.

27-C, Upper
Circular Rd., Calcutta,
2nd January '41.

A. D. MUKHARJI,
President,
A. I. M. L. A.

General Secretary's Circular No. 1 of 1941

To

All the Provincial and District
Branch Secretaries.

Sirs,

I hasten, on this New Year's Day, to convey to all of you my heartiest felicitations and happiest good wishes.

May the Providence guide us all in the Service of our Association!

Mere talk will be of little avail, and I therefore exhort all our Branches to be intensely active, and implement the resolutions passed at the last Bombay Conference of our Association.

Let each one of us make a solemn resolve to enrol at least 3 to 5 members during this year, and thus make our Association more representative and powerful.

Public opinion goes a long way in upholding the prestige and usefulness of an association. I would therefore request all our Branches to help the Local Bodies, the Provincial Departments of Public Health and Voluntary Public Health Organisations in their Public Health work, particularly in times of epidemics. Such public service is one of the objects of our Association.

Before I close, I would like to tender my thanks to all of you for reposing confidence in me by re-electing me unanimously as your General Secretary. The responsibilities of this office are no doubt arduous but I hope to fare through with your good wishes and co-operation.

MANOHARLAL KAPUR,
General Secretary,
A. I. M. L. A.

ASSOCIATION NOTES

[The following proceedings refer only to the Branches and Committees of the A. I. M. L. A., unless otherwise stated.]

Madras: Urgent Meeting held on 18-11-1940. Dr. D. V. Venkappa occupied the chair. 14 members were present.

The minutes of the previous Committee Meeting were read and confirmed. The minutes of the General Body Meeting were also confirmed subject to ratification by the General Body meeting as pointed out by Dr. T. V. Ranganadha Rao.

The Branch accounts for October 1940 was scrutinised and the following resolution was passed:

"Resolved that the Branch accounts of Rs. 20 as incurred by both the Secretaries be passed."

After discussion a Committee of the following was appointed to go into details connected with the annual dinner: Drs. K. Rama Rao, K. B. Bhujanga Rao, Miss R. Rukmani, M. V. S. Prakasa Rao.

Ujjain (C. I.): Meeting held on 20-11-40. 6 members were present. Dr. N. S. Kulkarni was in the chair.

Read and confirmed the proceedings of the last meeting.

Resolved that the same office-bearers be continued for the next year and efforts be made to enrol new members.

Resolved that Dr. P. L. Dange be sent as a delegate from this Branch to the annual Conference at Bombay.

Gwalior (C. I.): Meeting held on 15-11-40 with Dr. Laxmi Narayan in the chair. 8 members were present.

The election of Dr. A. D. Mukherji for the next annual conference was confirmed.

Office-bearers were elected as follows: Drs. Laxmi Narayan Shrivastav—President, M. D. Pustake—Secretary and Treasurer. Members of the Managing Committee: Drs. C. R. Gupta, N. P. Singhal, Shri Krishna Varma.

Rohtak (Punjab): Meeting held on 1-12-40. 8 members were present. Dr. Hukum Chand Khosala was in the chair.

Circular No. 13 was read together with the reply which had already been sent. Approved.

Circular No. 14 dated 12-6-40 was read and resolved that the General Secretary be thanked for his generous offer of reducing the subscription to Rs. 4 in memory of the late Dr. S. L. Sharma.

Circular No. 15 dated 18-7-40 was read.

Circular No. 16 dated 1-8-40 was read. This Branch unanimously nominates Rai Bahadur Dr. Hari Ram of Delhi as president of the annual conference of the Association.

Circular No. 19 dated 13-8-40 was read and the budget estimate of Rs. 24 for the coming year was approved.

Dr. Anant Ram Luthra was elected to go as a delegate from this Branch to the Annual Conference of the Association.

It was resolved to recommend to the Conference that the postings and transfers of all the medical licentiates whether Government servants or District Board employees be published in the Journal.

Circular No. 24 dated 28-11-40 was read and appreciated by all.

Resolved to pass votes of thanks to Drs. D. R. Varma and Manohar Lal Kapur for their generous help rendered to this Branch.

Resolved that a copy of this be sent to the above doctors.

Nowgong (Assam): Periodical Meeting held on 17-11-40. Dr. J. C. Bhuyan occupied the chair. 7 doctors were present.

Resolved that Dr. H. D. Nath be elected as delegate to the ensuing annual conference at Bombay.

Dr. R. K. Das or Dr. G. C. Barcoah to represent this Branch, in case Dr. H. D. Nath fails to attend the conference.

Resolved that the Provincial Secretary be requested to correspond directly with the Honorary Secretary of the Branch in all matters relating to the Branch.

Gauhati (Assam): Monthly meeting held on 7-12-40. Dr. J. N. Roy presided.

G. S. Circular No. 24 was read. The members expressed their satisfaction at the election of Dr. A. D. Mukherjee as President of the 30th Annual Conference.

The Conference agenda was considered and instructions were given to the delegates re-items in the agenda.

Contingent bill for Rs. 6-2-0 was passed.

Tinsukia (Assam): General meeting held on 1-12-40 under the chairmanship of Dr. K. M. Ganguli. 8 doctors were present.

Proceedings of the last meeting were read and confirmed.

Account for November 1940 was passed for payment.

Proceedings of the 8th Assam Provincial Conference (Nowgong) was read and filed.

Read Circular No. 1 of Provincial Secretary. It was resolved that members should pay Re. 1 per annum towards the Provincial fund and that the collection be made in January 1941.

Dr. U. R. Dey read a case note on eclampsia in twin pregnancy and all members took part in the discussion.

Jorhat (Assam): Meeting held on 11-12-40. 6 doctors were present. Dr. A. Hakim was in the chair.

Read Circular No. 28 dated 4-12-40.

Resolved that Dr. P. C. Barua be elected to attend the ensuing annual conference at Bombay as a delegate from this Branch.

Read Circular No. 1 from Provincial Secretary.

Resolved that the matter of subscribing towards the Provincial fund be kept pending for the time being.

Account of the Branch as audited was passed.

Karachi (Sind): (1) Managing Committee held on 8-12-40 Present 3 members.

Minutes of the last meeting held on 18-11-40 was read and confirmed.

Considered accounts for the months of October and November 1940 and passed.

(2) General Body meeting held on 8-12-1940. 6 members were present.

Minutes of the last General Body meeting held on 10-11-40 read and confirmed.

G. S. Circular No. 24 dated 28-11-40 was considered and the delegates were requested to support or oppose the resolutions in the light of discussions.

Considered circular No. 25 from the General Secretary and recorded.

Considered Circular No. 26 dated 4-12-40 and recorded.

Considered letter dated, 5-11-40 regarding second Bombay Provincial Conference to be held at Ahmedabad. As there is no likelihood of second Bombay Provincial Conference to be held at Ahmedabad it is not necessary to elect a President and delegates.

And in the event of such a Conference being held, this Branch delegates attending the annual conference at Bombay are elected as delegates for the Provincial Conference.

Nagpur (C. P.): General meeting held under the presidency of Dr. S. D. Deshmukh. 11 members were present.

Office-bearers for 1940-1941: Drs. S. D. Deshmukh—President Upasani—Secretary and Treasurer, Managing Committee Members—

Drs. Aloni, G. K. Kulkarni, R. S. Sastri.

Standing Committee Members: Drs. Thergaonkar, Dongre.

Election of representatives for the annual conference at Bombay: Drs. Sengupta, G. K. Kulkarni.

Nadia (Bengal): Monthly meeting held on 6-12-40. 11 were present. Dr. K. S. Roy was in the chair.

Proceedings of the last meeting were read and confirmed.

Accounts for November 1940 were examined and passed.

Circular No. 24 from G. S. dated 28-11-40 was discussed and necessary instructions were given to the delegates who attend the next annual conference.

The election of office-bearers held on 1-10-1940 was confirmed.

Drs. Kulaja Ranjan Roy and Dharendra Nath Adhikary have been finally elected by this branch as delegates for the next annual conference.

"There are two honorary physicians and 1 ophthalmic surgeon working in the Krishnagar Sadar Hospital but there is no honorary surgeon. So this Branch requests the Managing Committee of the Sadar Hospital to appoint one honorary surgeon from the licentiate medical practitioners practising in this town."

Burdwan (Bengal): Meeting held on 12-12-40 with Dr. Satya Charan Maitra in the chair. 12 doctors were present.

Unanimously resolved that this meeting records its deep sense of sorrow at the sad and untimely death of Dr. Sudhir Kumar Ghosh. Further resolved that the Secretary be authorised to communicate this resolution to Babu Raghunath Ghosh, the uncle of the deceased, expressing the condolence and heartfelt sympathy with the family of the deceased.

Confirmed the proceedings of the meeting held on 26-1-40.

Considered the draft resolutions of the General Secretary.

Read the letter of Dr. Kshetra Gopal Mukherjee regarding his grievance against Dr. Ahibhushan Mukherjee. He is requested to be present at the next meeting when his case will be considered. The Secretary is requested to inform the date of the next meeting to Dr. Kshetra Gopal Mukherjee.

Contingent bill amounting to Rs. 2-12-0 was passed.

BENGAL PROVINCIAL MEDICAL CONFERENCE

(8th Session—1941)

An Appeal to Bengal Medical Licentiates

Dear Doctor,

You may be aware of that the Provincial Medical Conference will be held during the Easter holidays, on the 12th and 18th April 1941 at the B. K. Paul's garden, Dum Dum Junction, E. B. Rly.

While extending to you a cordial welcome and soliciting your participation in the deliberations of the conference, I cannot but strongly emphasise that the problems of medical licentiates are bristling with so many wrongs and evils that their rights and interests are in very sad and serious jeopardy. The dual system of medical education and the arbitrary ban imposed by the Indian Medical Council upon the licentiates are baffling problems; the nature and conditions of service under Government and public institutions are very unsatisfactory; competition and quackery have turned private practice into a miserable state of affairs; is it not high time on our part to meet in the conference, and make serious and united attempt to devise suitable courses of action for remedying the long-standing grievances and the inequities of the powers that be.

The Provincial Medical Act has been happily reorganised in Madras creating only one uniform standard of the medical education, greatly due to the united efforts of the licentiates concerned, but Bengal is unfortunately out of the picture, since not even 1-10th of her 8 thousand of licentiates have so far united and made earnest and effective move in the matter. Nevertheless she cannot definitely remain very long lagging behind her sister provinces, and each and every licentiate of Bengal should take up the cause as a sacred duty to the class.

I whole heartedly request you to join at the conference, to discuss and demonstrate the recent knowledge of the various branches of the science and art of healing, to make the conference a real success, as it should be, and give a proper and timely lead in solving the vital and serious problems confronting the profession, for which I very sincerely expect that you should become a member of the Reception Committee of the conference at an early date.

K. K. DUTT, L.M.F., L.T.M.
9 B, Roypara By-Lane,
Cossipore, Calcutta.
Dated, the 1st February 1941.

Yours sincerely,
K. K. DUTT,
General Secretary.

N.B.—Remittance to the above address of Rs. 3/- only will enable you to enrol yourself as a member of the R.C. and will be thankfully acknowledged. Scientific papers should reach the above address not later than 31st March 1941. A.I.M.L.A. membership fee and subscription for the Indian Medical Journal together is Rs. 4/- only per annum.

NOTICE

(To the Subscribers to the Fund of the 30th Ahmedabad Conference of the All-India Medical Licentiates' Association.)

The subscribers to the above fund are hereby informed that since the next 31st Conference of the above Association will be held here at Ahmedabad, their subscriptions—unless otherwise desired—will not be returned and shall be utilized for the purpose of the next conference.

JAYANTILAL J. VYAS

Treasurer,

3-2-41. 30th Annual Conference, A.I.M.L.A. Ahmedabad.

Audit Report of the Association

To, The Secretary, Finance Committee, All-India Medical Licentiates Association.

Audit Report

We have audited the accounts of your Association for the year ending 30th September, 1940, and have the pleasure in handing you the following statements duly signed, together with our observations:—

- Consolidated Statement of Receipts and Payments.
- Statement of Cash and Bank Balances.
- Statement of Investments.

1. Receipts

(a) A War Loan for Omera Gold Medal Account for £ 157-17-10 which had been received by the Association some years ago, has now been brought into accounts as an income of this year. Last year also 3 items were taken credit vide our report para. 2 (a) which were omitted to be taken into accounts at the time of receipt. This does not speak well of the system of accounts.

(b) Interest on the following securities for the last several years has not been accounted for in the Books of the Association: 8½ % G. P. Notes. Face value Rs. 10500.

The above securities were held by the Ex-President of the Association R. B. Dr. Hari Ram of Delhi until 22nd October, 1940, when these were lodged in the Imperial Bank of India for Safe Custody.

(c) Acting on our suggestion in the last year's report, the Association was able to claim and received a sum of Rs. 112-14-0 as refund of Income-Tax deducted at source on interest of the Government Securities. A similar claim should now be made for the year under report.

2. Payments

The expenditure during the year was vouched. The payments were duly supported by receipts and authorised by the Finance Committee.

3. Cash and Bank Balances

(a) Rs. 175 with Dr. A. Mukherjee, Burdwan. It is not clear whether the above sum was held by Dr. Mukherjee as on 30-9-40. It appears from his letter that he advanced the amount in question to Mr. S. K. Sinha, Advocate for filing suit against Dr. S. P. Sen Gupta.

(b) Rs. 2-11-5 Post Office Savings Bank Account, Madras. The Pass-Book was not produced for our inspection.

(c) Rs. 793-12-1 Dr. S. P. Sen Gupta. This is an old balance and we repeat our remarks as made in the last report.

4. General Remarks

(a) The accounts have very much improved since last year and we are glad to say that the Hony. Treasurer takes keen interest in his work.

(b) We agree with the Hony. Treasurer that the preparation of Income and Expenditure Account and Balance Sheet or a Receipt and Payment Account are alternative systems of keeping accounts and therefore, we have no objection to the present system being continued.

(Sd.) P. R. MEHRA,

Registered Accountants, Auditors.

THE ALL-INDIA MEDICAL LICENTIATES' ASSOCIATION
CONSOLIDATED STATEMENT OF RECEIPTS AND
PAYMENTS FOR THE YEAR ENDING
30TH SEPTEMBER 1940

Receipts.	Rs.	A.	P.
To opening Balance on 1—10—1940	...	63998	4 2
Subscription (Old and New)	...	11275	5 0
Advertisement	...	11887	2 1
Interest	...	3191	2 11
Miscellaneous	...	15	6 9
War Loan	...	£ 157	17 10
Grand Total	...	90857	4 11
			& £ 157 17 10

Payments

	Rs. A. P.
By Printing I. M. J.	5496 2 9
" Establishment	5076 0 0
" Office Rent	730 0 0
" Stationery	184 2 0
" Travelling Allowance	1508 7 6
" Postage and Telegrams	2408 4 9
" Miscellaneous	738 15 9
" Other Printing	210 10 9
" Propaganda work	796 5 0
" Expenses for Branches	2050 9 6
" Furniture	62 14 3
" Audit fee	80 0 0
" Payment to Contributors	125 15 0
" Advertisement Commission	66 6 0
" Subscription to Foreign Journals	168 0 9
" Office Equipment (Omara Gold Medal)	101 12 0
" Expenditure for Standing Committee Meeting	141 13 0
" Scientific Section	1 7 0
" Other Contingencies	55 8 0
Total	19968 6 0
By closing Balance on 30-9-1940	70388 14 11
	& £ 157 17 10
Grand Total	90357 4 11
	& £ 157 17 10

We have audited the Receipts and Payments account as set forth above with the Books and vouchers of the "Association" and have submitted a separate report of even date.

Connaught Circus, } (Sd.) P. R. MEHRA,
New Delhi, }
Dated 16-12-40. } *Registered Accountants, Auditors.*

THE ALL-INDIA MEDICAL LICENTIATES' ASSOCIATION
DETAILED STATEMENT OF CASH AND BANK
BALANCES AS ON 30TH SEPTEMBER 1940

	Rs. A. P.	Rs. A. P.
1. With Ex-Manager, I.M.J.		
Dr. S. P. Sen Gupta	798 12 1	
2. Omara Gold Medal Account.		
Imperial Bank of India, Delhi	387 6 11	
3. With President.		
Postal Saving Bank Account	2 11 5	
4. With Branches.		
Dr. D. V. Venkappa, Madras	16 12 6	
Dr. K. Rama Rao, Madras	25 0 0	
Dr. S. K. Sen, Cinnamara	2 0 0	
Dr. Ahi Bhushan Mukherjee		
Burdwan	175 0 0	
Dr. U. Sesha Rao, Bombay	16 14 0	
Dr. Kunj Behari Lal Verma	43 6 9	279 1 3
5. With Managing Editor, I.M.J., Madras.		
Cash in hand	94 14 11	
In Bank	1396 8 10	
In Stamps	38 11 6	1580 3 8
6. With General Secretary.		
Cash in Hand		166 2 9
7. With Hon'y Treasurer.		
Cash in hand	15 4 6	
In Punjab National Bank Ltd., Karnal	3513 13 8	
In Postal Saving Bank Account	11914 7 6	15443 9 8
8. With Imperial Bank of India Delhi.		8189 10 6
Total	26792 9 10	

Certified in terms of our report of even date.

Connaught Circus, } (Sd.) P. R. MEHRA,
New Delhi, }
Dated, 16-12-40. } *Registered Accountants, Auditors.*

THE ALL-INDIA MEDICAL LICENTIATES' ASSOCIATION
DETAILED STATEMENT OF INVESTMENTS
AS ON 30TH SEPTEMBER 1940

Particulars of the Security	Book Value	Face Value
1. Shares.		
5 shares of Rs. 1 each of the Bacterio Clinical Laboratory (1936) Ltd., Calcutta	5 0 0	5 0 0
8 shares of Rs. 10 each of the Bacterio Clinical Laboratory (1936) Ltd., Calcutta	80 0 0	80 0 0
2. New Loans.		
8½ % Conversion Loan 1947-50 New No. DH004734	3200 0 0	3200 0 0
8½ % Conversion Loan 1947-50 New No. DH004735	5000 0 0	5000 0 0
3. 5 Year Hostel Cash-Certificates.		
4 CC's Rs. 1000 each No. C/2, 091251-44	3450 0 0	4800 0 0
1 CC's Rs. 500 each No. G/2, 011408	431 4 0	500 0 0
1 CC's Rs. 100 each No. M/2, 121135	86 4 0	100 0 0
1 CC's Rs. 50 each No. O/2, 011379	43 2 0	50 0 0
4. G. P. Notes 8½ %.		
No. 300682, (B. 193428) New		
No. DH. 001477, 1854-55	500 0 0	500 0 0
No. 405163, of 1900-01 New		
No. DH. 001764 & No. 961653, New No. DH 001156, 1900/01	5441 9 0	5500 0 0
No. 416488, New No. DH001714 1865	3960 0 0	4000 0 0
No. 257609, New No. DH 001157 1864-55	990 0 0	1000 0 0
No. 262708, of 1854-55	4500 0 0	5000 0 0
No. CA. 010548 of 1865	450 0 0	500 0 0
No. CA. 010549 of 1865	450 0 0	500 0 0
5. Government Bonds for 1943.		
4 % Loan of 1943, New No. 002550	8500 0 0	3500 0 0
" " " " New No. 002547	100 0 0	100 0 0
" " " " New No. 002548	1000 0 0	1000 0 0
" " " " New No. 002549	1000 0 0	1000 0 0
6. G. P. Notes for S.S.		
1. 3½ % G.P. Note Receipt No. S.P.C. 8-M-1854-55 purchased on 22-7-1940	4409 2 1	5000 0 0
2. 8½ % Loan for 1947-50, AAO and P & T. Receipt No. S.P.C 47-50/13 No. 6124, dated 19-1-35	5000 0 0	5000 0 0
7. Omara Gold Medal.		
War Loan, through the Imperial Bank of India, Delhi	£ 157 17 10	£ 157 17 10
Total	43596 5 1	45535 0 0
	& £ 157 17 10	& £ 157 17 10

Certified in terms of our report of even date.

(Sd.) P. R. MEHRA,
Registered Accountants, Auditor.

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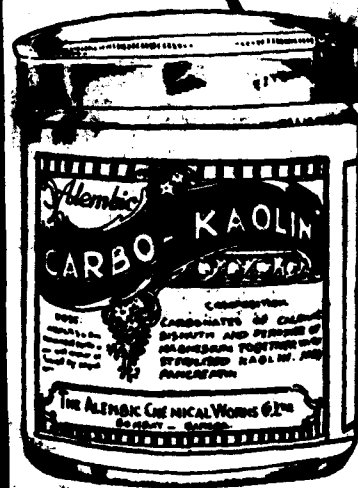
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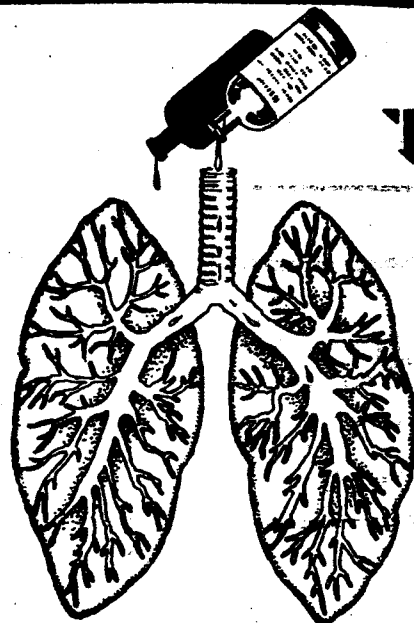
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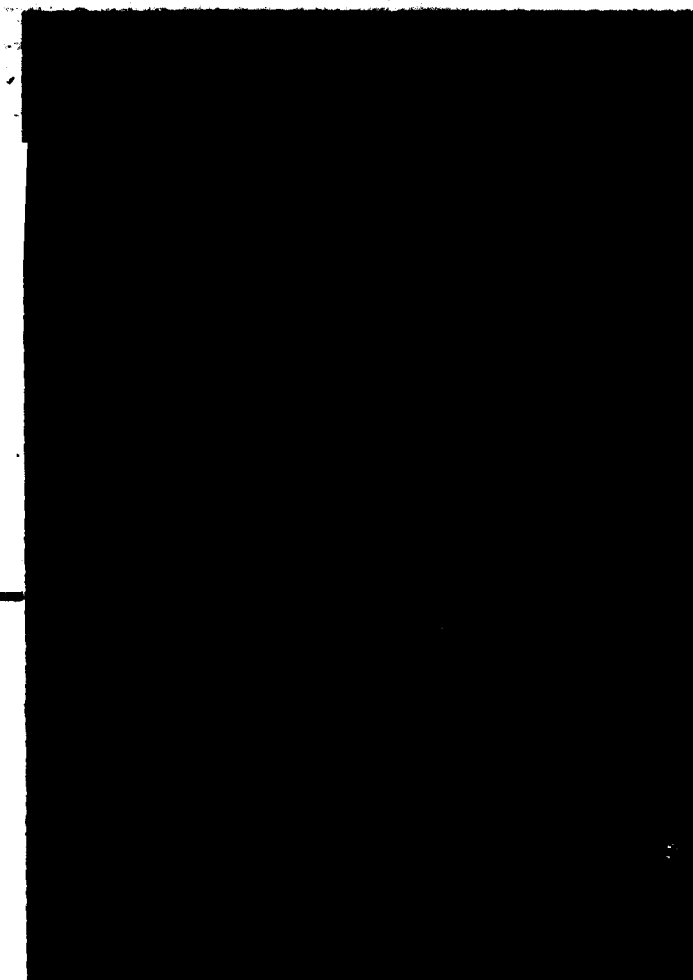
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ADDRESSES AND ARTICLES

Chemotherapy of Malaria*

- Dr. G. V. Joglekar, F. R. C. S., D. L. O.,
Superintendent of Dispensaries and Deputy
Sanitary Commissioner, Ujjain, C. I.

(3)

Practical Suggestions for Treatment of Malaria

It is not possible to lay down standard methods of treating malaria. From the summary of existing knowledge about the most useful drugs given in previous articles the following suggestions are made as a tentative guide based on present knowledge.

TREATMENT OF ACUTE P. FALCIPARUM INFECTIONS

(a) *Severe infection*:—Cinchona alkaloids, particularly salts of quinine are recommended. For the first day or two quinine should be given by intramuscular injection to ensure certainty of absorption. The adult quinine dose should be at least 2.0 gm. a day divided into 3 or four doses. The bihydrochloride is more suitable for injections, and the cheaper sulphate for administration by mouth. Tebetrin may replace quinine where cost is no consideration. Totaquina may be used where cheap reliable remedy is sought. This treatment should be continued for at least 7 days.

Gametocidal treatment should be given as a routine follow-up. It must be noted that giving of plasmoquine during the acute stage imposes an unnecessary additional risk.

Where more prolonged cinchona treatment is favoured the following scheme modified from Rogers and Megaw is suggested.

Full therapeutic dosage until the temperature is normal.

Two-thirds dosage for 4 more days.

Gametocidal follow-up as above.

A week's rest, then two-thirds dosage for 5 more days.

(b) *Mild subtertian infection*:—

Alternatives suggested are oral atebtrin 0.3 gm. x 5 or

quinine salt 2.0 gm. x 2 followed by oral atebtrin 0.3 gm. x 5

quinine salt or totaquina 2.0 gm. x 7 or

the modified Rogers and Megaw scheme outlined above or

Intramuscular atebtrin for injection 0.375 x 2 followed by oral atebtrin 0.3 gm. x 3.

(c) *Relapsing subtertian malaria*:—The suggested treatment is oral atebtrin 0.3 gm. x 5, followed by plasmoquine simplex 0.02 gm. x 5 or 0.03 gm. x 3. If possible, there should be a 3 day interval between the atebtrin and the plasmoquine courses.

Alternative treatment is quinine salt (or Totaquina) 2.0 gm. x 7 followed by plasmoquine as above, and after a week's rest by quinine salt 0.4 gm. daily for a prolonged period. This method is of advantage to persons returning to endemic areas where reinfection is likely.

(d) *Cerebral malaria*:—The treatment of choice is a combined intramuscular and intravenous quinine supplemented with adrenalin. An intravenous injection of 0.5 gm. of quinine bihydrochloride in 10 c. c. of water or saline is followed by 1.0 c. c. of 1/1000 adrenalin given intramuscularly. A further 1.5 gm. of quinine bihydrochloride is given by gluteal injection in two doses spread over the day. Intravenous quinine is not repeated. Subsequent treatment with intramuscular quinine and adrenalin is continued so long as there is mental clouding and the patient is not able to swallow.

Prof. Hawes of Singapore records good results with slow intravenous infusion of the following solution—

Quinine Bihydrochloride	10 grains
Calcium chloride	6 grains
Adrenalin Hydrochloride	7 minims
Saline 8%	1 pint

The infusion is made only once during the first 24 hours, the remainder of the quinine being given by intramuscular injections which are continued until the patient is able to swallow.

(e) *Subtertian malaria in children*:—Cinchona alkaloids, particularly quinine, are suggested for choice. Tasteless preparations are not favoured owing to their slower absorption. The daily quinine dosage should be at least one gramme for every fifty pounds of weight. Severe infection should be treated by intramuscular injections for the first day or two. Gametocidal after-treatment suggested is as below:

Age — 2 years plasmoquine simplex	0.005 gm.
Age 3—4 „ (early) plasmoquine simplex	0.005 gm. x 5
„ 5—8 „ „ „	0.01 gm. x 5
„ 9—12 „ „ „	0.015 gm. x 5
over 12 „ „ „	0.02 gm. x 5

THE TREATMENT OF ACUTE P. VIVAX INFECTION

(a) *Primary attacks of benign malaria*:—As the synthetic drugs are more likely to give a permanent cure, the use of cinchona alkaloids is less favoured than in the subtertian malaria.

Alternative lines of treatment are—

Oral atebtrin 0.3 gm. x 5 or

Plasmoquine 0.03 plus quinine salt 1.0 gm. daily for 14 days (quino-plasmoquine 3 tablets x 14) or

Atebrin for injection (intramuscular) 0.375 gm. x 2 followed by oral atebtrin 0.3 gm. x 3 or

quinine salts or totaquina 1.5 gm. x 7.

Treatment based on synthetic drugs, atebtrin and plasmoquine, exposes the patient to more risk but confers greater benefit. Atebrin and quino-

plasmoquine combinations are more potent in benign tertian malaria than the cinchona alkaloids. Intramuscular therapy is seldom necessary in *P. vivax* malaria except when the stomach is intolerant of any drug given by the mouth.

(b) *Chronic relapsing benign tertian malaria*: The problem of permanent cure of the chronic relapsing benign tertian malarial infection is not yet solved. In broad terms the alternative treatments seem to be (1) to treat attacks with the cinchona alkaloids either for a short period sufficient for immediate clinical control or else for a longer period with the hope of enhancing their low 'sterilisation potency'.

(2) To treat attacks with a short course of cinchona alkaloids at therapeutic dosage followed by a prolonged course at prophylactic dosage.

(3) To use the more potent methods offered by the new synthetic drugs.

There is much to be said for and against each of these methods, but the most effective therapy seems to be that based on atabrin or quinoplasmoquine.

A practical scheme may be suggested as follows:—

Primary attack:—oral atabrin 0.3 gm. x 5

First recurrence = quinoplasmoquine tablets 3 tablets x 14

Second recurrence = oral atabrin 0.3 gm. x 5

Third recurrence = quinine salt 1.0 gm. x 7 with a follow-up after a rest interval of 10 days, of 0.4 gm. daily for some months.

Acute benign tertian malaria in children:—Children seem to require larger *pro-rata* doses of quinine than adults. The dose should be not less than 1.0 gm. for every 50 lbs. of body weight. Atabrin and quinoplasmoquine have the special advantages mentioned earlier, but atabrin injections are inadvisable.

QUARTAN MALARIA

Quartan malaria, in most countries, is far less common than other forms. The treatment suggested for quartan malaria is that 0.06 gm. of plasmoquine daily in combination with quinine. This is more active than quinine alone, against asexual forms of *P. malariae*. Atabrin is at least as active as quinine for the immediate treatment of acute infection. Both treatments, atabrin and quinoplasmoquine, have been suggested as more permanent in their effects.

MALARIA IN PREGNANCY

There is a general agreement that untreated malarial attacks often terminate pregnancy and that quinine treated attacks are far less liable to do so. It seems that the fear of premature termination of pregnancy from quinine therapy is groundless and that abortion following the administration of quinine is not due to the drug but to the fever.

On general grounds, it is advisable to give the quinine in divided doses by mouth or intramuscularly if injections are essential. The total daily dose in benign tertian malaria may be limited to 1.5 gm. a day; and in mild subtertian attacks to 1.5 gm. a day; in severe subtertian malaria it is probably unsafe to give less than 2.0 gm. a day at least for the first few days. Atabrin and plasmoquine, when given in customary doses for malaria, are believed to be without action on the pregnant uterus. They have been successfully used in pregnancy and in some circumstances may be preferred.

INTRAMUSCULAR VS. INTRAVENOUS THERAPY IN MALARIA

There is no unanimity on this question of the relative merits of intramuscular and intravenous injections in malaria. Some there are who will never give intravenous injection of quinine because of the alleged dangers; others regard intramuscular injections of quinine as bordering on malpraxis.

The facts on which there is a fair agreement are:—

(1) That injection of quinine should be reserved for special indications,—grave infection, coma, digestive intolerance. It is possible, as Clayton Lann remarks, "to push into a patient with a hypodermic syringe a lasting conviction that if it has come to a choice between bitter taste and a bitterly painful experience, it is better to take quinine by the mouth after all."

(2) The intramuscular injection of quinine always produces tissue necrosis and often leaves fibrous induration for years. That intramuscular quinine has no mystical virtue not possessed by oral quinine; that the injected quinine is not absorbed more quickly than by mouth; and that it is not retained as a reservoir and is not clinically relapses are facts about which there is little dispute. In short it may be said that injections are indicated:

- (1) where quinine or atabrin cannot be swallowed,
- (2) where retention of the quinine or atabrin swallowed is doubtful from nausea or vomiting,
- (3) where failing a satisfactory clinical response to treatment, quinine or atabrin cannot be demonstrated in the urine and absorption is doubtful,
- (4) where the blood films show the presence of more than five parasites per field,
- (5) where on clinical grounds, the infection appears to be grave.

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Leprosy in the Fyzabad District*

• P. J. Chandy, B. A., L. C. P. S., Resident Medical Officer, Fyzabad Leper Home and Hospital

Having seen over a thousand cases of leprosy at the hospital at Zamurradganj during the course of the last 2½ years, I offer no apology in attempting to deal with this subject.

It is well-known that leprosy shows a great deal of regional variation. In this paper I wish to discuss some of these variations with particular reference to the study of endemiology. Leprosy is a social disease and once the key is found for its eradication many problems connected with nation building will naturally be solved. Like the fifth column activities leprosy operates insidiously, and a nation which does not meet the menace intelligently is doomed to eventual collapse.

Most of you may be aware that leprosy is such a major public health problem. The District of Fyzabad contains many villages badly affected with leprosy. According to the 1931 census, there were 5,300 lepers in the whole of Oudh comprising 12 districts of which Fyzabad is but one.

Out of the 1,000 cases that I have examined at Zamurradganj 700 are from the Fyzabad District alone. It won't be an exaggeration if I say that for every patient that has come to the hospital there must be ten others who have not attended the hospital. So we may say that there must be at least 7,000 cases in the Fyzabad District alone. The other districts in Oudh being very much like Fyzabad in climate, density of population, and economic conditions, we may easily conclude that the incidence of leprosy in Oudh is about 80,000, i.e., 16 times the figure given in the census returns of 1931.

The population of Fyzabad is estimated to be about 12,00,000 with an average density of 680 per square mile. This is made up of 88% Hindus and 11% Muslims and 1% belonging to other religions. Among the Hindus the population is distributed as in column one:

	% of population	% of patients
Chamars	16.8% (of Hindu population)	1.4%
Brahmins	15.16%	13.5%
Ahris	13.67%	10.8%
Kurmi	6.8%	6.2%
Rajputs	6.2%	7.6%
Kevat		5.8%
Pasis		8.6%
Muravo		2.6%
Banias		2.8%
Koeri		10.4%
Kahar		3.4%
Bhars		...
Kumhars		1.6%

* A paper read at the 16th U. P. Provincial Conference of the A. I. M. L. A., on 8th October 1940.

% of population	% of patients
Dobhie	1.6%
Nais	1.8%
Gadaria	1.8%
Brai	0.6%
Kaisth	0.6%
Teli	0.8%
Barahis	1.4%
Kalvar	0.4%
Lohar	1.4%
Lunia	1.4%

The second column in the above list shows the percentage distribution of leprosy in the various castes among 500 out-patients who were examined. This table shows us very clearly one important fact, namely, that as far as Fyzabad is concerned leprosy is not a disease of the low caste and outcaste. As a rule, those who follow sedentary occupations are more liable to get the disease. The surprisingly low incidence among the Chamars, who form a major part of the population, and the large incidence among the Brahmins and Koeris is interesting and this subject needs further study.

The sex incidence of leprosy in this District is 90% males and 10% females. I believe that a larger percentage of females must be suffering from this disease. The apparent low incidence may be partly due to the purdha system preventing women patients from attending the clinics. In other parts of India, the sex incidence is 25% females.

Case Type Rate: The patients in this District suffer mostly from the neural type of leprosy. The case type rate for Fyzabad being 66% neural, and 34% lepromatous. There seems to be a preponderance of the neural type. In Bengal, for instance, the lepromatous i.e., the malignant form of the disease forms only 18% of the total number of cases. An increase of lepromatous cases in a community is important from the point of view of epidemiology. However this finding has to be re-examined in the light of further research. It is probable that an intensive survey of the district which has not been done till now will bring to light large numbers of slight early neural cases which produce but little discomfort to the patient and as such do not go to a hospital for treatment.

The age of patients: When first symptoms were noticed has been studied in a hundred cases taken at random and the age groups have been plotted against the numbers in each group. *Vide*

Figure 1. The curve obtained is interesting as it shows its highest peak at the age group 30-39. The average incubation period for leprosy according to Muir is about 5 years. Calculating backwards we find that the majority of patients must have got

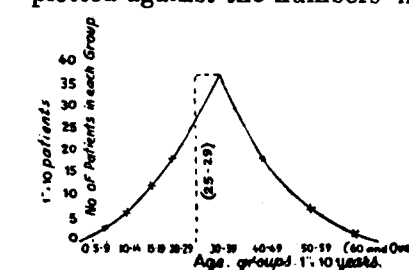


Fig. 1: Note that the peak is between the age group 30 and 39.

themselves infected between the ages of 25-29. This observation is very significant because in recent years too much emphasis is being laid on childhood infection and some leprologists believe that adult infection is rare.

The contact rate in the Fyzabad District has been studied and the following figures have been obtained:

Family contact	...	...	...	14%
Neighbourhood contact	...	...	...	12%
Contact of unknown origin	...	...	...	44%

The rest 30% migrated to endemic areas: 18% to Rangoon and 12% to Bengal. There are reasons to believe that a majority of them must have contracted the disease at one of these endemic centres. The incidence of leprosy in Burma is said to be twice as much as that of U.P., and there is a greater preponderance of infectious cases in Burma than in India. A considerable number of our patients say definitely that they had left home healthy and they noticed their first symptoms either in Burma or in their own villages a few years since return from that country. The average period elapsing between the last day of stay in Burma, and the time of noticing the first symptoms is 4 years. Almost all of them were adults and the vast majority of them gave no previous history of leprosy in the family.

In addition to the points already raised, namely, emigration to an endemic area, there are two very important predisposing causes that contribute towards the high incidence of leprosy in this district.

As a result of routine stool examination, on a large number of patients who were treated at the Hospital, we have found out that 80% of the patients in this district suffer from hookworm disease. This causes, as is well known, a very high degree of secondary anaemia and the normal immunity to leper infections which most people possess is broken down and the individual becomes a victim to leprosy.

Recently Oberdorffer has stated that the susceptibility to leprosy is chiefly induced by a certain dietary. There is a theory that certain toxins present in certain food-stuffs damage the adrenal gland and this in turn makes the patient susceptible to leprosy infection. It is also possible to explain the pigmentary changes in leprosy on the strength of this hypothesis. *Arum* (*Colocasia Antiquarum*) is grown and eaten extensively in these parts and it is quite probable that some variety of *Colocasia* may contain a toxic principle which is able to derange the physiology of the human system to such an extent as to make the individual susceptible to the invasion of *mycobacterium leprae*.

CONCLUSIONS

1. The incidence of leprosy in the Fyzabad District is high. It is estimated that 6 per 1,000 of the total population suffer from this disease.

* Hindi—Aroli.

Some Diseases Transferable from Animals to Men

Dr. Syed Niaz Hussain, Veterinary Assistant Surgeon, Fyzabad (U. P.)

GLANDERS

It is a contagious disease of the lymphatic system caused by the bacillus *Mallei* showing lesions in nodules, ulcerations and degenerations in the respiratory tract or in the skin. It is peculiar to horses, mules and monkeys. It is transmissible by inoculation and nasal discharge. Discharge from the nose in thick layers is virulent in dry air and ordinary sunshine for two months. Infection is contracted by inoculation and inhalation. These are the channels of infection in human beings. Care should therefore be observed in the handling of diseased animals. Infection is usually contracted through cuts, scratches and abrasions.

ANTHRAX

It is a very fatal disease of the blood caused by the presence of bacillus anthracis (it is called woolsorter's disease in human beings). The disease in carnivorous animals may be contracted by eating infected flesh. Man usually gets this disease by inoculation (malignant pustule) or by inhalation of wool and hair factories.

FOOT AND MOUTH DISEASE

It is an acute, highly infective and rapidly spreading contagious disease of the lower animals, specially of ruminants, characterised by vesicular eruptions in the mouth and on the feet and udder.

* A paper read at the 16th U. P. Provincial Conference of A. I. M. L. A. on 8th October 1940.

2. Leprosy is not confined to the low caste and the outcastes. The Brahmans in this district show a high incidence whereas the Chamars who number more than the Brahmans in population show a remarkably low incidence.

3. Poor economic condition of the people and emigration to endemic area are two of the causes that contribute towards this high incidence.

4. The predisposing causes of leprosy in the District are:—

1. Hookworm infestation.
2. Poor diet, especially the extensive consumption of *Colocasia Antiquarum*.
5. Adult infection seems to be much more common than is generally supposed.

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Human beings contract the disease from drinking infected milk. The virus of foot and mouth disease in bone marrow and blood is very active. In human beings there is tendency to localisation on the same points as in animals. The hands are inoculated in milking and the mouth is affected from drinking infected milk, and even from eating butter made from infected milk. There is a great danger of this disease in children fed on an exclusive milk diet. Gastric disturbances of a severe nature in addition to buccal eruptions may result. It must be mentioned here that by the 15th day of recovery the milk will ordinarily be fit again for human consumption.

RABIES

It is an acute contagious disease affecting the central nervous system and distinguished by aggressive nervous disorders. It is mostly seen in canine races and is usually communicated by them to man chiefly by biting. Even saliva is infective two or three days before the onset of the disease, and much more after the disease has set in. The incubation period in different animals is not the same. In man, it varies between fourteen to sixty-four days or more. The specific organism of rabies has not yet been discovered, so the disease is not under full control. Rabid dogs and jackals are the chief agents of rabitic infection in man.

TUBERCULOSIS

It is an infectious and incurable disease, common to man and a large number of animals, caused by bacillus tuberculosis and characterised by the formation of tubercles in the lungs and other parts of the body. Cattle, specially cows, are very susceptible to it. Sheep and goats show a remarkable immunity. Drinking tuberculous milk is also a frequent cause of infection in young animals, the digestive system being first affected. Human beings may be similarly infected. Total milking of cows is one of the predisposing causes of tuberculosis among them. Cough is more frequent and it is painful. Mucous membranes are bloodless. Mammary tuberculosis may be primary from external infection of milk ducts, but more commonly it is secondary to a general tuberculosis. At first, rather a firm uniform painless swelling of one or two quarters of the udder (commonly the hind ones) without serious interference with the milk secretion is marked. Later an irregular knotted condition of the gland is developed and the milk becomes pale, watery, coagulable and filled with T. B. Such suspected cows should be examined carefully. Tuberculin test will clear the case.

SURRA

The disease occurs in horses, mules, donkeys, camels and cattles. It is due to the presence in the blood of a protozoa known as *Trypanosoma Evansi*. Fortunately it does not appear to be

transmissible to man. But the shape and nature of the organism is similar to those of the sleeping sickness in human beings.

SCABIES

Scabies is a very contagious skin disease caused by acari or animal parasites. It is met with in all animals and men. Follicular mange in dogs resembles the scabies in men. Its infection in human beings is often acquired by immediate association with diseased dogs. The human itch parasite (*Sarcoptes Scabei*) is motile and transferable from the affected skin of horses and dogs. Men can contract also certain types of eczema by direct association with and handling of the diseased dogs, if proper care is not observed.

EQUINE SYPHILIS

It is an Arabic word, signifying dirt. It is a contagious venereal disease due to *trypanosoma equiperdum*. Practically it is a disease limited to horses and donkeys and only those used for breeding purposes are affected naturally by it. Syces or other persons may by chance contract the infection. No such case of human infection has yet been reported in our country.

INFLUENZA

It is a rapidly spreading contagious disease chiefly affecting horses and characterised by great prostration with a tendency to localisation in the mucous membrane of the respiratory and gastrointestinal tracts, in the eyes, subcutaneous connective tissues, joints, and sometimes in the central nervous system. Equine influenza is probably caused by a filterable virus contained in the blood and other body fluids. Persons in direct contact with the infected animals can get the infection.

TETANUS

It is a disease of animals and man characterised by spasms of the voluntary muscles. It is due to the bacillus tetanus, and infection is through the medium of wounds. The blood and tissues are not infective but pus from an infected wound is.

WHOOPIING COUGH

Generally dogs get it. It is directly contagious from dog to dog. But children who are in direct association with infected dogs can easily contract the disease.

DIPHTHERIA

The disease is highly contagious in cats. Cats suffering from diphtheria may convey the disease to children who are very fond of playing with them.

SMALL-POX

It seems certain that horse-pox and cow-pox are one and the same disease and of nature identical.

(Continued at foot of page 31)

The Injection Treatment of Hernia *

• Dr. M. L. Saxena, Medical Officer, Pipra Hospital

Injection treatment of hernia is suitable for those class of patients who refuse to undergo an operation, or are unsuitable for it,

The method to be described in this article is that advocated by G. B. Delisle Gray who attributes it to Ignatz Mayer of Detroit, U.S.A. Obviously it should be used by those who are scrupulously careful in carrying out the details.

This method is unsuitable for use in children or in cases complicated by imperfect descent of testis. For the most part it has been used for inguinal hernia, and it is essential that it should be completely reducible and capable of being controlled by a truss. The advantages claimed are: (1) that the method is ambulatory and suitable for out-patient practice; (2) that the patient can continue at work; (3) that pain is very slight and general anaesthesia unnecessary; (4) that the fear associated with a cutting operation is obviated; (5) that the injection may be successful; and finally (6) that it does not preclude the possibility of operative treatment later should that prove necessary.

The disadvantages experienced are: (1) the multiplicity of injections which may have to be continued over several weeks; (2) possibility of infection with subsequent gangrene; (3) risk of plastic peritonitis with resulting intestinal adhesions (4) occasional persistent swelling of the scrotum.

It is essential that the injection should not be made into the sac but round its neck, and between the layers of the muscles bounding the canal. The spermatic cord does not appear to be injured by the subsequent contraction of the scar tissue. A truss of the spring pattern capable of exerting continuous pressure must be worn throughout the treatment and for some time afterwards.

Many solutions have been employed; Mayers formula, recommended by Delisle Gray, is as follows:—

Zinc Sulphate.....1 drachm.
Phenol Crystals.....6 drachms.
Glycerine.....4 fl. drachms.

* A paper read at the 30th Conference of the A.I.M.L.A., 28-12-40.

Cinnamon water.....1 fl. ounce
Liquid extract of hamboek spruce.....5 fl. drachm.
Sterile redistilled water.....2 fl. ounce.

The compounding of these ingredients should be carried out by a skilled chemist. The ready prepared solution can be obtained under the name of *obturatin*. For the first injection 0.5 c.c. is used, and for subsequent injections 1 c.c.

The hernial region is shaved and cleaned with spirit or iodine, the patient lies on the back with the buttocks on a folded pillow and is instructed to remain entirely passive. The hernia must be fully reduced.

The injection is carried out as follows. (1) The scrotum is invaginated through the external ring in order that the external oblique muscle may be lifted forwards. (2) The needle size No. 17 of the charged syringe is inserted vertically over the site of the internal ring until its point is felt to pierce the aponeurosis. (3) Before making injection the plunger of the syringe is withdrawn to ensure that no considerable sized vessel has been entered. (4) The injection is then made slowly, the needle being moved from time to time. (5) The syringe is withdrawn and the area dusted with talc powder. The truss is re-applied before the patient rises from the couch and must on no account be disturbed until the time of the next injection. When the hernia is so small that the scrotum cannot be invaginated, the needle is inserted directly into the region of the internal ring which is situated half an inch above the centre of the Poupart's ligament.

The injections are repeated every four to seven days depending upon the degree of reaction. After a few injections a hard mass forms deep in the inguinal region. At the end of a month the injections are discontinued for a fortnight, the truss being still kept in position. It is then removed with the patient lying down, and he is asked to cough; if there is no impulse the patient is examined again in a fortnight, this time in erect posture, and if again there is no impulse the truss may be discontinued, at first at night only but after another month altogether, except during severe exertion. During the period of treatment there is seldom much pain, but there may be a bruised feeling with some aching, and there may be sensations of heat referred to the perineum and genitals. These symptoms soon subside but the truss must not be removed in the hope of relief.

From ten to thirty injections may be necessary, the average being about twenty.

The Need for an early Diagnosis of Glaucoma

• Dr. S. Kanthimathy Nathan, Ophthalmic Surgeon, Govt. Hospital, Madura

Glaucoma, so named after sea-green colour, is a disease which shows increased intraocular tension as a common physical sign. Since there are various factors in producing such ocular hypertension the disease is classified according to the etiological basis for easy understanding. For an average medical practitioner it is very difficult to distinguish a case of glaucoma from one of cataract. This article is intended to give an idea of the distinguishing features of the disease, so that one may ordinarily diagnose and advise the patient to have early treatment and thus prevent any possible damage by timely help. Owing to the negligence on the part of the patient and want of early diagnosis, many a valuable eye is lost irrecoverably.

Clinically glaucoma is classified into two broad divisions, namely, primary and secondary glaucomas. The primary one is again classified into four divisions: acute inflammatory, chronic inflammatory, chronic simple and absolute.

Acute inflammatory glaucoma, otherwise known as acute uncompensated glaucoma, is a disease of old age more commonly seen in women. Though no satisfactory cause is yet found, it is still believed that anatomic predisposition of the eye and the disturbances in the normal pressure-

(Continued from page 29)

cal with small-pox in human beings. They are regularly intercommunicable.

USE OF MILK

If care is exercised in milking so that pocks are not broken and its contents mixed with the milk, its consumption is not injurious. But it would be prudent to boil milk before drinking.

ACTINOMYCOSIS

This is a specific disease affecting different kinds of animals chiefly cattle and men, caused by a vegetable parasite known as the "Ray Fungus". It is characterised by the formation of characteristic nodules, usually in the tongue in human beings and at every part of the face and head of cattle. It has been often confused with osteosarcoma and carcinoma. During the course of the disease and treatment, milk of the suspected cows and goat is not fit for human consumption.

I would like to conclude this paper with an appeal for co-operation between medical men and veterinary surgeons in the common object of preventing transferable diseases from animals to men and vice-versa.

regulating mechanism of the eyeball, play an important part in producing this variety of the disease. As the name implies, the clinical picture of the disease is one of inflammation and incompenation. Intense pain in one eye, oedema of the lids, lachrymation, severe congestion of the bulbar conjunctiva, steamy cornea, shallow anterior chamber, moderately dilated, irregular and rigid pupil, dirty appearance of the iris, loss of fundus reflex, hyperemia of the optic nerve, loss of vision, increased intra-ocular pressure and systemic disturbances such as nausea, vomiting, chills, etc., are some of the important signs and symptoms of the disease. According to the severity and the resistance of the patient, the disease manifests its signs and symptoms in various ways. The sooner the eye is brought under treatment the visual acuity is better maintained. It is stated that 90% of patients with acute uncompensated glaucoma, if operated on within 48 to 72 hours after beginning of the attack, retain useful vision without much impairment. The longer the operation is postponed the poorer the chances become. When the prodromal attacks appear with moderate signs the patient invariably neglects the disease or attributes his sufferings to some other causes. Hence these attacks often miss the attention of the practitioner and only late and full-blown attack is brought to his notice for treatment. In the early stages miotics such as eserine 1%, if instilled once or twice a day, will markedly relieve the patient and iridectomy, if undertaken, will give a permanent relief and avoid further attacks. In severe acute cases eserine instillations every 15 minutes for 2 or 3 hours will invariably bring down the pressure by opening the filtration angle as a result of pupillary contractions. Continuous application of ice bag over the eye, morphine injections, free catharsis and blood-letting are some of the weapons in our armamentarium. If no relief is obtained within 6 hours by miotic treatment, operation is the only chance to save the eye. Iridectomy is the operation of choice and is recommended by many. As a wise prophylactic method, iridectomy in the other normal eye should always be insisted upon.

Chronic uncompensated glaucoma is necessarily one of reduced violence with degenerative changes in the eyeball and nerve head, due to continued hypertension and hyperemia. The pain in the eye is rather moderate and mostly felt in the early morning hours. Oedema and lachrymation are slight. The bulbar conjunctiva is moderately congested. The cornea gets degenerated not only by the formation of corneal opacities but also by the formation of bullous keratitis. The anterior chamber is shallow, the pupil is dilated and irregular and does not react to light. The iris gets atrophied and lenticular opacity sets in. The optic nerve head gets excavated and the vision is markedly reduced. The treatment though not satisfactory

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is essential in order to keep up the existing vision. A filtering operation such as Elliot's trephining is performed with fairly good results.

Chronic simple, otherwise known as chronic non-inflammatory or compensated, glaucoma is a most common malignant malady and occurs ten times more frequently than other forms of glaucoma. It is always bilateral and women are the worse sufferers. Heredity plays an important factor especially when it occurs in young individuals. Errors of refraction, particularly hyperopia, contributes to a large number of attacks. No definite causes are attributed to the formation of the disease but the following theories are mentioned by various authors. 1. Decrease in the elasticity of the sclera as the cause of the hypertension. 2. Obstruction to the outflow of intraocular fluids. 3. Increase in the production of aqueous humor of the eye. 4. Volumetric increase of intraocular tissues.

The following are some of the signs and symptoms which appear according to the severity and duration of the disease. Bilaterality, non-inflammatory condition of the conjunctiva, cornea and sclera; shallow anterior chamber, pigment granules in the anterior chamber, posterior surface of the cornea and sometimes over the anterior surface of iris; adhesions in the angle of the anterior chamber; dilatation and irregularity of the pupil; atrophic iris; diffuse lenticular opacities; excavation of the optic nerve head; increased intraocular tension markedly during the early morning hours; decreased vision; obliteration of visual form and colour fields; formation of various central, paracentral and cecentral scotomas. In a straightforward case of compensated glaucoma no difficulty is felt in the diagnosis. But in very early cases with history of morning headaches or headaches appearing after a stay in a dark-room or after seeing movies, it is rather hard to give a positive opinion since the tension in the eyes gives no idea as it keeps up the normal level. In such cases provocative tests should be made in a dark-room and tension taken at different hours so as to give a correct opinion.

The treatment of a case of compensated glaucoma is one of the most difficult problems for an ophthalmologist. Miotics should be cautiously tried and the progress of the miotic treatment should be carefully watched by taking the visual acuity with correcting lenses, by outlining the peripheral and central field of vision and by measuring the tension by tonometer. If the response to the miotic treatment is not satisfactory operative procedure is the only way to preserve the eye. Iridectomy, cyclo-dialysis and trephining are the different methods indicated according to the diseased condition of the affected eye.

Absolute Glaucoma.—This is the final stage of a primary glaucoma that has not been treated or

has failed to respond to the treatment. In both the varieties of compensated as well as uncompensated glaucoma the end result is the same. The eye is painful and tender on pressure and there is diffuse hyperemia of the conjunctival and scleral vessels. The cornea is anaesthetic and degenerated. The A. C. is extremely shallow and the annular adhesions are already formed completely obliterating the angle of the A.C. The iris is atrophied and adhesions between the iris and the lens are a common feature. Pupil is dilated, irregular and immobile. The lens is opaque with calcareous degeneration. Fundus could not be seen and the optic nerve head is excavated. Vision is absolutely gone and the intraocular tension is very high. Medical treatment is of no avail. Enucleation is the only way to remove the pain and discomfort of the sufferer.

Secondary Glaucoma.—In this disease some recognisable cause is always found when the eye is affected with intraocular hypertension and its attendant symptoms. There are ten principal causes that produce secondary glaucoma which are as follows:—

1. Diseases of the iris.
2. Disease of the ciliary body and choroid.
3. Changes in the position of the lens.
4. Intraocular tumour.
5. Non perforating injury of the eye.
6. Diseases of the cornea.
7. Congenital anomalies of the eye.
8. Retinal disease.
9. Stasis of the orbital veins.
10. Epidemic dropsy.

The treatment essentially rests upon the proper tackling of the cause that is responsible for the disease.

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Non-Surgical Treatment of Glaucoma

• Dr. R. S. Agarwal, Eye Specialist, Delhi

Glaucoma is a serious disease of the eyes which some years ago was considered incurable when chronic. In most cases, the eyeball was usually too hard and this is the symptom which more than any other was the strongest evidence we had that the eye was suffering from glaucoma. The field of vision was contracted on the nasal side and the pupil was usually more or less dilated; one characteristic symptom was the apparent appearance of colours around the flame of a candle or some other similar light.

Glaucoma is a disease of adult life and seldom occurs in children. Its uncertainty is usual. For example, a person with normal eyes and normal sight may retire perfectly comfortable. Some time in the middle of the night, he may be awakened by a very intense pain, with total permanent blindness in both eyes from glaucoma. In a limited number of cases the pain may be absent, although the vision may be partially lowered. The sudden onset may not occur, but one or both eyes may slowly, without pain, after a long time, a year or longer, become totally blind.

The results of the various methods of treatment which were suggested and practised have been so disappointing that one may hesitate to foretell what may happen after any such treatment.

It was a very welcome discovery made by Dr. Bates that the relief of eyestrain always lessens tension, relieves pain and improves the vision. The discovery that relaxation methods cured glaucoma suggested that the cause was due to eyestrain. Experimental work proved this to be true. All methods of treatment which promote relaxation, always benefit glaucoma.

Absolute glaucoma is a serious disease and the stare can become so great that a large amount of pain and total blindness will be produced. The pain may be so severe that many ophthalmologists feel justified in removing the eyeball to bring relief. While many cases of absolute glaucoma obtained much relief from pain after the removal of the eyeball, there were too many cases which still had severe trouble, even after such an operation. A strain which produces absolute glaucoma is really a mental strain and not a local one entirely.

Glaucoma may be produced solely by the memory of imperfect sight. If a person with normal eyes and normal vision presses lightly on the eyeballs through the closed eyelids and remembers or imagines a letter 'O' with a gray, blurred outline very imperfect, the eyeball can be felt to increase in hardness. When the patient

remembers a letter 'O' perfectly, the hardness of the eyeball disappears and the eyes become normal as they were before. These experiments are offered as proof that the memory of imperfect sight is a strain which may produce glaucoma, and the memory of perfect sight a relaxation, which will relieve glaucoma.

Some of the best methods of producing relaxation are the practice of the long swing, the universal swing, palming and sun treatment. There are some people who cannot practice a certain swing correctly until after weeks of instruction. They are full of excuses and are quite ready to find fault with the method rather than their own lack of practising properly. The memory of letters and other objects seen by central fixation becomes very much better in a short time. Imagination of thin white line or a white centre of a letter 'O', whiter than the rest of the card, is very helpful. Frequent enemas, fasting, dropping of lemon juice in the nose, once or twice a week, regulation of diet have proved beneficial in glaucoma patients.

CASE REPORTS

1. A man aged thirty-five was all right when he went to bed. During the sleep he got severe pain in the right eye. Redness increased and watering continued. The eyeball became very sensitive. The vision was lost. The doctor whom he consulted said that he was suffering from glaucoma and iritis. The eyeball was hard. This sort of inflammation had taken place two or three times before also and every time the inflammation continued for about two months.

The first thing that I did was that I gave a strong enema which caused about ten or twelve motions and much mucus passed with the faeces. Then I gave steam to the face for a few minutes. Sun treatment and relaxation exercises were practised. The whole trouble subsided within twenty-four hours, the eyeball became soft, and the patient became all right in a week's time.

2. An old woman was suffering from glaucoma without pain, the vision was 1/20. By the help of enema, regulation of diet, sun treatment and palming she began to read fine print of Hindi test type within a fortnight.

3. Another old lady was suffering from inflammatory glaucoma with severe pain in the temples. First few drops of ginger powder mixed in milk were dropped in the nose, which brought out much discharge through the nose and mouth. This sort of treatment helped in relieving the pain. At bed time the patient took purgative which caused about four motions. Sun treatment and swinging exercises were practised. The redness subsided in a week's time and the vision began to improve. Since then she did not get any attack of glaucoma.

4. An old man had absolute glaucoma and the vision was totally lost in the right eye and there was perception of light in the left eye. He had gone under operation when there was some vision in both the eyes; but the vision gradually went on diminishing. Such cases are incurable and no benefit is generally possible.

Local use of sulfamido compounds in the treatment of infected wounds. W. E. Herrell, M.D., and A. E. Brown, M.D., *Proc. Staff Meet. Mayo Clin.*, 15: 611—616 September, 1940.

Experimental and clinical observations tend to indicate that the local administration of sulfamido compounds exert, in a certain number of cases, a definite beneficial effect in the course of infected wounds. This is true of postoperative infected wounds as well as wounds which may result either from accidental injuries or injuries incident to war. The results following this form of treatment in 21 cases are presented. The results are by no means uniform. However, it is felt that they are encouraging enough to justify a continuation of this procedure. Sufficient evidence is at hand to indicate that the continued local application of sulfamido compounds as a prophylactic measure in any of the wounds mentioned is justifiable. (*Clinical Abstracts*)

Ascariasis with Special Reference to Tea Garden Practice in Assam*

● Dr. H. C. Dass, L.M.F., A.M.O., Keyhung T.E., Hoogrijan, Assam

The eggs of ascarides are voided with faeces in unsegmented condition. They segment and develop into infective larvae under favourable conditions of temperature and moisture. This process occupies from a few weeks to a year or two. Man becomes infected by swallowing the infective larvae with polluted raw fruits, vegetables and water.

From the stomach, as Stewart has shown, these larvae pass to the intestine, burrow through its wall and enter the portal circulation, and are thus carried to the liver, then to the heart and finally to the lungs where they grow and moult. Here they leave the blood stream, enter the alveoli; crawl up the trachea, over the epiglottis, reach the oesophagus and from thence to the stomach and intestine which is their natural habitat in man.

As the labourers generally pass motion in open fields, do not observe cleanliness and take raw uncleaned food-stuffs polluted with infected earth, this infection is very high among tea garden coolies.

Symptoms and Complications: In the majority of cases the symptoms are not dangerous. Gnashing of the teeth, itching of the nose, abdominal pain, dullness of appetite, indigestion, occasional diarrhoea, vomiting of adult worms, foul breath and peevishness—all these are common symptoms. In children, convulsions, due to the toxins produced by the worms are common. Children harbouring too many of these worms become very asthenic and depressed, their abdomen become very big and rigid. There may be oedema of the face, hands and feet, simulating Bright's disease. I have seen coolie children harbouring as many as eighty, ninety or hundred of adult worms. These children gradually become more and more emaciated and depressed and ultimately die, most probably due to heart-failure or toxemia. After anthelmintics such children, when they pass so many worms at a time, generally become more depressed and ultimately die due to shock or heart-failure.

Out of 399 cases of clinical dysentery the only abnormality found in 34 cases (8.5%) was a heavy infection with ascaris. This observation was made in our laboratory covering a period of about two years. In another 10 cases (2.3 per cent) the only abnormality was a mixed helminthic infection including ascaris.

* Read in the monthly meeting of Tingri Valley Branch, A.I.M.L.A. on 19-5-40.

Due to wandering habits of the worms they produce very dangerous symptoms at any moment. One may be coiled up in the intestine and produce intestinal obstruction of varying degree. It may produce jaundice by obstructing the bile duct. It may pass into the liver and produce liver abscess or into the lungs causing broncho-pneumonia. It may pass into the larynx and cause suffocation. Appendicitis has been reported due to obstruction of the lumen following a round-worm entering or trying to enter into the appendix. It may pass down into the gall bladder and set up cholecystitis or it may cause perforation of a post-dysenteric or typhoid ulcer.

It is probable that at least a few of the many broncho-pneumonia cases amongst children in tea-gardens are due to these worms, owing to the irritation set up during the passage of the larvae through the lung tissue.

Prophylactic Treatment: Strict use of latrines.

Curative Treatment: Santonine followed by purgatives has been regarded to be the best remedy against ascarides up till now. But its high price and adulteration have already made it unpopular. Oil of chenopodium also seems to be very good. Tetrachlorethylene is probably fairly efficient. Preparations like "Neo-Panthelmin", a mixture of ascaridol, the active principle of oil of chenopodium and tetrachlorethylene, in proportion of one to six, is very effective. (Hare, Dass and Banerjee, I. M. J., Vol. 38, Dec. 1939). The absolute cure rate was shown to be 91.1 per cent.

The treatment of complications should be symptomatic.

Acknowledgements: I am highly indebted to my chief Dr. K. P. Hare, M.B., B.S., L.M.S. S.A. (Lond), for his kind and valuable advice and guidance in the preparation of this paper.

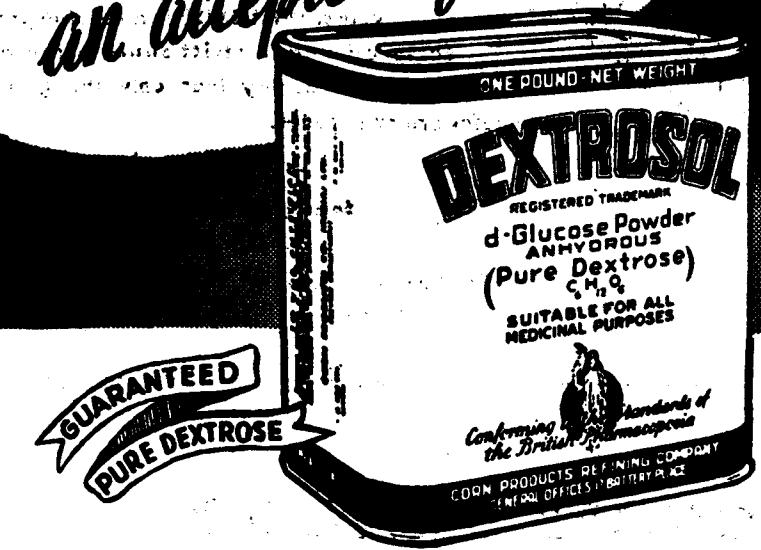
Local injection of testosterone in chronic Mastitis: A. W. Spence, M. C., F. R. C. P., *Lancet*, 387-389, Sept. 28, 1940.

Mammary pain was relieved in all of 8 patients with chronic mastitis by daily injection of the breast with an ointment of testosterone or of testosterone propionate containing 3-10 mg. of active substance. Preliminary treatment with non-medicated ointment as a control measure relieved the pain in 2 patients but was ineffective in the remaining 6. No undesirable side-effects, such as hirsuties and suppression of the menses, were observed. The effectiveness of local injection with small doses of testosterone supports the view that in relieving the pain of chronic mastitis its action is probably local rather than through inhibition of the pituitary. (*Clinical Abstracts*)

Testosterone propionate in functional impotence: A. W. Spence, M. D., F. R. C. P., *Brit. M. J.*, 411-413, Sept. 28, 1940.

Six patients with functional impotence unassociated with any evidence of testicular dysfunction failed to respond to testosterone propionate given intramuscularly in doses varying from 50 to 100 mg. three times a week for two to six weeks. A seventh patient with hypogonadism also failed to respond after treatment for two months, probably because of a super-added psychological disturbance. As these doses are sufficient to cause prolonged erections in eunuchs, it is concluded that testosterone propionate has no effect on impotence due to psychological disturbances. (*Clinical Abstracts*)

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Vol. 38	MADRAS: February 1941	No. 2
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Blood Transfusion

The last War has brought into prominence the efficacy of fresh blood transfusion in the treatment of traumatic hæmorrhage and shock. During the present War, full advantage is taken of all recent advances on this subject, and each medical unit of the allied army, in the west as well as in the east, is equipped with all facilities for blood transfusion. Much has been learnt about its storage, transport and the technique of administration during the recent Spanish Civil War. In our own country Blood Banks have been lately established in Bombay, Calcutta and Karachi.

The indications for blood transfusion have progressively broadened from one of military exigency to peace time needs. Not only is it given to combat severe hæmorrhage due to trauma but also to replenish erythrocytes, counteract dehydration and shock in anemias, burns, septicemias and toxemias. It is therefore essential that the general practitioners should be thoroughly conversant with this branch of life-saving therapeutics.

In the earlier days of its introduction, fresh human blood was used and this necessitated certain laboratory procedures: (1) typing the patient (2) typing a proper donor (3) testing for compatibility and (4) performing Khan's or similar tests. This meant delay, and hence a great drawback in its use as an emergency measure.

This led to the development of stored or preserved blood. The problem of storage and preservation of blood was solved by citrating it with or without dextrose. By this method hemolysis of stored blood was prevented to a large extent, and it was soon found that blood-dextrose-citrate mixture could be preserved for 30 days as against citrated blood which could not be preserved for more than 10 days without the setting in of hemolysis. But even with the use of stored blood there still remained the necessity for typing the patient's blood, performing compatibility tests and filtering.

This, in turn, led to the search of a good blood substitute which could be given to patients irrespective of their blood groups. Plasma was separated from stored blood at a time when it could not be used owing to its hemolysis. The serum, so obtained, was nothing more than a plasma-saline-citrate and dextrose mixture without the cell elements—the erythrocytes. Its protein, calcium and potassium contents were found to be quite satisfactory for the patient's rehabilitation of these lost elements of his blood, and the liquid volume of the serum replaced the lost blood-plasma.

There yet remained the problem of transport to be tackled successfully. Either fresh blood or stored blood or even the blood substitute in the form of human serum could not be easily obtained in sufficient quantities for the treatment of the wounded in the field owing to the difficulties of transport over distant regions and of keeping a reasonable stock of the same at all times. This difficulty was solved by the successful preparation of dried plasma¹. The dextrose-citrated blood was allowed to settle and the clear liquid drained off. This was dried *in vacuo* to a granular powder and packed aseptically in containers. Before use, it was made into a solution with sterile water and given to the patient in the same manner as a blood transfusion.

The relative merits of fresh blood, stored blood and blood plasma transfusions have to be clearly understood. In severe pernicious or secondary anaemia where restoration of erythrocytes to normal quantity and quality is a vital factor, fresh blood transfusion alone is the method of choice. In traumatic or operative hæmorrhage

¹ Dried blood plasma is now manufactured in our country.

and primary shock there is extensive plasma loss and hemoconcentration resulting in a diminished volume and more viscid blood. This sudden and marked diminution in circulating blood volume is of grave significance because of the consequent rapid development of secondary shock. The immediate need therefore is the restoration of blood volume. Here undoubtedly the choice of the agent for transfusion is human serum, and since these are the important factors in all emergencies it is obvious that transfusion of human serum is best suited to meet demands so urgent that we have little time to perform typing tests on patients and blood-donors.

It must not be supposed that transfusion is altogether an innocuous procedure. Reactions following blood transfusions are still relatively frequent, the most serious of which is due to hemagglutination or hemolysis. Chill, fever, jaundice allergic manifestations, hemoglobinuria, vomiting, epigastric pain and cardiac embarrassment are some of the other reactions. To this may be added the danger of mistakes in typing and resultant death from incompatible blood. These reactions are common to both fresh-blood and stored-blood transfusions, although the incidence of these reactions varies largely and is reported to be not more than 10 or 15%. But they are not so severe or marked in blood serum transfusion.

Except for the single limitation of its inability to replenish the erythrocytic loss, transfusion of blood serum has many practical advantages as an emergent measure in saving life. These advantages are: (1) it can be given without any regard for blood groups; (2) it may be prepared, tested and stored in large quantities for long periods of time without deterioration; (3) it can be transported easily and can be handled and injected as simply as a saline solution; (4) it can be used as an interval therapy to prevent oligemia, shock, acidosis and the like; (5) it provides an ideal blood substitute, particularly in its tablet form, at the battle front; (6) it gives practically little reaction if the serum is prepared carefully.

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CURRENT COMMENTS

Newer Concepts of Dry Labour

The revolutionary concept of dry labour, propounded by Arthur King,¹ that cervix is not dilated by the amniotic sac but by the muscular action of the cervix itself and that dry labour occasioned by premature rupture of membranes is not necessarily long, difficult and dangerous, is not likely to be accepted by a majority of older obstetricians. But the concept itself is likely to promote further investigation with a view to arrive at the truth, and from this point of view at least we welcome Arthur King's bold suggestion. He corroborates the validity of his concept by the results of series of inductions of labour by puncture of the membranes and studies of dry labour as it occurred spontaneously. He also gives a review of 34 papers by various authors on dry labour or rupture of the membranes involving altogether 14,669 such cases. He concludes that there is no evidence whatsoever to support the traditional belief that dry labour is long, difficult and dangerous, but that, on the contrary, its duration is shorter, its morbidity no greater, damage to the cervix lesser than what happens in normal labour. He therefore advises that the cause of dystocia, in the presence of ruptured membranes, must be sought elsewhere.

Eosinophilia in Tuberculosis

Morton Gill² deplores that in none of the English text-books of medicine is tuberculosis given as a cause of eosinophilia, although it is widely recognised in Europe. He reviews the continental literature on eosinophilia in tuberculosis and eosinophil tuberculous pleural effusion. He himself adds a case of his own to this list. It was a case of pleural effusion clinically diagnosed as due to tuberculosis, but doubt was thrown on such a diagnosis by the astounding finding of 80% eosinophilia in the pleural fluid. But the original diagnosis was vindicated by biopsy and necropsy.

The question, therefore, is: does tuberculosis give rise to eosinophilia?

Probably the correct answer is furnished by Frimodt-Møller,³ who finds that some cases, labelled as due to tuberculosis, showed a high rate of 90% of eosinophilia in the differential count. These patients presented the usual symptoms of tuberculosis including fever, cough, sputum, loss of weight, chest pain and even haemoptysis. The physical signs and x-ray pictures were apparently

¹ *J. A. M. A.*, Jan. 20, 1940, p. 228.

² *B. M. J.*, Aug. 17, 1940, p. 220.

³ *I. M. G.*, Oct., 1940, p. 607.

confirmatory. But a careful study and analysis of 600 cases revealed that the lung condition could not be explained as due to tuberculosis, syphilis or heart disease. He labels these cases as "pseudo-tuberculous" and suggests the possibility of its being caused by dust inhalation or allergy.

In fact, Frimodt-Møller comes to the conclusion, contrary to Morton Gill's, that the presence of high eosinophilia should induce the physician to search for causes of this condition other than tuberculosis.

Only more intensive research and study could settle this puzzling problem of eosinophilia in tuberculosis, whether it is due to the latter or to other causes.

Clinical Diagnosis of Pulmonary Embolism and Infarction

Clinical diagnosis of pulmonary embolism and infarction is notoriously difficult, and it is usually established only after an autopsy. Therefore, Parsons-Smith's contribution⁴ on this subject is welcome and a close study of it is bound to help the practitioners in diagnosing these conditions. Recognition of certain essential factors are necessary to avoid confusion. (1) The clinical aspects of pulmonary embolism are very complex, and their range of severity varies from the mild and the relatively simple symptomless cases to those in which the signs prior to a long protracted illness or sudden death are unmistakable. (2) Since the symptoms of uncontrollable pain in the chest, tachycardia, rapid respiration, pallor, cyanosis and soft imperceptible pulse are common to both coronary thrombosis and pulmonary embolism, care should be taken to eliminate the former by a previous history of angina, high-blood pressure, heart disease and decompensation. The crucial clinical points in the diagnosis of pulmonary embolism are: (1) right heart embarrassment and (2) acute ischemic myocardial damage.

Gastric Syphilis

Williams and Kimmelstiel⁵ find that symptoms of gastric syphilis are very similar to those of gastric cancer, viz., marked dyspepsia, epigastric pain without food relief, vomiting and, in some cases, haemorrhage.

In the nine cases reported by the authors, the syphilitic lesion was located in the pylorus in all of them, eight had a positive Wassermann and one was negative. The average age of the patients was 36 years, and anti-syphilitic treatment gave little or no relief. The authors believe that diagnosis cannot be positively made before operation, and that resection of the involved portion of the stomach is the treatment of choice.

⁵ *B. M. J.*, Aug. 10, 1940, p. 179.

⁶ *J. A. M. A.*, Aug. 24, 1940, p. 578.

MEDICO-LEGAL NOTES

Determination of Age by X-ray Examination*

● Dr. G. B. Sahay, B. Sc., M.B., D.T.M.,
Police Surgeon, Patna

I wish to tell you at the very outset that I do not claim originality for this paper. I am only presenting before you a summary of recent researches on the subject carried on by workers in India. I shall avoid scientific technicalities and classical discussions as far as practicable so that it may not become too dull for any section of the audience. I confess it may not perhaps come up to the expectations of the experienced doctors and judges to whom I apologise.

Accurate determination of age forms a very important part of medico-legal work particularly in our country where birth registers, horoscopes, school age and affidavits etc., are all of doubtful veracity. To add to these difficulties, guardians of the poor village children have not got a correct and reliable idea about the ages of their wards. Sometime they give us absurd informations. I admit that it is in many cases wilful but in some cases it is entirely due to their ignorance. Cases of kidnapping, rape etc., that come to courts usually relate to children of the poor class and our difficulties, therefore, are extreme.

Facts generally relied upon for determination of age are: Eruption of teeth, Development of minor signs and X-ray Examination of joints. Of these teeth still play the most important part. Text-books do not show any appreciable difference between the two sexes so far as eruption of teeth are concerned up to the age of at least 14 years. Beyond 14, however, the behaviour of the two sexes may not be quite alike. I have found from my own experience that the data regarding teeth given in Indian text-books are sufficiently reliable in most cases. When considering ages 16 and 18, I have found that girls are about a year ahead of boys and this is quite reasonable to expect. Looking at the ages regarding development of minor signs we find that girls are at least 1 year ahead of boys e.g., the growth of hair on common parts appears a year earlier in case of girls. As girls mature earlier it is quite reasonable to expect them to cut their first wisdom tooth earlier. So far as the complete eruption of all the 4 wisdom teeth are concerned there may not perhaps be an appreciable difference.

Data regarding minor signs given in Indian text-books are, in my experience, sufficiently reliable for our province.

Let us now consider the role of X-ray examination. Some 5 years back I had examined a girl whose age in my opinion was about 14 years. I had not considered it necessary to X-ray her. As the girl was obviously much below 16 years the lawyer had not much to ask me but he read out a sentence from the deposition of a

* Read before the Medico-legal Society, Bihar and reproduced from the *P. J. Medicine*, 15, 1940, with due acknowledgments.

senior medical officer and asked me if I challenged it. The doctor had made a general remark that it is not possible to determine age without X-ray examination. I replied that X-ray finding was certainly an important help in doubtful and border line cases but that it was not infallible. I said and I still believe that X-ray finding cannot be regarded as the final verdict about age. If teeth and general findings are all in consonance with each other I would not (except in border line cases) be guided by the X-ray finding if it differs from the other findings.

In February last I examined a Bengalee girl who, from general appearance, teeth etc., was about 17 years. She was X-rayed. The X-ray findings according to the data given in present text-books put her age to be some where between 20 and 25. I discussed the case with Dr. Modi when he came here in April. The girl was again examined by both of us together and we scrutinised the films and consulted recent researches on the subject, according to which the X-ray findings placed her between 16 and 17 years.

Sometime back I was talking to a young doctor. He felt very much surprised that the courts had the right of final opinion about age and that the doctor's opinion was only a guide. His contention was that whereas doctors had so much knowledge of anatomy and juris and had the advantage of the most scientific method of investigation by X-ray, their opinions were liable to be revised by non-medical courts! My reply shocked him. I said that while a layman could usually estimate age with a possible error of 1 or 2 years, while non-medical courts could usually do it with a possible error of 6 months to 1 year, our X-ray examinations could do it with a possible error of only 4 to 6 years! And such a wide range of error in criminal cases where definite opinions were wanted whether a particular girl was 16 years or less than 16!

After all books are only guides. They do not give us mathematical formulæ for determination of age. Data given in text-books have to be considered in the light of the doctor's own experience. This "own experience" however is sometimes taken mean advantage of—particularly in junior courts. I shall analyse the limitations of this "own experience". Cases requiring estimations of age are not many in the whole year and then some of them go to lady doctors on account of purdah restrictions. Thus on an average I think a young medical officer in charge of a Subdivision has experience of 5×4=20 cases in his sixth year of service and this is his much boasted "experience"!

Even an anatomist like Elliot Smith had to admit that "in the present state of our knowledge it would be rash and altogether unjustifiable to give in figures the precise age of a skeleton without making the reservation that it might be several years older or younger than the estimate".

Stevenson describes skiagrams as "merely a confusing medley of shadows". But with care chances of such confusion can certainly be reduced to a minimum at the hands of an experienced radiologist.

Figures given in present text-books regarding epiphysal union relate to English and American subjects. Then they make no distinction between the two sexes. It is now universally admitted that girls are

much ahead of boys in the matter of development and that the same figure cannot apply to both sexes. It is unanimously admitted by all Indian workers that the text-book figures are much too high for Indian subjects and that it would be very wrong on our part to swear by these English and American figures. Recent researches in India have been published in medical journals and may have been read by some of the doctors but they have not, I am afraid, reached the lawyers and perhaps also courts yet and I have reasons to believe that many if not most of us are still swearing by text-book figures. This is the justification for the present paper.

The earliest work on the subject was done in India in 1929 by Major S. M. Hepworth, D. M. B. E., I. M. S. I shall quote a sentence from his article to show his own conviction about X-ray findings—"Whilst most methods are merely an expression of opinion at best, a method in which the condition of the epiphyses of the bones is actually seen on an X-ray plate is definite and scientific".

The subjects of his research were the inmates of certain Mission schools of Ferozpur (U. P.). He concludes that "the age at which union of the epiphyses and the shafts of their long bones takes place is 2½ to 3 years earlier than the corresponding union in English and American peoples." "It appears," he says, "that the epiphyses unite with the shafts somewhat earlier in girls than in boys". The extent of this difference in the two sexes he could not work out. As a radiologist of repute he gives a warning note: "Very careful centering of the X-ray tube over the epiphyses is necessary as it is quite easy to give an un-united epiphysis the appearance of union by directing the cone of X-rays obliquely."

Major Hepworth's paper was followed by those of Galstaun (1930), Lall and Natt (1934), Barrett (1936), Pillai (1936), Galstaun (1937), Basu and Basu (1938), and Lall and Townsend (1939).

Galstaun was the first to work out the sex factor. He has definitely proved that union takes place 2—3 years earlier in case of girls. His subjects were boys and girls of Bengal. His figures do not tally with those of Pillai for South India.

Basu and Basu worked in Bengal on Bengalee girls exclusively. Their figures vary slightly from those of Galstaun, showing race factor which the latter had overlooked. The work of Basu and Basu is the latest and most commendable. The only comment on their work is that they examined only 130 subjects which is not adequate for statistical purposes. If we consider the difficulty in getting girls of definitely known ages and the cost of the skiagrams etc., we shall have to complement them for their laudable work.

A careful perusal of the work done by these Indian researchers would show that union of epiphyses depends upon the following factors:—(1) Race (2) Heredity e.g., a native would differ from a domiciled subject (3) Climate, (4) Social environments (5) Familial traits, (6) Diet and (7) Disease factor—recent or old which leave indelible marks on the skeleton e.g., a girl belonging to a malaria-stricken part would not be useful for statistical work as her figures would be different from those of the average ones of a healthier part.

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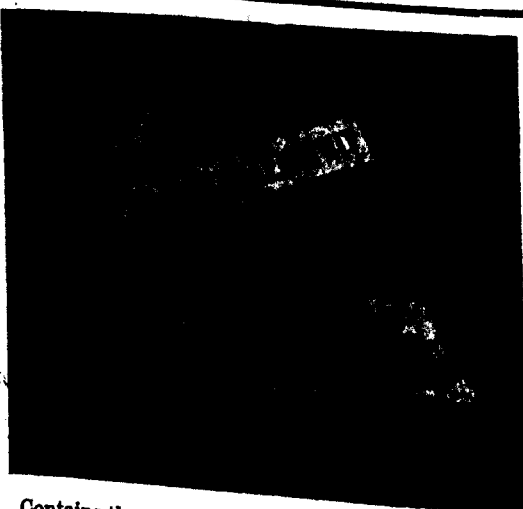
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FOREIGN MEDICAL NEWS

Our American Letter

(From Our New York Correspondent)

BLOOD PLASMA FOR BRITAIN

In about six weeks nearly 6,000 men and women from all stations of life have donated about 3,000 quarts of blood to save the lives of wounded British soldiers and civilians. They have made their contribution to "plasma banks"—which is a progress to the "blood banks" we had until now.

Plasma—that part of the blood which remains after the white and red cells have been removed—constitutes about half the bulk of whole blood. It can be kept for several years without deteriorating. The use of plasma, further more, does away with matching. Provided a donor is free from disease, his plasma can be transfused into any sufferer without danger; there is no regard to the types of blood which have been discovered by Landsteiner (groups O, A, B and AB). In contrast to plasma, stored blood will not keep longer than two or three weeks even in a refrigerator.

The technique has been developed by Dr. Scudder of the Rockefeller Institute for Medical Research and his associates. Each donor gives up a pint of blood. A little sodium citrate prevents clotting. Before the red and white cells are removed, a Wassermann test for syphilis is made; centrifuging the blood takes 45 minutes, and the rest of the process from 18 to 24 hours. Centrifuging takes place in a dustproof, air-conditioned room. To prevent bacteria from growing a little merthiolate is added. Globulins (proteins) must be kept in solution, and so salt solution is poured in—as much salt solution as there is plasma. The plasma is filled in bottles and placed in cold storage for emergency use.

The next step has already been taken. Plasma can be dried—reduced to powder. The scientific work has been done, but the technicians must now devise the necessary large-scale machinery.

The work of collecting blood in this country for Great Britain is directed by the Red Cross and the Blood Transfusion Betterment Association. The Red Cross does the appealing for donors, and the association assigns the volunteers to a hospital. Professional donors are paid for their blood. Volunteers are asked to give theirs in a cause which is as much their own as it is that of England. For the time being the collecting of plasma is confined to New York. Probably blood and plasma banks will be established in other cities as the urgency of Britain's needs grow.

DRUGGING OF WAR FLYERS

The experience of this War that war flyers in general and dive bombers in particular lower their altitude from some 10,000 feet and more to 500 feet and less in an extremely short time to gain again rapidly the highest altitude, has raised the attention of physiologists and physicians. Such rapid change of altitudes places high requirements on the body and its organs, particularly on the blood circulation system.

It is frequently said and written—and especially so of the German Stuka divers—that they are being drugged before they take-off, like horses are doped before a

Two points are worth noting; (1) Union takes about 6 months for completion. So an incomplete union should be interpreted as a complete union within 6 months. (2) Lines of union may sometimes persist for a long time after complete union. So its presence should not be interpreted as recent union.

Basu and Basu remark that "scientists, however, should come to an agreed standard for the country or to such formulae as can be utilized within limits for the determination of age of epiphyseal union in the different provinces of India. And if scientists are able to set a standard for one province and then carry on comparative work in other provinces of India they will have made a comprehensive scientific basis with which they can start appraising any problem in this line of work".

We have at present got Major Hepworth's figures for U. P. and Basu and Basu's figures for Bengal. Unfortunately we have no figures whatsoever for our own province. My own impression is that our figures would be somewhere between Bengal and U. P. but this "somewhere" must be accurately worked out. Most of us have got at least a rough idea of the amount of money spent by Government in prosecuting a single case of kidnapping from start to its ultimate finish. Would it now be a waste by any means to spend a reasonable amount to work out definite data for our own province and thus help the courts in bringing to book so many actual culprits who may perhaps be escaping law with impunity due to our inadequate knowledge of the subject? This argument should convince any sceptic.

I am giving below a comparative table of the ages at which different epiphyses unite:—

Union of Epiphyses.	Age in Text-books.	Age in U. P. (Major Hepworth.)	Age of U. P. girls (Lal & Townsend).	Age of Bengalee girls (Basu & Basu.)
1. Upper end of Humerus ...	20	17-18	...	16-17
2. Upper ends of Radius & Ulna.	16	14-15	16	12-14
3. Lower ends of Radius & Ulna.	20	16-17	19	16-17
4. Head of Femur ...	19	15-17	...	13-14
5. Greater Trochanter of Femur.	18	16-17	...	14
6. Lesser Trochanter of Femur...	16	...	...	13
7. Lower end of Femur ...	20	16-17	...	16
8. Upper end of Tibia...	20	16-17	...	15-16
9. Upper end of Fibula ...	23	16-17	...	16-17
10. Lower end of Tibia ...	16	16-17	...	14-15
11. Lower end of Fibula ...	18	17-18	...	15

Bihar might, I think, adopt tentatively Bengal figures after adding one year to each individual figure above. (All these figures have, since, been incorporated in Modi's Latest Edition 1940.)

The following mixture may be useful in Migraine:

Fr. Gelsemii	...	...	m. 10
Fr. Nucis Vom	...	...	m. 10
Acid Phosph. Dil	...	...	m. 10
Liq. Glycerylis-Trinitratis	...	...	m. 1 to 2
Sodii Brom	...	...	gr. 10
Aqua chloroformi	...	...	ad. 1 oz.

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Calcium, Potassium, Sodium,
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and its definite dangers contraindicate its use. Sulfanilamide has received considerable favorable attention in clinical reports. Use of sulfanilamide compounds in human malaria cannot be recommended until much further carefully controlled experimental evidence is available on human malarial plasmodia.

For the average acute attack, initial or relapse, it is recommended that the patient receive atebrine 0.1 Gm. (1½ grains) three times a day by mouth for one week. In the case of subtertian or malignant malaria the atebrine course should be followed by quinine sulfate 1 Gm. (15 grains) in 3 divided doses after meals on 4 consecutive days each week for 6 weeks. Children usually tolerate quinine well and, up to 1 year of age, can be given from 0.065 to 0.10 Gm. (1 to 1½ grains) a day. For children from 1 to 12 years of age the dose should be from 0.1 to 0.8 Gm. (1½ to 12 grains) increasing with age.

PERCENTAGE OF QUININE IN VARIOUS
QUININE SALTS

Quinine salt	Per cent. of Quinine
Quinine hydrochloride	81.7
„ dihydrochloride	81.6
„ sulfate	73.5
„ bisulfate	59.0
„ tannate	30.0
„ ethylcarbonate, approximately	40.0
„ and urea hydrochloride	58.0-65.0

DOSAGE OF ATEBRINE ACCORDING TO AGE

From	6 months	to	2 years	Approximately	1 cc.
„	2 years	„	4 „	„	2 cc.
„	4 „	„	6 „	„	3 cc.
„	6 „	„	10 „	„	4 cc.
„	10 „	„	12 „	„	5 cc.
„	12 „	„	15 „	„	6 cc.
„	15 „	„	18 „	„	7 cc.
Healthy men				0.3 Gm. in	9 cc.
Healthy women and weaker men					8 cc.
Weak or sickly women					7 cc.

Cinchonism is best treated by caffeine or coffee. Haemorrhagic tendency may follow the use of quinine and may be distinguished with difficulty from haemorrhage due to malaria itself. The calcium level of the blood should be maintained by giving such a prescription as follows:

Dicalcium phosphate 4 Gm.
Label: One teaspoonful twice a day, stirred up
in a little water.

Or 10 per cent. calcium gluconate solution, 10 cc.
intravenously daily for from 5 to 20 days should be
given.

Our Canadian Letter

(From Our Own Correspondent)

VACCINATION AGAINST TUBERCULOSIS

J. A. Boudouin, Montreal, in *Canadian Public Health Journal*, summarizes the annual report of the sub-committee on tuberculosis of the National Research Council dealing with the value of the BCG vaccine against tuberculosis. The report is based on 20,000 vaccinations accumulated during eleven years.

Appraisal of the immunity conferred by the Calmette-Guerin vaccine indicated a 51 per cent total mortality balance in favour of the vaccinated group and

a favourably morbidity rate of 47 per cent. Judged by the duration of the immunity conferred, vaccinated children were found to possess a greater resistance to tuberculosis than the unvaccinated: for children under 12 months by 71 per cent, from 1 to 2 years by 54 per cent, from 2 to 3 years by 86 per cent, from 3 to 4 years by 66 per cent and from 4 to 5 years by 33 per cent.

The decline in mortality, though regularly favouring the vaccinated group, was not as uniform as was expected. This is attributed to the small number of deaths in both groups.

No negative reactions occurred. The report recommends BCG vaccination for all children, especially for those born in a contaminated environment. Infants were always vaccinated during the first ten days after birth. Protection against tuberculosis afforded by the vaccine is stated to last for two or more years.

WAR AND WOUNDS

When this War started, some medical authorities gave an extended picture of the part modern medicine would probably play in the war. They presented a series of developments of the last few decades that probably would result in more effective and successful treatment, such as blood banks for quick and safe transfusions; better treatment for gas gangrene which was fatal for many soldiers during the last war; portable X-ray machines; new immunity protection, before injury against tetanus; improved treatment for burns; advances in surgery and anesthesia; greater control of communicable diseases.

Of these points, it is obvious that the treatment of war wounds has changed in some directions since the World War 1914-18 although so far we have no reliable extended statistical figures. We remember that in the World War the American Expeditionary Force in France had a mortality rate of more than 48 per cent, according to the Surgeon-General's office.

Recently several lectures on the chemotherapy of war wounds were given. They are based mainly on the experience of the British Expeditionary Force in France where combatant activities on a larger scale occurred. We know from former wars that about 70% of all the deaths due to infection of wounds was caused by hemolytic streptococci. The germs were carried into the tissues either at the time of wounding or they were transmitted later from case to case in the hospitals, or disseminated by dust etc. Experiments on mice had shown that injections of sulfapyridine or sulphanilamide protected them before they were infected with streptococci.

For wounded soldiers the administration of these drugs must be continued for at least four days. Fuller and James, some time ago, gave the following suggestion for the administration of sulphanilamide: First doses, 1.5 gm. of sulphanilamide (or three tablets) dissolved in 100 c.c. of an 1 per cent citric acid solution or hot lemon. The second dose, which is given two hours later consists of 0.5 gm. sulphanilamide (one tablet whole or partly crushed in order to delay the absorption of the drug). The subsequent doses are 0.5 gm. each, whole or partly crushed, and given at four hourly intervals for four consecutive days. The total dose is 13.5 gm. in four days. Toxic effects should be noted.

race. Otherwise, it is believed, they could not stand the strain of the rapid diving which makes them extremely dizzy, makes them lose acuity of vision and hearing, have paralysis of the limbs and become even half unconscious.

The drugs in use for this drugging (or doping) are said to be ephedrine and benzedrine and similar compounds one of the characteristic qualities of which is the capacity of raising the lowered blood pressure. The heart rate is slowed down and there is an increase in both systolic and diastolic blood pressure by the drugs. This is important for the flyers as the lowering of the blood pressure is considered one of the most unpleasant and even dangerous conditions which threaten the dive bomber.

However, so far no exact evidence has been given that the blood pressure of these flyers has actually been lowered to a degree which would call for medicamentous support or that it has been lowered at all. Benzedrine is noted for its wide usage in college and university circles where the students use it frequently—not with the unrestricted approval of their doctors—to keep awake during their night studies before examination. It is well known that these are powerful drugs and even dangerous when given in another way than that fixed by exact studies.

In the United States as well as in several other countries there are investigations in progress to study the physiological effects of dive bombing, i. e., of brusque diving in airplanes and rapid changes of altitude, and also possible pathological effects. There is no doubt that so far some questions raised by this new technique have not been answered.

MALARIA AMONG DRUG ADDICTS

The intravenous use of heroin by drug addicts first appeared in Cairo, Egypt, in 1929, and from there has brought a disease usually uncommon but now endemic in New York City, namely, falciparum malaria. The cases seen were associated with a high mortality rate. According to a report of Harry Most in the *American Journal of Public Health*, the disease seems to have become well established in New York City during the past 5 years, cases of falciparum malaria being seen in drug addicts almost at all times in the wards of Bellevue Hospital.

The drug addicts practise the common use of hypodermic syringes. In some cases a complete medical hypodermic syringe and needle were used. In other instances, the apparatus is improvised by fitting a needle to the end of an eye dropper with the aid of a piece of rag or newspaper or cigarette paper. The addict draws the drug into the syringe and attempts to insert the needle into a vein. The successful trial is known by the appearance of blood in the syringe. The drug mixed with the blood is now forced into the vein and to ensure that it is all obtained, the syringe is again filled with blood and the contents emptied into the vein. Frequently, another addict is waiting his turn to use the apparatus and to have his share of the drug. Without washing or other attempt at cleaning the syringe, he repeats the process described.

It is obvious that if the first individual has plasmodia in his blood in fair numbers, the addict following him will not only receive his share of the drug, but plasmodia as well.

By far the outstanding species of parasite in this case is the plasmodium falciparum. It was found to be capable of infecting anopheline mosquitoes after years of asexual transmission from man to man. Clinically and pathologically the disease manifests all the characteristics of falciparum malaria as it occurs in the tropics, including various cerebral, intestinal, and haemoglobinuric syndromes.

It is suggested that drug addicts who have recovered from malaria be placed under the legal jurisdiction of the city department of health. All available contacts with drug addicts should be explored or latent or asymptomatic carriers treated. The possibility of an epidemic involving the healthy population of the city must be borne in mind.

TREATMENT OF MALARIA IN AMERICA

At the suggestion of the U. S. Pharmacopoeial Committee of Revision and *The Journal of the American Medical Association*, Prof. Alfred C. Reed, University of California Medical School, gave an extended report on to-day's treatment of malaria in America.

Drugs used in the treatment of malaria, according to this report, fall into four groups, which are plasmo-chin, atebine, direct cinchona derivatives and a miscellaneous group, largely ineffective, insufficiently tested, empirical, experimental and even dangerous.

Plasmochine is a synthesized substance, essentially an amino-quinoline. It should never be given in a dosage exceeding 0.065 Gm. (1 Grain) by mouth each day to an adult weighing 150 pounds. In the form of a tablet a third of the daily dose (0.02 Gm.) is given by mouth three times a day. It is not desirable as a sole treatment but serves as a useful and limited purpose as an adjuvant to quinine.

Atebrine is another synthetic drug which has fully proved its usefulness. It is essentially an amino-acridine derivative. Its average dosage for an adult of 150 pounds is 0.1 Gm. (1½ grains) three times a day by mouth for from five to a maximum of seven days. It frequently causes yellow pigmentation of the skin, which usually clears within two or three weeks.

Cinchona alkaloids are numerous and in general all are antiplasmodial in action. Tablets that are made up with sugar etc., are prone to become stony hard and may pass through the intestinal tract unchanged. To meet this difficulty it is often advisable to administer the quinine in solution.

Quinine sulfate	0.3 Gm. (5 grains)
Aromatic sulfuric acid	0.4 cc. (6-8 drops)
Syrup of ginger, water, each in sufficient quantity	to make 4'0

For a child the following method may be used: Dissolve a 5 grain (0.3 Gm.) tablet of quinine dihydrochloride in 4 teaspoonfuls (15 cc.) of water and add a little honey, syrup or jelly. One-fourth of the solution contains 1½ grains (0.08 Gm.) of the drug.

Miscellaneous drugs have been recommended. Epinephrine, ergot, heat, cold douches, alcohol, purges and non-specific proteins have been urged as provocatives in latent malaria. Such measures are usually ineffective, may be dangerous and should not be used. Iron and various arsenic compounds have been found useful in the treatment of malarial anemia. Sometimes these have been mistakenly been assumed to have antiplasmodial action. Arsenic—its low therapeutic value

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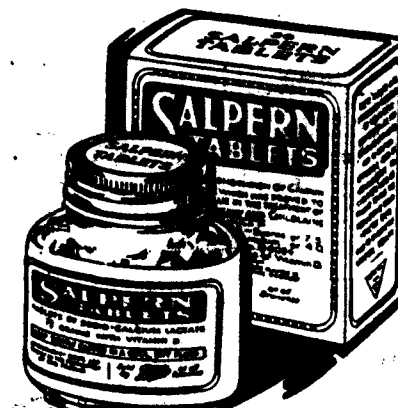
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INDIAN MEDICAL NEWS

(From Our Own Correspondent)

HEALTH OF THE ARMY IN INDIA

How vaccination and inoculation, sanitary control of cantonment areas and water supply save troops from small-pox and enteric fever, is commented upon by the Annual Report on the *Health of the Army in India for 1939*, Volume, II, Part I, issued to-day.

Of small-pox there were only four cases in the whole of India amongst British troops and their families. Of enteric fever only one per 1000 was infected amongst British troops, the incidence among Indian troops dropping to 0.5 per 1000.

Admission rates both for officers and men increased for British troops but the increase was more apparent than real owing to changes of strength.

Although the admission rate of 666.1 per thousand showed an increase of 63 per thousand on the previous year, the death rate and invaliding rate decreased and the quinquennial figures for admissions and deaths continued the fall obtained since 1920.

Amongst British soldiers malaria, sandfly fever and the dysentery-diarrhoea group were prominent. The insect borne group, malaria, sandfly fever and dengue between them accounted for over 90 admissions per thousand of strength and for an increase of nearly 20 per 1000 on the previous year. This was due in part to troop movements, early return to the plains and the manning of defensive posts in outlying unhealthy areas.

With an increase in the average of those constantly sick in hospital and an increase in barrack-treatment cases, the number of ineffectives increased from 27 in 1938 to 53.06 per thousand, but the total loss in working days was considerably less.

Among the principal factors affecting the health of the Army were many of the unusual movements of troops by train or road throughout the hot weather necessitated by the European tension culminating in the war. No casualties resulted from these moves. But an early return to the plains and manning of the defensive posts in unhealthy areas produced insect and fly-borne infections. Operations in the early spring in Waziristan gave surprisingly low sick rates in spite of cold weather.

Spraying of living quarters as a defensive measure against all insect-borne diseases was further developed, often with success as in the reduction of sandfly fever in Peshawar and Rawalpindi districts. Arrangements were completed for manufacturing pyrethrum spraying solutions in our own medical stores depots from Empire-grown pyrethrum flowers from Kenya.

Cholera, plague, small-pox, enteric fever and tuberculosis were much in evidence amongst the civilian population round cantonments, sometimes in epidemic form. However, there was no case of cholera or plague amongst the military personnel, and other infections were few and far between.

There was no serious epidemic in the Indian Army and the rise in admission rates by 32 per 1000 to the

present figure of 454 per 1000 is fully accounted for by conditions of war service. Large numbers of reservists returned to their units, hundreds of men returned from leave in and through highly malarious areas, there was a considerable influx of recruits, overcrowding was temporarily inevitable in many barracks, and many defensive posts had to be manned in unhealthy areas. Invaliding rates at 6.43 per 1000 showed a small increase, but death rates fell to 2.12 per 1000.

The increase in admission rates was due in great part to malaria, scabies, sandfly fever and the minor respiratory group, common cold and pharyngitis. The death rate of 2.12 per 1000 continued the steady fall of the past fifteen years. Injuries with over 70 deaths and pneumonia were the commonest cause of deaths.

With the rise in average constantly sick the average sick time per Indian soldier increased but the average duration of each case decreased. The total inefficiency per day at 34.6 per 1000 was slightly higher than that of the past two years but less than that of 1936.

As for the physical development of cadets in military colleges and schools, failures were few and the monthly increases in weight varied from 1½ to 2½ lbs. per boy per month.

Barracks are being improved. The mosquito carrier is being eliminated by drainage, oiling, paris green powder, spraying with insecticides, "dry day", "sluicing" and above all by the use of larvicidal fish. Pasteurisation of milk is being introduced in Southern and Eastern Commands.

In Northern Command 15 fully organised committees for co-operating with civil authorities are in existence. Arrangements are being made for the provision of hygiene demonstration areas at every large station to form part of the brigade training scheme. Modern automatic chlorinating apparatus for purifying drinking water has been installed in one or two places.

WAR-TIME MEDICAL SUPPLIES FOR INDIA

The main question that engaged attention of the Medical Stores Department of the Government of India was what important drugs could be obtained in the near future in India, so as to reduce imports and relieve the strain on exporting countries, which may not have either sufficient supplies or shipping facilities. Closely allied to this question was the problem of providing suitable Indian or British equivalents or alternatives for the various pharmaceutical preparations that became scarce in the market.

Though there was no immediate shortage of essential drugs in India, in view of the importance of ensuring adequate supplies of all necessary drugs and chemicals for medical treatment and associated laboratory work during the war, a committee was set up to investigate the sources of supply of drugs, chemicals and biological products for the Medical Stores Department. The committee drew up a list of essential drugs and circulated it to all administrative medical officers in the provinces, to State railways and Residencies with the request that they should warn all the medical officers to exercise the strictest economy in the use of such drugs.

As regards surgical instruments and appliances, considerable headway was made by Indian firms dealing in these articles. There is no shortage of surgical

instruments to meet immediate demands, but present resources are to be expanded. Several firms have been encouraged to take up the manufacture of articles hitherto imported from abroad, such as Haldane's oxygen outfits of field pattern.

Rubber products such as waterproof sheetings, hot water bottles and air cushions are now obtained in India. Glass of many varieties and sufficiently pure chemically to be used as ampoules for biological products and in various designs for laboratory work is now made in India. Thermometers, glass-stoppered bottles and ampoules are also manufactured by certain firms.

RECRUITMENT OF MEDICAL PERSONNEL

The declaration of war brought a flood of offers from medical men of varying ages and qualifications all over India, many of them well settled in private practice, who wished to place their services at the disposal of the Government for war-time employment. At first recruitment was confined to men below 32 years of age, but later, in view of the large number of applications from more experienced men, it was decided to relax the age limit in the case of men who had all the qualifications laid down except that they were over-age.

The Director-General of the Indian Medical Service also received numerous applications for army service from medical men who had previously held temporary commissions in the Indian Medical Service. In view of their special usefulness to the army, by virtue of their previous military experience, it was decided to take as many suitable officers from this category as were available, under special terms and conditions of service, counting their previous commissioned service for rank, pay and promotion.

Emergency Commissions: Soon after the outbreak of war, recruitment to permanent and short-service commissions in the Indian Medical Service was suspended. It was decided to grant emergency commissions to suitably qualified medical men. The Selection Board set up for the purpose was also empowered to relax the age-limit in suitable cases. While not accepting any new commitments during the war by the grant of permanent commissions, Government decided to select on the conclusion of the war to fill vacancies in the permanent cadre from among all officers holding emergency commissions.

Selected men receive pay and allowance admissible to short-service commissioned officers in the regular cadre of the Indian Medical Service and on release after the war will receive a gratuity at the rate of one month's pay for every 12 months' service.

In the first year of the war over 350 medical officers were recruited, trained in various military establishments and detailed for general and overseas service.

Sub-Assistant Surgeons: As in the case of medical officers, so in the case of medical subordinates, recruitment to the permanent cadre of the Sub-Assistant Surgeons Branch of the Indian Medical Department and Sub-Assistant Surgeons I.M.D. Reserve was suspended and an emergency branch of the Indian Medical Department (Sub-Assistant Surgeons) was created.

The same scales of pay and allowance as were admissible to Sub-Assistant Surgeons of the permanent cadre were allowed for those given emergency posts. In common with the policy in other branches of the service,

The new type of chemotherapy of wounds is still in its initial stage. The experience of the War, however, will undoubtedly give quick solution to these very up-to-date problems.

THE DIONNE QUINTUPLETS

The sixth birthday of the Dionne quintuplets has attracted wide public attention. Never before has a similar event been recorded. No other quintuplets have been known to survive together more than a few hours after birth. The event gave the Metropolitan Life Insurance Company the opportunity to connect some principally important statistical conclusions with this unique experience.

At their present age, any one of these little Dionne girls, has an even chance of living 63 years more, thereby reaching age 69. The life table further tells us that as an unbroken group they may all expect to live another 41 years so as to reach age 47 together. These figures are based on average conditions of health: as wards of King of England, however, and with the skillful care which has brought them from puny, premature infants to splendid, robust health, it is a fair presumption that they will do even better than this.

These girls were fortunate to be born at a time when our knowledge of how to control sickness and death was being constantly extended. They were even more fortunate to have come under the care of Dr. Dafoe who was so alert to use all the expedients of modern medical science in their behalf. Today, in the United States, the death rate, during the first year of life, is about 20 per cent lower than when the Dionne girls were born. In Canada, the improvement has been somewhat smaller, even though the infant mortality rate in the Dominion is considerably higher than in the United States. Deaths from children's diseases such as measles, scarlet fever, whooping cough, and diphtheria, considered as a group, have declined about two-thirds in the United States since 1934; in Canada they have been reduced only about one-eighth. Deaths from diarrhoea and enteritis, once the scourge of infants, have declined about one-quarter in the United States and about one-third in Canada, in the same period of time. Tuberculosis has continued to decline in both countries, and pneumonia, particularly in 1939, showed a very decided drop.

What special hazards to life and health face these children and other in the coming year of life?

According to the records of the Metropolitan Life Insurance Company's Industrial policy-holders, accidents, at age 6, are by far the greatest danger to both boys and girls. Next in line, but causing considerably less than half as many deaths, comes influenza and pneumonia. Following fairly closely thereafter are appendicitis, heart disease, and tuberculosis. The excellent care given the Dionne girls should protect them from these and other hazards.

the terms of employment of both private medical practitioners and civil sub-assistant surgeons transferred to military duty from the provincial Medical Departments were made as liberal as possible. These terms have been generally recognised as generous and suitably qualified and experienced medical men are coming forward for military service. To the end of September 1940, 325 appointments were made to the emergency branch of the Indian Medical Department.

Although the Director-General of the Indian Medical Service is not concerned with the recruitment of nurses in peace time, his close contact with the civil life of the country has actuated the Military Department to enlist his support in securing the services of suitably qualified nurses. Recruitment to the Indian Military Nursing Service (Temporary) was consequently entrusted to him. With the help of the provincial administrative medical officers, a number of suitably qualified and experienced nurses were enrolled and transferred for duty with military hospitals and units. The names of those who offer themselves for service are registered and they are appointed as necessity arises.

A number of dentists are to be recruited for service with Indian troops. A certain number of chemists are also to be recruited for employment in medical store depots and with medical store units overseas.

The first year of the war was one of solid achievement and intense preparation for the future. The transition from a peace-time to a war-time basis was both quick and smooth. The vastly increased armed forces were equipped with suitable medical staff on an unprecedented scale. A system has been evolved which ensures confidence for the future. All provincial Governments co-operated in unstinting measure in the common effort.

Arrangements are being made to release a certain number of medical personnel employed in the State railways who volunteered for military service.

When an Ordinance was promulgated making military service compulsory for European British Subjects in India, a number of European British doctors in India not covered by the National Service (European British Subjects) Act, 1940, volunteered their services.

INDIAN SUBSTITUTE FOR COD LIVER OIL

On the outbreak of War the cutting off of the main sources of supply of cod liver oil presented India with a serious problem. In recent years the high vitamin A content of certain Indian fish, such as shark and saw-fish has been demonstrated by the Nutrition Research Laboratories, Coonoor—which are financed by the Indian Research Fund Association—and by workers in other parts of India. The laboratories of Coonoor are now engaged on the standardization of supplies of shark oil. Research has also been carried out on the vitamin D content of this oil.

When it was discovered in the laboratories that the Indian gooseberry, *amla*, had a high content of vitamin C, large quantities of *amla* were purchased and powdered early in the 1940. The powder was sold to the Medical Store Depot, Madras, to make into tablets and issue to the troops for use in the treatment of and as a preventive against scurvy.

ANTI-MALARIA MEASURES

Staff for the anti-malaria work with the forces in the field are being trained at the Malaria Institute, Delhi. Four military medical officers were trained at the regular courses in anti-malarial measures conducted by the Institute in March and three officers were given a short refresher course in February-March, 1940. In August 1940 a special short refresher course was held for six military sub-assistant surgeons and eight Indian Hospital Corps personnel. One of the officers of the Institute rejoined the army for anti-malarial duties while some of the subordinate staff volunteered for field service.

Though there is no yellow fever in India at present, an outbreak, should it occur, might have serious results. A possible source of danger was the diversion of the England-India air route to yellow fever areas of Africa.

The India Office was asked to warn all authorities and companies concerned that air passengers and crews for India should be inoculated against yellow fever 21 days before entering the yellow fever area and that, except with the previous permission of the Government of India, passengers and crews who were not satisfactorily inoculated, should not be brought into India until the expiry of nine days from the date of leaving the yellow fever area. Persons admitted into by special permission would be quarantined at Drigh Road, Karachi, where adequate arrangements were made.

QUININE STOCKS FROM JAVA

Enquiries made from the various provincial Governments revealed some anxiety on their part as to future supplies of quinine. Statistics were collected showing probable requirements over a period of years. The amount involved was substantial and the Government of India approached the authorities in the Netherlands East Indies and concluded an agreement whereby the whole amount of quinine required by India during the next four years would be shipped from Java in six months, from July 1940. Owing to the size of the contract it was possible to arrange considerably reduced terms.

Counting the reserve regularly maintained by the Government of India and with the supplies from Java, India will have ample supplies of quinine to meet any emergency. Provisions was also made for the requirements of the defensive services.

HONORARY MEDICAL SERVICE IN MADRAS

The Government of Madras have decided to make some radical changes in policy in regard to the appointment of honorary medical officers, on the ground that the changes effected in 1937 (by the Congress Government) by filling a large number of paid posts by honorary men have, in practice, given rise to difficulties.

Pending the issue of orders as to which posts should be reserved for paid officers and which for unpaid officers, the Government have decided to make a number of temporary appointments of paid Civil Assistant Surgeons and Sub-Assistant Surgeons.

The Government have issued the following Press Communiqué on the subject.

In December 1937 the Government considered that it was desirable to make economies in the expenditure on medical relief and to provide qualified men and women with greater facilities for public service. With this object they decided that a large number of posts in the Medical Department should be filled by honorary

medical officers. A limited number of posts were to be reserved for paid medical officers, of which the most important were those of the Superintendent of Government Hospitals in the City and of District Headquarters hospitals, and those of the Chief Medical Officers in charge of Government Hospitals with a bed strength of more than thirty.

The changes have in practice given rise to a number of difficulties. It has been found that for some posts honorary medical officers are unsuited and that for others they cannot be secured. In view of these difficulties, Government have instituted enquiries and propose when they are completed, to issue further orders regarding which posts should be reserved for paid officers and which for unpaid officers. It is likely that some months will elapse before all these matters can be settled and, in the meanwhile, it is necessary to make urgent arrangements for carrying on the work of the department. For this purpose, Government have decided to make a number of temporary appointments of paid Civil Assistant Surgeons and Sub-Assistant Surgeons. The holders of these appointments will retain them only until a definite decision has been taken upon the general matters which are now the subject of enquiry; they will not, however, be debarred from appointment to such permanent posts as may hereafter be created.

DOCTOR-TEACHERS FOR SCHOOLS IN ORISSA

"One of the notable features of reforms in the province introduced during the year under review with a view to supplement the medical inspection of school children under a separate organisation, is the appointment of doctor-teachers in some high schools as part of the permanent staff of the schools", observed Lt.-Col. G. Verghese, Director of Health and Inspector-General Prisons, in his report of the hospitals and dispensaries in Orissa for the year 1939.

The report says that the experiment has become popular and with the encouragement and co-operation received from the Education Department, it is hoped to extend this scheme to all the high schools in the province in the first instance. The advantage of a doctor-teacher being in the staff of a school cannot be over-estimated.

MEDICAL STUDIES IN S. AFRICA

Indian medical students in the Union of South Africa had hitherto experienced difficulty in completing their education in that country for lack of facilities for clinical training. At the end of the first three years, they had to proceed to Europe or India for hospital training. Information has now been received that as a result of representations made by Sir B. Rama Rau, the Witwatersrand University is making arrangements for the hospital training of Indian students in the Union itself. They will enable the students to complete their medical course at the University.

SYLLABUS FOR PUBLIC HEALTH COURSE

A proposal for revising the syllabus of the Diploma course in public Health at the All-India Institute of Hygiene is, it is learnt, now being considered by the Government of India. To begin with, it has been proposed to revise the first and second parts of the course. The proposal has been sent to the various Universities for their opinion.

REVIEWS & REPORTS

Heil hunger : Health under Hitler by Dr Martin Gumbert George Allan and Unwin Ltd., London. Price 5 sh. net. Published 16th July 1940.

Dr. Gumbert was formerly head of a large clinic in Berlin and therefore the material presented in this book is mostly from personal experience. Besides, the sources of information on which the author's criticisms are based are entirely from Nazi quarters. The author shows the physical decadence of the German people, and this he attributes to stern dictatorship which is itself a sickness and which drives all concerned to inevitable physical break-down, because, he believes—and we think rightly—that freedom is the first condition of the individual and of the social group. According to the author, there seems to be a general increase in the incidence of drunkenness, venereal disease, tuberculosis etc., in Germany of to-day due directly to Hitler's dictatorship and his interference with the previous social and medical organisations in a way so as to subserve his militaristic ambitions.

Practical guide to Post-mortem Examination by S. K. Bose, M. B. Published by Benoy Kumar Bose, 86/1, South Road, Entally, Calcutta. Price Rs. 3-8-0. Illustrated.

We have no hesitation in congratulating the author on this excellent hand-book on post-mortem examinations which would be useful to the students and practitioners alike. The book consists of 7 chapters, 5 useful appendices and a chapter on Emergency Treatment in acute poisoning. It is intensely practical and based on author's own experience. The get-up of the book is excellent and we heartily commend it to the profession.

Modern Drugs in General Practice by Ethel Browning, M. D., Ch. B. Edward Arnold & Co., London. Price 10 Sh. 6 d net. Edition 1940.

This book is an useful and welcome addition to the few books of the kind that have been published in our country, such as Dr. Narayan Rao's *Materia Medica of Pharmaceutical Combinations and Specialities*. There is however a difference. The latter aims at exhaustiveness while the former aims at compactness and presents a therapeutic account of only such modern drugs that have been proved by research and clinical experience as safe and useful. The author's classification of modern drugs is quite sensible and least confusing. He describes them under nine heads: (1) Drug therapy in general practice (2) The Sulphonamides (3) The gold salts (4) Cardiac drugs (5) Drugs acting on the autonomous nervous system (6) Sedatives and hypnotics (7) Diuretics and urinary antiseptics (8) Gastro-intestinal remedies (9) External applications. The Chapters on sulphonamides and gold salts are exceedingly interesting and instructive. We entirely agree with the author that some of the valuable and potent synthetic drugs may prove to be two edged swords unless their capacity for producing serious toxic effects when wrongly handled or given in the wrong type of case is fully understood and carefully guarded against.

There is precision in the author's statements, and his method of exposition has made so dry a subject quite enchanting and eminently readable. We believe that this book will be highly useful to the general practitioners, and we, therefore, heartily recommend it to them.

Biological Aspects of Infectious Diseases by F. M. Burnet M. D. Macmillan & Co. Ltd., London. Price 15 Sh. net. Published September 26, 1940.

This is certainly a thought-provoking book, and according to the author, it is written not from the point of view of a physician or a pathologist whose interest must necessarily centre on the human aspect, but with the outlook of a biologist to whom both man and micro-organism are objects of equal interest. The author deals with such infectious diseases as diphtheria, influenza, tuberculosis, plague, cholera, malaria etc., makes references to the process of defence, natural, chemical and developmental; describes the natural history of infectious diseases; and ends with an illuminating chapter on New Diseases and Outlook for Future. He writes: Wars, internal and external, financial depressions and labour troubles are all breeders of infectious disease, and the future of the disease will depend on the essentially fortuitous circumstances which will let loose or withhold these calamities. A really serious world-wide epidemic might perhaps do more to set going a sense of genuine international co-operation than anything else.

The author has obviously ended his book with a note of pessimism. While we dare not call him wrong, we may say however that all our failures—in the region of medicine as well as in politics—are due to the ideology which man instinctively and irresistibly sets before himself for accomplishment viz., to make a heaven of this earth which seems to be a physical impossibility in the universe designed by God.

We wish our readers peruse this intensively interesting book and thus get a broader conception of infectious diseases than what is ordinarily understood by medical men. The author's delightful style, broad outlook, and a thorough and all-round grasp of the subject are factors which would appeal to the readers in no small measure.

Mechanisms of Biological Oxidations by David E. Green, University of Cambridge. The syndics of the Cambridge University Press. Price 12/6 net. Published October 8, 1940.

The mechanisms of cellular oxidation are the main concern of this book. It is a book of advanced studies, and deals in full detail, often with illustrative graphs, with the properties of enzymes, and helps us in understanding the relation between vitamins, "trace metals" and enzymic catalysis. Excellently printed and got-up, and forming an important contribution to the *Cambridge Biological Studies* we have great pleasure in recommending the book to research workers in advanced chemistry, bio-chemistry and related subjects.

Injuries of the Jaws and Face by W Warwick James, F. R. C. S., D. D. S., and B. W. Fickling, F. R. C. S., D. D. S. with 194 illustrations. John Bale and Staples Ltd., London. Price 15/- net. Published September, 1940.

This is no doubt a timely publication, as during this war there is bound to occur injuries of jaws and face which require a special war-time organisation to cope with such accidents. The authors have dealt with the subject in a practical way and detail all necessary steps in the operative treatment of such injuries. The descriptions are clear and concise, and the illustrations aid the reader's understanding to a very great extent. We heartily recommend the book not only to the military surgeons but also to the civilian practitioners who are not unoften called to treat injuries to the jaw and face.

Anti-Mosquito Measures with special reference to India by Lt.-Col. G. Covel, M. D., D. P. H., I. M. S. Fifth edition, 1940. *Health Bulletin No. 11*. Price Annas eight or 9 d.

The numerous advances in anti-mosquito measures made since its first publication in 1927 have been incorporated in this edition. This book will be found highly instructive to those who are interested in anti-malaria work in our country, and we recommend it particularly to the Medical Officers of Health of Local Bodies who may choose with benefit anyone of the anti-mosquito measures which suit their local conditions best.

Epitome of Indian Medical Literature

Ind. Med. Gaz., Dec. 1940

	Page
More notes on clinical heart disease—Gerard Kelly ...	709
(1) Diamidino—Stillbene in the treatment of kala-azar—Napier and Sen ...	720
Intestinal polyposis—Tribedi and Banerjee ...	725
Ectopic pregnancy—Murray ...	727
Prolapse of rectum in children—Kini ...	728
(2) Small-pox and sulphonamide—Patel and Naidu ...	730
Auricular flutter—T. K. Rahman ...	739
(3) A simple treatment of dysenteries and diarrhoeas—B. H. Singh ...	738
(4) The Vi-agglutination test in enteric fever—Seshadrinathan and Narayana Pai ...	735
(1) Napier and Sen give a preliminary report of the trial of a new drug—diamidino-stilbene, M & B 744—in the treatment of kala-azar. They have tried it in 8 cases and they come to the tentative conclusion that the clinical and laboratory evidences show that it is an effective therapeutic agent in the treatment of kala-azar. The dosage they adopted was 0.001 g. per pound of body weight intravenously. The ill-effects observed were flushes, burning sensation all over the chest and abdomen and slight dyspnoea, but they were transitory.	
(2) Patel and Naidu write that owing to protective inoculation in early childhood there is greater prevalence of small-pox amongst the adult population, and that clinically it manifests itself in 3 distinct types: the discrete, the semi-confluent and the haemorrhagic. The confluent type has a mortality of 47%, and the haemorrhagic 88%. Death in discrete type is generally due to pneumonia and in other types to sepsis, the infective organism being staphylococci, and in some cases streptococci.	
The authors have tried sulphonamide in a few selected cases of the septic confluent type, and they used sulphonamide tablets of P. D. & Co. They conclude that the results were satisfactory.	
(3) Singh advocates <i>Ispaghula</i> treatment for all dysenteries and diarrhoea as a preliminary step to causative and specific treatment.	
His line of treatment is as follows:	
(a) <i>Ispaghula</i> seeds, 2 drs., boiled in 1 pint of water for 15 minutes, strained, and administered at the rate of 3 ounces every 2 hours.	
(b) If there is much blood in the stool, calcium lactate in 10 gr. doses is given three times a day.	
(c) If there are too frequent motions, he suggests addition of 5 to 10 grs. of alum to the <i>ispaghula</i> decoction.	
(4) Seshadrinathan and Pai show that a higher percentage of cases showed a positive V-i agglutination (9%) than H agglutination (5%) in the first week, and that in the second week there was no appreciable difference.	

Jr. of I.M.A., Dec. 1940

	Page
Modern treatment of compression fracture of the spine—Sanyal ...	105
Mental Hygiene—Rizvi ...	109
(5) Obscure fever in children—H. B. Basu ...	113

FEBRUARY, 1941]

EPITOME OF INDIAN MEDICAL LITERATURE

47

(5) Basu is of the opinion that undiagnosed fevers in pediatric practice is quite common. Causes of such fevers are, he says, either physiological or pathological, and he insists that routine examination is necessary to arrive at proper diagnosis.

Cal. Med. Jr., Nov. 1940

	Page
The service of chemistry and pharmacology in the alleviation of human suffering—Mukherjee ...	688
(6) Some observations on the etiology of epidemic dropsy—Sarkar ...	690
Use of sulphanilamide in obstetrics—Sinha ...	705
Anemia of obscure origin—Dutta ...	715
(6) Sarkar writes, and illustrates by case notes, that there is at least some evidence that consumption of infected rice may give rise to a group of clinical symptoms which are very akin to the classical symptoms of epidemic dropsy produced by <i>Argemone</i> oil poisoning. He therefore warns against any hasty conclusion regarding its aetiology.	

Jr. of South Indian Medicine, Dec. 1940

	Page
Acute abdomen—Nambiar ...	102
(7) Treatment of infantile cirrhosis of the liver—Srinivasa Rao ...	109
(7) Srinivasa Rao appeals to the practitioners not to pass on their cases of infantile cirrhosis to "Vendors of secret liver specifics". He outlines the following line of treatment:	
(a) Proper ventilation, sun light and rest,	
(b) Non-fatty diets such as diluted skimmed milk, vegetable soups, tomatoes, orange or lime juice,	
(c) Zinc oxide gr. 1½	
Hydr. c creta " 1	
Pul. Rhei Co. " 6	
Ft. Pulvis 8. One powder T. D. S.	
(d) Vitamin C preparations, orally or parenterally.	
(e) Subcutaneous injection of acetylcholine (B. D. H., 0.9 gm. in 1 cc. distilled water) once in three days.	
(f) Symptomatic treatment.	

Antiseptic, December, 1940

	Page
Dislocation of the head of the radius associated with fracture of the upper third of the ulnar—Kine ...	1059
Eversion of the diaphragm—Arunachalam and Srinivasa Rao ...	1063
(8) Intravenous alcohol as a specific in the post-operative septic lung complications—Andreasen ...	1071
Fracture rib with some of its complications—Sinha ...	1083
(8) Andreasen reviews 836 cases of post-operative septic lung complications treated by intravenous alcohol. He used 20 cc. of 20% absolute alcohol (ethyl alcohol) in normal saline, and he is of the view that it is a safe and efficient line of treatment.	

Med. Bull., Dec. 21, 1940, & Jan. 4, 1941

	Page
Traumatic neurosis—Gadgil ...	773
The surgery of diabetes—De Sa ...	776
The eventful second year in the Indian child—Gadgil ...	782
Treatment of ch. trachoma—Patwardhan ...	785
Female sex hormones—Purandare ...	1
Endocrines in medical practice—Sathe ...	17
Endocrines in surgical practice—Baliga ...	22

Med. Digest, Dec. '40

Treatment of typhoid fevers—Shiva Rao and Sastry ...	457
(9) Vitamin B Complex and its therapeutic applications—Basu ...	478
Specific action of gold in tuberculosis—Desai ...	479
(9) Basu gives the therapeutic indications for vitamin B complex as follows:	
Vitamin B ¹ — Peripheral neuritis as in beri-beri.	
" B ₁ + vitamin C — Treatment of painful joints.	
" B ₂ — Anesthetic type of leprosy and other skin diseases.	
" B Complex in the form of yeast — Diabetes and anemia.	

Special Journals

Ind. Dental Jour., Vol. 16, No. 1, 1941

Nitrous oxide anesthesia in dentistry—Desai ...	1
A new method of treatment of facial neuralgia—Ambart.—	4
(10) Origin and effects of betel-chewing—Shroff ...	7
(10) Shroff mentions the following ill-effects of betel-chewing:	

- Waste of saliva.
- By constant chewing the incisal edges of the anteriors and the occlusal surfaces of the posteriors get washed out.
- The fibres of the leaf and betel-nut get packed in the inter-proximal spaces.
- Pyorrhoea alveolaris is common among chewers.
- Excess of calcium which is deposited as seramul tartar.
- Discolouration of teeth.
- Loss of sensibility.
- Cancer, dyspepsia and diarrhoea are not uncommon among the chewers.

Ind. Jr. of Med. Research, Oct., '40

(Only some of the articles are epitomised below)

Gosh and Chakravarty write that all cholera stools are highly alkaline and that the alkaline medium is distinctly favourable to the formation of cholera toxin. Elimination of alkaline base and chlorides is also considerable. This leads to acidosis and disturbs the osmotic balance. The suppression of urine may partially be due to the disturbance of this osmotic balance.

Basu and Malakar write that Indian dietaries require to be liberally supplemented with vegetables and legumes in order that a sufficient amount of magnesium may be provided. Whole wheat diets appear to be superior to rice diets in their effects on magnesium metabolism.

Karunakaran and Nair carried an investigation on an out-break of scrotal eczema, sore mouth, xerophthalmia and phrynodema in Travancore. They think that these may be due to poly a-vitaminosis, particularly to the deficiency of vitamin B complex.

Dogra writes that his survey of peptic ulcer in South India reveals that (1) it is common all over South India, (2) the common variety is an ulcer in the wall of the first part of the duodenum, (3) it is almost entirely a disease of poor agriculturist and poor labouring classes, (4) it is rare amongst women and (5) the maximum age incidence is between 26 to 40 years in both sexes.

Ragavachari and Venkatraman writing on endemic fluorosis in South India are of the view that it is due to fluorides in ground waters in Chittcor, North Arcot, Chingle-out, Madura and Ramnad districts. The drinking of such water results in fluorine intoxication, such as mottled enamel and severe bone involvements. They also observe that a pronounced C a-vitaminosis was especially associated with a severe incidence of the disease.

ABSTRACTS

Clinical experiences with equine gonadotropic hormone: Henry W. Erving, M.D., Christine Sears, M.D., and John Beck, M.D., *Am. J. Obst. and Gynec.*, 40: 695-713, October, 1940.

Forty-eight cases of sterility, dysfunctional, flowing amenorrhea, were treated with equine gonadotropic hormone. Effects of treatment were judged by endometrial biopsy in 12 cases and by the subsequent clinical course in the others. Thirty-nine patients (81.2 per cent) were apparently unaffected by equine gonadotropic hormone. In no case was there any definite evidence of stimulation of ovulation by equine gonadotropic hormone. In the sterility group three was one pregnancy, but it cannot be attributed to equine gonadotropic hormone. One other, an anovulatory patient, was found by biopsy to be ovulating four months after treatment. One patient with dysfunctional bleeding continued to flow for a month following equine gonadotropic hormone therapy and since then has had amenorrhea for three months. Six patients with amenorrhea strained or flowed after treatment, but none of these showed evidence of ovulation. Only one patient continued to flow at regular intervals. She seems to be responding rather to thyroid than to equine gonadotropic hormone stimulation. Allergic reactions to equine gonadotropic hormone appeared in 3 patients following therapy. In 3 patients, a cyst of the ovary was noted after treatment.

Although we cannot, and do not, attribute them to equine gonadotropic hormone, we cannot deny the possibility that the treatment may have been instrumental in causing the condition. It is suggested that a great deal of clinical experimentation is necessary before the value of this hormone will be established. (*Clinical Abstracts*)

Uterine bleeding induced by progesterone during the normal menstrual interval and in amenorrhea: Bernhard Zondek, M.D., Samuel Rozin, M.D., and Morton Vesell, M.D., *Am. J. Obst. and Gynec.*, 40: 391-399, September, 1940.

Up to the present it has been assumed that the corpus luteum hormone (progesterone) is only able to produce bleeding of the uterine mucosa, provided that estrogenic hormone has previously been active in bringing about perfect proliferation of the mucous membrane. However, the investigations reported in this paper show that it is possible to induce bleeding during the intermenstrual stage by administering 10 mg of progesterone on five successive days. It is, therefore, no prerequisite for the occurrence of a progesterone-produced bleeding that perfect proliferation be present. These observations were applied in the treatment of amenorrheic women (secondary amenorrhea), and 17 out of 19 cases were successfully treated in this way, i.e., without preliminary treatment with estrogens.

The presence of a certain degree of estrogenic hormone production is, as a matter of fact, a prerequisite condition for the appearance of bleeding. Probably, the mucous membrane must be stimulated to a certain extent by this estrone produced in the organism. This is clearly shown by the fact that in primary amenorrhea no result is obtained by treatment with progesterone alone. It is, however, also possible to induce bleeding in primary amenorrhea, provided that small amounts of estrogens are also given, previously to or simultaneously with progesterone.

During pregnancy even large doses of progesterone (up to 150 mg.) are unable to produce bleeding, and it is, therefore, impossible to induce abortion in this way.

Large doses of estrogenic hormone are active in preventing the intracyclic bleeding and are also able to delay normal menstruation. Estrogenic hormone must, therefore, be held responsible for three functions: (a) Proliferation of the uterine mucosa, if the amounts administered do not exceed physiologic limits; (b) counteracting the activity of progesterone, if the amounts administered are higher than those physiologically present in the organism; (c) influence on the gonadotropic secretion of the anterior pituitary lobe. (*Clinical Abstracts*)

The use of sulfanilamide in obstetrics and gynecology: A report on 121 cases. Charles A. Gordon, M.D., F.A.C.S., and Alexander H. Rosenthal, M.D., *Am. J. Obst. and Gynec.*, 40: 211-218, August, 1940.

In minor febrile disturbances chemotherapy should not be used. In severe intrapartum and puerperal infections of the

genital tract, sulfanilamide should be given provided the patient is in a hospital where its administration may be properly supervised. Bacteriologic diagnosis need not precede therapy, yet recognition of the infective agent is important. Since it is probable that sulfanilamide is effective only when the streptococcal hemolytic Group A is present, administration should not be continued for longer than a week, if another organism has been isolated.

In mastitis not responding to ordinary treatment, chemotherapy should be tried. In pueritis it is at least as effective as other methods of drug treatment. A large series of cases, followed over a considerable period of time, will be necessary before positive statements can be made.

Sulfanilamide should be used in gynecologic infections (1) if they are primary gonococcal, (2) if smear or culture is positive with exacerbation or reinfection of old gonococcal infection, and (3) when the streptococcus hemolyticus can be demonstrated as the infective agent.

Sulfanilamide should not be given in cases of cellulitis, pelvic or abdominopelvic abscess or to patients with acute exacerbations of chronic pelvic infections with tuboovarian masses when the gonococcus cannot be demonstrated. Evidence accumulates that sulfanilamide should not be given to ambulatory patients. (*Clinical Abstracts*)

Tuberculosis of the knee-joint in Adults: L. A. Key, M. B. C. S., L. R. C. P., *Brit. M. J.*, 408-411, Sept. 28, 1940.

One hundred and eight cases of tuberculosis of the knee-joint are reported and some general aspects of the disease in adults are reviewed.

Tuberculosis of the knee-joint is a hematogenous infection secondary to a focus of active disease elsewhere in the body. Often the primary focus cannot be detected, and in many such cases the bronchial or mesenteric lymph nodes are the starting-point of disease. In this series of cases 87.75% had tuberculous lesions elsewhere—active in 19.35 and quiescent in 18.4%. History of trauma was elicited in 15% of cases. Trauma causes a localized diminution of tissue vitality and inflammatory changes, favouring lodgement and subsequent activity of tubercle bacilli, which form the primary focus.

The early stages of disease in young adults are marked by the principal changes occurring in the synovial membrane in the first instance, bone involvement being very slight or even absent. In older patients tuberculous disease of the knee-joint most frequently starts in bone, spreading to the synovial membrane via the circulus vasculosus or by direct continuity of disease. By the time diagnosis has been established pathological changes in the tuberculous knee-joint have already passed the earlier stages of disease with a marked increase in the incidence of bone involvement and a dwindling of purely synovial disease. Fibrosis is the predominant factor in repair. Following erosion of its articular surface the joint undergoes fibrous ankylosis of varying stability. Bony ankylosis, unless associated with previous sinus formation and secondary infection, is a rarity.

Pain of insidious onset is the first symptom in 70% of cases. Stiffness is the first complaint in 10% of patients. Swelling of the joint, associated with pain or stiffness, is present in 54 per cent of cases first seeking medical advice. Typical "white swelling" develops in cases of progressive disease. The presence of free fluid in the joint is uncommon. Muscular wasting is synovial disease. Tenderness when present, is more often elicited on the inner side of the joint. Local heat is always present. Abscess formation in the early stage of disease occurs in 6.5 per cent of cases. There is gross limitation of movement. In the early stages X-ray changes are inconclusive. Bone changes become obvious after an average interval of 4 months. Diagnosis of early cases is often difficult, and sometimes is impossible. The tuberculous knee-joint presents a general picture of subacute or chronic arthritis, and in attempting to determine the underlying cause it is essential to ascertain accurately, and to correlate the history, physical signs and X-ray appearance.

The modern tendency in treatment is to combine conservative and operative measures with the object of establishing quiescence of the general and local disease before effecting arthrodesis of the joint in the position of election. It is not until the local disease has reached quiescence that a decision is made as to whether conservative treatment will suffice or whether arthrodesis is necessary. It is suggested that arthrodesis is the most suitable form of treatment for the majority of adult cases following conservative management. (*Clinical Abstracts*)

February, 1941]

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* Bishop, P.M.F., Boycott, M., and Escherman, S. (1939) *Lancet* 1, 8. and Westerton, W. R., and MacGregor, T. N., (1939) *British Medical Journal*, 1, 10.

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This comes into force with effect from 1st January, 1941.

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*Dishay, P.M.F., Baybutt, M. and Sutherland, J. (1939) *Lancet* 1, 5. and Winterson, W. E. and MacGregor, T. B. (1940) *British Medical Journal*, 1, 10.

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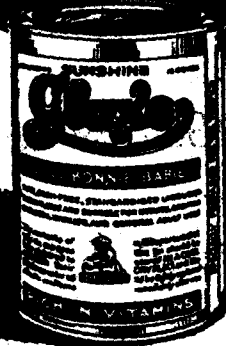
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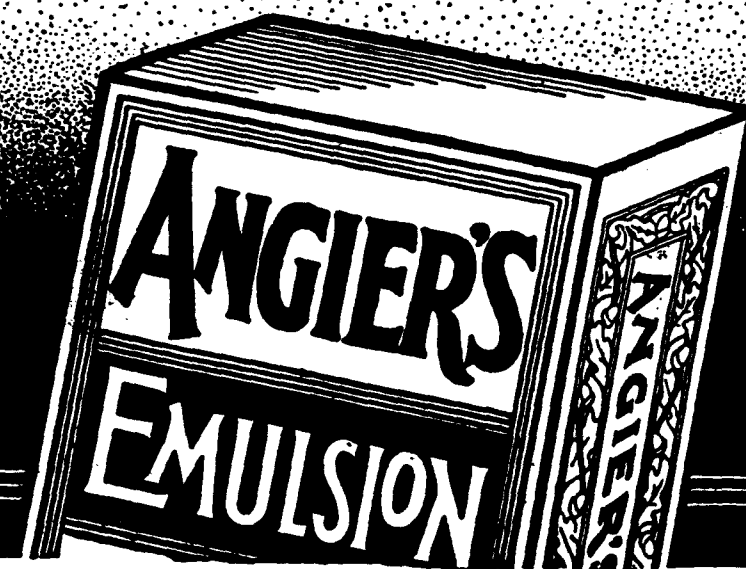
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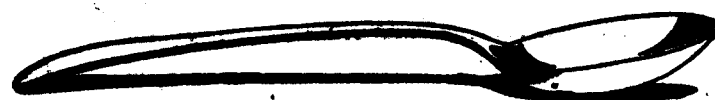
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