

SCIENCE NOTES.

Upendra Kumar Das.—We regret to have to announce the death at the early age of 35 years of Dr. Das, Research Associate in-charge of the Biochemical Laboratory at the Experiment Station of the Hawaiian Sugar Planters Association. Dr. Das was instantly killed by an explosion of apparatus in his laboratory on October 22, 1937.

His contributions to the sugarcane agriculture were substantial and conspicuous. His work covers a wide field and includes cane quality, juice quality and sugar mill by-products. His passing away at an early age, when fully equipped for research of a high quality has deprived the sugar industry of a practical scientist.

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The Ananda Temple of Burma.—What is likely to be the last contribution relating to Burma published by the Archaeological Survey of India has just been released. It is a monograph on the Ananda Temple at Pagan in Burma in the series of memoirs published by the Archaeological Survey of India on the ancient monuments of India and Burma.

Pagan, it may be noted, is the most famous Buddhist Centre in Burma and among the hundred temples at the place there is no one which can equal Ananda as a religious monument or as a store-house of inscriptions and sculptures. The date assigned for the foundation of this temple is 1090 A.D. in the reign of King Kyanzittha whose zeal and piety led to the adoption of Buddhism as the Burmese national faith.

Like the religion of the land which came from India, the architecture of this and other Burmese temples, too, bears the stamp of Indian genius and craftsmanship. Internally the Ananda temple is massive with solid walls of enormous thickness. Colossal standing images of the Buddha are enshrined in recesses on each side of the central mass of brickwork. Another peculiar feature of the temple is the frieze of glazed terracotta plaques which are embedded in small panels in the plinth around the temple.

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The Government of Travancore have sanctioned the formation of a Museum of Antiquities at Padmanabhapuram, to preserve the inscription stones, carved and sculptured pillars, images, etc., and other relics of antiquity. While the Padmanabhapuram collections will be mainly of archaeological and historical interest, collections with an artistic appeal will be housed in Trivandrum. The Padmanabhapuram Palace, it is understood, will be declared a protected monument under the Ancient Monuments Preservation Regulation.

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Plastics from Fixed Glycerides.—Oils have been converted into products resembling lubricating greases, waxes and resins. By a further modification of the process, the same materials have been transformed into a powder with thermo-plastic and thermo-hardening properties. The conversion of fixed glycerides of this type into the products enumerated above, is an entirely

new observation due to Dr. M. Goswami, Department of Applied Chemistry, University of Calcutta. The process depends upon three factors:—(1) presence of catalysts, (2) definite temperature, (3) definite pressure. The nature of the final products—soft, hard and resinous—is determined by a variation in these three factors. The possibilities of this process from an industrial standpoint, are very great as India is rich in oils of all types and is at the present time, entirely dependent upon foreign supplies for the synthetic plastics, resins and lubricating greases of a superior quality. All the ingredients are found in abundant quantities in India and no imported raw material appears to be necessary for the process.

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Marketing of Ghee.—An important step to ensure the marketing of genuine ghee has been taken by the Government of India. The merchants dealing with ghee, are required to maintain a fully-equipped ghee testing laboratory and suitably qualified staff approved by the Government. Raw ghee received from the villages, is to be tested and clarified. After examination by the merchants' analyst, samples are drawn and sent to the Government *Agmark* Laboratory at Cawnpore. The ghees satisfying all the chemical requirements laid down by the Ghee Conference are to be placed in suitable containers which will be marked with special seals issued by the Agricultural Marketing Adviser. Ghees will be marketed in four grades, *viz.*, 'Cow', 'Buffalo', 'Special' and 'Genuine'. The seals are printed on a special paper which can stand pasting only once and cannot, therefore, stand removal from a container and repasting to another. The seal as well as the soldered part of the bung are covered with a special protecting coating which renders the seal waterproof. Coatings of different colours which are inflammable are used for different grades of ghee. Each tin is marked with the name of the packing station and the number of the melt, so that its identity and other particulars can be traced back easily for the purpose of checking. Thus, all possibilities of unscrupulous adulteration of ghee are sought to be prevented, and the interests of consumers, safeguarded.

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Indian Central Cotton Committee.—Marketing survey of cotton for all India was one of the principal subjects which came up for discussion at the 36th half-yearly meeting of the Indian Central Cotton Committee, held in Bombay on the 25th and 26th January 1938, under the presidency of Sir Bryce Burt, C.I.E., M.B.E., I.A.S., President of the Committee. The scheme was prepared by the Agricultural Marketing Adviser to the Government of India, following upon the decision of the Committee at its meeting held in August last year. Side by side with this a scheme for cotton marketing survey in the Punjab proposed by the Director of Agriculture, Punjab, on the lines of surveys of other crops initiated by the Imperial Council of Agricultural Research was also discussed. The Committee decided that the Punjab scheme should be circulated to

commercial bodies for an expression of opinion. It was resolved that the proposed scheme for a marketing survey of cotton in India be also circulated among commercial bodies in the first instance.

Prior to the meeting of the full Committee, various Sub-Committees had made a detailed and critical examination of many important problems concerning the cotton grower, the trade and the cotton industry and made reports thereon for the consideration of the full Committee.

The Committee accorded its approval to the report of the Agricultural Research Sub-Committee, which had reviewed the progress reports of a series of research and seed distribution schemes already operating in the provinces. It also considered several new research and seed distribution schemes proposed by them in pursuance of its programme for the improvement of cotton in India. Among the schemes reviewed was the Punjab Physiological (Cotton Failures) Scheme which was sanctioned for the purpose of investigating the causes, which led to the partial failures of cotton crop in the Punjab, and Dr. Mason's report on the working of the scheme. The Committee was gratified to note the valuable suggestions made by Dr. Mason which should bring the scheme to fruition. The Committee expressed its obligation to Dr. Mason and to the Empire Cotton Growing Corporation, which had placed so eminent an expert at the disposal of the Committee.

The question of acquiring wider markets for Indian cotton, received considerable attention of the Special Sub-Committee which met earlier. The Report of this Sub-Committee was considered by the full Committee and approved. With a view to keeping close contact with the foreign demand for Indian cottons, it was decided to circulate the trade associations monthly reviews received from the Director-General of Commercial Intelligence and Statistics.

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Indian-built Plane.—The first aeroplane built at the Aeronautical Training Centre of India, New Delhi, under the direction of Captain A. T. Eadon and approved by the Air-Ministry, made its first successful flight on 28th January. The machine was piloted by Captain R. Pierce, and broke the speed record for its class, attaining 155 miles per hour. The pilot in an interview to the *Associated Press* said, "It was indeed a proud moment for me to fly for the first time in the first approved training machine made in India. The young Indian cadets had devoted one year to building this machine and it was a thrilling experiment to see our labours so successfully crowned." The machine is of the Miles Training type, an M.2.R. low-wing monoplane with a DeHavilland 130 H.P. engine.

The Aeronautical Training Centre of India is in a position to turn out air craft not only to cope with the expansion of civil aviation in this country, but also for defence purposes. We offer our congratulations to Captain Eadon, a pioneer in the aeronautical education in India.

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Prince of Wales Museum of Western India.—A perusal of the *Annual Report* for the year 1936-37, shows that the popularity of the Museum is on the increase. It has indeed reached

a high standard of educational activity not incomparable with that obtained in the museums in N. W. Europe and America. During the year under report significant additions were made to the galleries of the various sections. The Natural History Section has been practically remodelled on modern lines, and if further improvements and additions have not been made, it is solely due to the paucity of funds.

It will be recalled that the Natural History Section was referred to especially at the Conference of the Museum Association held at Leeds in August 1936, where Mr. Markham, the senior author of the *Report* on Museums in India, described its galleries as amongst the best in the world and worthy of every attention. The research collections in this Section include Mammals, Birds and Reptiles, which are perhaps the most important available to students in the East. It is, however, unfortunate, as the report rightly points out, that these valuable collections are housed under conditions wholly unsuitable and it is hoped that the Government of Bombay will lose no time in providing funds for the proper accommodation of the reference collections, consistent with their importance.

The most outstanding addition to the museum during the year has been the collection of the world famous antiquities excavated at Mohenjo Daro in Sind. Two noteworthy exhibitions in attractive settings in the galleries in the main building are the magnificent art collections of the late Sir Dorab Tata and the important collection of Mughal paintings and fine copies of the Ajanta frescoes of the Rt. Hon'ble Sir Akbar Hydari.

The progress made in the working of the main sections, detailed in the *Report*, is impressive and those in immediate charge of the section and the management of the Museum, deserve the grateful thanks of the public for the valuable instruction so agreeably provided.

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Estimated World Requirements of Dangerous Drugs in 1938.—The Statement issued by the Supervisory Body under Article 5 of the Drugs Limitation Convention of 1931 giving the estimated World requirements of dangerous drugs in 1938 has recently been published by the League of Nations.

The Statement makes provision for the dangerous drugs requirements of every country and territory in the World. The total number of separate administrative units (*i.e.*, countries, colonies, dependencies, protectorates, etc.), for which estimates are given in the document, is 179. In preparing its Statement, the Supervisory Body had to examine estimates for 63 countries and 104 territories. In addition, in accordance with the obligation imposed upon it under the Convention, it established estimates for ten countries and two territories, for which estimates had not been furnished by the governments concerned.

The Introductory Table in the Statement gives a total of estimated World requirements of each drug for medical and scientific purposes for the year. The total amount of morphine required for all purposes (including the amount required for conversion into heroin, codeine and dionine) is 45,638 kilos (as compared with 40,976 kilos in 1937). The amounts of heroin, codeine and

dionine (made principally by conversion from morphine), estimated as required for 1938 are: heroin, 1,133 kilos (as compared with 965 kilos in 1937); codeine, 29,921 kilos (as compared with 25,724 kilos in 1937); dionine, 3,089 kilos (as compared with 3,199 kilos in 1937). The amount of cocaine estimated as required is 5,032 kilos (as compared with 4,976 in 1937). A little over a ton of other drugs is required. Altogether, therefore, leaving aside the factor of conversion, the total amount of dangerous drugs estimated as required for actual use next year is a little over 52 tons.

One of the principal tasks of the Supervisory Body under the Convention is to see that estimates are not excessive and correspond as closely as possible to real needs. In carrying out this task, the Supervisory Body asked for additional information and explanations in the case of eleven countries. Even here, four years' experience has shown considerable progress, since information of this kind was asked for in 1934 from 28 countries, in 1935 from 23 countries, and in 1936 from 18 countries.

Some 53 countries have so far signed the Procès-Verbal drawn up for the purpose of enabling the Statement of the Supervisory Body to be issued on December 1st instead of November 1st; ten signatures are still required before the Procès-Verbal can come into force.

Short Quinine Treatment for Malaria.—The Malaria Commission of the League of Nations, recommends the short quinine treatment for malaria which consists of taking 15-18 grains of quinine daily during 5-7 days, the treatment being repeated, should there be a relapse. For countries infested with malaria, the short quinine treatment is an invaluable help. Former methods, which consisted of taking quinine over a period of months, have completely given way to the short quinine treatment, thanks to which, the worker is able to continue his work uninterruptedly. For prophylaxis the Commission recommends a daily dose of 6 grains during the whole malarial season.

A country whose population suffers from malaria, is economically much weaker than one with a healthy population. In British India, the number of subjects attacked by malaria every year reaches 100,000,000, and it is reckoned that on account of this disease the British Administration loses about sixty million pounds sterling every year!

One of the resolutions adopted at the meeting of the **Inter-University Board**, held at Allahabad on 13-14th December 1937, relates to the grants from Provincial Governments for research work in Applied Sciences. The resolution reads:—

“Resolved that Provincial Governments be requested to sanction increased grant to Universities for research work in Applied Sciences and also to take steps to ensure increased collaboration between Universities and Governments in the matter of researches relating to agricultural and industrial problems.”

The *Academia Asiatica* of Teheran, Iran, has conferred on Mr. Benoy Kumar Sarkar, the Honorary Doctorate Degree of Geography,

for his contributions to the Economics, Culture and Sociology of Asia. This is the first honorary distinction accorded by the *Academia Asiatica* to an Indian scholar.

Barclay Medal.—The Royal Asiatic Society of Bengal has awarded the Barclay Memorial Medal to Brevet-Colonel R. N. Chopra, Director of the School of Tropical Medicine, for his long sustained and distinguished work in the field of medical research. The award is made biennially for conspicuously important contribution to medical and biological sciences with special reference to India.

Mr. Mohd. Afzal Husain, Principal of the Punjab Agricultural College, Lyallpur, left for Geneva to represent India at the Agricultural Committee's meeting of the International Labour Organisation held on 7th February. This Committee is the first of its kind and has been appointed for discussing important problems concerning agricultural workers. Mr. Mohd. Afzal Husain intends visiting various agricultural and scientific institutions on the Continent.

National Institute of Sciences of India.—At The Third Annual General Meeting of the National Institute of Sciences of India, held on Saturday the 8th January 1938 in the Senate House of the University of Calcutta, the following gentlemen were elected office-bearers and other members of Council for the year 1938:—

President: Prof. M. N. Saha, D.Sc., F.R.S., F.R.A.S.B.; *Vice-Presidents*: Prof. S. S. Bhatnagar, O.B.E., D.Sc., Brevet-Col. R. N. Chopra, C.I.E., Sc.D., M.D., F.R.A.S.B., K.I.P., I.M.S.; *Treasurer*: Dr. B. S. Guha, Ph.D.; *Foreign Secretary*: Prof. B. Sahnii, D.Sc., Sc.D., F.G.S., F.R.S., F.R.A.S.B.; *Secretaries*: Prof. S. P. Agharkar, Ph.D., F.L.S.; Dr. A.M. Heron, D.Sc., F.R.S.E., F.R.G.S., F.G.S., F.R.A.S.B.; *Members of Council*: Mr. T. P. Bhaskara Shastri, M.A., F.R.A.S.; Dr. G. S. Bose, D.Sc., M.B.; Mr. H. G. Champion, M.A.; Prof. J. C. Ghosh, D.Sc.; Dr. T. H. Gravely, D.Sc., F.R.A.S.B.; Khan Bahadur M. Afzal Husain, M.A., M.Sc., I.A.S.; Prof. K. S. Krishnan, D.Sc.; Dr. R. B. Lal, M.B.B.S., D.P.H., D.T.M. & H., D.B.; Prof. S. K. Mitra, D.Sc.; Prof. J. N. Mukherjee, D.Sc., F.C.S.; Col. Sir Arthur Oliver, C.B., C.M.G., F.R.C.V.S.; Dr. B. Prasad, D.Sc., F.R.S.E., F.L.S., F.Z.S., F.R.A.S.B.; Prof. N. R. Sen, D.Sc., Ph.D.; Lt.-Col. S. S. Sokhey, M.D., D.T.M. & H., I.M.S.; Prof. V. Subrahmanyam, D.Sc., F.I.C.; Col. J. Taylor, C.I.E., D.S.O., M.D., D.P.H., I.M.S.; Rao Bahadur B. Venkatesachar, M.A., F.Inst.P.

Prof. M. N. Saha, President of the Institute, delivered his Presidential Address, the subject being 'The Problem of Indian Rivers'.

We have recently received the Annual Report for 1937 issued by the Council of the National Institute of Sciences. Since the Annual Meeting held in January 1937 at Hyderabad, three ordinary meetings, one in Allahabad, one in Calcutta, and the third at Delhi were held. At the Calcutta meeting a symposium on the 'Malaria Problem in India' was organised which was attended by a large number of medical and scientific workers from all parts of India. Four numbers of the

Proceedings, three numbers of the *Transactions* and the second number of the *Indian Science Abstracts* for 1935, were issued during the year. The publications of the Institute are issued free to Universities and similar bodies making annual grants to the funds of the Institute.

The Institute received a grant of Rs. 300 from H. E. H. the Nizam of Hyderabad and a grant of Rs. 6,000 from the Government of India.

The Institute lost 2 Ordinary Fellows, Diwan Bahadur L. K. Ananthakrishna Iyer and Sir J. C. Bose and 2 Honorary Fellows, Lord Rutherford of Nelson and Prof. Albert Heim.

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Indian Chemical Society.—The Annual Meeting of the Society was held on Wednesday, 5th January, at Calcutta with Dr. J. C. Ghosh, President of the Society, in the Chair.

The proposal of the Council to publish the *Industrial and News Edition* of the *Journal of the Indian Chemical Society*, under the joint auspices of the *Indian Chemical Society and the Institution of Chemists (India)*, was approved. This publication will be issued quarterly.

Dr. J. C. Ghosh delivered his address on the "Physico-chemical Investigations on Vitamin C".

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Indian Statistical Institute.—The Madras Branch of the Institute was inaugurated by Prof. K. B. Madhava, on the 15th January. Prof. P. J. Thomas, who has been elected President was in the chair. Prof. Madhava traced the inauguration and development of the Indian Statistical Institute and said that it was the business of the Statistical Societies all over the country to develop schools of thought of great efficiency and integrity—integrity because there was a feeling that statistics could be used to prove anything.

The use of statistics for the formulation of economic and social policy would be the aim of the Madras Branch of the Indian Statistical Institute.

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The Indian Botanical Society.—The 17th Annual Meeting of the Indian Botanical Society was held at Calcutta on January 6th, 1938. The following office-bearers were elected:—

President: Mr. H. G. Champion, I.F.S. (Nainital); *Secretary*: Dr. E. K. Janaki Ammal (Coimbatore).

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Association of Economic Biologists.—The Eighth Annual Meeting of the Association of Economic Biologists, Coimbatore, was held on 17th January 1938. The following office-bearers were elected:—*President*: Dr. J. S. Patel; *Vice-Presidents*: Mr. P. V. Ramiah, and Mr. K. Ramiah.

The retiring President, Mr. K. Krishnamurthy Rao delivered an address on "Science and the Scientist".

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University of Aligarh.—The Annual Convocation of the University was held on 23rd January, H. H. the Aga Khan, Pro-Chancellor, presiding. A feature of the function was the conferment of the honorary degree of Doctor of Literature on H. H. The Nawab of Rampur. The Marquess of Lothian delivered the Convocation Address.

Donations amounting to Rs. three lakhs, one lakh each from H. E. H. The Nizam of Hyderabad,

H. H. The Nawab of Rampur, and H. H. the Aga Khan, were announced.

Sir Zia-ud-din Ahmed, Vice-Chancellor, emphasized the supreme need for establishing a Polytechnic Institute at Aligarh for which Rs. 30 lakhs were needed.

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University of Mysore.—I. *Personnel.*—(1) Dr. J. F. Robinson, B.A., M.D., F.A.C.S., F.R.C.S.E., Principal, Medical College, Mysore, who was on leave from the 22nd June 1937, returned from leave and assumed charge of the Office of the Principal from Dr. D. S. Puttanna, B.A., F.R.C.S.E., L.M., D.T.M. (2) Mrs. H. S. Hensman, M.A., Principal, Maharani's College, was permitted to retire from service from 17th January 1938 and Miss J. M. Black, M.A., appointed Professor of English and Principal, Maharani's College, Mysore.

II. *Lectures.*—(1) *British Delegation.*—The British Delegation to the Indian Science Congress Session held at Calcutta, were invited to visit the University. Two public lectures were arranged, one at Bangalore and the other at Mysore as under:—

Bangalore: Sir A. S. Eddington, D.Sc., LL.D., F.R.S., "The Expanding Universe".

Mysore: Sir James H. Jeans, F.R.S., "The Furthest Depths of Space".

Special lectures to college classes were delivered by Professors C. Spearman, E. Barker, in Mysore and by Professor F. A. E. Crew in Bangalore.

(2) *Extension Lectures.*—(i) Mr. B. M. Sivaramiah, Pleader, Nanjangud, delivered a lecture in Kannada (illustrated by lantern slides) at Channapatna on "Evolution of the Sound Screen".

(ii) Dr. M. V. Gopalaswamy, B.A., B.Sc., Ph.D., Professor of Psychology, Maharaja's College, Mysore, delivered a lecture in English on "The Future of the Radio in India" at each of the places, Bangalore and Shimoga.

(3) *Special Lectures.*—Special lectures were given in the Maharaja's College and Central College respectively by Dr. Hermann Goetz, and Dr. R. R. Gates.

III. *Examinations.*—The results of the Medical Examinations held in December 1937 were published. They were as follows:—

	No. Examined	No. Passed
Pre-Medical	30	19
First M.B.B.S.	29	19
Second M.B.B.S.	22	13
Final M.B.B.S., Part I ..	27	19

IV. *Academic Council.*—A meeting of the Academic Council was held on the 29th January 1938. Among the decisions arrived at, mention may be made of the following:—

(a) Institution of Post-Secondary Diploma Courses. (b) Revised detailed courses of study for the B.T. Degree examination. (c) Revised courses of study in History for the B.A. (Honours) Degree examination. (d) Revised courses of study in Economics for the B.A. (Honours) Degree examination.

V. *Endowments.*—The following endowments have been offered to the University:—

(i) By Mr. B. M. Srikantia, M.A., B.L., Professor of English, Central College, Bangalore, for the

award of scholarships for the encouragement of the advanced study of Kannada in the University: Rs. 5,000.

(ii) By Mr. T. R. Naidu, Bangalore, for the encouragement of the study of Chemistry for a degree among students of the Depressed Classes: Rs. 1,500.

(iii) By the Professor M. G. Srinivasa Rao Memorial Committee, for a prize for Proficiency in Organic Chemistry and another for Proficiency in Sports: Rs. 1,400.

VI. Recognition of Examinations and Degrees.—

(1) In connection with the question of the recognition of the M.B.B.S. degree of this University by the Royal College of Surgeons, England, Mr. Cecil Wakeley was deputed by the Examining Board of the Royal College to inspect the Medical College. Mr. Cecil Wakeley, Prof. Huggett and Mr. Horace H. Rew accordingly visited the College in January.

Travancore University.—Messrs. Harrison and Crossfield have donated Rs. 12,000 to the Travancore University for the development of Technological Studies.

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Announcements.

It is announced that an authorised biography of Lord Rutherford of Nelson is being prepared by Prof. A. S. Eve. Those who have letters written by Lord Rutherford that might be used, are requested to forward them to him at 26, Willaw Road, Hampstead, London, N.W. 3.

All-India Population and Family Hygiene Conference.—The Second All-India Population and the first Family Hygiene Conference will be held in Bombay from 16th to 19th April 1938 (Easter Holidays). The Office-bearers and sectional chairmen are:

President: Sir Vepa Ramesam; *Executive Chairman:* Lady Cowasjee Jehangir; *Chairman, Reception Committee:* Sir Jehangir C. Coyajee; *Vice-Presidents:* Mr. Jamnadas M. Mehta, Lt.-Col. Jelal M. Shah, and Mrs. How-Martyn; *Vice-Chairman:* Dr. J. S. Nerurkar; *Chairman, Subjects Committee:* Lt.-Col. S. S. Sokhey; *Chairman, Exhibition Committee:* Dr. George Coelho; *Chairman, Entertainment Committee:* Mrs. G. R. Billimoria.

Sectional Chairmen.—

Economics: Mr. P. K. Wattal; *Sociology and Anthropology:* Prof. Radhakamal Mukherjee; *Nutrition:* Lt.-Col. S. S. Sokhey; *Vital Statistics:* Prof. R. B. Lal; *Maternity and Child Welfare:* Begum S. Hamid Ali; *Birth Control and Sterilization:* Dr. V. R. Khanolkar; *Medical Problems:* Lt.-Col. W. C. Spackman; *Problems of Sex:* Lt.-Col. Owen Berkeley-Hill; *Housing and Health:* Dr. A. Y. Dabholkar.

Honorary Secretaries: Dr. A. P. Pillay and Prof. Ghurye; *Jt. Honorary Secretary and Treasurer:* Mrs. A. Thanawalla.

Those desiring to submit papers and members and delegates wishing to attend the Session should apply to the Honorary Secretaries at No. 8, Ormiston Road, Appollo Bunder, Bombay, at an early date.

The Second All-India Obstetric and Gynaecological Congress will be held at Bombay from April 13 to 16 next, under the presidentship of Dr. B. D. Mukherji of the Carmichael Medical College, Calcutta. Those who desire to attend the Congress, should communicate early to the Organising Secretary, Raj Bhuvan, Sandhurst Road, Bombay 4. A Medical Exhibition is also being arranged. Those manufacturers who desire to reserve stalls, should inform the Hon. Secretary as early as possible.

The Third International Congress for Microbiology.—The Third International Congress will be held at the Waldorf-Astoria Hotel, New York City, from September 2-9, 1939, under the auspices of the International Association of Microbiologists.

The Congress will comprise the following sections:—(1) General Biology: Variation and Taxonomy, (2) General Biology, Microbiological Chemistry and Physiology; (3) Viruses and Viral Diseases; (4) Rickettsiae and Rickettsial Diseases; (5) Protozoology and Parasitology; (6) Fungi and Fungus Diseases; (7) Medical and Veterinary Bacteriology; (8) Agricultural and Industrial Microbiology and (9) Immunology.

Dr. T. M. Rivers, Rockefeller Institute for Medical Research, will be the President of the Congress, and Dr. M. H. Dawson, College of Physicians and Surgeons, Columbia University, the General Secretary.

Biological Abstracts.—On October 1, 1937, a circular letter was sent from The Union of American Biological Societies Office to all subscribers in the United States. It advised that *Biological Abstracts* is to be published, beginning with the January issue, 1938, on a self-supporting basis. All institutions, and many individuals, profiting by its service are co-operating in the support of its publication. *Biological Abstracts* is published without profit, to anyone except to the individuals and institutions it serves.

The new basis of publication necessitates a revised scale of charges to all subscribers. The new subscription rate in all countries except the United States will be \$25.00 per year. In the United States the rates range from \$25.00 to \$200.00 per year, depending upon the number of biologists in the various institutions it serves.

The subscription price quoted is below the actual cost of gathering the abstracts and publishing them. In return for this low rate, it is hoped that biologists all over the world will co-operate in furnishing abstracts of their articles to *Biological Abstracts* as so many of them are doing now and have done in the past. A preliminary letter has gone to the Editors of numerous biological journals suggesting a possible basis for such co-operation, and an announcement regarding this will be sent at a later time.

Journal of Morphology.—Beginning from January 1, 1938, the Journal of Morphology, heretofore a quarterly, will be issued bimonthly, on the first of January, March, May, July, September, November. A volume will contain 600 pages, as formerly, and will be issued in three numbers. Two volumes will be published annually. The price is reduced from \$12.00 per volume to

\$10.00 per volume, Domestic; \$10.50 per volume, Foreign. This change has been made to meet the demands of the ever increasing number of accepted manuscripts, and to assure prompt publication. Volume 62, no. 1, was issued on January 1, 1938. Address subscriptions to The Wistar Institute of Anatomy and Biology, Woodland Avenue and Thirty-sixth Street, Philadelphia, Pa.

It is announced that available back number and volumes of the following journals will be disposed off at special prices. This offer holds good for a period of four months only commencing from January 1938:--

(1) Journal of Morphology, (2) The Journal of Comparative Neurology, (3) American Journal of Anatomy, (4) The Anatomical record, (5) The Journal of Experimental Zoology, (6) American Journal of Physical Anthropology, (7) Journal of Cellular and Comparative Physiology, and (8) The Journal of Nutrition. Address orders to the Wistar Institute of Anatomy and Biology, Woodland Avenue and Thirty-sixth Street, Philadelphia, Pa.

Chinese Universities Relief Fund.--The damage inflicted on universities in the course of the Japanese invasion has been enormous, amounting in several instances to complete destruction of all the university buildings and equipment. Concerted action has been taken by students, professors and the Chinese Government to combine the relief of distressed students with the maintenance of some form of training in centres remote from the war theatres, such as Changsha in Hunan Province. Appeals to universities in other lands have been organized by International Student Service for the relief of destitute students and for equipping them in their efforts to carry on their studies. In England there has been a response from every single university and the majority of university colleges, the amount raised in this way up to date being £3,000. The English Committee has undertaken in addition to contributing to the international fund, to assist Chinese students in Great Britain whose funds have been cut off. In a letter to *The Times* of January 7, Sir Walter Moberly, Chairman of the International Student Service, appeals for at least another £2,000. Contributions may be sent to Prof. Ernest Barker, the Hon. Treasurer of the Chinese Universities Relief Fund at 49, Gordon Square, London W.C. 1 (*Nature*, Jan. 22, 1938).

Hops for Distribution.--The Secretary, Research Fund Committee of the Institute of Brewing, announces that a small quantity of hops, viz., 21 pockets and 11 part-pockets of New Varieties, grown at the South-Eastern Agricultural College, Wye, and at the Research Station, East Malling, Kent, are available for purchase by Brewers who are willing to assist the Institute of Brewing in determining their flavour.

Several of these New Varieties have an aroma of the American type, and the co-operation of Brewers, who use American hops, is desired in order to ascertain to what extent these New Varieties could replace American hops.

All communications in regard to this matter

should be addressed to the Secretary, Brewers' Hall, Addle Street, London, E.C. 2.

The Food Group of the **Society of Chemical Industry** has formed a Microbiological Panel with a view to holding meetings for the study of the general subject of industrial microbiology. Professor H. Raistrick has been elected Chairman of the Panel and Dr. J. H. Bushill, Honorary Secretary. Anyone interested in any microbiological problem in industry will be welcomed as a member of the Panel, but if not already a member would have to join the Society of Chemical Industry. It is intended that the scope of the Panel will include (a) all food industries; (b) those industries utilising micro-organisms, e.g., agriculture, dairying, leather, fermentation industries, etc.; (c) those industries interested in the prevention of the growth of micro-organisms, e.g., in the microbiological spoilage of any raw or manufactured materials (*Chemical Age*, 1938, Jan. 15, p. 53).

Literary Intelligence.--Messrs. J. & A. Churchill, Ltd., announce that early in January a new (Second) edition of A CHEMICAL DICTIONARY by Professor Ingo W. D. Hackh was published. Dr. Julius Grant has assisted in the preparation of this new edition which contains 230 more pages of new material; nearly 100 new and original tables; new illustrations and diagrams. The price will be 48 s.

A fourteenth edition of the famous work by Clowes & Coleman entitled QUANTITATIVE CHEMICAL ANALYSIS will be ready shortly. It has again been edited by Dr. Stockdale and Mr. J. Dexter. The work has been revised thoroughly and many new tables are incorporated. The published price remains at 18 s.

In the early Spring it is hoped to issue a second edition of THE CHEMISTRY OF THE PROTEINS by Dr. Jordan Lloyd and Miss Agnes Shore. The advances in this subject have necessitated the virtual re-writing of the book. It will be considerably enlarged and will contain many illustrations.

Of interest to many workers in its special field will be the new (Eleventh) edition of Hawk & Bergeim's PRACTICAL PHYSIOLOGICAL CHEMISTRY. For thirty years this volume has been a standard work and the revised new edition will, it is felt, be as useful as its predecessors. A thorough revision has been made and much new matter is incorporated. The volume is priced at 35 s.

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We acknowledge with thanks, receipt of the following:--

"Agricultural Gazette of New South Wales," Vol. 49, No. 1.

"American Museum of Natural History," Vol. 41, No. 1.

"Allahabad Farmer," Vol. 12, No. 1.

"Biochemical Journal," Vol. 31, No. 12.

"Berichte Der Deutschen Chemischen Gesellschaft," Vol. 71, No. 1.

"Bulletin of the Health Organisation of the League of Nations," Vol. 6, No. 5.

"Bulletin of the American Meteorological Society," Vol. 18, No. 11.

"Canadian Journal of Research," Vol. 15, No. 12.

"Calcutta Medical Journal," Vol. 33, No. 1.

"Current Titles from Engineering Journals," Vol. 1, No. 3.
 "The Calcutta Review," Vol. 66, Nos. 1 and 2.
 "Chemical Age," Vol. 38, Nos. 965-69.
 "Forschungen und Fortschritte," Vol. 14, Nos. 1-3.
 "Indian Journal of Agricultural Science," Vol. 7, No. 6.
 "Indian Forester," Vol. 64, No. 2.
 "Indian Journal of Physics," Vol. 11, No. 5.
 "Indian Journal of Venereal Diseases," Vol. 3, No. 4.
 "Indian Trade Journal," Vol. 128, Nos. 1647-51.
 "Indian Journal of Veterinary Science and Animal Husbandry," Vol. 7, No. 4.
 "Journal of Agricultural Research," Vol. 55, Nos. 8 and 9.
 "Journal of the Royal Society of Arts," Vol. 85, Nos. 4439-43 and Vol. 86, No. 4444.
 "Journal of the Institute of Brewing," Vol. 44, No. 1, and Index to Vol. 33.

"Journal of Chemical Physics," Vol. 6, No. 1.
 "Journal of the Indian Chemical Society," Vol. 14, No. 11.
 "Journal of Nutrition," Vol. 15, No. 1.
 "Journal of Research (National Bureau of Standards)," Vol. 18, No. 6, and Vol. 19, Nos. 1-3.
 "Lingnan Science Journal," Vol. 16, No. 4.
 "Monthly Bulletin of Agricultural Science and Practice," Vol. 29, No. 1.
 "Medico Surgical Suggestions," Vol. 7, No. 1.
 "Nature," Vol. 140, Nos. 3557-60.
 "The Philippine Agriculturist," Vol. 26, No. 8.
 "Review of Applied Mycology," Vol. 16, No. 12.
 "Research and Progress," Vol. 4, No. 1.
 "Science and Culture," Vol. 3, No. 7.
 "Sky," Vol. 2, No. 3.
 "Science Progress," Vol. 32, No. 127.
 "Transactions of the Faraday Society," Vol. 34, No. 201.

Catalogue.

"Wheldon and Whesley's Catalogue," Part 3, 1938.

ACADEMIES AND SOCIETIES.

Indian Academy of Sciences:

January 1938. SECTION A.—S. S. PILLAI: *On the Addition of Residue Classes*. F. C. AULUCK: *On Conics Connected with Four or More Lines*. S. RANGASWAMI AND T. R. SESHADRI: *Fixation of the Aromatic Double Bonds in the Coumarin Ring System*.—It is concluded from the reactivity of 7-hydroxy coumarin and its derivatives that the nuclear double bonds are not fixed and are capable of assuming alternative positions. C. S. VENKATESWARAN: *The Hydroxyl Frequency in the Raman Spectra of Acids and Acid Salts*.—A weak and diffuse band characteristic of O—H group has been recorded in the Raman spectra of sulphuric, iodic, selenious and telluric acids. The frequency values however are lower than that for a free hydroxyl. This is apparently connected with the formation of hydrogen bonds. R. S. KRISHNAN: *The Reciprocity Theorem in Colloid Optics and its Generalisation*.—The reciprocity relation is deduced theoretically. It is valid for a solution containing a large number of particles which have no preferred orientation in the plane containing the incident and scattered beam, and also for conditions of oblique scattering. The relations for oblique scattering have been experimentally verified in the case of graphite and arsenic trisulphide sol. S. BHAGAVANTAM AND B. SUNDARA RAMA RAO: *Light Scattering and Other Allied Physical Properties of Ordinary and Heavy Water*.—The adiabatic compressibility and depolarisation have been measured. The calculated relative scattering powers of D₂O and H₂O, 1.8 : 2, are in good agreement with observations. P. NILAKANTAN: *Magnetic Anisotropy of naturally occurring Substances. III. —Wood and its constituents*.—It is found that the 'crystalline' element in wood is definitely cellulose, and that the direction of maximum diamagnetic susceptibility in the cellulose molecule is along the length of the chain. BAWA KARTAR SINGH: *The Physical Identity of Enantiomers. Part V.—The relation between concentration and*

viscosity of solutions of d-, l-, and dl- forms of Camphor, Iso-nitroso Camphors, Camphor quinone, Camphoric Acid, and Sodium Camphorate. A. NARASINGA RAO: *On the Miquel-Clifford Configuration*.

January 1938. SECTION B.—D. N. MAJUMDAR: *The Relationships of the Austrie-speaking Tribes of India, with Special Reference to the Measurements of H₂ and Saoras*.—From an analysis of two new series of anthropometric measurements of H₂ and Saoras, and by a comparison of the statistical constants with those of the series available, it is shown that four distinct ethnic groups are represented among the Austrie-speaking tribes. S. N. DAS GUPTA: *On the Culture Behaviour of a Species of Rosellinia II.—Further Experiments in the Production of Perithecia*.—The effect of various chemicals—*asparagin*, potassium nitrate, acid, alkali and C/N ratio on the production of *perithecia* in a species of *Rosellinia* is recorded. B. KRISHNAMURTI: *A Microscopical Study of the Development of Trichogramma minutum Riley (The Egg Parasite of the Sugarcane Borers in Mysore) and its Parasitisation of the Eggs of Corcyra-cephalonica Staint (The Flour-moth employed in the Mass Production of Trichogramma)*. P. SEN: *On a New Species of Acanthocephala, Acanthocephalus holospinus sp. nov. from the Fish Barbus stigma (Cuv. and Val.)*.—The morphology and anatomy of the parasites obtained from fish guts are recorded. COL. I. PROHLANO DE MELLO AND LUIS DA FONSECA: *On the Schizogonic Forms of a Plasmodium found in the Blood of the Green Snake, Passerita mycterizans Daud.*

Meteorological Office Colloquium, Poona:

December 14, 1937.—Dr. S. K. Banerji—On the theory of cyclone formation at extra-tropical fronts and developed by Norwegian meteorologists,