

## SCIENCE NOTES AND NEWS

Inaugurating the first Joint Session of the Indian Academy of Sciences, and the National Academy of Sciences, India, held in Hyderabad (Deccan), H. H. the Prince of Berar said: "Your efforts in the field of science will, I feel sure, help India to join in overcoming the forces of aggression and in marching with steady step towards peace and prosperity. You have done much to give India a prominent place in the scientific world and I am sure you will meet with further success in solving the mysteries of Nature and in using her gifts for the progress of mankind."

Welcoming the Fellows and delegates of the Joint Session of the Indian Academy of Sciences and the National Academy of Sciences, India, held in Hyderabad, Md. Abdur Rahman Khan, President of the Hyderabad Academy, said:—

"In these days of ultra-specialisation it is impossible for any one man to appreciate fully the deliberations of the various sections in which the activities of the Science Academies here assembled will be conducted. Allow me, however, to point out that, through your brilliant researches and epoch-making discoveries you have given India the foremost place in the domain of Academic activity in Asia. To Sir C. V. Raman, in particular, to Sir P. C. Ray, Professors Saha, Birbal Sahni, Bhatnagar, Krishnan and Bhabha and a host of others, we are indebted for placing India in the forefront of international renown. We are looking forward to your contributions in post-war reconstruction schemes to such important branches of Applied Science as aeronautics, navigation, military and marine engineering, industrial and biochemistry, etc., which will make India a self-contained and self-supporting unit in the galaxy of progressing nations.

"Civilization owes a tremendous debt to the early astronomers of Egypt, Babylonia, Assyria and China; to the savants of ancient Greece (mostly through the institution of Plato's Academy in the modest grove of Academus in Athens, hence the name Academy which we are all proud to adopt), to the all-round contributions of Arab intellect and to Hindu mathematics and medicine.

"Our present experience has brought home to us all too plainly the inadequacy of purely scientific investigations, unleavened or modified by philosophical contemplation and philanthropic conceptions, treating the whole human race as a single entity, undifferentiated by artificial distinctions of caste, colour, creed or nationality. India, the land of Gautama Buddha and Amir-Khusrau, may yet be able to bring the world back to Peace and Plenty, Co-operation, Contentment and Universal Happiness, through the practice and preaching of its God-fearing and man-loving philosophers. Let us pray that this goal is not far off and we shall soon witness its blessings spread all over the globe, as was done on more than one occasion in the past.

"Coming down to more local matters, I have a more mundane, and to a large extent, personal message to offer. Having retired from Government service, I was abruptly cut off from the experimental world; but human mind easily adapts itself to environment. I found ample scope for incessant work in the pursuit of observational astronomy, like the determination of meteor radiants, the significance of moon-lit meteors and the drift of long-enduring trains, disclosing the presence of strong convection currents in the upper atmosphere; and the equally interesting study of Variable Star phenomena. To calculate the heights and orbits of exceptionally bright meteors and make a systematic study of their spectra, a number of keen observers provided with suitable apparatus and scattered over different parts of the country, are needed. Harvard and Yale, the British Astronomical Association, the Flower Astronomical Observatory of Pennsylvania, the University of Toronto, Canada and the Sternberg Astronomical Institute of Moscow (to name only a few) are devoting more and more attention to these fascinating topics and publishing the results of their observation and research. May I take this opportunity to invite some of you gentlemen, with more leisure at your disposal, to participate in this movement and fill up the gap in our programme of scientific investigations?"

In the course of his welcome address to the delegates of the Thirty-first Session of the Indian Science Congress held at Delhi, Sir Maurice Gwyer said:

"Indian science has already achieved a position second to none in the world, and Indian men of science have it in their power to make a contribution to the future welfare of India almost beyond human computation. They can transform the face of India, they can multiply its wealth, they can solve the problems of ignorance and poverty; and who knows whether they may not even be able to solve the most intractable of all, India's constitutional problems? It is the earnest prayer of all who have the happiness and welfare of this country at heart that all these problems, surveyed in the calm and serene atmosphere of science by men consecrated to the search for truth and nothing but the truth, with minds free from prejudice or bias, may find a solution, or at least the beginnings of a solution, at the meetings this week in Delhi.

By the irony of circumstance, war, that great enemy of human progress, affords the most powerful stimulus to scientific research that we know; but good can come out of evil, as war is followed by peace; and that part of the world which still loves peace and still believes in human personality in the dignity of man and in honest dealing between nation and nation, will benefit hereafter from the labours of scientists to put new and ever more potent weapons in its hands to defeat the enemies of mankind. For those and for the many other

blessings which, by the goodness and mercy of God, men of science have bestowed upon us, we tender them our gratitude; and we hope that their labours this week and the discussions and contacts which a gathering like this makes possible will bear fruit a hundredfold.

In the course of his Presidential Address to the twenty-sixth session of the Indian Economic Conference held in Madras, Dr. B. V. Narayanaswamy Naidu said: "Hitherto the material resources of India have been mobilised for winning the war. The time has now come for us to realise that as soon as the war is over, this mobilisation cannot be dropped but has to be reoriented for winning the greater victories of peace. It is up to us to realise, that we have to see to it that the war controls are carried on into peace-time and utilised by capable and sympathetic hands for the promotion of India's wealth and welfare. The aim should be steadily kept in view to bring about a maximum utilisation of the material and human resources of the vast sub-continent of India in the interests of all its inhabitants. Such a plan will lead to the providing for all Indians the minimum of necessities like food, clothing, housing, medical help and education."

In any scheme of social welfare, provision for cheap, abundant and nourishing food should take the place of honour. Taking as basis a family of three adults and two children, the minimum annual food requirement for this unit would be Rs. 240, if we are to take Dr. Aykroyd's standard, while other essentials like fuel would demand an additional Rs. 120. According to this computation, every individual with a family requires Rs. 30 per mensem excluding contributions for social insurance. This would involve a provision for a total income of at least Rs. 3,000 crores a year. At the same time, it must be borne in mind that this is only the minimum; the average is bound to be higher and therefore in order to ensure the minimum to all, the national income will have to be many times this figure.

No effort should be considered too arduous, no expense too heavy for carrying into execution a comprehensive plan which will include both agriculture and industry. Whenever in the past a plea was made for nation-building activities, an old horse, named lack of capital, was trotted out by obscurantists. Where there is a will to bring about a new order in India, the way can surely be devised. If there is to be an easy transition from a war economy to a peace economy, if India's millions are not to be for ever starving, ignorant and suffering, a co-ordinated plan for industrial and agricultural development, is a prime need."

"Any planned scheme of economic development for India", proceeded Dr. Naidu, "must not be a slavish imitation of Western industry with its urban civilisation and perpetual clash of classes. Industry at the present day has reached a stage when it is dependent for its very existence and survival on the sympathy, encouragement and active support of the State. When a State like India wants to promote new industrial ventures, it can itself undertake the organisation, and see that it is worked in the interests of all the people. Even if new enterprises are entrusted to individual or cor-

porate management, the State should insist that the benefits thereof flow equally to the whole community and are not utilised to promote the profits and interests of a few. In other words, the planned economy of post-war India must be so conceived and designed that surely and inevitably it will lead ultimately to a socialistic new order in India."

At the twenty-fourth session of the All-India Liberal Federation held in Bombay, the Federation adopted a resolution on post-war reconstruction. The resolution, referring to the Committees appointed by the Government of India and certain Provincial Governments for the purpose, emphasised that the main functions of such Committees would be to lay the foundations of a well-planned economy which would increase the cultivation of productive crops, improve agricultural methods, expand rural reconstruction and liquidate illiteracy. Among other essential requirements, the resolution continued, are the improvement and extension of communications and works of irrigation, the creation of an Indian mercantile marine, increased medical aid, the establishment of better health conditions, the provision of social services such as insurance against sickness and unemployment, and a general improvement in the standard of living.

The resolution further urged the Government to have a settled policy to assist in the establishment of new industries and in the development of the natural resources of the country; and pointed out the necessity, after the war, of the protection of nascent industries against foreign competition.

For the first time in its annals, a meeting of the Royal Society was held outside England, when Prof. A. V. Hill, on behalf of the President of Royal Society, admitted Dr. S. S. Bhatnagar and Prof. H. J. Bhabha to the fellowship of the Society.

As these distinguished scientists could not go to England on account of the war, the Royal Society empowered Prof. Hill to admit them by holding an extraordinary meeting attended by the delegates to the Indian Science Congress.

Prof. Hill on that occasion stated:

"This occasion is unique in the fact that, for the first time in its 281 years, the Royal Society is holding a meeting outside England."

Sir C. V. Raman has been re-elected President of the Indian Academy of Sciences for the period 1943-46 at the ninth annual session of the Academy held at Hyderabad. Dr. H. J. Bhabha, Dr. K. R. Ramanathan, Prof. Birbal Sahni and Lt.-Col. S. S. Sokhey were re-elected Vice-Presidents.

The following have been elected Fellows of the Indian Academy of Sciences at the Ninth Annual Meeting held at Hyderabad:—Major Inderjit Singh, Ph.D. (Cantab.), I.M.S., Officer-in-Charge, Brigade Laboratory, Allahabad. Dr. R. S. Krishnan, M.A., D.Sc., Physics Department, Indian Institute of Science, Bangalore. Prof. G. P. Majumdar, M.Sc., Ph.D., Professor of Botany, Presidency College, and Lecturer, Calcutta University, 19, Ekdalia Place, Ballygunj, Calcutta. Dr. G. V. L. N. Murty, D.Sc., Research

Chemist, Tata Iron and Steel Works, *Jamshedpur*. Prof. L. Narayan Rao, M.Sc., Ph.D. (Lond.), Professor of Botany, Central College, *Bangalore*. Dr. V. Ramaswami, B.A. (Cantab.), Ph.D. (Cantab.), Head of the Department of Mathematics, Andhra University, *Guntur*. Dr. K. L. Ramaswamy, D.Sc., Superintendent of Works, Mysore Chemicals and Fertilisers, Ltd., *Belgola*. Prof. K. P. Rode, M.Sc., Ph.D., Head of the Department of Geology, Andhra University, *Guntur*. Dr. U. Sivaraman Nair, M.A., Ph.D., Assistant Professor of Mathematics, University College, *Trivandrum*. Prof. K. Sreenivasan, B.Sc., A.I.I.Sc., M.I.E.E., Mem.I.R.E., Mem.A.I.E.E., Head of the Department of Electrical Technology, Indian Institute of Science, *Bangalore*. Prof. C. S. Venkateswaran, M.A., D.Sc., F.Inst.P., Professor of Physics, University of Travancore, *Trivandrum*.

**Lady Tata Memorial Trust: Research Scholarships for 1944-45.**—(1) Applications are invited for six Scientific Research Scholarships of the value of Rs. 150 per month each for the year 1944-45.

(2) The Scholarships are open to men and women, and will be tenable for a period of twelve months commencing from the 1st July 1944. Any or all the Scholarships may be extended for a further period of twelve months, within the discretion of the Trustees. All old scholars who desire renewal should re-apply.

(3) Applicants, who must be of Indian nationality, must be Graduates in Medicine or Science of a recognised University. They must undertake to work whole-time and will be debarred from private practice. In the duration of the period of his scholarship or award the recipient of the benefit shall devote himself to the work before him to the entire satisfaction of the Trustees, who reserve the right to withhold payment on the recommendation of the Advisory Committee.

(4) The subject of scientific investigation which they may select must have a bearing directly or indirectly on the alleviation of human suffering from disease.

(5) Applications must be forwarded through the Director of a recognised Research Institute or Laboratory where the candidate proposes to work and must be accompanied by a letter from the Director stating that he has critically examined the details of the proposed Research, that he approves of the general plan and that he is willing, as far as possible, to guide and direct the investigation and give laboratory facilities.

(6) Candidates will be required to furnish the following additional information in their application, along with certificates of physical fitness and character: (a) Full Name, (b) Age, (c) Sex, (d) Permanent Address, (e) Details of Academic Career, (f) Particulars of their past and present Research qualifications, (g) Particulars of the proposed Research, and (h) *What other emoluments, scholarships and pay or any other financial support from friends or relations they are or will be in receipt of during the period they are Scholars and the amount if any.*

(7) Applicants must give (a) a short resumé on the subject indicating present state of knowledge and (b) details of the proposed research

indicating (i) the methods intended to be employed, (ii) previous experience in the use of these methods and (iii) the experiments to be carried out.

(8) Applications, which must be typed, must give full particulars in the order indicated above and must be addressed to the *Secretary, The Lady Tata Memorial Trust, Bombay House, Bruce Street, Fort, Bombay*, so as to reach him not later than 15th March 1944.

(9) Applicants are warned that any canvassing, direct or indirect, of the Trustees or Members of the Selection Committee, will entail disqualification, and also that the Scholarships are liable to be terminated without any notice on receipt of any unfavourable report from the Director under whom a Scholar may be working.

(10) The result of the selection will be announced on the 18th June 1944 and the successful candidates will be required to report themselves for duty, to their respective Directors, on the 1st July 1944.

(11) Scholars will be required to submit periodical progress reports every six months to the Secretary of the Trust, through the Directors and with their remarks of the work done.

**Indian Mathematical Society: The Narasinga Rao Medal for Mathematical Research.**—The Indian Mathematical Society has instituted a medal for the encouragement of mathematical research endowed by Dr. A. Narasinga Rao of the Annamalai University. The medal will be awarded to the best solution or contribution towards the solution of a specified problem in mathematics. A period of at least eighteen months will be given for the submission of theses dealing with the problem and the award will be made at the Conference of the Indian Mathematical Society which meets immediately after its adjudication. To be eligible to compete for the medal, the competitor must be of Indian domicile and must be a member of the Indian Mathematical Society at the time of submitting the thesis and at the time of award. There is no entrance fee.

One of the objects of the award is to direct the attention of younger researchers in India to modern topics in mathematics which have not so far received their due share of attention.

Particulars regarding the first prize problem under the above endowment which was selected by a special committee at the Annamalai-nagar Mathematical Conference, can be had from the Secretary.

Theses connected with the problem should be sent to Dr. A. Narasinga Rao so as to reach him before the end of July 1945.

The Syndicate of the University of Utkal has accepted a sum of Rs. 7,000 donated by the Public Utility and Charitable Fund of the district, towards the establishment of a university library.

**A Possible Reprinting of Saccardo's *Sylloge Fungorum*.**—The Alien Property Custodian has recently announced (*Science*, 1943, 97, 303-4) that many technical books and sets of books of Axis origin are available for republication. The procedure to be followed in obtaining necessary licences and other details is given

and it is clear that every encouragement will be given to bring about prompt reproduction of books of this kind.

To mycologists and plant pathologists this announcement immediately suggests the possibility of the reproduction of Saccardo's classical *Sylloge Fungorum* in usable form. This compendium of mycological descriptions is a *sine qua non*, and the comparatively few sets now in use in the Americas are showing the effect of much use. Additional copies have been practically non-existent heretofore, only occasional sets appearing on the market at rare intervals and at exorbitant prices. There are undoubtedly many institutions as well as individual mycologists and plant pathologists who will welcome an opportunity to purchase a set of Saccardo. Even those libraries now possessing the work will likely desire an additional set to relieve the wear and tear on the original.

It has been ascertained that a satisfactory reproduction of the 25 volumes can be produced. If 100 subscriptions are obtained by September 1, the complete set of 25 volumes can be obtained at \$200.00 per set; if 300 subscriptions are obtained, the price will be \$150.00 per set. These prices are based on an offset edition, with the type block photographically reduced ten per cent.

In order that the undersigned may obtain an idea of the number of prospective purchasers, interested mycologists are requested to send in tentative subscriptions and to interest their respective institutions in doing likewise.  
Bureau of Plant Industry

Station, Beltsville,  
Maryland.

JOHN A. STEVENSON.

It is understood that the Government of India will soon constitute an industrial commission consisting of about ten prominent industrialists who will undertake an extensive tour of the United Kingdom and the United States of America in order to study the development of industries and discuss ways and means by which their war-time industries will be changed to fit the peace-time economy during the post-war period.

The Government of India have appointed a committee, under the chairmanship of Mr. D. V. Rege, I.C.S., to report upon a "Beveridge Plan" for industrial workers during the post-war period.

A complete assembly for the manufacture of sugar on a cottage industry scale, has been designed and constructed at the Sugar Research and Testing Station, Bilari. The plant can be operated by the grower with the aid of his family and his bullocks. Besides yielding a higher return for the labour involved, the sugar manufactured with this plant is free from excise duty as no motive power is employed.

The Government of Mysore have decided to organise the Sericulture Industry in the State on a more stable basis. In this, they are to take advantage of the prevailing absence of competition from China and Japan and the

consequent rise in the price of silk, for the benefit of the industry. The Silk Control Order which has been recently promulgated seeks to further the war effort and secure the permanent advance of the industry. A third of the net profits realised by the sale of silk in the State is earmarked for researches directed towards the consolidation and expansion of the industry.

Benares Hindu University.—Mr. C. Dakshinamurti has been awarded the D.Sc. of the Benares Hindu University, in Physics, at the Convocation held on the 28th November 1943 for his thesis "Doppler Effect in Positive Rays of Hydrogen, etc."

### MAGNETIC NOTES

Magnetic conditions during December 1943 were slightly less disturbed than in the previous month. There were 11 quiet days, 19 days of slight disturbance and 1 day of moderate disturbance as against 16 quiet days, 13 days of slight disturbance and 2 days of moderate disturbance during the same month last year.

The quietest day during December 1943 was the 6th and the day of the largest disturbance the 16th.

The individual days during the month were classified as shown below.

Quiet days	Disturbed days	
	Slight	Moderate
6-8, 11-13, 15, 24, 27, 28, 30.	1-5, 9, 10, 14, 17-23, 25, 26, 29, 31.	16

No magnetic storms occurred during the month of December in the years 1942 and 1943.

The mean character figure for the month of December 1943 was 0.68 as against 0.55 for December 1942.

M. V. SIVARAMAKRISHNAN.

We acknowledge with thanks the receipt of the following:—

"Journal of the Royal Society of Arts," Vol. 91, Nos. 4651, 4652.

"Annals of Biochemistry and Experimental Medicine," Vol. 3, No. 2, 1943.

"Calcutta Review," Vol. 89, No. 2; and Vol. 90, No. 1.

"Journal of the Indian Chemical Society," Vol. 20, No. 10.

"Chemical Products and Chemical News," Vol. 6, Nos. 9 to 12.

"Indian Farming," Vol. 4, No. 7.

"Transactions of the Faraday Society," Vol. 39, Pts. 9 and 10.

"Indian Forester," Vol. 70, No. 1.

"Central Board of Irrigation (Bulletin)," No. 1, Oct. 1943.

"Indian Trade Journal," Vol. 151, Nos. 1956, 1958; Vol. 152, No. 1959.

"Monthly Science News," No. 27.