

SCIENCE NOTES AND NEWS

Mother and Child Combinations of Blood Groups and Blood Types in Calcutta.—A paper relating to the study of blood groups was read at the ordinary meeting of the *Royal Asiatic Society of Bengal*, held on Monday, January 1, by Dr. Eileen W. E. MacFarlane. The author has examined bloods from 252 matching pairs of mothers and babies. "Among these 127 were homospecific and 125 were heterospecific. There is no significant difference in frequency of premature births nor in weight at birth between these two groups. Agglutination time of agglutinin B in cord blood is similar to that in adults but for A it is almost twice as long. Only about one-third of the infants have demonstrable agglutinins at birth. Sub-group A., is found in between 2% and 3% only of Indians in Calcutta. One hundred matching pairs of mothers and babies were typed for M, MN and N. Among them 56 were homotypic and 44 heterotypic. No exceptions to the expected possible combinations of mother-child blood types or blood groups were found. The proportions of the blood types were found to be of the same order as reported for Calcutta by previous workers, with somewhat more of MN and less of type M. The Calcutta Muslims examined resemble in their blood group proportions the up-country Khattris and not the rural Bengali Muslims."

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"Anastomoses between the Rectal and Uterine Views forming a connection between the Somatic and portal venous system in the Recto-uterine pouch," E. G. WERMUTH, *Jour. Anat.*, 1939.—In this important contribution, the author has given a description of the various anastomoses between the uterus and the rectum. These anastomoses between the portal and somatic venous systems were hitherto unknown. The significance of these anastomoses, in normal and pathological conditions, is discussed with special reference to the spread of infection from the uterus and parametrium towards the portal vein. It is suggested that in portal congestion these anastomoses are of greater importance than the circumanal anastomoses.

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Fumigation of Rat Burrows as an Anti-Plague Measure.—Health Bulletin No. 21 (By Lt.-Col. W. J. Webster, M.C., I.M.S.; Manager of Publications, New Delhi, Second Edition, 1939, Price 2as. or 3d.) gives full details for conducting fumigation of rat burrows by hydrocyanic acid gas which is now recognised as the fumigant of choice as far as the lethal effect on rats and fleas is concerned. Experiments have been carried out in the Cumbum Valley in the Madras Presidency and also at Bombay and Lahore under the auspices of the *Indian Research Fund Association*, the Travancore Durbar and the Bombay and Punjab Governments and it has become evident that "such products as Calcid, Cyanogas 'A' dust and Cymag are powerful

lethal agents for rats and rat fleas and that they can be successfully applied to rat burrows and that they are, therefore, valuable weapons in the fight against plague." "The work in Madras Presidency indicates that to maintain a steady low level of rat-population in villages fumigation should be repeated at least once in three months. It is suggested that if this were continued over a period of three years there might be a prospect of eradicating plague from endemic foci." The bulletin gives valuable information on the treatment of cyanide poisoning, chemical tests for the detection of hydrocyanic acid, etc.

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International Trade in Certain Raw Materials and Foodstuffs, 1938.—A new volume entitled *International Trade in Certain Raw Materials and Foodstuffs by Countries of Origin and Consumption, 1938* (Ser. L.O.N.P., 1939, II. A.22, 178 pp., 6/-), which is the fourth of its kind, has just been published by the Economic Intelligence Service of the *League of Nations*. It gives an account of the movement from one country to another of the commodities dealt with.

This volume contains provisional statistics for 1938 as well as revised and completed statistics for 1936 and 1937 relating to 38 commodities. These commodities include wheat, sugar, rubber, wood in various forms, hides, wool, cotton, silk, iron and steel, copper and motor spirit. The number of importing countries covered by the various tables is 125, as compared with 42 in the first volume. The statistics are thus practically world-wide, the 125 countries dealt with representing 98% of the total world trade.

The object of this volume is to show the sources from which countries do in reality obtain their raw materials and foodstuffs. The trade returns published by many countries fail to furnish this information or they indicate some intermediate country from which the goods have been sold or consigned and not the country from which they originated.

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Methods for the Detection of Toxic Gases in Industry.—Four new leaflets in the series describing methods for determining low concentrations of dangerous gases which may occur in the atmosphere in industrial works have now been published by H.M. Stationery Office for the Department of Scientific and Industrial Research.

(1) Leaflet No. 8 describes a method whereby concentrations of *Phosgene* down to 1 part in 1,000,000 may be quickly estimated by drawing a sample of the atmosphere through a test paper and comparing any stain so obtained with a standard colour chart. (2) Leaflet No. 9 describes a method whereby concentrations of *Arsine* down to 1 part in 250,000 may be quickly estimated by drawing the atmosphere under test through a test paper and comparing any

stain so obtained with a standard colour chart. (3) Leaflet No. 10 describes a method whereby concentrations of *Chlorine* down to 1 part in 1,000,000 may be quickly estimated by drawing samples of the atmosphere through a bubbler containing a solution of a suitable chemical and comparing the depth of colour developed with a series of standard colours. (4) Leaflet No. 11 describes a method whereby concentrations of *Aniline Vapour* ranging from 1 part in 5,000 to 1 part in 200,000 may be quickly estimated by a refinement of the bleaching powder test, which has been made quantitative by comparing the colours obtained at known concentrations with a series of standard colours prepared from a dye.

A pamphlet describing the complete series of gases and vapours to be covered is obtainable on application to the Secretary, Department of Scientific and Industrial Research, Teddington, Middlesex.

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Wood and Charcoal as Fuel for Vehicles.—A contribution to the literature on alternative fuels for vehicles has been issued by the *National Research Council of Canada* (Ottawa, 1939, pp. 23, price 25 cents) under the title "Wood and Charcoal as Fuel for Vehicles". This mimeographed publication contains a list of recent articles on this subject that have appeared in English, French, German and Italian books and periodicals, and gives brief accounts of their contents. The articles reviewed deal with test results, industrial performance and design of equipment, and show the present economic status of vehicles driven by gas from wood and charcoal.

It is pointed out in the publication that France has about 4,400 of these vehicles, Germany and Italy about 2,000 each, England very few. The use of such vehicles in Germany and Italy will be restricted by Germany's status as an importer of wood, and the inability of Italy to produce sufficient charcoal to drive more than 6,000 vehicles. Italy and France both have regulations aimed at increasing the number of wood-gas-burning vehicles.

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Handbook of Empire Timbers is a publication, compiled by the *Forest Products Research Laboratory* of the Department of Scientific and Industrial Research. It contains up-to-date information on the properties, uses, and supplies of nearly 100 timbers of Empire origin that are now being offered in the home markets, and gives strength values, saw specifications, and kiln schedules appropriate to the different timbers dealt with. Much of the information has accrued since the Empire Marketing Board issued a Handbook with the same title in 1932. The pamphlet is priced 3s. 9d. (post free) and can be had from H.M. Stationery Office, London, W.C. 2.

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The Rothamsted Experimental Station Report, 1938.—The yearly account of the activities of the Rothamsted Experimental Station is addressed to two sections of the agricultural readers: those mainly interested in farming the land or advising in direct practical problems,

and the scientific specialists whose highly technical and often rather intangible researches will form the basis for the practical advances of the future. For farmers the main field covered is crop production including manuring, cultivation and soil improvement, and plant disease caused by insect, fungus, and virus agents. The section dealing with a large body of data on wheat-growing, particularly in relation to the growth of consecutive crops of wheat on the same land, is of great value at the present time. The effects of manures and of previous system of cropping are summarised, and the existing knowledge on the control of Take-all disease, one of the most serious menaces in intensive wheat cultivation, is set out. A further pressing problem in a period of exhaustive cropping will be the maintenance of organic matter in the soil, and preliminary experiments on the use of surplus straw and of prepared dust-bin refuse from the towns are reported. The section dealing with the action of fertilisers contains a summary of the work carried out by the Rothamsted staff and their collaboration at outside centres in the past seventeen years. This work covers a wide range of crops and soils and is always associated with soil analysis in order to examine the value of various chemical methods proposed for the prediction of manurial requirements. In the Statistical Department methods of field experimentation and the treatment of the results are being further developed with a view of linking together high precision and economy of work in the field. A study has been made of the handling of agricultural data obtained by survey or questionnaire methods, this is in effect the systematisation of a large body of experience as distinct from the interpretation of numerical data derived from an experiment. The report contains a series of short summaries covering the current work of the laboratory departments, and includes abstracts of the 97 scientific and technical papers published during the year.

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Jute Grading Experiments.—With a view to train jute growers in selling their produce in graded form, an interesting experiment is now being carried out by the *Indian Central Jute Committee* at Kendupatna, Cuttack (Orissa). Over 300 growers have joined a Co-operative Jute Sales Society, set up by the Development Department of the Government of Orissa and financed by the *Indian Central Jute Committee*. Instructions are given to grower-members in the principles of jute grading, by demonstrating the methods of assorting and the qualities that go to make up each work. The growers are evincing keen interest.

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Coal Mining in India, 1938.—A record output of coal and a record number of persons employed in coal mining coupled with a small general increase in the wages paid in practically all the coal-fields, and high prices for coal at the beginning of the year, followed by a decline towards the end, are some of the main features of the mining industry in India, to which attention is drawn in the *Annual*

Report of the Chief Inspector of Mines in India for 1938, just published.

The output of coal in 1938 was over 25,250,000 tons of a declared value of Rs. 9,50,00,000 representing an increase in the output of a little less than 3,000,000 tons as compared with 1937, and an increase in value of Rs. 2,50,00,000. There were increases in output in the Jharia, Raniganj, Karanpura, Fench Valley and Assam coal-fields and decreases in the Bokaro and Giridih ones. The number of coal mines worked was 665, and the number of metalliferous (including stones, etc.) mines at work was 1,288 in the year.

Despatches of coal amounted to over 21,000,000 tons. In addition, nearly 1,500,000 tons were consumed on the collieries. The quantity of coal used for coking at the collieries was nearly 1,500,000 tons and 901,000 tons of soft coke and 104,000 tons of hard coke were made.

Coal exports amounted to nearly 2,250,000 tons, as compared with over 1,750,000 tons in 1937.

There was a decrease of about 34,000 tons in the output of manganese ore, the figures of production being 766,000 tons, valued at about Rs. 1,25,00,000, as compared with 800,000 tons valued at about Rs. 2,75,000 less in 1937. Output of iron ore also declined from 1,587,000 tons, valued at Rs. 27,50,000 in 1937 to 1,421,000 tons valued at Rs. 27,00,000.

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Ulla Grass for Paper-making.—Investigations on the utilisation of *Ulla* grass (*Anthistiria gigantea*), found in abundance in the United Provinces, for the production of wrapping and packing papers, have been completed at the Forest Research Institute, Dehra Dun. These investigations indicate the possibility of manufacturing, from *Ulla* grass, packing and wrapping papers which will approach in quality, the imported imitation *kraft* papers and which will be superior to the brown wrappings imported into or manufactured in this country. The development of both large- and small-scale industries and the rise in the economic standards in the country point to an increasing demand for packing and wrapping papers of the *kraft* quality.—(*Indian Forester*, January 1940, pp. 47.)

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The 75,000-pound Antarctic Snow Cruiser devised by Dr. Poulter and owned by the Research Foundation of the Armour Institute of Technology, is now on its way to the South Pole. Rear Admiral Richard E. Byrd is in command of the Cruiser and this is the third time that Messrs. Bausch & Lomb has been called upon to supply much of the optical equipment.

The cruiser is equipped with bunks, galleys, laboratories, machinshop and dark room and will carry a plane on its back, thus providing a movable base for the operation of field parties. The research programme laid out for the scientific members, according to a press note issued from Rochester, include: "Geo-

magnetic studies, astronomic observations, a renewed attack on unknown sectors of Antarctica, detailed surveys, meteorological observations, radio tests, metabolism studies, seismic prospecting, biological and zoological collecting, and geology, will occupy the time of some twenty scientists and their aides. The expedition has had the aid of a group of 30 scientists of the National Academy of Sciences in planning the programme for the United States Antarctic service.

"Spurred by the increasing number of claimants to slices of the Antarctic and its future possibilities as an aerial, meteorological and observational base, the United States Government has voted funds to make a thorough survey of this territory and a comprehensive study of its resources. The American claims which are undisputed will add a domain vaster than Alaska, afford protection for our whaling interests, and give us an opportunity to establish observatories for long-range forecasting of weather.

"Coal resources, second only to those in the United States, together with oil, copper, nickel and tin, are believed to await the development of Antarctica.

"Only 575 nautical miles separate the tip of South America from Palmer Land in the Antarctic, an easy plane flight, lending point to our extension of the Monroe Doctrine clear to the pole."

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South Indian Science Association, Bangalore.—The Annual General Body Meeting of the Society was held at the Central College, on November 25, 1939. The following were elected members of the Managing Committee for the year 1940:—Dr. B. Sanjiva Rao (*President*), Dr. K. S. Gururaja Doss (*Treasurer*), Dr. M. N. Ramaswamy (*Secretary*), Mr. H. S. Venkataramiah (*Joint Secretary*), Mr. B. H. Iyer, Mr. E. H. Krishna, Dr. P. Krishna Rao, Prof. L. Rama Rao, Dr. S. Subba Rao and Prof. A. V. Telang.

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The Ninth Annual Session of the National Academy of Sciences was held at Allahabad on 13-14 January 1940. H.E. Sir Maurice Hallett, the Governor of the United Provinces, who is the patron of the Academy, inaugurated the session.

Sir Shah Mohumud Sulaiman was re-elected President for the year 1940.

The Education Minister's Gold Medal was awarded to Dr. Mohammad Abdul Tamid Siddiqui, Professor of Anatomy, King George's Medical College, Lucknow, in consideration of his paper on "Geneto-urinary System of the Indian Ground Squirrel".

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Mr. J. B. Ross was elected President of the Mining, Geological and Metallurgical Institute of India for 1939-40 at the annual general meeting of the Institute held at Calcutta on January 12. Mr. J. J. Ghandy, Mr. E. S. Pinfold and Rao Bahadur D. D. Thacker were elected Vice-

Presidents and Dr. A. L. Coulson, Honorary Secretary.

The Government of India Prize of Rs. 500 was awarded to Mr. A. Wilson Haig for his paper on "Coal Carbonization and some of Its By-Products".

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National Institute of Sciences of India.—At the annual meeting of the Institute held at Madras on 2nd January, Bret.-Colonel R. N. Chopra, C.I.E., M.A., Sc.D., F.R.C.P., Director, School of Tropical Medicine, Calcutta, was re-elected President of the Institute for the year 1940. Sir U. N. Brahmachari and Dr. A. M. Heron were elected Vice-Presidents. The other Office-bearers are Dr. B. S. Guha (*Treasurer*), Prof. Dr. J. C. Ghosh (*Foreign Secretary*) and Prof. S. P. Agharkar and Dr. C. S. Fox (*Secretaries*).

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University of Mysore.—I. EXAMINATIONS: The list of candidates who were successful at the S.S.L.C. Supplementary Examination held in November 1939 and declared eligible for admission to University Courses was published.

II. LECTURES: The following lectures were delivered:—(i) *University Extension Lectures*—(1) Mr. C. K. Venkataramayya, M.A., LL.B., Kannada Translator to the Government of Mysore, on "Poet Kumaravyasa" in Kannada at Chitaldrug. (2) Mr. A. R. Wadia, B.A. (Cantab.), bar-at-Law, Professor of Philosophy, Maharaja's College, Mysore, on "The Problems of Industrial Civilization" in English, at Robertsonpet. (3) Mr. K. Sundaresan, L.M.S., Assistant Surgeon, Minto Ophthalmic Hospital, Bangalore, on "The Causes of Blindness", in Kannada at Davangere, and on "The Prevention of Blindness", at Chitaldrug. (4) Sri. B. Indiramma, M.A., Dip. Edn. (Leeds), Superintendent, Maharani's Women's Training College, Mysore, on "The need for a Knowledge of Child Psychology on the part of Parents", in Kannada, at Chickballapur and Chickmagalur. (5) Dr. A. Appadhurai, M.A., Ph.D., Loyola College, Madras, on "The Revision of Democracy", in English, at Mysore. (6) Dr. Kavoor T. Behnan, B.A., B.D., Ph.D., Department of Psychology, Yale University, on "Yoga—A Way of Life", in English, at Mysore, and on "Scientific Analysis of Social Phenomena", in English, at Bangalore. (ii) *Special Lectures*—Dr. M. V. Gopalaswami, B.A., B.Sc., Ph.D., Professor of Psychology and Logic, Maharaja's College, Mysore, on "The Nature-Nurture Problem in relation to Intelligence", in English, at Mysore.

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Announcements

Indian Science Congress, 1941.—The Twenty-eighth Session of the Indian Science Congress will be held at Benares from 2nd to 8th January 1941.

Sir Ardeshir Dalal, Managing Director of Messrs. Tata Iron & Steel Co., Ltd., has been elected General President of the Congress. The following have been elected Sectional Presidents:—Prof. K. Ananda Rao (*Mathematics*

and *Statistics*), Prof. P. N. Ghosh (*Physics*), Dr. Mataprasad (*Chemistry*), Dr. M. R. Sahni (*Geology*), Dr. S. M. Tahir Rizvi (*Geography and Geodesy*), Dr. Sri Ranjan (*Botany*), Dr. A. Subba Rao (*Zoology*), Rao Sahib Y. Ramachandra Rao (*Entomology*), Mr. T. C. Das (*Anthropology*), Mr. A. C. Ukil (*Medical and Veterinary Research*), Mr. K. Ramiah (*Agriculture*), Dr. B. B. Dikshit (*Physiology*), Dr. I. Latiff (*Psychology and Educational Science*) and Sir M. Visvesvaraya (*Engineering*).

The Editorial Committee of the Imperial Council of Agricultural Research announce that, with effect from January 1940, a new monthly magazine entitled "*Indian Farming*" will be issued in place of the bi-monthly "*Agriculture and Livestock in India*".

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We acknowledge with thanks receipt of the following:—

"Agricultural Gazette of New South Wales," Vol. 50, Pt. 12.

"Agriculture and Live-Stock in India," Vol. 9, Pt. 6.

"The Philippine Agriculturist," Vol. 23, No. 7.

"Monthly Bulletin of Agricultural Science & Practice," Vol. 30, No. 10.

"Biochemical Journal," Vol. 33, No. 10.

"Journal of the Institute of Brewing," Vol. 45, Nos. 7 and 11.

"Journal of the Indian Botanical Society," Vol. 18, No. 3.

"Biological Reviews," Vol. 14, No. 4.

"Journal of the Indian Chemical Society," Vol. 16, No. 10.

"Journal de Chimie Physique," Vol. 36, Nos. 7-9.

"Comptes Rendus (Doklady)," Vol. 24, Nos. 6-8.

"Experiment Station Record," Vol. 81, No. 5.

"Indian Forester," Vol. 66, No. 1.

"Review of Applied Mycology," Vol. 18, No. 11.

"Calcutta Medical Journal," Vol. 36, Nos. 5-6.

"Bulletin of the American Meteorological Society," Vol. 20, Nos. 8-9.

"Scripta Mathematica," Vol. 6, No. 2.

"Indian Medical Gazette," Vol. 74, No. 12.

"Indian Journal of Medical Research," Vol. 27, No. 2 (October 1939).

"Nature," Vol. 144, Nos. 3654-57.

"Journal of Nutrition," Vol. 18, Nos. 2-5.

"Journal of the Bombay Natural History Society," Vol. 41, No. 2.

"Proceedings of the Royal Society of Edinburgh," Vol. 59, Part 2.

"Canadian Journal of Research," Vol. 17, No. 11.

"Journal of the Royal Society of Arts," Vol. 87, Nos. 4539-40.

"Indian Trade Journal," Vol. 135, Nos. 1747-49, and Vol. 136, No. 1750.