

Liquid—Liquid Extraction. By L. Alders. (Elsevier Publishing Co.), 1955. Pp. x + 206. Price 32 sh.

Advances in Virus Research, Vol. II. Edited by K. M. Smith and M. A. Lauffer. (Academic Press), 1954. Pp. x + 313. Price \$7.00.

Advances in Carbohydrate Chemistry, Vol. 9. Edited by L. Wolfrom. (Academic Press), 1954. Pp. xviii + 426. Price \$10.50.

Chemistry and Chemical Technology of Cotton. Edited by Kyle Ward Jr. (Interscience Publishers, Inc.), 1955. Pp. xix + 782. Price \$20.00.

Optical Glass Working. By F. Twyman. (Hilger & Watts Ltd.), 1955. Pp. viii + 275. Price 24 sh.

Frontier to Space. By Eric Burgess. (Chapman & Hall), 1955. Pp. xvi + 174. Price 21 sh.

Relativity for the Layman. By James A. Coleman. (William Frederick Press, New York), 1954. Pp. 131. Price \$2.75.

A Symposium on Amino Acid Metabolism. Edited by W. D. McElroy and H. Bentley Glass. (Johns Hopkins Press, Baltimore), 1955. Pp. xvi + 1048. Price \$12.50.

SCIENCE NOTES AND NEWS

First Congress on Theoretical and Applied Mechanics

The First Congress on Theoretical and Applied Mechanics will be held during November 1955 at the Indian Institute of Technology, Kharagpur. Exact dates will be announced later. It will be the first congress of the kind to be held in this country to bring together engineers, mathematicians, physicists and statisticians who are interested in applied mechanics. Dr. K. S. Krishnan, Director, National Physical Laboratory will preside over the Conference and Dr. S. R. Sen Gupta, Director, Indian Institute of Technology, will be the Chairman of the Reception Committee.

The Congress will be on a research level. Papers may be communicated and read on any of the following subjects: Elasticity—Plasticity—Rheology; Fluid Mechanics—(Aerodynamics—Hydrodynamics); Mechanics of Solids—(Ballistics—Vibrations—Friction—Lubrication); Statistical Mechanics—Thermodynamics—Heat Transfer; Mathematics of Physics and Mechanics—Methods of Computation. Further details can be had from Dr. B. R. Seth, Organizing Secretary, First Congress on Theoretical and Applied Mechanics, Indian Institute of Technology, Kharagpur.

Madras University Prizes

The Maharaja of Travancore-Curzon Prizes for 1955-56. Two prizes (one for Physiology and one for Geology) will be awarded by the Syndicate for the best essay or thesis written by any graduate of the Madras University on any topic dealing with the subjects. The value

of each prize is Rs. 250. Competitors should submit their theses so as to be received by the Registrar not later than the 1st March 1956.

Sir William Wedderburn Prize, 1956: The prize which will consist of books of the value of Rs. 45, will be awarded to the student, who having qualified in Chemistry for the Degree of B.Sc (Honours) or M.Sc. not more than two years previously, has shown aptitude for research. A thesis on any research work conducted by the student should be submitted with the application so as to be received by the Registrar, Madras University, not later than the 30th April 1956.

Journal of Family Welfare

A bimonthly Journal devoted to family welfare has been started under the editorship of Dr. A. P. Pillay, in Bombay. The appearance of the Journal is timely, and it caters to a very wide public as may be judged from the contents of the inaugural number: Marital maladjustments and marriage counselling, The Special Marriage Act of 1954, The so-called 'artificial' insemination, Differential fertility and its effect on community welfare, Family planning in India, Assessment of sperm density from dry smears of semen, An approach to the problem of infertility, Sterilization in the male. The first three numbers which have been received make it clear that it has a very useful part to play in educating the lay public in regard to the personal, marital and sociological aspects of family life, and we extend to the Journal our heartiest good wishes. Copies may be ordered from: The Editor, *Journal of Family Welfare*, 378, Hornby Road, Bombay-1.

Virology

Academic Press Inc., Publishers, announce a new Journal, *Virology*, with Dr. George K. Hirst, Public Health Research Institute of the City of New York, Inc., as the Editor-in-Chief. The purpose of *Virology* will be to publish articles on the biological, biochemical and biophysical aspects of the subject, stressing contributions of a fundamental rather than applied nature. It is hoped that the Journal will contribute to the integration of virus science by providing a ready introduction to all its fields.

It is planned to publish one volume per year. Volume 1, Number 1 is scheduled for release in May 1955. Subscriptions for the Volume 1, priced at \$9.00, should be sent to the Publishers, Academic Press, Inc., 125 East 23 Street, New York 10, New York.

Inventory of Teaching Equipment for Medical Schools

A detailed inventory of the equipment needed to set up a medical school is now available as the result of a joint undertaking by the World Health Organization and UNESCO. This important reference manual is intended chiefly for use in new medical schools, but is also expected to be of help to existing medical schools which plan to re-organize their teaching departments on more modern lines.

This is Part V (Medical Sciences), Volume III of the UNESCO series "Inventories of Apparatus and Materials for Teaching Science" and contains lists of equipment used in the instruction of medical students in 8 subjects: (1) Anatomy, (2) Bacteriology (Microbiology), (3) Biochemistry, (4) Histology, (5) Morbid Anatomy (Pathology), (6) Pharmacology, (7) Physiology, and (8) Preventive and Social Medicine (Hygiene and Public Health).

The publication is priced at \$2.75 and can be had from any of the national distributors of UNESCO Publications.

Aluminium in Australian Trees

The surprising discovery that certain trees in Australia and New Guinea accumulate aluminium has been reported by the Plant Industry Division of the Australian Commonwealth Scientific and Industrial Research Organisation. The Division examined about 80 species, and found that the aluminium exists in the form of compounds, hard white masses in the timber, also in the bark and the leaves, the trees apparently absorbing it from the soil.

When considerable quantities were found in a tree in Queensland, it was first considered a

freak, but examination of other species, including coachwood, prickly ash, smooth-flowered nut trees, and Queensland blue beech, soon showed that various trees had accumulations.

It is not known whether the trees absorb the aluminium wilfully from the soil, or whether it plays some part in their growth. No trees in the dry inland area of Australia accumulate aluminium. It is in the rain forest areas that the research officers have found the compounds of the metal, together with organic acids.

World Health Day, 1955

"Clean Water Means Better Health" is the theme chosen for this year's World Health Day, 7 April, the seventh anniversary of the day on which the Constitution of the World Health Organization officially came into force. The series of feature articles issued by the WHO on the occasion have been written by authorities on various aspects of water supply, water protection or purification, and serve to emphasize the Organization's concern for the improvement of sanitation programmes, and to highlight a problem which is causing serious anxiety to health authorities in countries all over the world.

Radiocinematography

A documentary picture made by Dr. Pierre Thevenard of the Pasteur Institute in Paris, is the first successful example of "radiocinematography", or filming with X-rays. After previous attempts in the United Kingdom and Germany had failed, Dr. Thevenard decided to pursue the experiments and to produce a 35 mm. film on the biological history of the bluebottle (*Calliphora erythrocephala*).

Special camera equipment had to be assembled with strong magnifying power and a recording range of between 24 pictures a second and one picture every ten minutes. By means of irradiation through the aperture, and without either fluorescent screen or lenses, Dr. Thevenard was able to study the metamorphosis of the insect and the processes involved in the passage of food through its body. Unlike ordinary microphotography, X-ray filming retains the three dimensions.

Apart from its high artistic quality, the film emphasizes the exceptional value of radiocinematography as an instrument for scientific research. The various phases of the metamorphosis revealed by the X-rays provide evidence of hitherto unknown phenomena.—UNESCO.

The Institution of Telecommunication Engineers

The Institution of Telecommunication Engineers, inaugurated in New Delhi, India, in November 1953, has already more than a thousand members on its rolls and this figure is increasing rapidly. Its membership is drawn from various government operated communication agencies, the three Defence Services, Research Institutes and Industry. Run by a governing council of 24, the Institution, like most professional bodies, prescribes minimum educational qualifications and experience for entry into its several categories, but direct admission into the lower categories is also possible by passing the examinations which are to be conducted by it. A quarterly Journal of the Institution of Telecommunication Engineers is proposed to be published and the first issue of the Journal is already in the Press. Talks and discussion meetings are now arranged periodically at New Delhi, the Headquarters of the Institution, and similar activities are being planned at Bombay, Calcutta, Madras, Poona, Bangalore and Jabalpur. Further particulars of the Institution can be had from: The Honorary Secretary, The Institution of Telecommunication Engineers, Post Box 481, New Delhi, India.

Blood Fractionation

It has been estimated that the human body contains 5 litres of blood of which 2.75 litres is plasma, 2.22 litres is erythrocytes, 0.02 litre is platelets and 0.01 litre is leukocytes. A blood fractionator developed under the direction of the late E. J. Cohn at Harvard University provides a continuous closed mechanical system for fractionating the blood into its components from the moment it is drawn from the vein.

In this apparatus calcium is removed by passage through an ion-exchange resin which gives sodium and takes up calcium. Since glass and rubber are destructive, the component parts are built of non-wettable plastic coated with silicone. The blood is immediately cooled to near freezing within a few seconds after being drawn. It then passes through a centrifuge. On stopping the centrifuge the erythrocytes and leukocytes fall into their respective containers. The platelets are washed from the resin column and stored in a gelatin-containing medium. Platelets can

be preserved for some months but as yet leukocytes cannot be. The plasma is fractionated into 26 identifiable substances by known laboratory methods (*J. Amer. Med. Assoc.*, 1954, 156, 772).

Rapid Drying Coating Materials

A process for rapid hardening of inks, paints or other coating materials made from drying oils or reactive resins by means of sulphur dichloride has been developed by the Armour Research Foundation.

Sulphur dichloride vapour reacts with drying oils, resins made from drying oils (such as alkyl or epoxy esters), urea-formaldehyde melamine-formaldehyde, rubber and similar materials. In the case of drying oils and related materials containing a number of points of unsaturation, the sulphur reacts cross-linking the molecules in hardening. The resultant coating is different chemically from an air-dried film because it contains both sulphur and chlorine from the cross-linking agent. The weight of the coating is increased because of the absorbed sulphur dichloride. In the case of the urea and melamine resins, sulphur dichloride acts as an acid catalyst to initiate the polymerization. For reactive resins and oils, contact times of from 2 to 20 seconds will give either a complete hardening of the film in the case of thin coatings, or a sufficient surface dryness in the case of heavier applications.

Awards of Research Degree

The Muslim University, Aligarh, has awarded the Ph.D. Degree in Zoology to the following candidates for theses indicated against each: N. M. Antony—"Avitellina centripunctata Studies in Morphology and Life-Cycle"; S. Johnson—"Studies in Morphology and Life-Cycle of *Physaloptera varani*"; and S. Shujaat-ul Akbar—"Morphology and Life-History of *Leptocoris varicornis*, a Serious Pest of Paddy Crop in India".

The Osmania University has awarded the Ph.D. Degree in Physics to Shri D. S. R. Murty for his thesis entitled 'Directional Studies in Cosmic Rays at Hyderabad, India', and to Shri W. V. Varadiah for his thesis entitled 'Viscosity and Light Scattering Studies on High Polymer Solutions'.

The Andhra University has awarded the D.Sc. Degree in Chemistry to Sri. A. Purushottam for his thesis entitled 'Studies on Rare Earths'.