

Books Received

The Nucleic Acids—Chemistry and Biology, Vol. I. By Erwin Chargaff and J. N. Davidson (Academic Press), 1955. Pp. xi + 692. Price \$ 16.80.

Memoirs of the Society for Endocrinology. No. 3. *The Technique and Significance of Oestrogen Determinations*. Edited by P. Eckstein and S. Zuckerman. (Cambridge University Press), 1955. Pp. 96. Price 18 sh.

Molecular Vibrations—The Theory of Infra-Red and Raman Vibrational Spectra. By E. Bright Wilson Jr., J. C. Decius and Paul C. Cross. (McGraw-Hill), 1955. Pp. xi + 388. Price \$ 8.50.

Theoretical Principles of Organic Chemistry, Vol. I. By Walter Huckel. (Elsevier Publishing Co.), Pp. xi + 904. Price 77 sh. 6 d.

X-Ray Diffraction by Polycrystalline Materials. Edited by H. S. Peiser, H. P. Rooksby and A. J. C. Wilson. (The Institute of Physics, London, S.W.-1), 1955. Pp. 725. Price 63 sh.

A Laboratory Manual of Qualitative Organic Analysis, Third Edition. By H. T. Openshaw. (Cambridge University Press), 1955. Pp. xii + 92. Price 10 sh. 6 d.

Modern Gas Analysis. By P. W. Mullen. (Interscience Publishers, Inc.), 1955. Pp. ix + 354. Price \$ 5.50

Higher Polymers—Emulsion Polymerization, Vol. IX. By Frank A. Bovey, I. M. Kolthoff, Avrom I. Medalia and Edward J. Meehan. (Interscience Publishers, Inc.), 1955. Pp. xii + 445. Price \$ 12.50.

Methods of Biochemical Analysis, Vol II Edited by David Glick (Interscience Publishers, Inc.), 1955 Pp. vi + 470. Price \$ 9 50.

SCIENCE NOTES AND NEWS

New Laboratory Electromagnet

A new laboratory electromagnet embodying the most convenient features for varying magnetic field configurations was announced recently by Varian Associates, Palo Alto, Calif, manufacturers of klystron tubes and *n-m-r* spectrometers.

Varian's new magnet, the V-4004, has two fixed energizing coils with adjustable poles and readily changeable pole caps. A wide range of field contours can be set with ease. By a simple adjustment of each pole, any air-gap width up to 4.3" can be achieved. A variety of cylindrical, conical or specially-shaped pole caps are available for wide choice of flux patterns. Despite the comparatively small size of this new magnet, a gap field flux density as high as 28,600 gauss can be attained.

'Runaway' Nuclear Reactor

A nuclear reactor was deliberately allowed to get out of control recently at the United States Atomic Energy Commission's Reactor Research and Development Station in Idaho. All the safety control rods which maintain the "burning" of the atomic fuel were withdrawn so that the reactor could burn itself out.

The results proved far less disastrous than

might have been expected, since after an initial period of "running away" in which rapidly increased fission and the generation of excessive quantities of heat occurred, the reaction slowed down and then stopped. The reactor had in fact proved self-controlling, the rapid increase in fission having created conditions under which the reaction necessary for the continued "burning" of the atomic fuel could not be maintained. It would appear that a large number of the nuclear reactors so far constructed are of the self-controlling type, but other types of reactors, such as those using fast neutrons which are capable of breeding more atomic fuel than they burn up do not come in this category.

Taste, Smell and Molecular Weight

In the course of an article on the above subject in *Chemical Products* (1955, 18, p. 131), R. W. Moncrieff has shown that there is a well-marked relationship between molecular weight and taste which is shown in the appearance of a bitter taste with increasing molecular weight, irrespective of whether the taste of lighter members of the series is sour, salt or sweet. Although not without exceptions, this rule is of very wide application indeed.

Very high molecular weights usually result in insolubility in water, and as a result in tastelessness.

There is not such a relation in the case of smell, no tendency for a particular quality of smell to develop with increasing molecular weight. Eventually, when molecular weight rises so high that volatility is lost, smell falls away too. Low molecular weight is accompanied by more rapid diffusion, which will enable a smell to be perceived more quickly. A preliminary investigation shows that substances that have musky smells have molecular weights that are fairly closely grouped. If adsorption of odorant on olfactory receptor is the process that initiates the sensation of smell, molecular weight might be a factor in olfactory discrimination.

Tetracycline

Tetracycline, also known as polycycline and bristacycline, has shown itself effective in eradicating the diverse bacteria responsible for acne and other troublesome types of skin disease.

According to Dr. Charles R. Rein and his co-workers, bristacycline brought forth a speedy response in all of a group of 106 patients, the majority of whom were suffering from common acne. In more than half the cases, the improvement was "moderate to marked" during the first week of treatment, and the new drug is well tolerated by patients. Adverse reactions appear to be less frequent and less severe than with previously employed broad spectrum antibiotics. The successful use of the drug for a variety of other infections was also reported before the Second Annual Symposium on Antibiotics recently held in Washington.

Treatment of Rheumatic Fever

The results of a remarkable international trial of the relative values of cortisone, "A.C.T.H.", and aspirin in the treatment of acute rheumatic fever in childhood are given in the March 5, 1955 issue of the *British Medical Journal*.

Essentially there was no difference between the effects of the three, which tends to confirm a previous report on the relative value of cortisone and aspirin in rheumatoid arthritis

when, according to the criteria used, there was little to choose between them.

In the tests described six centres in the United Kingdom were used, five in the United States, and one in Canada. The criteria for diagnosis and for measuring progress were drawn up in great detail and nearly 500 patients under the age of 16 received the special treatment in the special way it was planned. The choice of drug was determined by the opening of a sealed envelope, so that there was no bias.

The hormone treatment (cortisone and "A.C.T.H.") appeared to produce more rapid control in certain acute manifestations, but this was offset by a greater tendency for relapses at the end of treatment. After a year there was no essential difference in the state of the heart in the three groups.

Post-Doctorate Fellowship Awards to Indian Scientists

The following Indian scientists have been awarded the National Research Council of Canada's Post-Doctorate Fellowships for 1955-56

J. Datta, Indian Institute of Science, Bangalore; I. Hussain, Muslim University, Aligarh; G. Kartha, University of Madras, Madras; M. L. Lakhanpal, Punjab University, Punjab; J. Sharma, Indian Institute of Technology, Kharagpur; G. Singh, N.P.L., New Delhi; A. G. Datta, Calcutta-19; M. L. Gattani, IARI, New Delhi; Rajindar Pal, Malaria Institute of India, Delhi; Vachaspati, Physical Research Laboratory, Ahmedabad; A. S. Atwal, Government Agricultural College, Ludhiana (Punjab).

Award of Research Degree

The University of Bombay has awarded the Ph.D. Degree in Chemistry to Shri G. Jagan Mohan for his thesis entitled "Biochemical Studies on the Flocculation of Sewage".

The University of Poona has awarded the Ph.D. Degree in Chemistry to Shri V. K. Phansalkar, for his thesis entitled "Dielectric Constant and Molecular Structure".

The Andhra University has awarded the D.Sc. Degree in Chemistry to Shri H. Sanke Gowda for his thesis entitled "Vanadimetric Methods for the Assay of Pharmaceutical Preparations".