

Those vital adjuncts of modern organic chemistry, the physical methods, are expertly and concisely introduced and the relevance and application of the main methods to the fatty acid field are well brought out. X-ray diffraction, ultra-violet, visible, infra-red and micro-wave spectroscopy, and nuclear magnetic resonance are each discussed. The estimation of *trans*-isomer content by infra-red spectroscopy and other similarly important applications are carefully documented though, again, I would have preferred a more critical appraisal of the present situation.

The properties dealt with under 'the liquid state' include heats of formation and combustion, density, molar volume, viscosity, surface tension and refractivity, many of the data being economically presented in tabular form. The final chapter surveys the properties of aqueous and non-aqueous solutions of the acids and their glycerides.

In summary, Part I of this completely rewritten and enlarged edition of *Fatty Acids* provides an unrivalled survey of the field covered. The complete work, which will consist of Parts 1, 2, 3 and 4, should prove a worthy successor to the first edition.

GEOFFREY EGLINTON

COTTON IN INDIA

Cotton in India

A Monograph, Vol. 2. By R. H. Dastur, R. D. Asana, K. Sawhney, S. M. Sikka, R. S. Vasudeva, Quadiruddin Khan, V. P. Rao and B. L. Sethi. Pp. viii + 339 (16 plates). Rs. 30; 45s.

Vol. 3. By C. Nanjundayya, R. L. N. Iyengar, W. R. Natu, M. B. Ghatge, K. S. Murti, C. B. Parikh, B. L. Sethi and D. N. Mahta. Pp. viii + 295 (20 plates). Rs. 30; 45s.

Vol. 4. By S. M. Sikka, Arjan Singh, Avtar Singh, P. D. Gadkari, R. Balasubrahmanyam, N. K. Iyengar, K. Sawhney, V. K. Bederker, G. B. Patel, P. S. Pandya, V. N. Paranjpe and N. S. Panigrahi. Pp. x + 378 (20 plates). Rs. 30; 45s.
(Bombay: Indian Central Cotton Committee, 1961.)

THE monograph *Cotton in India*, the publication of which has been sponsored by the Indian Central Cotton Committee, is now completed by the issue of Volumes 2, 3 and 4. Volume 1 has already been reviewed in *Nature*, 189, 86 (1961).

The second volume deals with physiology, agronomy, diseases, insect and mite pests, and with seed multiplication and distribution. The third volume concerns itself with technology, ginning and pressing, marketing, consumption of cotton (seed and lint), legislative measures and exports and imports. The fourth and final volume treats of the special features of the six recognized cotton regions of India.

As the work covers every possible aspect of cotton in India, with a large number of contributors, it is difficult to discuss any points in detail. Practically all work done in India is mentioned and, though some can only be described as trivial, important findings occur sporadically throughout the work. The laborious and painstaking, though somewhat unfruitful, work of Dastur on applied physiology deserves special mention. He points out that no fundamental physiological research has so far been attempted as all attention has been concentrated on the physiological causes of bud and boll shedding, bad opening of bolls with immature seeds and lint, premature yellowing and reddening of leaves, low

yields of seed cotton, etc. The important work on cotton physiology in Trinidad by Mason and his co-workers, Maskell and Phillis, receives only scant attention. In Egypt much fundamental work was done by Balls and his colleagues, much of which has some bearing on Indian problems. There is a casual reference to the *Cotton Plant in Egypt* published in 1912, but later work during 1927-47 is ignored. The subterranean environment, probably as important as the aerial one, does not seem to have been studied, and it is significant that 'roots' finds no place in the index.

In Volume 3, several pages in the chapter on technology are devoted to an exposition of statistics at the elementary text-book level. This inclusion would appear to be unnecessary. The section on small-scale spinning-tests covers less than a page and is inadequate. Although of great importance to India, the pioneer small-scale spinning-plant set up by Balls and Hancock in Egypt is not mentioned.

The index can only be described as amateurish and calamitously inferior. It is neither comprehensive nor usable, and is quite unworthy of the encyclopaedic nature of the work. The virtues of the monograph, however, greatly outweigh the defects, which regrettably include an undue number of printer's errors. On the whole, it is a reasonably good attempt to put on record what is known about cotton in India and will undoubtedly find wide use as a standard work of reference.

S. C. HARLAND

SOME ASPECTS OF ASIATIC RUSSIA

Physical Geography of Asiatic Russia

By S. P. Suslov. Translated from the Russian by Noah D. Gershevsky. Edited by Joseph E. Williams. Pp. xiv + 594. (San Francisco and London: W. H. Freeman and Company, 1961.) 105s.

THIS book—a large quarto, printed on good glossy paper and containing well-reproduced text, maps and diagrams as well as photographs, although these as a rule are not so well reproduced—possesses all the potentialities of a good and informative book. Actually it suffers from many original and translation defects.

First and foremost the book purports to be the *Physical Geography of Asiatic Russia*, but this title does not accurately describe the contents of the book. Physical geography must clearly include geomorphology and structural geology. In these fields the book is very weak, whereas the sections on hydrography, soils, plants and animals are adequate and well presented. The names of plants and animals are translated into vernacular English and their Latin names are printed in brackets. Their habit and ecology are well described—the general impression being that the writer is a specialist in bio-geography, not physical geography. On the other hand, the geomorphological and geological sections are written in a casual and often inexpert manner, occupy a small proportion of the text, are often disposed throughout the text and are inadequately illustrated by geological maps and sections. This is particularly annoying since great progress has been made during the past hundred years in the study of the geology and geomorphology of the Asian part of Russia, as evidenced by the work of such authorities as Obruchev, Shatsky and Nalivkin.