12. BIOLOGY IN SOVIET RUSSIA (1917-42)

Advances in Biological Sciences in the U.S.S.R.
within the Recent 25 Years, 1917-1942

Symposium. Editor-in-Chief: L. A. Orbeli. (In Russian.) Pp. 356. (Moscow and Leningrad: Academy of Sciences of the U.S.S.R., 1945.) 26 roubles.

THIS volume, compiled by some thirty authors, represents an attempt to summarize the work in the main branches of 'pure' biology, carried out in Soviet Russia during the period 1917-42. The summaries cannot be called critical, and their main aim is made abundantly clear by the introductory sentences to each section, which all plainly stress, in monotonous similarity of words, that the blossoming out of every particular branch of biology followed the Revolution and was due to the Soviet attitude to science. Completeness of the record of achievements is not claimed in the preface, which indicates that war-time difficulties made it impossible to obtain summaries of the work in a number of biological sciences. As a result, the volume lacks summaries on geology, experimental biology and genetics, to mention only the most conspicuous gaps.

Individual contributions vary from comprehensive reviews of the main results obtained by Soviet scientific workers in a particular branch of biology, to mere lists of authors and subjects. Such lists might have been of great value to men of science of other countries, but unfortunately throughout the volume no references are given, except by the author's name and the date; a number of, apparently, important papers are quoted from manuscript. An accurate bibliography of all the publications mentioned in the text would have, probably, occupied fewer pages, while supplying an incomparably more useful record of the progress of Soviet science. The need for such bibliographical work is pointed out in the conclusion to the summary on zoological systematics and faunistics, where it is stated (p. 183) that "... the recognition of achievements of Soviet science is not always proportional to the actual value of the work; we often meet with an under-estimation which has a political basis and is due to unwillingness to draw attention to achievements of Soviet science in particular. However, in many cases, the underestimation of achievements of Soviet science is, so to speak, due to technical reasons, for example, simply to the lack of knowledge about the respective works, and in many cases the fault is ours." A footnote explains that in 1937 only about 25 per cent of Russian papers were quoted in the *Zoological Record*, whereas in 1913 the percentage was about 50. This is ascribed to the interruption of the work of the Bureau of International Bibliography at the Academy of Sciences, a point worthy of the attention of international bodies concerned with scientific bibliography.

It would be impossible to review all sections of a volume of this kind, but brief indications of the main items may be useful.

The section on physiology contains articles by L. A. Orbeli, A. G. Ginecinsky, A. V. Tonkikh and M. I. Vinogradov, on nervous physiology; by N. P. Rezviakov on electrophysiological investigations; by A. G. Ginecinsky on vegetative processes; by G. V. Gershuni on sense physiology; by E. M. Kreps on comparative physiology; and by A. G. Ginecinsky on physiology of embryos.

Advances in biochemistry are summarized by V. A. Engelhardt, who stresses that the development of this branch of science in Russia has occurred almost entirely during the Soviet period.

The chapter on animal systematics and faunistics, by twelve authors, is the longest in the volume and consists mainly of an enumeration of books and papers dealing either with taxonomic groups or with various local faunas. The lack of references in this section is particularly serious, since it helps a taxonomist little to know that a revision of a genus in which he is particularly interested was published by a Russian author in 1938, if there are no means of finding a reference.

As already stated, a summary on geological work is missing, and only palaeontological achievements are reviewed by A. A. Borisiak (palaeozoology) and by A. N. Krishtofovich (palaeobotany).

Botanical sciences are represented by summaries on systematics and floristics, by B. K. Shishkin; on plant ecology, by E. M. Lavrenko; on plant physiology, by N. A. Maximov; and on micro-biology, by B. L. Isachenko.

The last section of the volume deals with the theoretical principles of medicine, and includes summaries by A. I. Abrikosov (pathological anatomy), N. N. Petrov (malignant growths, especially cancer), and N. N. Anichkov (pathological physiology).

INTRODUCTION TO ALTERNATING CURRENT MEASUREMENTS

Alternating Current Measurements at Audio and Radio Frequencies

By Dr. David Owen. (Methuen's Monographs on Physical Subjects.) Second edition, revised. Pp. vii + 120. (London: Methuen and Co., Ltd., 1946.) 5s. net.

THE present author maintains the quality of the many preceding monographs on basic up-to-date physics, but does not quite give that aspect the electrical engineer requires, although the material may be ideal for educational purposes in *ad hoc* physics. The practising engineer looks on electrical measurements as a tool to enable him to do something else, to get data to assist him in solving his problems. Thus, while the author gives an excellent survey of the basic circuits which are usable for the regular measurements of the usual electrical parameters, including frequency, with their proofs, he is not always clear in describing their limitations, especially when measurements above 1000 cycles per second are demanded. While he gives a clear exposition of the principle of the Wagner earth, he nowhere else insists on an earth connexion to a suitable point in his circuit; neither is the reader warned about the necessity of shielding inductances and other components, and told where the shield should be connected. All these are vital practical points affecting the possibility and accuracy of an electrical measurement.

Nevertheless, within his scope the author has laid foundations which should put a student in a good position to understand the basis of practice when he meets it in non-educational laboratory work, and should prompt him to exercise ingenuity in devising measurements when he is faced with the usual problem in industry, the paucity of high-grade measuring apparatus.

L. E. C. HUGHES