

Evidently some Europeans do not share the Americans' estimate of their own work.

The American Psychological Association now has ten thousand members as compared with a handful at the turn of the century. We must wait to see whether the achievements of this army are commensurate with its increase in size. JOHN COHEN

SCIENTIFIC WORK ON BARLEY

The Barley Crop

By Dr. Herbert Hunter. (Agricultural and Horticultural Series.) Pp. ix+187+12 plates. (London: Crosby Lockwood and Son, Ltd., 1952.) 21s. net.

BARLEY is one of the most interesting of all farm crops. It has a wider tolerance of climatic conditions, and therefore a wider geographical distribution than any other cereal, and its grain has a greater range of uses depending on its composition and the form in which its constituents exist. It has long been fortunate in its students and historians. Six years ago E. S. Beavan's remarkable volume "Barley, Fifty Years of Observation and Experiment" was published posthumously, and now Dr. Hunter has prepared this connected account of his well-known and highly valued experiments with this crop. These were begun in Ireland, where he was for long responsible for the barley investigations conducted by the Department of Agriculture in association with Messrs. Arthur Guinness and Co., an account of which he published in 1926 in a book also called "The Barley Crop". Since then much new material has accumulated. The National Institute of Agricultural Botany at Cambridge has been continuously studying barley varieties since 1919, and the Institute of Brewing ran a long series of chemical and field studies from 1920 onwards. The Danish investigators also have been very active and have produced some remarkably good varieties. Dr. Hunter has rendered a valuable service in putting together this material and making an interesting book of it.

The book opens with a detailed account of the botanical classification of the genus *Hordeum* and a brief history of barley in Britain from prehistoric times to the present day. The records go back to the Neolithic period: barley grains somehow got into the clay in the making of pots; they were burnt during the firing but left an impress in the clay from which it is possible to effect some measure of identification. Even in those days—five thousand years ago—both naked and hulled types occurred, the former predominating more and more as time went on; but in the Iron Age, and still more in the Anglo-Saxon period, the hulled barley was the more common. Some actual grains have been found which show that the type was six-rowed *H. hexastichum* as shown on Greek and early Roman coins: two-rowed barley was not found in Britain until just before the Christian era. However it got here, it is now our chief type; the six-rowed sorts are mainly winter or spring varieties not very widely grown.

When agricultural surveys were first made in Britain a number of different varieties were recorded in different parts of the country; some of them still survive and have proved of great value to plant breeders. Dr. Hunter has been strikingly successful with Spratt, crossing it with Archer to produce Spratt-Archer, one of the most popular malting varieties, and with Archer Goldthorpe to produce

Camton, a short stiff-strawed variety that will stand up to high manuring, and, while not popular with maltsters, is of great feeding value.

The Danish breeder, H. A. B. Vestergaard, has produced at Abed in Lolland some outstanding varieties, early ripening and resistant to lodging; some of them, notably Kenia and Maja, have proved very useful in Britain. As the combined result of suitable varieties, high manuring for the preceding sugar beet, and sound management, the Danish farmers obtain the highest yield of barley in the world—51.8 bushels per acre; Great Britain comes next with 39.2 bushels.

The effect of manuring, weather conditions, cultural conditions and other factors on yield and quality of the grain are discussed with special reference to the Irish experiments; it would have been interesting to have compared these with the long series of experiments made under the Institute of Brewing scheme, particularly to see if the relations with rainfall were paralleled in Ireland.

In conclusion, the author discusses the objects at which the plant breeder should aim, rightly emphasizing the need for resistance to lodging. Most experts will agree with Dr. Hunter that high yield and high quality can be combined, but very high yields may be less compatible with high quality.

The book can be strongly recommended to all who are interested in barley: it gives in clear concise form an admirable summary of present knowledge of this most interesting crop. E. JOHN RUSSELL

THEORY AND APPLICATIONS OF FLUID DYNAMICS

High-Speed Aerodynamics

By Prof. Harold W. Sibert. (Prentice-Hall Aeronautical Engineering Series.) Pp. xiii+283. (New York: Prentice-Hall, Inc., 1948.) n.p.

Supersonic Aerodynamics

A Theoretical Introduction. By Edward R. C. Miles. Pp. xi+255. (London: McGraw-Hill Publishing Co., Ltd., 1950.) 34s.

Aerodynamics of High Speed

Facsimiles of Nineteen Fundamental Studies as they were Originally Reported in the Scientific Journals. With a Bibliography compiled by Prof. George F. Carrier. Pp. xi+286. (New York: Dover Publications, Inc., 1951.) Paper, 1.75 dollars; cloth, 3.50 dollars.

High-Speed Aerodynamics

By W. F. Hilton. Pp. ix+598. (London, New York and Toronto: Longmans, Green and Co., Ltd., 1952.) 60s. net.

Essentials of Fluid Dynamics

With Applications to Hydraulics, Aeronautics, Meteorology and other Subjects. By Prof. Ludwig Prandtl. Authorized translation. Pp. x+452. (London and Glasgow: Blackie and Son, Ltd., 1952.) 35s. net.

PROF. H. W. SIBERT'S book is intended for undergraduate students of aeronautical engineering. The mathematical development is strictly elementary in character and is set out in full detail. Almost all the examples are numerical in character, and, although such computations are by no means