

Service a period of practical study in those European countries in which the standard sylvicultural systems are well exemplified. Some of these systems are now so well established in India that they furnish examples equal to anything to be found in Europe: this only serves to emphasize India's

indebtedness to Europe, a fact that is sometimes overlooked.

The style of the book is attractive and the illustrations are good, though in some of the titles the omission of the locality to which they refer detracts somewhat from their interest.

THE HYDROLOGY OF THE UPPER WHITE NILE

The Nile Basin

Vol. 5: The Hydrology of the Lake Plateau and Bahr El Jebel. By Dr. H. E. Hurst and Dr. P. Phillips. (Ministry of Public Works, Egypt: Physical Department Paper No. 35.) Pp. x+251+103 plates. (Cairo: Ministry of Finance, 1938.) P.T. 100. 20s.

SINCE 1931 the Physical Department of the Egyptian Government has been issuing at intervals the volumes of a publication "The Nile Basin", written by Drs. H. E. Hurst and P. Phillips. The earlier volumes have contained descriptive matter and statistical records of hydrological observations of the Nile and its basin. The series has now been crowned by the volume under review, which summarizes and discusses the results of thirty years' river survey in the Sudan, upon which work Egypt has spent money both generously and fruitfully.

The excellent and numerous maps and diagrams that accompany the text have been reproduced by the Survey of Egypt, from which the Physical Department has sprung. One is reminded by this instance of co-operation of the principle advocated before the British Association in 1929 by Brigadier E. M. Jack, that the several survey branches of any country's administration should be as closely related as possible.

"The Nile Basin" is a book of a type of which unfortunately far too few examples get published. Mankind is comparatively well supplied with information as to the resources of the heavens and the earth itself but, as was noted by Galileo, knows little of the freshwater resources of the globe. So much is this the case that, when anything on the subject is reported in a British technical journal, the indexer usually is at a loss to classify it suitably and places it under some such heading as 'Water Supply', that is, distribution, whether the resources have been put to use or not. In this connexion, reference may be made to a recent Stationery Office publication, in which on an advertisement page the Surface Water Year-book of Great Britain, 1935-36, is placed under the heading of River Pollution and Fisheries.

The motives of modern Egyptian river-studies are the same as those for which the Roda gauge at Cairo has been read since A.D. 620, namely, irrigation and defence against floods. Without entangling the reader deeply in the problems of the Egyptian Irrigation Department, the authors frequently discuss their data with reference to those problems.

The task of surveying the Upper Nile is a formidable one, because of the tangle of lakes, channels and swamps in which the river-flow is gradually accumulated and through which it passes to Malakal. As the result of these physical conditions, any scheme for the conservation of the river-water in those regions in the interests of far-away Egyptian agriculture brings many factors into play. There is, however, a practical limit to the amount of survey that can be undertaken. Great care and skill have, therefore, to be exercised in extracting the maximum of accurate data for the testing of the schemes prepared.

In performing their task, the authors have, however, placed hydrologists as well as river-engineers in their debt, not only by furnishing well-arranged records of the river-system and its behaviour but also by discussing various problems and phenomena, such as the time of travel of changes of river-level and discharge; sunspots in relation to the water-levels of Lake Victoria; flow through and water-losses in swamps; the backwater effect of large rivers on one another; and gauge-discharge relationships as observed at various points on the Nile. Orthodox forms of statistical analysis have been used to an extent that is otherwise very rare in studies of this great river.

Dr. Phillips' death unfortunately occurred whilst this book was in draft form. Although hydrologists must deplore the premature loss of this valued worker, they can nevertheless rejoice as he surely would have done that this admirable record of the river-survey work of Dr. Hurst, his staff and the Egyptian Irrigation Department has now by publication been given a wider audience and endowed with permanency.

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