BOOK REVIEWS

SURFACE WATER RESOURCES. Atlas of Australian Resources, second series. Published by the Department of National Development, Canberra, 1967.

This publication consists of a 1: 6,000,000 map of Australia and a 24-page information booklet.

Hydrological information given on the map includes perennial, seasonal, and ephemeral streams. Those with catchment areas of more than 200 square miles are shown, and also most gauged streams from catchments of 5–200 square miles.

The main feature of the map is isopleth lines dividing the country into areas of equal long-term average annual run-off. There are nine categories of run-off shown between <0.05 in. per year and >60 in. per year. In addition, histograms of annual discharge are given for 22 selected gauging stations.

The overall hydrological impression of Australia is of a vast desert; by far the greatest area has an annual run-off of less than one inch. For this reason a finer subdivision of run-off at the lower end of the scale would have been of interest.

The colouring of the map is excellent. There is adequate contrast between each of the tints without reverting to garish colours. The use of grey ink for background detail has meant that hydrological information is dominant without being cluttered. Clutter is also avoided by having information of lesser importance incorporated in the accompanying booklet. Reference to the commentary is also necessary to find the source of the data used.

The small scale of the map has made it possible to use data which are essentially only estimates; at 1: 6,000,000 any discrepancies would be barely discernible and of no consequence. Despite this — because of the large size of the country — the map is not a small one, being 28 inches in width.

The difficulties which have been overcome in compiling data for this publication are impressive. Because of the intermittent flow pattern of streams over a vast area there are major technical problems in measurement and spatial sampling. However, despite this, there has been produced a useful and seemingly complex map which will be of great benefit in the national planning of water resources in Australia, and must point the way for similar publications in other countries.

A.D.P.

PHYTOPLANKTON ORGANISMS FROM THREE RESERVOIRS ON THE JAMUNA RIVER, INDIA, by T. Hortobágyi. Studia Biologica Hungarica. Published by Akadémiai Kiado, Budapest, 1969. 120 pp.

As the world population increases and countries become more highly developed the demand for water increases accordingly, and more attention must be paid not only to the quantity of water available but also to its quality.

The quality of water is usually determined by chemical and physical analysis, but complementary to this and of greater long-term importance is analysis of its biota. The presence or absence of each type of micro-organism, and the size of its population, will depend on the conditions characterizing the water under study. For observing fluctuations in water quality, therefore, it is important to have a knowledge of the range of phytoplankton. These algae are primary producers, the first step in the food chain; they use dissolved minerals as nutrient, and their numbers and types are relative to the concentrations of these minerals.

Dr Hortobágyi, as an extension of work on Hungarian fish-ponds, has made a survey of three reservoirs in India. Of 327 kinds of algae found, all except the diatoms (96 taxa) are fully described and discussed in this book and are illustrated with 431 large, clearly detailed diagrams. In addition, there is an analysis of the qualitative and quantitative distribution among the three different environments. Formal Latin diagnoses are given for 37 newly discovered taxa, comprising four species, 24 varieties, and nine forms. By far the greatest number of taxa belonging to any one genus were those of *Scenedesmus,* 29 of which are new to science.

Apart from its immediate application to the study of river pollution in India, this book will be of great use in identifying algae found in other parts of the world, as it adds to an understanding of the variations which can occur in the characteristics of species. It is important to have some measure of this, as the same species occur in widely separated localities. Thus, nearly 20 per cent of the algae listed here have been reported as occurring in New Zealand.

Providing as it does an independent description of each alga, this book will be of interest to anyone concerned with identification of phytoplankton.

A.D.P.