drawn for echinoderms.

One minor criticism: the author's curious practice of citing his authorities in reverse chronological order seems to attribute to northern geophysicists findings actually made much earlier by Australian and New Zealand biologists, as for example the late Miocene coolings evident in New Zealand, but strangely attributed to an English student of geomagnetism and hard-rock geology.

H. Barraclough Fell

FIELD WORK OF A MUSEUM NATURALIST: ALASKA – SOUTHEAST; ALASKA – FAR NORTH; 1919-1922. By ALFRED M. BAILEY. *Colorado: Denver Museum of Natural History, 1971. 6 x 9 inches, 192 pages, illustrated. $2.50 U.S. postpaid.*

This genuine and engaging little book, dedicated by the author to his wife, is a narrative of about three years' collecting in Alaska, without the detailed observations on natural history of Bailey's formerly published accounts. It will be of interest to Alaska hands, with its accounts of settlements, vessels, natives, old-timers and officials; and to modern naturalists and travellers who enjoy reading the recollections of their tougher precursors. It is illustrated by no less than ninety-five fine full and half-page period photographs, plus two maps, and embellished by a stream of anecdote involving Alfred and Muriel Bailey, Bailey's associate Russell Hendee, their numerous acquaintances and the Airedale "Jerry". Though written with the immediacy of dates, times and distances, the accounts of the great bird flocks, the pods of sea mammals, the free collecting forays by Americans to the Siberian shore, the determined and strong personalities of the settlers and their native friends, evoke nostalgia and heighten one's awareness of the precarious existence of man's cultural and natural resources.

A. H. Macpherson

INTERNATIONAL BIOLOGICAL PROGRAMME, TUNDRA BIOME: PROCEEDINGS IV. INTERNATIONAL MEETING ON THE BIOLOGICAL PRODUCTIVITY OF TUNDRA, LENINGRAD, USSR, OCTOBER, 1971. Edited by F. E. WIELGOLASKI and TH. ROSSWALL. *Stockholm: Swedish IBP Committee, 1972. 6½ x 9½ inches, 320 pages, illustrated. $4.00.*

Synthesis of research carried out in the International Biological Program is now occurring. The collaborative aspects of research have been a strong element in the tundra biome and a distinct contribution of IBP. Exchanges among circumpolar scientists have, in the past, been usually limited to formal papers, a few international conferences or the fortunate travels of a very few professional scientists.

Thus the publication of the third and fourth proceedings of IBP tundra workshops is a significant manifestation of changes within the scientific community. The fourth meeting occurred in Leningrad, October 25 to 29 1971. The most exciting portion of the resulting publication is the availability of summary descriptions and data from tundra research in USSR.

The Proceedings consist of three distinct parts: Part 1, comprising one third of the volume, is a set of ten articles on general problems of accounting for biological productivity in tundra regions. Dr. F. E. Wielgolaski of Norway presents a discussion of vegetation types by species composition and morphologic structure across the circumpolar tundra together with tabulated mean values of standing crop and apparent annual production by country and vegetation type. Initial attempts at simulation modelling of biomass production are described by H. E. Jones and A. J. P. Gore of the United Kingdom. Both a biomass balance method and an energy flux approach were compared for three sites at Moor House, United Kingdom; Barrow, Alaska; and Hardangervidda, Norway. Agreement between the two independent estimates for three sites was within the limits of the range of efficiency of solar energy conversion (1 per cent $\pm$ 0.2 per cent) used in the energy flux model. L. L. Tieszen describes the primary producer research in the U.S. tundra program which is focused on canopy structure, photosynthetic fixation and allocation of CO_2. This emphasis on plant physiological processes appears to address specifically the gap encountered by the U.K. model in accounting for seasonal variations in biomass increment. V. N. Andreev *et al.* summarize methods and values of estimating seasonal changes in above-ground phytomass employed in the Institute of Biology in Yakutia field station on the Kolyma River. The objective was to predict seasonal productivity by individual species, and most of the species analysed were circumpolar monocots. Initial multiple regression analyses of tundra decomposition processes by O. W. Heal, soil microbiological studies by T. V. Aristovskaya and O. M. Parinkina indicate that real progress is beginning to emerge on this