

plants, like animals, have followed a general southerly direction. It is possible that we know almost as much about Pleistocene floras in Europe as we do of Pleistocene mammals.

In stressing the importance of mountain barriers, such as the Himalaya, to animal and plant migration, the author is apt to overlook the fact that, so far as plants are concerned, they act as carriers as well as barriers. The east to west distribution of alpine plants is to be ascribed to the great Tertiary uplifts of Eurasia; and this movement has to some extent masked the north to south movement, further complicating the problem for the botanist. But the Himalaya was certainly most effective as a barrier just at the most critical time, namely, during the glacial epoch, when great numbers of species which might otherwise have made good their escape southwards, found their

way barred, and perished. Almost unconsciously, as it appears, Dr. Newbigin pays tribute to the general truth of Willis's 'Age and Area' hypothesis; for on p. 216 we read: "Thus the problem of distribution for any type seems to resolve itself into the time factor, the length of time which has elapsed since its origin, and the checking factor . . ."

In the opinion of the reviewer, this is the best general account which has appeared for some years of plant and animal distribution, its causes and consequences. The book is well printed and adequately illustrated; although it might be as well to add a map in any future edition showing at least the fourteen botanical regions commonly accepted by geographical botanists. Only the expert can correlate these for himself with the zoological map facing p. 244.

## Mélanges Pelseneer

Mélanges Paul Pelseneer  
(Mémoires du Musée Royal d'Histoire Naturelle de Belgique, Deuxième Série, Fasc. 3). Pp. ii+1206.  
(Bruxelles: Musée Royal d'Histoire Naturelle de Belgique, 1936.) n.p.

THIS handsome volume, containing contributions from among the most distinguished of his fellow workers in eleven countries, is dedicated to the eminent zoologist Paul Pelseneer "en témoignage de profonde reconnaissance et de respectueux admiration". Although he is pre-eminently a malacologist, his interest in all aspects of zoology is well known, and there are few groups in which he has not worked. A knowledge of this interest is manifest in the wide range of subjects chosen by the sixty-six authors represented, for nearly every animal group is included, from Protozoa to man, and each contributor choosing the subject specially his own in many cases has chosen one already in some measure touched upon by his illustrious colleague.

Not only in malacology but in the general papers also this interest is felt. Strohl's work on bipolarity is a case in point, and the paper by Pérez dealing with the influence of trematode sporocysts on the genital glands of *Turritella* recalls to us the fact that Pelseneer has himself investigated the larval trematodes parasitizing various molluscs, and has recorded several new species. In this connexion also comes Van den Berghe's ecological account of Congo molluscs as hosts for trematode cercariae. It is the same with the Crustacea. Among the

four papers dealing with this group, Redeke, in his research on *Atyaephyra desmaresti*, follows in the footsteps of Pelseneer, who was the first naturalist to record this species from Belgium.

Naturally the molluscs predominate, twenty-four of the contributions being devoted to them. To select two bearing specially on Pelseneer's own work we may mention Odhner's extensive paper on the Nudibranchia Dendronotacea, emphasizing our indebtedness to that author's exact investigations which afford such a solid basis for a modern natural classification, and Orton's observations and experiments on sex-change in the European oyster *Ostrea edulis*, in which he acknowledges "inspiration and advantage from this distinguished and honoured colleague". Yonge, on the evolution of the swimming habit in the Lamellibranchia, has chosen a subject peculiarly his own; and Navez, in his observations on the cardiac rhythm of *Anomia simplex*, offers a very interesting subject in a totally different field.

Four papers deal with echinoderms. Here Hörstadius's "über Heterosperma Seeigelmerogone" stands out. His beautiful and exact work, entailing the finest microtechnique, is well known, and needs no introduction here.

Physiology, embryology, ecology, morphology and systematics all have their share of attention, both in the mollusca and elsewhere. It is, however, impossible to mention them all in so short a space. All are valuable and interesting, and the whole volume is well got up and well illustrated.