

the implements of the Oronsay shell-mound and those of the Asylien and Arisien of France. These names have been given by Piette to strata occurring in the cave of Mas d'Azil between deposits of the Reindeer Period and purely Neolithic deposits with polished axe-heads. The Asylien yields flat harpoon points of stag's horn to which those of Oronsay bear a considerable resemblance. In the overlying Arisien, and also in the still higher purely Neolithic strata, there occur pebbles and slabs of slate, which are polished to a cutting edge either at the end or at one side. These implements are regarded by Piette as foreshadowing the polished axe-heads of the Neolithic Period. The bevel-ended pebbles of Oronsay and of the Balnahard Neolithic floor in Colonsay certainly bear a resemblance to these, but, even when taken in association with the occurrence in Oronsay of the Asylien type of harpoon-head, they can hardly be regarded as sufficient evidence of an early stage of Neolithic culture in the islands.

Finally, the evidence of the connexion of the Neolithic floor of Balnahard with a higher level of the sea is of a negative kind, and could not stand by itself. Were it not that a similar relation is observable in other parts of Scotland and Ireland, no special significance could be attached to it.

NOTICES OF MEMOIRS.

THE JURASSIC FLORA OF SUTHERLAND.

UNDER this title Professor A. C. Seward has given a general account of Scottish Jurassic plants, most of which have been obtained from Sutherland, and a particular account of the flora of the Upper Oolites of that county, based on materials collected by the late R. Marcus Gunn, F.R.C.S. (Trans. Roy. Soc. Edin., vol. xlvii, pt. iv, 1911). The formations from which plants have been obtained in Sutherland are: (1) Lower Oolites, including the Brora Coal Series of Great Oolite age, and possibly beds of Inferior Oolite, as suggested by Miss Stopes; (2) the Corallian Sandstone of Clyncleish Quarry, Brora, which has yielded in abundance casts of Cycadean stems described by Mr. Carruthers under the names of *Bucklandia* and *Yatesia*, but placed under the former genus by Professor Seward; (3) the Upper Oolites, between Kintradwell, north of Brora, and Helmsdale, Navidale, etc. The specimens in the collection of Mr. Gunn were obtained by him almost wholly from this last series, and mainly from Culgower Bay, in beds of Kimeridgian age.

The new forms described by Professor Seward are as follows:—

PTERIDOPHYTA.

FILICINEÆ.

Hausmannia Richteri.
Gleichenites Boodlei.
Marattiopsis Boweri.
Rhizomopteris Gunni.
Sphenopteris onychiopsoides.

GYMNOSPERMÆ.

GINKGOALES?

Phanicoopsis Gunni.

CONIFERALES.

Araucarites Milleri.
Masculostrobilus Zeilleri, gen. et sp.
 nov.
Tarites Jeffreyi.

CYCADOPHYTA.

Pseudoctenis crassinervis, gen. et sp.
 nov.

These and other species are figured in ten plates and fourteen text-illustrations.

In his conclusion Professor Seward remarks: "It is generally agreed that the differences between Wealden floras and those from different horizons in the Jurassic system are comparatively small. It may be said without exaggeration that from the Rhætic and Liassic periods to the end of the Jurassic period, including the Wealden, the vegetation of Europe experienced no very striking or fundamental change . . . The Culgowen flora has many features in common with the Upper Jurassic (Wealden) flora of Spitzbergen, the Wealden of England, Germany, and other regions, as also with the older Jurassic flora of East Yorkshire, which may be taken as a type of Middle Jurassic floras in various parts of the world. As one would expect in a flora of Kimeridgian age, we find an admixture of Wealden or Upper Jurassic, Middle, and Lower Jurassic species."

REVIEWS.

I.—A MONOGRAPH OF THE TERRESTRIAL CARBONIFEROUS ARACHNIDA OF GREAT BRITAIN. By R. I. POCOCK. Palæontographical Society, in volume for 1910. 4to; pp. 84, 3 plates, and 42 text-figures. London, 1911.

IT is a matter of common complaint among zoologists that fossil animals, especially Invertebrates, are too often described by writers who have an insufficient knowledge of recent animals and of the literature referring to them. It cannot be denied that there is sometimes ground for this complaint, but, on the other hand, it must be admitted that there is justice in the palæontologists' reply that those who possess the necessary knowledge of recent animals can rarely be persuaded to take up the difficult study of their fossil remains. It is to be noted, further, that the scientific study of any group of fossils demands not only the broad outlook of the morphologist, but also the minutely detailed knowledge of the systematic specialist, since the necessary imperfections of fossil remains often leave only the most trivial and superficial characters from which to draw conclusions as to affinity; and it is just the systematic specialist who is least often ready to appreciate the scientific importance of palæontological research.

Mr. Pocock is recognized as one of the foremost authorities on recent Arachnida, and he has already made several noteworthy contributions to our knowledge of some of the fossil representatives of the group. Of the Monograph under review it is no exaggeration to say that it places the study of the Carboniferous Arachnida on a new footing, and it merits the attention of palæontologists and zoologists alike.

In all, thirty-three species are described, but, as the author very justly remarks, the species themselves are of very little importance in the present state of our knowledge, and more attention is given to discussing the characters and affinities of the Orders, families, and genera to which they are referred. A large proportion belong to the