the Upper Jura of the Aargau; and from the whole Swiss Jurassic formation he has determined about sixty species, including the Textularidæ. They belong to the genera:—

Psammosphæra.	*Reophax.*	*Webbina.*
Astrorhiza.	*Haplophragmium.*	*Thurammina.*
Rhabdammina.	*Haplostiche.*	*Textularia* (*Plecanium*).
Marsipella.	*Placopsilina.*	*Bigenerina.*
Hyperammina.	*Trochammina.*	*Valvulina.*
Lituola.	*Hormosina.*	

A few species are identical with Carboniferous or Permian forms; but most of them most nearly approach recent deep-sea species and varieties, although similar forms do not occur in the younger formations. The species described in the present paper are from the zone of *Amm. transversarius*, and are as follows:—*Psammosphæra fusca*, Schultze, *Hyperammina vagans*, Brady, *Reophax multilocularis*, sp.n., *R. helvetica*, Häusl., *R. scorpiurus*, Montf., *Placopsilina arenacea*, d'Orb., *Thurammina papillata*, Brady, and *T. hemisphærica*, sp.n. Most of the recent genera of Astrorhizidæ and Lituolidæ would seem to have been represented by species identical with, or nearly allied to, those now existing, at the time of deposition of the beds with *Ammonites transversarius*.

CORRESPONDENCE.

SUBMERGED FORESTS ON THE SUFFOLK COAST.

Sir,—In 1874-5, whilst the river Orwell was being deepened, and a new channel cut, a bed of peat was discovered. This was carefully examined and worked by myself and Mr. Thos. Miller, C.E., the Ipswich Dock Engineer, and the published results appear in the Report of the British Association (Bristol) Meeting, 1875. This peat-bed was as much as nine feet thick, full of the trunks of trees, and from it we obtained several grinders of the Mammoth. It was traced down towards Harwich for a distance of six miles, and, at the time, I pointed out that this ancient forest could only have grown when the land stood relatively so much higher than the present sea-level that the bed of the German Ocean must have been marshy land, probably characterized by similar extensive shallow lakes to those which are so abundant in the flat, eastern parts of Norfolk, where they are known as "Broads."

Fishermen off the Norfolk and Suffolk coasts frequently bring up lumps of peat in their trawl nets, and that the bed of the German Ocean off these parts must be occupied by extensive deposits of this kind is shown by the unfailing supplies. Bones and teeth of Elephant, Ox, Deer, etc., are strewn over the area, and are often dredged up. Those who are acquainted with the magnificent collection of these remains made by Mr. Owles, of Great Yarmouth,[1] nearly all of which were dredged up by Yarmouth fishermen, will be prepared to substantiate the statement that the floor of the German Ocean is occupied by extensive post-glacial deposits, with their characteristic

[1] Now preserved in the British Museum of Natural History.

organic remains. A post-glacial forest-bed occurs at Holm Scarf, off the Norfolk Coast, and may plainly be seen at low water. It is a bed of peat in which trunks of trees are imbedded. It was in one of these trunks that Mr. Edwards found a flint implement sticking.

Within the last few days I have come upon the remains of another submerged forest or peat-bed at Bawdsey, near Felixstowe. It is only visible and accessible at low-water spring-tides, and even then it is seen sloping down into the sea. The cliffs at Bawdsey are formed of London Clay, capped by Red Crag, and they do not waste so rapidly as many other parts of this coast. The London Clay forms the bed of the sea, except near the northern side of the estuary of the Deben. There we find the peat-bed, resting directly on the London Clay. It is about four or five feet thick at its thickest part, but it has evidently been very much denuded, and is now merely a relic of what it once was. Remains of trees are not plentiful in it and the peat contains an abundance of fresh-water and marsh plants, but I found no fresh-water shells. The only animal remains I obtained are the upper part of the skull and horn-cores of *Bos longifrons*, but I was told that bones had frequently been washed out of it. Among the plants a species of *Cyperus* was abundant, and *Sphagnum* was also plentiful. Indeed, the nature of the peat-bed indicates its formation under just such marshy conditions as geologists have assumed the bed of the German Ocean to have been in before the submergence took place which brought the sea-water over it, and so converted England into an island.

The discovery of this remnant of a once extensive peat-bed uncovered only in part even at extreme low-water spring-tides, is therefore interesting as confirming the geological speculations concerning the old marshy plain over which the German Ocean now extends.

J. E. Taylor.

REPLY TO MR. ALFRED TYLOR.

Sir,—Mr. Alfred Tylor complains that being dissatisfied with certain views of some prominent geologists, I have "ready a theory of my own to meet all the difficulties of the student of Quaternary Geology." My rôle I am afraid is much more humble. It is true that I have spent much time in trying to unravel the difficulties of the surface beds of Western Europe, and have found, as Mr. Tylor no doubt has, that almost every student of them has a different theory. It is true also that, disagreeing with the many and contradictory views that have been propounded, I have tried (I hope in deferential language) to show why they seem incompetent to explain the facts, and having done so have propounded another view; but I neither claim for this conclusion that it explains all possible difficulties, nor that it is necessarily a final view. I do not believe in final views in Science. Every one of us is as a fly on a plate in view of the advancing tide of Knowledge, and we can do no more than frame an hypothesis that shall meet the facts accumulated up to the time when we write. To-morrow a child may find a fresh fact which will not fit our theory. That theory must thereupon go