

numerous, and happier, than they are now. They then had no wars, and such troubles as they have now."

The earliest French Missionaries found among the Indians, a very few, but very rude and illy formed copper knives. But there is no difficulty in distinguishing the implements of copper which they had from those that are found in the ancient mounds of Ohio. They are much more rude, and less perfect, in their construction. One of these knives may be seen figured by Mr. Squier, on page 201, of the Smithsonian Contributions, vol. 1.

The Indians knew of the existence of boulders or detached masses of copper, and when they found small pieces of it in the gravel, or on the pebble beach, they made use of the best skill of which they were possessed to fashion it into some useful implement.

Mr. S. W. Hill, of Eagle Harbor, Lake Superior, informed me, that in digging the foundation for a house at that place, at about four (4) feet below the surface, in the water washed sand of the Lake, there was found evidences of an attempt to melt by fire, some pieces of copper from a neighboring vein. This was, doubtless, the work of our Indians.

Mr. Bailey, of the same place, described to me an instrument of copper which he found in the gravel within Fort Williams, that appeared to have been used either for skinning animals or for dressing and working the skins. It resembled, somewhat, the circular knife of a saddler, without its wooden handle.

I have found in the soil or loose materials, pieces of native copper, that with a little beating in a cold state, might be fashioned into a rude knife or cutting instrument; and it is from such masses that I conclude all the implements known to the Indians were made. Those taken from the mounds of Ohio are much more finished and entirely different in form.

According to the relations of the Jesuit Missionaries, the Indians often preserved pieces of pure copper, which they picked up on the beach, as "manitous," or Gods, which they would not have done had this metal been so common as the working of the mines would make it.

The conjecture that the Indians knew of and worked the mines, but concealed them from the French, is not very plausible.

The entire length of the excavations now known, must be 25 or 30 miles, some of them on the coasts and navigable waters, and not easily concealed. Although the Indians are reluctant to disclose minerals to white men, they have done so in many cases of copper masses, but never of veins or ancient mines. They would be as likely to do one as the other, if they knew of them. But all of the ancient works yet explored, show that they have been abandoned more than 500 years, and not only before the French first heard the Indians speak of copper, but before Columbus landed on the Continent.

(To be continued.)

The Natural History of the British Seas; By Prof. E. Forbes.

The Natural History of the British Seas has for a long time been a favorite subject of investigation. Within the last fifteen years, however, fresh inquiries have been set on foot, and the details of their zoology and botany worked out to an extent beyond that to which the examination of any other marine province has been carried. Numerous and beautiful illustrated monographs, treating of their fishes, Cetacea, portions of the Articulata, the Mollusca, Radiata, Zoophytes, Sponges, and Algae, have been published, either at private cost, or by the patriotic publishers, or by the Ray Society, such as the scientific literature

of no other country can show. As these have all been the results of fresh and original research, they present a mass of valuable data sufficient to form a secure basis for important generalizations.

From these materials, and from the results of the inquiries into the distribution of creatures in the depth of our seas, conducted by a committee of the British Association, a clear notion may be formed of the elements of which our submarine population is composed. Extensive tables, exhibiting the sublittoral distribution of marine invertebrata, from the South of England along the Western coasts of Great Britain to Zeland, mainly constructed from the joint observations of Professor E. Forbes and Mr. MacAndrew, are now preparing for publication, as a first part of a general report from the committee referred to. The data embodied in these tables are the produce of researches conducted during the last eleven years, and registered systematically at the time of observation.

British marine animals and plants are distributed in depth (or bathymetrically) in a series of zones or regions which belt our shores from high water mark down to the greatest depth explored. The uppermost of these is the tract between tide marks; this is the Littoral Zone. Whatever be the extent of rise and fall of the tide, this zone, wherever the ground is hard or rocky, thus affording security for the growth of marine plants and animals, presents similar features, and can be subdivided into a series of corresponding sub-regions; through all of which the common limpet (*Patella vulgata*) ranges, giving a character to the entire belt. Each of these sub-regions has its own characteristic animals and plants. Thus the highest is constantly characterized by the presence of the periwinkle *Littorina rudis*, (and on our western shores, *Littorina neritoides*), along with the sea-weed *Fucus canaliculatus*. The second sub-region is marked by the sea-weed *Lichina* and the common mussel (*Mytilus edulis*). In common with the third sub-region it almost always presents rocks thickly encrusted with barnacles; so that where our shores are steep, a broad white band, entirely composed of these shell-fish, may be seen when the tide is out, marking the middle space so conspicuously as to be visible from a great distance. In the third sub-region the commonest form of wrack or kelp (*Fucus articulatus*) prevails, and the largest periwinkle (*Littorina littorea*) with the *Purpura capillus* are dominant and abundant. In the fourth and lowest sub-region the *Fucus* just mentioned gives way for another species, the *Fucus serratus*; and in like manner the shells are replaced by a fresh *Littorina* (*littoralis*) and peculiar *Trochi*.

Once below low-water mark the periwinkles become rare, or disappear, and the *Fuci* are replaced by the gigantic sea-weeds known popularly as tangles (species of *Laminaria*, *Alaria*, &c.) among which live myriads of peculiar forms of animals and lesser plants. The genus *Lacuna* among shell-fish is especially characteristic of this zone. In sandy places, the *Zostera* or grass-wrack replaces the *Laminaria*. The Laminarian Zone extends to a depth of about fifteen fathoms, but in its lowest part the greater sea-weeds are comparatively few, and usually the prevailing plant is the curious coral-like vegetable called Nullipore.

From 15 to 50 or more fathoms we find a zone prolific in peculiar forms of animal life, but from which conspicuous vegetables seem almost entirely banished. The majority of its inhabitants are predaceous. Many of our larger fishes belong to this region, to which, on account of the plant-like zoophytes abounding in it, the name of Coralline Zone has been applied. The majority of the rarer shell-fish of our seas have been procured from this region.

Below 50 fathoms is the region of deep-sea corals, so styled because hard and strong true corals of considerable dimensions