

the waves on reading Edward Forbes' enthusiastic description of his first deep-water dredging:—

“Beneath the waves there are many dominions yet to be visited and kingdoms to be discovered, and he who venturously brings up from the abyss enough of their inhabitants to display the physiognomy of the country, will taste that cup of delight, the sweetness of whose draught those only who have made a discovery know. Well do I remember the first day when I saw the dredge hauled up after it had been dragging along the sea bottom, at a depth of more than 100 fathoms. Fishing lines had now and then entangled creatures at as great, and greater depths, but these were few and far between, and only served to whet our curiosity, without affording the information we thirsted for. They were like the few stray bodies of strange red men which tradition reports to have been washed on the shores of the Old World, before the discovery of the New, and which served to indicate the existence of unexplored realms inhabited by unknown races, but not to supply information about their character, habits, and extent. But when a whole dredgeful of living creatures from the unexplored depth appeared, it was as if we had lighted upon a city of the unknown people, and were able, through the numbers and varieties taken, to understand what manner of beings they were. Well do I remember anxiously separating every trace of organic life from the enveloping mud, and gazing with delighted eye on creatures hitherto unknown, or on groups of living shapes, the true habitats of which had never been ascertained before, nor had their aspect, when in the full vigour and beauty of life, ever before delighted the eye of a naturalist. And when, at close of day, our active labours over, we counted the bodies of the slain, or curiously watched the proceedings of those whom we had selected as prisoners, and confined in crystal vases, filled with a limited allowance of their native element, our feelings of exultation were as vivid, and surely as pardonable, as the triumphant satisfaction of some old Spanish ‘Conquistador,’ musing over his siege of a wondrous Astlan¹ city, and reckoning the number of painted Indians he had brought to the ground by the prowess of his stalwart arm.”²

Dredging in shallow water was found to be so easy, and its results so interesting, and often so unexpected, that it soon became popular among naturalists, and assisted in turning their attention more particularly to marine life.

The increased interest in the biological conditions was accompanied by a more careful study of the physical and chemical problems presented by sea water. A great many analyses were made towards the end of last century, but the methods then employed were too imperfect to yield results of much scientific value, and the principle on which they were conducted was erroneous. It was assumed that a proximate analysis of the salts in sea water could be made by weighing the amount of each particular salt that could

¹ Astlan was the country from which, according to native tradition, the Aztecs came.

² Natural History of European Seas, p. 11, 1859.