known shallow-water species, at a depth of 680 fathoms, half-way between Iceland and the Faroe Islands."[1] He mentions that he met with no Algæ at depths greater than 200 fathoms, the only vegetable structures occurring at great depths being Diatomaceæ, and he sums up as follows :—"Basing my arguments on two facts which I venture to hope are unequivocally proved in the preceding pages, namely, that highly organized creatures have been captured in a living condition at depths vastly exceeding those to which animal life had previously been supposed to extend, and that their presence, where captured, cannot be regarded as an accidental or exceptional phenomenon, it has been my endeavour to establish the following important propositions :—

Wallich's General Views on Deep-Sea Life.

"I. The conditions prevailing at great depths, although differing materially from those which prevail near the surface of the ocean, are not incompatible with the maintenance of animal life.

"II. Assuming the doctrine of single specific centres to be correct, the occurrence of the same species in shallow water and at great depths proves that it must have undergone the transition from one set of conditions to the other with impunity.

"III. There is nothing in the nature of the conditions prevailing at great depths to render it impossible that creatures originally, or through acclimatization, adapted to live under them, should become capable of living in shallow water, provided the transition be sufficiently gradual, and hence it is possible that species now inhabiting shallow water may, at some anterior period, have been inhabitants of great depths.

"IV. On the one hand, the conditions prevailing near the surface of the ocean render it possible for organisms to subside after death to the greatest depths, provided every portion of their structure is freely pervious to fluid : on the other hand, the conditions prevailing at great depths render it impossible for organisms still constituted to live under them to rise to the surface, or for the remains of these organisms after death to make their appearance in shallow water.

"V. The discovery of even a single species living normally at great depths warrants the inference that the deep sea has its own special fauna, and that it has always had it in ages past, and hence that many fossiliferous strata, heretofore regarded as having been deposited in comparatively shallow water, have been deposited at great depths."[2]

Many of Wallich's opinions have been confirmed by subsequent researches, and altogether he must be regarded as one of the most industrious pioneers in the investigation of the deep-sea.

The existence of a deep-sea fauna discovered by Wallich was soon established on conclusive proof. In 1860, the telegraph cable between Sardinia and Bone in the Mediter-

[1] Wallich, *op. cit.*, p. 151.

[2] Wallich, *op. cit.*, pp. 154–155. In addition to the North Atlantic Sea-bed, Wallich is the author of many papers in scientific journals between the years 1858 and 1873, describing marine organisms and treating of various aspects of deep-sea investigations and controversies.