

deep-sea fauna, of this zone by taking a line of soundings and dredgings in its northern half (say between Japan and Vancouver) and in its eastern half (say between Vancouver and Valparaiso). If practicable, it would further be very desirable to explore the littoral fauna of Waihou, Easter Island, or Sala y Gomez, with the view of comparing it critically with that of the west coast of South America.

If H.M.S. *Challenger* passes through Torres Straits, it will be very desirable to examine the littoral fauna of the Papuan shore of the straits, in order to compare it with that of the Australian shore. The late Professor Jukes, in his "Voyage of the Fly" many years ago, directed attention to this point and to its theoretical bearings.

The Hydrographic examination of "Wallace's line" in the Malay Archipelago, and of the littoral faunas on the opposite sides of that line, is of great importance, considering the significance of that line as a boundary between two distributional provinces. And additional interest has been given to the exploration of this region by Captain Chimmo's recently obtained sounding of 2800 fathoms in the Celebes Sea, the mud brought up being almost devoid of calcareous organisms, but containing abundant spiculæ of Sponges and *Radiolaria*.

The light from any self-luminous objects met with should be examined with a prism as to its composition. The colors of animals captured should also be examined with a prism, or by aid of the microscopic spectroscope.

#### V. CONCLUDING OBSERVATIONS.

Attention should be paid to the geology of districts which have not hitherto been examined, and collections of minerals, rocks, and fossils should be made. Detailed suggestions as to the duties of the geologist accompanying the expedition are unnecessary; but it seems desirable that, at all shores visited, evidence of recent elevation or subsidence of land should be sought for, and the exact nature of these evidences carefully recorded.

Every opportunity should be taken of obtaining photographs of native races to one scale; and of making such observations as are practicable with regard to their physical characteristics, language, habits, implements, and antiquities. It would be advisable that specimens of hair of unmixed races should in all cases be obtained.

Each station should have a special number associated with it in the regular journal of the day's proceedings, and that number should be