

siderable expense. We must still, therefore, depend mainly upon some form of sounding apparatus for the gradual accumulation of observations which will give us in time a consistent idea of the nature of the bottom of the sea throughout. A simple instrument which will bring up a surface sample of a pound or so, from a depth of 2,000 fathoms, without much trouble and with some certainty, is still a desideratum.

In the year 1818, Sir John Ross, in command of H.M.S. 'Isabella,' on a voyage of discovery for the purpose of exploring Baffin's Bay, invented a machine "for taking up soundings from the bottom of any fathomable depth," which he called a 'deep-sea clamm.' A large pair of forceps were kept asunder by a bolt, and the instrument was so contrived that on the bolt striking the ground, a heavy iron weight slipped down a spindle and closed the forceps, which retained within them a considerable quantity of the bottom, whether sand, mud, or small stones.<sup>1</sup> On the 1st of September, 1818, Sir John Ross sounded in 1,000 fathoms, lat. 73° 37' N., long. 75° 25' W. The soundings consisted of "soft mud, in which there were worms, and, entangled on the sounding-line, at the depth of 800 fathoms, was found a beautiful *Caput Meduse*." On the 6th of September Sir John Ross sounded in 1,050 fathoms, lat. 72° 23' N., long. 73° 075' W., and the clamms brought up 6 lbs. of very

<sup>1</sup> A Voyage of Discovery made under the Orders of the Admiralty in His Majesty's Ships 'Isabella' and 'Alexander,' for the purpose of exploring Baffin's Bay, and inquiring into the Possibility of a North-west Passage. By John Ross, K.S., Captain Royal Navy. London: 1819: p. 178.