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## CHAPTER II

### THE SHIP AND ITS EQUIPMENT

Difficulties experienced in making deep-sea observations.

It has often been said that studying the depths of the sea is like hovering in a balloon high above an unknown land which is hidden by clouds, for it is a peculiarity of oceanic research that direct observations of the abyss are impracticable. Instead of the complete picture which vision gives, we have to rely upon a patiently put together mosaic representation of the discoveries made from time to time by sinking instruments and appliances into the deep, and bringing to the surface material for examination and study. Our difficulties are greatly increased by the fact that it is impossible to watch our apparatus at work. A trawl, for instance, is lowered to a great depth, and a few fathoms below the surface it disappears from view; later on it is brought on board and found to be empty. Is this because there was nothing to catch where it was operating, or has it somehow or other got out of order, or failed to reach the bottom, or met with some similar mishap, and so been prevented from catching anything? These questions can only be answered by examining the trawl when once more on deck, and drawing one's conclusions accordingly.

Importance of development of mechanical aids in deep-sea work.

Obviously, therefore, the progress of oceanography depends to a great extent upon the development of mechanical aids, by which we mean not only the scientific instruments employed, but also the whole arrangements of the ship itself. To be able