

ing-down." Curve C is reduced from the serial sounding at Station I. (Plate IV.), 70 miles from Santa Cruz. The "hump" has now disappeared as such, but it is still represented by the space between C and D raising the portion of the curve corresponding with the "hump," and representing the course of the southern branch of the Gulf-stream moving southward, now without a special impediment. Curve D represents the middle station of the section in the course of the trade-wind drift where the distribution of temperature is very regular, the isotherms being closely pressed together and the heated water confined to a thin surface layer; and the diagram, Fig. 57, represents a vertical section at the same station, showing the proportion of water at different temperatures. Fig. 58 gives for comparison the proportion of water at different temperatures at Station I.

Between Teneriffe and Sombrero three series of temperature observations were taken by Lieutenant Bethell with Mr. Siemens's resistance deep-sea thermometer; and there seems to be little doubt, from the general correspondence of the results with those of the protector thermometers, that the instrument answers its purpose. In some of the observations, however, there were wide discrepancies; but these may have been due to want of practice in observing.

Should it turn out that Mr. Siemens's instrument can be thoroughly depended upon to give accurate results, it will undoubtedly be invaluable for certain purposes. In our antarctic cruise, for instance, on several occasions the surface layer was colder than any layer beneath: our thermometers on the Miller-Casella construction registered accordingly their minimum on the surface; a warmer layer succeeded, in which they registered their maximum: but after fixing these two points they were useless. A workable instrument on Mr. Siemens's principle would have given us the bottom temperature, which we most of all desired.

I must say, however, that I doubt if this resistance apparatus