



FIG. 70.—Thermometer tubes broken by pressure at Station XXV. A, Thermometer No. 39; B, No. 42.

bulb and the top of the tube. The large bulb and its covering shell were also broken, but into larger pieces, disposed as if the injury had been produced by some force acting from within. The thermometer tube was broken through in three places; at one of these, close to the bend, it was shattered into very small fragments. The creosote, the mercury, and bubbles of air were irregularly scattered through the tube, and it is singular that each of the steel indices had one of the disks broken off. The whole took place, no doubt, instantaneously by the explosion of the small bulb, which at the same time burst the large bulb and shattered the tube.

In No. 42 a crack only occurred in the small bulb, either through some pre-existing imperfection in the glass or from the pressure. When the pressure became extreme, the crack yielded a little, and the sea-water was gradually forced in, driving the contents of the thermometer before it, and, taking it at a disadvantage from within, breaking the shell of the large bulb, which was unsupported on account of the belt of rarefied vapor between it and its outer shell. The pressure was now equalized within and without the instrument, and the injury went no farther. Alcohol, cre-