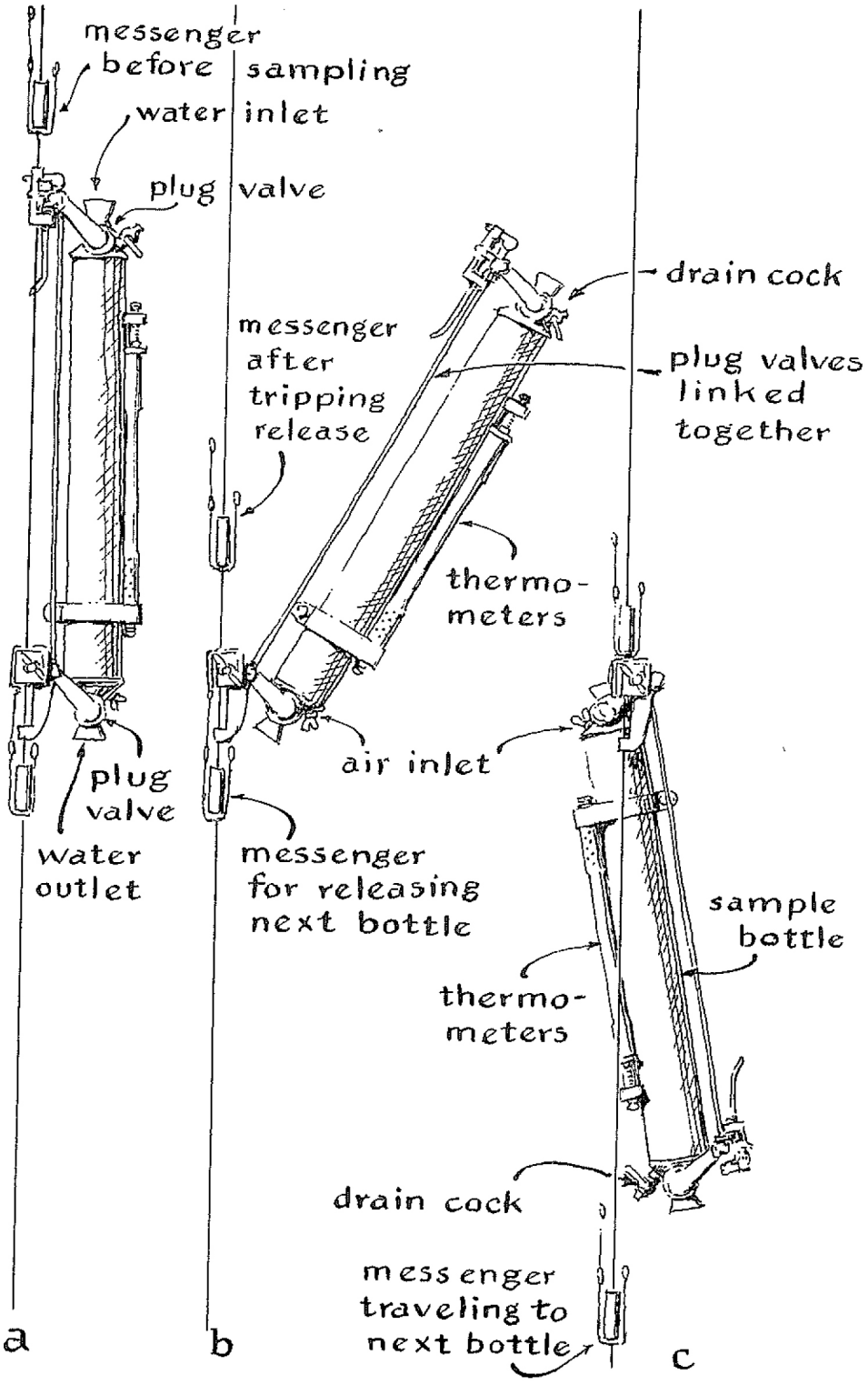
THE NANSEN BOTTLE

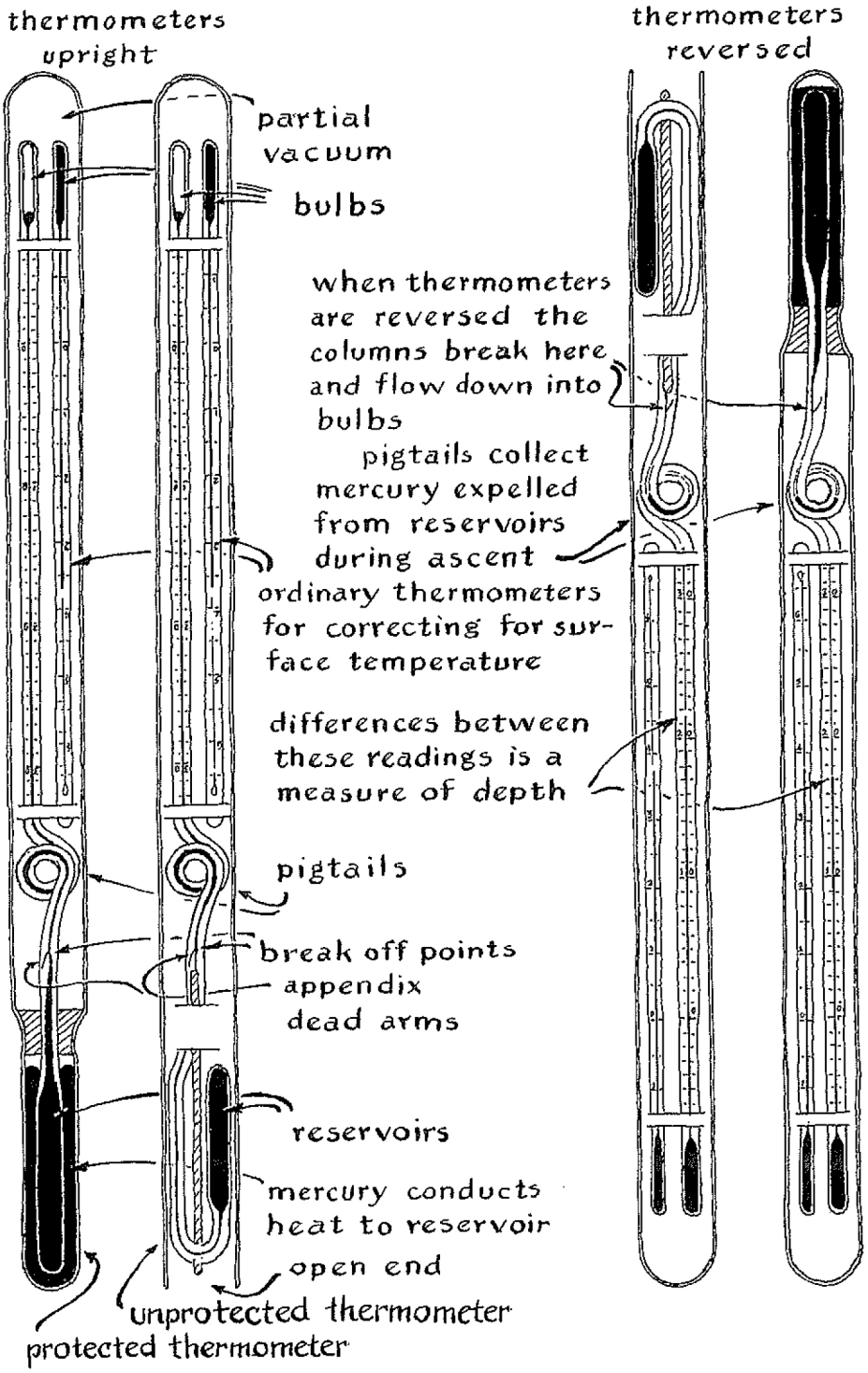
The Nansen Bottle was developed in 1894 by oceanographer Fridtjof Nansen and was used in oceanography until about 1981. It was mounted on a wire lowered from a ship and used to sample water and measure temperature at depth. The Nansen bottle is the precursor to Niskin bottles currently used in oceanography.

One or a series of Nansen bottles are mounted on a wire, a messenger weight is sent down the wire from the surface, to trip the first bottle upside down, closing the sample bottle and reversing the thermometer so it records the temperature at depth, see cartoon illustrations below. In a series of bottles mounted on a wire, a second messenger mounted just below the top Nansen bottle is then released to drop and trip the next bottle on the wire, and so on.

The mercury thermometer, protected by a rigid enclosure, has a constriction in its capillary tube which, when the thermometer is inverted, causes the thread to break and trap the mercury, fixing the temperature reading from that depth. An un-protected thermometer is paired with the protected one, and comparison of the two temperature readings is a measure of depth.



Oceanography
A view of the earth
M. Grant Gross, 1972



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