

Phipps' deep-sea soundings.

During this expedition also some of the earliest attempts at deep-sea sounding were made by Captain Phipps, the deepest sounding being 683 fathoms, from which depth he brought up a sample of Blue mud.

Saussure.

In 1780 Saussure determined the temperature of the Mediterranean at depths of 300 and 600 fathoms by protected thermometers, and in 1782 Six's maximum and minimum thermometer was invented, and subsequently made use of by

Krusenstern.
Kotzebue.

John Ross
and Sabine.

Parry.
d'Urville.

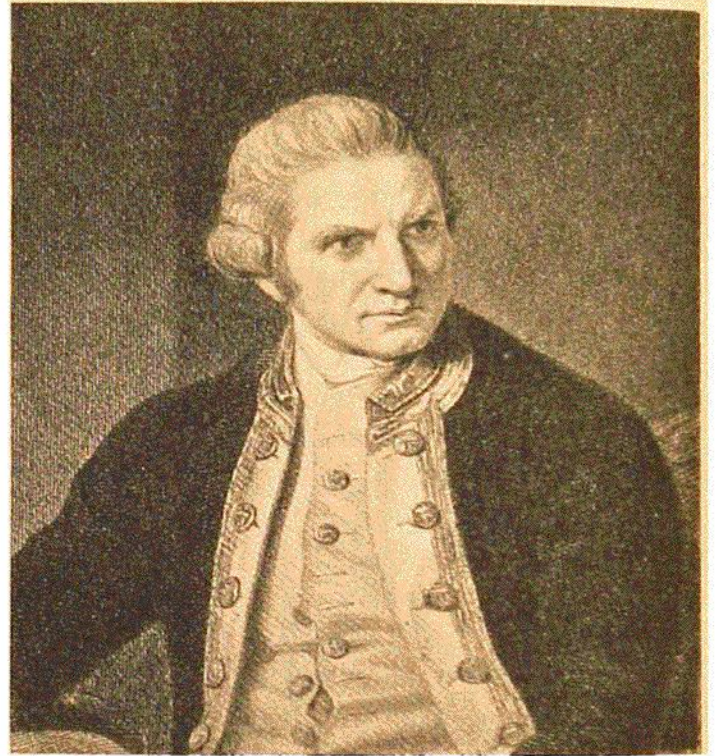
Péron.
Scoresby.

Krusenstern in 1803, by Kotzebue in 1815, by Sir John Ross accompanied by Sir Edward Sabine in 1818, by Parry in 1819, and by Dumont d'Urville in 1826. Slow-conducting water-bottles were used by Péron in 1800, by Scoresby in 1811, who recorded warmer water beneath the colder surface layers in the Arctic regions, and by Kotzebue accompanied by Lenz in 1823.

Lenz.

Protected thermometers were used for deep-sea temperatures by Thouars in 1832, by Martins and Bravais in 1839, and by Sir James Clark Ross during his Antarctic expedition from 1839 to 1843, the last-mentioned making also many observations on

Thouars.
Martins and
Bravais.
James Clark
Ross.



CAPTAIN JAMES COOK.

Aimé.

the density of the water at various depths. In 1843 Aimé introduced reversible outflow thermometers, and about 1851

Maury.

Maury used cylinders of non-conducting material for taking temperatures in deep water. But it was only when thermometers with bulbs properly protected from pressure came into use that oceanic temperatures could be recorded with precision.

Pullen.

The first thermometer of this kind seems to have been used in 1857 by Captain Pullen of H.M.S. "Cyclops," and shortly thereafter improved forms of the Six pattern (Miller-Casella) and of Negretti and Zambra's reversing pattern were introduced, and have been largely used ever since, improvements and modifications being incorporated from time to time.