

previously indicated. His scientific results were published in the English language in six handsome volumes.

The "Ingolf." During 1895 and 1896 the Danish ship "Ingolf" was engaged in the investigation of the northerly portions of the Atlantic, the physical and biological results being published in English.

Survey of
Scottish
lakes.
John Murray,
F. P. Pullar.
Laurence
Pullar.

Chrystal's
observations
on seiches.

Temperature
seiche.

From 1897 to 1909 Sir John Murray, associated at first with F. P. Pullar and afterwards with Laurence Pullar, carried out a bathymetrical survey of the Scottish fresh-water lochs, including detailed physical and biological observations, and the report on the scientific results was published in six volumes in 1910. During these investigations very careful observations were made by Chrystal on seiches, as a result of which our knowledge of these oscillations and their causes was widely extended. Another kind of oscillation was also discovered, which has been called the temperature seiche. This occurs at the discontinuity layer, where there is a rapid fall of temperature. This temperature oscillation in Loch Ness had a period of about three days, and a maximum rise and fall of about 200 feet. The period of these oscillations is dependent on the difference in density between the upper warm layer and the lower cold layer: the smaller the difference in density, *i.e.* the smaller the temperature differences in a lake, the longer does the period of the oscillation become. These observations in the Scottish lakes have recently been extended by further systematic work in Loch Earn under E. M. Wedderburn, and have already suggested explanations of phenomena in the ocean, where long-period oscillations are observed in various depths, and the explanation is probably the same as that given for the lakes.

Wedderburn.

The
"Belgica."

In the years 1897 to 1899 the Belgian Antarctic Expedition on board the "Belgica" carried on important work. This was the first vessel to winter in the Antarctic regions, and the scientific results are necessarily of great interest and value.

The
"Valdivia."

In 1898-99 the German Deep-Sea Expedition on board the "Valdivia" investigated the physical and biological conditions of the Atlantic and Indian Oceans, penetrating into the Antarctic as far as the ice would permit. The extremely valuable scientific results are being issued in a series of magnificent memoirs under the editorship of Chun, the leader of the expedition.

Chun.

The "Nero."

In 1899 the U.S.S. "Nero" surveyed the route for a telegraph cable between the Sandwich and Philippine Islands by way of Midway and Ladrone Islands, many of the soundings