

self-registering limnograph installed at Morges, and a portable limnograph of simpler construction. In 1877 Plantamour established a magnificent self-registering limnograph at his villa at Sécheron, near Geneva, which has been in continuous operation since. In 1879 Sarasin devised his portable limnograph, with which observations were made at Tour de Peilz, Chillon, Rolle, and various other stations on Léman, and also upon other Swiss lakes. In 1880 the French Government engineers also installed a fixed limnograph at Thonon, with which observations have been made under the superintendence of Delebecque, Du Boys, and Lauriol.

During the last twenty years a large number of enthusiastic observers have followed the lead given by Forel and his fellow-countrymen; and we have now a great mass of information regarding the seiches in lakes in various parts of the world,¹ from the 15-hour seiches observed by Henry in Lake Erie, which is 396 km. long, to the seiches of 14 seconds observed by Endrös in a small pond whose length was only 111 m.

Systematic observation of seiches in the lakes of Scotland is of very recent origin. On 22nd May 1902, Dr Johnston and the late Mr J. Parsons, using merely a foot-rule, made a determination of the uninodal period of Loch Treig. In the same year Mr James Murray made similar determinations for Lochs Laggan, Arkaig, Morar, Fada, Maree, and Chroisg, and Mr J. Hewitt for Lochs Shiel and More. Mr Murray also detected the binodal seiche of Lochan Fada, and in 1903 Mr T. R. H. Garrett obtained a good approximation to the uninodal period of Loch Ness. All these observations were made with a foot-rule, and make no pretence to great accuracy. The uninodal periods found, some of which are given in the table below on p. 53, varied from 9 min. for Loch Treig to 31 min. for Loch Ness, and the ranges from 0.38 cm. to 3.7 cm.

In June 1903 a self-recording Sarasin limnograph was erected at Fort Augustus under the superintendence of Mr E. M. Wedderburn, who was afterwards assisted in the observations by Messrs James Murray and E. R. Watson. In May 1904 a Dines-Shaw microbarograph, provided by the Moray Fund of the University of Edinburgh, was set up alongside of this limnograph. The observations were continued till May 1905, the instruments having been in the charge of the monks of the Order of St Benedict from October 1904 to May 1905. This valuable series of observations has not as yet been exhaustively discussed, but Mr Wedderburn has deduced from them

¹ See the extension of Forel's bibliography appended to my paper on the Hydrodynamical Theory of Seiches, *Trans. Roy. Soc. Edin.*, vol. xli. p. 599, 1905; also, for the most recent information, an excellent paper by Halbfass, "Der heutige Stand der Seiches-Forschung," *Zeitschr. Ges. Erdk. Berlin*, 1907, p. 6.