

Mr H. N. Dickson, the late Mr John Rattray, and many other physicists, chemists, and biologists took part.¹

While carrying on these researches in the sea-lochs of Scotland the *Medusa* made several excursions into the fresh-water lochs in the line of the Caledonian Canal—Loch Lochy, Loch Oich, and Loch Ness. Nothing could be more striking than the difference in the physical and biological conditions presented by the salt- and the fresh-water lochs. In salt water the maximum density point is below the freezing point, so that the colder water at the surface always tends to sink to the bottom. In fresh water the maximum density point is 39°·2 Fahr., so that water at this temperature tends to sink to the bottom, while water above or below 39°·2 Fahr. remains at the surface. This physical fact governs the very different distribution of temperature and

¹ Cunningham, J. T., "On the Relations of the Yolk to the Gastrula in Teleosteans, and in other Vertebrate Types," *Quart. Journ. Micr. Sci.*, vol. xxvi., N.S., p. 1, 1885.

Henderson, J. R., "The Decapod and Schizopod Crustacea of the Firth of Clyde," *Trans. Nat. Hist. Soc. Glasgow*, 1886.

Murray, John, "The Physical and Biological Conditions of the Seas and Estuaries about North Britain": Paper read before the Philosophical Society of Glasgow, 31st March 1886, and published in *Proc. Phil. Soc. Glasgow*, vol. xvii. pp. 306–333, 1886.

Murray, John, "On the Effects of Winds on the Distribution of Temperature in the Sea- and Fresh-Water Lochs of the West of Scotland," *Scot. Geogr. Mag.*, vol. iv. pp. 345–365, 1888.

Günther, A., "Report on the Fishes obtained by Mr J. Murray in Deep Water on the North-West Coast of Scotland, between April 1887 and March 1888," *Proc. Roy. Soc. Edin.*, vol. xv. pp. 205–220, 1888.

Cunningham, J. T., and R. Vallentin, "The Luminous Organs of *Nyctiphanes norvegica*," *Proc. Roy. Soc. Edin.*, vol. xiv. pp. 351–356, 1887; also *Quart. Journ. Micr. Sci.*, vol. xxviii. pp. 319–343, 1888.

Rattray, John, "Revision of the Genus *Aulacodiscus*; Revision of the Genus *Aulisca*," *Journ. Roy. Micr. Soc.*, 1888.

Hoyle, W. E., "On the Deep-Water Fauna of the Clyde Sea-Area (with map)," *Journ. Linn. Soc. Lond.*, Zoology, vol. xx. pp. 442–472, 1889.

Murray, John, "On the Temperature of the Salt- and Fresh-Water Lochs of the West of Scotland, at different Depths and Seasons, during the years 1887 and 1888," *Proc. Roy. Soc. Edin.*, vol. xviii. pp. 139–228, 1891.

Murray, John, and R. Irvine, "On Silica and the Siliceous Remains of Organisms in Modern Seas," *Proc. Roy. Soc. Edin.*, vol. xviii. pp. 229–250, 1891.

Mill, H. R., "The Clyde Sea Area," *Trans. Roy. Soc. Edin.*, vol. xxxvi. pp. 641 and 664, 1892.

Murray, John, and R. Irvine, "On the Chemical Changes which take place in the Composition of the Sea-Water associated with Blue Muds on the Floor of the Ocean," *Trans. Roy. Soc. Edin.*, vol. xxxvii. pp. 481–507, 1893.

Murray, John, and R. Irvine, "On the Manganese Oxides and Manganese Nodules in Marine Deposits," *Trans. Roy. Soc. Edin.*, vol. xxxvii. pp. 721–742, 1894.

And numerous other papers.