

pretiosus, the "Escolar," which "is taken with an ordinary bait at a depth (the fishermen affirm) of from twelve to fourteen *linhas* (=300–400 fathoms), living habitually near the bottom, in company with the Cherne (*Polyprion cernium*), Cœlho (*Thyrsites prometheus* or *Prometheus atlanticus*), etc."; *Thyrsites prometheus*, which "lives habitually at the bottom, and is taken at most seasons in a depth of from 100 to 300 or 400 fathoms"; *Scorpæna dactyloptera*, from 250 to 400 fathoms. Especially instructive is Lowe's account of the capture and occurrence of *Polyprion cernium*; he says:—

"The Sherny in Madeira is only captured by the hook; and though shoals of small fishes, weighing from five to twenty pounds, and called Chernotta, are said to be often taken near the surface, in the neighbourhood of floating wreck or logs of wood, the proper habitat of the full-sized fish, weighing from thirty to one hundred pounds, is from one to two or three leagues from shore, and at the enormous depth of from twelve to fifteen or sixteen *linhas*, or from three hundred to four hundred fathoms. With a strong line¹ of this length, to the bottom of which is tied a stone (called the '*pendula*') of three or four pounds' weight, and having attached immediately above the stone, at intervals of eighteen inches, from twelve to fifteen strong hooks, baited with pieces of Cavallo [Mackerel] or Chicharro [Madeiran Horse-Mackerel], I have been frequently assisting at their capture. Coming up from these enormous depths, the fish becomes so distended with gas, expanding upon the removal of the vast pressure below, that it rises to the surface, not indeed entirely dead, but wholly powerless, and in a sort of rigid cataleptic spasm; the stomach is usually inverted, and protruded into the mouth; and the eyes in general are forced so completely from their sockets, sticking out often like two horns, that 'eyes like a Cherne' is a common phrase amongst the fishermen for a prominent-eyed person. Sometimes, from the same cause, it rises faster as it approaches the surface than the line can be hauled in, shooting quite out of the water at some distance from the boat upon its first emergence, like a cork or bladder, from the lightness caused by its great distension. The usual size of these was from two and a half to three and a half feet long, weighing from twenty-five to forty or fifty pounds."

The discovery that some fishes live, at an early period of their existence, at or near the surface, and in the course of their growth retire into the depths of the ocean, is due to Lowe.

The study of the fishes of Madeira was continued by Mr. J. Y. JOHNSON, who, between the years 1862 and 1866, made some of the most interesting additions to ichthyology; he discovered important bathybial types, such as *Chiasmodus*, *Melanocetus*, *Halosaurus*, *Synaphobranchus*, the *Saccopharynx* of Mitchell, and others, but he treated them like any other rare surface-fishes, without taking note of their pertinence to a distinct fauna.

¹ Each boat is generally furnished with two such lines, each worked by a single fisherman, who is, however, assisted by others in the labour of hauling in the line, which takes from twenty to thirty minutes.