

which are very variable in position, sometimes being located near the head, at other times in the tail, while a new and hitherto unsuspected type of electrical organ is the scattered glandular form, which recent investigations have shown to be spread in the skin of one of our commonest fishes. Naturalists have hitherto been unaware of the fact that the common eel of our rivers and lakes is really an electrical fish. It is possible that extended studies will reveal many more common species endowed with this remarkable property.

The most complex form of electrical organ is that of the electric ray *Torpedo* of which several species exist. Five years ago I secured a living torpedo during an official survey on the Kerry coast, Ireland: an interesting capture when it is noted that Thomas Pennant a hundred years ago says of this fish that it "is very rarely taken in British Seas: the only one we ever heard of being took off the county of Waterford."

I found that the Irish fishermen stood in dread of it, called it a Mum Ray, a corruption no doubt of Numb or Cramp Ray; but begged for the liver of the fish, to which they attributed almost miraculous curative qualities. It was a clumsy ill-looking creature, and unlike the Skate was thick and fleshy at the lateral margin, round in front and lacking the pointed rostrum or snout. In the dirty ochre-coloured skin a rude hexagonal pattern appeared indistinctly, and on dissection, was found to correspond to the columns of modified soft muscle which constitute the electrical organs. They have been aptly compared to a collection of Voltaic piles, each consisting of electric plates of transparent homogeneous substance and invested by tendinous connective tissue, which sends alternating extensions between the plates. Over eleven hundred of these hexagonal columns are said to have been counted in a torpedo weighing seventy pounds. Five large nerve trunks pass from the medulla oblongata, on each side, to the organs, dividing up into 50,000 or 60,000 separate nerve fibres. The nerve terminations in the electric plates were found by Fritsch to precisely resemble those in muscular tissue. The organs occupy the entire thickness of