

*gymnoti*, of unequal strength, in such a manner as to receive the shocks of the most vigorous fish by contact, that is to say, by touching only one of the other fishes, I did not observe that these last were agitated at the moment when the current passed their bodies. Perhaps the current did not penetrate below the humid surface of the skin. We will not, however, conclude from this, that the *gymnoti* are insensible to electricity; and that they cannot fight with each other at the bottom of the pools. Their nervous system must be subject to the same agents as the nerves of other animals. I have indeed seen, that, on laying open their nerves, they undergo muscular contractions at the mere contact of two opposite metals; and M. Fahlberg, of Stockholm, found that his *gymnotus* was convulsively agitated when placed in a copper vessel, and feeble discharges from a Leyden jar passed through its skin.

After the experiments I had made on *gymnoti*, it became highly interesting to me, on my return to Europe, to ascertain with precision the various circumstances in which another electric fish, the torpedo of our seas, gives or does not give shocks. Though this fish had been examined by numerous men of science, I found all that had been published on its electrical effects extremely vague. It has been very arbitrarily supposed, that this fish acts like a Leyden jar, which may be discharged at will, by touching it with both hands; and this supposition appears to have led into error observers who have devoted themselves to researches of this kind. M. Gay-Lussac and myself, during our journey to Italy, made a great number of experiments on torpedos taken in the gulf of Naples. These experiments furnish many results somewhat different from those I collected on the *gymnoti*. It is probable that the cause of these anomalies is owing rather to the inequality of electric power in the two fishes, than to the different disposition of their organs.

Though the power of the torpedo cannot be compared with that of the *gymnotus*, it is sufficient to cause very painful sensations. A person accustomed to electric shocks can with difficulty hold in his hands a torpedo of twelve or fourteen inches, and in possession of all its vigour. When the torpedo gives only very feeble strokes under water,