

pressing wet sticks of sealing-wax against the organs of the fish, while the same animal gave me the most violent strokes, when excited by means of a metallic rod. M. Bonpland received shocks, when carrying a gymnotus on two cords of the fibres of the palm-tree, which appeared to us extremely dry. A strong discharge makes its way through very imperfect conductors. Perhaps also the obstacle which the conductor presents renders the discharge more painful. I touched the gymnotus with a wet pot of brown clay, without effect; yet I received violent shocks when I carried the gymnotus in the same pot, because the contact was greater.

When two persons, insulated or otherwise, hold each other's hands, and only one of these persons touches the fish with the hand, either naked or armed with metal, the shock is most commonly felt by both at once. However, it sometimes happens that, in the most severe shocks, the person who comes into immediate contact with the fish alone feels them. When the gymnotus is exhausted, or in a very reduced state of excitability, and will no longer emit strokes on being irritated with one hand, the shocks are felt in a very vivid manner, on forming the chain, and employing both hands. Even then, however, the electric shock takes place only at the will of the animal. Two persons, one of whom holds the tail, and the other the head, cannot, by joining hands and forming a chain, force the gymnotus to dart his stroke.

Though employing the most delicate electrometers in various ways, insulating them on a plate of glass, and receiving very strong shocks which passed through the electrometer, I could never discover any phenomenon of attraction or repulsion. The same observation was made by M. Fahlberg at Stockholm. That philosopher, however, has seen an electric spark, as Walsh and Ingenhousz had before him, in London, by placing the gymnotus in the air, and interrupting the conducting chain by two gold leaves pasted upon glass, and a line distant from each other. No person, or the contrary, has ever perceived a spark issue from the body of the fish itself. We irritated it for a long time during the night, at Calabozo, in perfect darkness, without observing any luminous appearance. Having placed four