

NOTES ON A NEW SPECIES OF PEDALION
FOUND IN THE SOLOMON ISLANDS.

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The paper I have the honour to read before this Society might be entitled, with some truth, "The History of a Lost Opportunity." In a paper which I read before the Royal Microscopical Society of London, in 1889, on a "New Species of *Megalotrocha*," I spoke of Dunk Island, off the coast of Queensland, as follows:—"One meets with a tiny pool, not more than three or four feet across, on the bleak and rocky headland of an island out at sea, exposed to the storm and to the glare of a tropical sun, breakers beating on the rocks below within twenty feet of it, and yet, strange to relate, I found the water of such a solitary and lifeless pool literally swarming with a wonderful pedalion." But at that time (1888) I did not realise that this rotifer was a totally distinct and new species. Last August (1893) whilst examining some water collected in the artificially hollowed-out trunk of a cocoanut tree, made by the natives of New Georgia for drinking purposes, and growing on a small island in Rendova Harbour, Solomon Islands, I once again came across this pedalion in considerable numbers. Then I recognised my old friend of the Australian coast, and realised that it was a new species, differing in essential details from the only known species of *Pedalion*, *P. mirum*. Before I could, however, complete my examination of this rotifer, the news arrived that this same species had been discovered by Dr. Levander, of Helsingfors, in Finland, in October, 1892,* and had been named by him *P. fennicum* four years after I first had seen it.

The genus "Pedalion" can with truth be regarded as one the great discoveries of the nineteenth century. As late as the year 1871, the true position of the Rotifera in the animal kingdom was a matter of keen dispute. At first classed with the Infusoria, they were afterwards raised by some observers to the level of the Crustacea, whilst others placed them among the Vermes (worms). In that year Dr. C. T. Hudson discovered in Clifton, England, a rotifer, for which not only a new genus had to be formed, but also a new family, whilst

*Curiously enough, like mine "in a little pool, about two yards square by a foot deep, ten yards from the sea-shore, and not a yard above the sea-level; no vegetation; grey detritus on the bottom; the water moderately clear; sweet."

a new order was created for its reception as well as the reception of *Hexartura polyptra*, another extraordinary rotifer found in Egypt in 1853, but never seen since. This new rotifer, named by Hudson *Pedalion mirum*, resembled in its general conformation the *Namplius* larva of one of the freshwater Entomostraca. Not only did it possess, in common with other rotifera, a ciliary wreath on its head, by the movements of which it was driven through the water in a manner somewhat similar to that of the screw of a steamship, but it had in addition six limbs, which enabled it to skip several times its own length. Here then we have in *Pedalion* the connecting link between the two sub-kingdoms, *Vermes* and *Arthropoda*.

For a long time England was *Pedalion*'s only home. But it has since been found in several others parts of the world. I myself have come across it in China, the waters of which literally swarm with beautiful microscopic organisms, and also in the desolate volcanic island of Ascension in the middle of the Atlantic Ocean.

Now a second species of this wonderful genus has been discovered, mounted specimens of which are now under the microscopes on the table.

The differences between the two species are soon told. In size they are nearly equal, viz., about $\frac{1}{25}$ inch in length, though I think that the new *P. fennicum* is rather broader than *P. mirum*. If you will glance at the sketches of these two rotifera, you will see (marked *a*) two peculiar stylate processes projecting from the posterior end of the body of *P. mirum*; these are absent in *P. fennicum*. Taking into consideration the six limbs, the ventral limb (mark *b*) is seen to project considerably beyond the hinder end of the body in *P. mirum*, whilst in the new species it only just reaches beyond the posterior end, and is therefore considerably shorter. There is also a marked difference in the lateral limbs. In *P. mirum*, the dorso-lateral limb (*g*) is considerably smaller than the ventro-lateral limb (*j*), whilst in *P. fennicum*, the two lateral appendages are nearly equal in size. The bristled extremities of all the limbs, but especially the ventral limbs, are more expanded in *P. mirum* than in *P. fennicum*.

Such are the main differences. The internal anatomy, as far as is known (the digestive, nervous, water vascular, reproductive, and muscular systems), is similar in both species. Only females have been found at present, many of them bearing one or two reddish eggs attached to the hinder part of the body.