1906

(R. C.) common. Mr. Ellison took 7 specimens this summer near Stromness from *M. orcadensis*.

DASYCANEMUS, *Rothsch.*—29, v.' 06: abundant in unoccupied nest of *Sorex araneus*? in bank near Hillend.

SORECIS, *Dale* = (*Gracilis Taschb.*).—7, vii. '06: on *Sorex araneus*, 2 ♂ ♂, (R. C.).

PENTACANTHUS, *Rothsch.*—26, iv. '06: on *Mus sylvaticus*, Colinton, ♂.

CTENOPSYLLUS, *Kolen.*

MUSCULI, *Dugès.*—viii. '05: ♀ from *Mus musculus*, Stromness, (Robert Godfrey, "A.S.N.H.," April 1906). 2, i. '06: Many from *M. musculus*, Edinburgh.

EDINBURGH.

THE TARDIGRADA OF THE FORTH VALLEY.

(SECOND PAPER.)

By JAMES MURRAY.

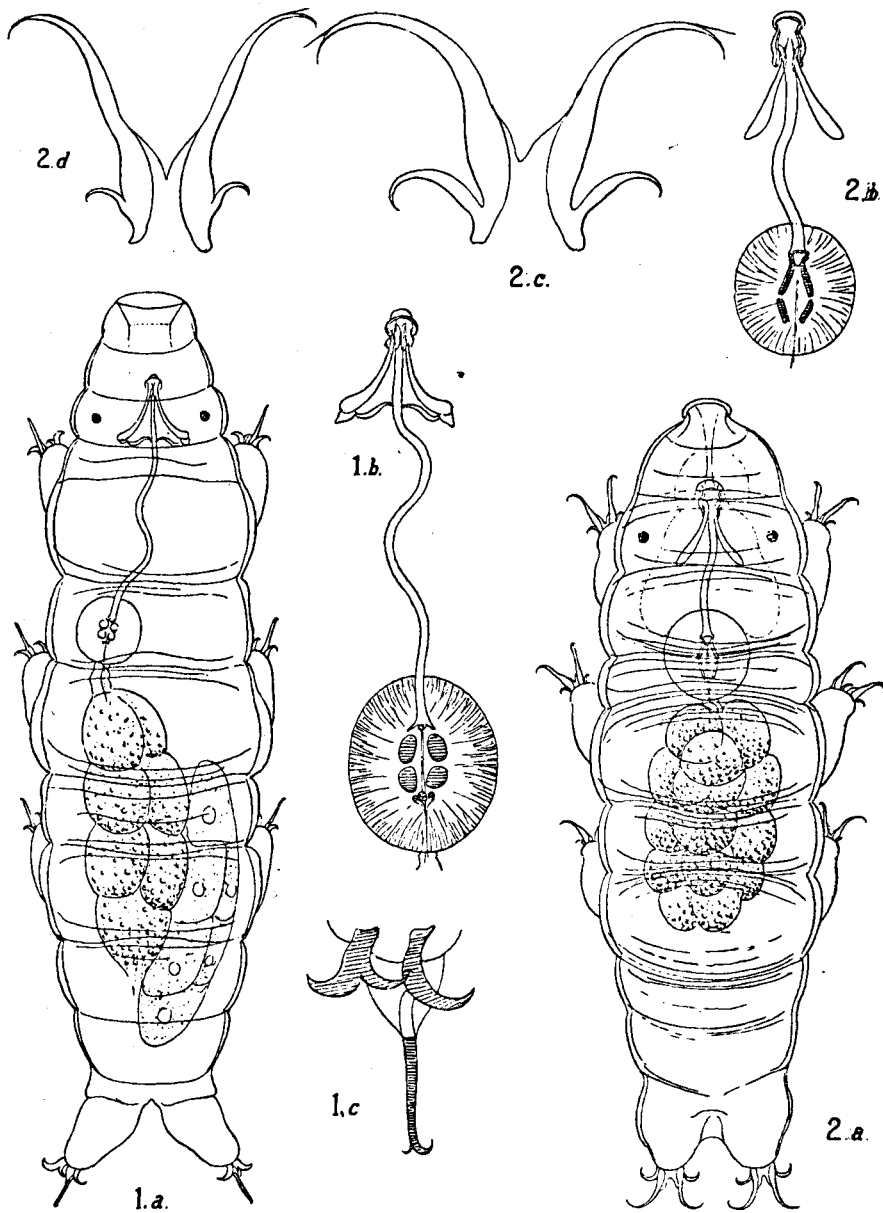
PLATE V.

SINCE the first list of Forth Tardigrada appeared in this journal in July 1905, some half-dozen additional species have been found in the district, including an undescribed species of the genus *Diphascon*, and some new localities fall to be noted for the species previously found. As in the previous list, all the species here mentioned were collected by Mr. Wm. Evans.

Genus ECHINISCUS.

No further species of this genus has been identified, but two forms have been found which cannot be referred to any known species. These are shortly described for the sake of future reference, but they are not named because there is at present so much uncertainty as to the specific value of many points of structure in *Echiniscus*.

Echiniscus sp.?—Length $\frac{1}{110}$ inch, relatively broad, plates 9, granules moderate, lateral setæ 5, at posterior angles of head, shoulder, first and second paired and lumbar plates, progressively longer from second to fifth, head seta also long; dorsal processes a small spine on posterior edge of each plate of first and second pairs; fringe of sharp teeth on last leg; inner



1, *a*. *Diphascon oculatum*, n. sp.
1, *b*. The same; teeth, gullet, and pharynx.
1, *c*. ,, claws of last leg.

2, *a*. *Macrobiotus macronyx*, Duj...
2, *b*. The same; teeth, gullet, and ...rynx.
2, *c*. ,, claws of last leg.
2, *d*. ,, claws of first leg.

claws with strong decurved barbs, none on outer claws; palp on first leg.

The species is very close to *E. creplini*, Schultze. The chief differences are the *fringe* and the *barbs* of the inner claws, and it is a question whether Schultze, in common with all the earlier observers, did not overlook these structures. The only other important distinction is the little spine on anterior edge of the plates of the first pair. I have not seen such a spine in any species. Schultze figures a separate anal plate, a character possessed by many of Richters' species, but I have seen no species having such a plate. Little importance can, I think, be attached to this character, unless the animal observed is full-grown and mature.

Nether Habbie's Howe, Pentland Hills.

Echiniscus sp. ?—Length $\frac{1}{100}$ inch, plates 9, granules moderate, lateral setæ 4, on head, first and second paired and lumbar plates, longest setæ on plates of first pair; dorsal processes, a weak spine on each plate of first pair; a small tooth on each plate of second pair; fringe of short spines on last leg, inner claws barbed.

From Moss, Fullarton, Midlothian, November 1905.

E. spitzbergensis, Scourfield.—The form of *Echiniscus* referred to this species in the previous paper differs from the type in having the dorsal process on each plate of the second pair elongate. The pattern on the plates, also, appears to consist of flat discs with depressed or perforate centre, instead of coarse granules. In both respects it closely resembles a species found in Franz Josef Land. Further study is necessary to determine whether that is distinct from *E. spitzbergensis*.

Genus Macrobiotus.

M. hufelandi, C. Sch.—Malleny Dam, Fullarton; form *simplex*, near Doune and Ochils above Dollar.

M. intermedius, Plate ?—A species agreeing with this as to pharynx and claws has been found at Duddingston, Upper Elf Loch, and Pentland Hills, but without finding the characteristic egg I would not be certain of the identification.

M. echinogenitus, Richters.—Upper Elf Loch on Braid Hills, 4th November, adult and typical egg. Three varieties of eggs, doubtfully referable to this extremely variable form, have also been found; 1st var., spines very long, straight, sharp, length about equal to half the diameter of the body of the egg, Elf Loch; 2nd var., spines very small cones, closely set, but not meeting at bases, Malleny Dam, near Balerno; 3rd var., spines

small cones standing far apart, about 17 in the circumference, Gullane Links.

M. ornatus, Richters ?—A form agreeing with this species as to pharynx and claws, but with the skin perfectly glabrous and without spines, occurred at Fullarton, Winchburgh, and Thornton. This variety is connected with the type by Richters' var. *verrucosus*.

M. macronyx, Doy.—Upper Elf Loch, Largo, and Marl Pit at Davidson's Mains. The furca of the tooth is very large.

M. macronyx, var. ? (Figs. 2*a* to 2*d*).—Near Roslin, in March, Mr. Evans found an animal which would technically be called a *Diphascon*, but which has claws exactly like those of *M. macronyx*. It is a *simplex* form, having teeth without furca or bearers, and an elongate flexible gullet. As such forms are useful to indicate the affinities of the genera and species, it is here figured. The pharynx has rods sufficiently like those of *M. macronyx*, but is rounder.

Genus Diphascon

D. angustatum, Murray.—In damp moss, Thornton, Fife, December 1905. A *simplex* form, the first seen for this species. The gullet is a good deal longer and narrower than in the type.

D. oculatum, n.sp. (Figs. 1*a* to 1*c*.) *Specific characters.*—Large, narrow, broadest in middle. Two dark eye-spots. Teeth curved, with bearers; gullet very long, slender; pharynx nearly round; thickenings two short oval bodies and at posterior end a little round nut (what Richters calls a "komma"). Claws, a short thick pair, and a pair with one very long claw apparently springing from the middle of the back of the shorter claw, long claw with a fine spine near the apex.

It is the first species of the genus found possessed of eyes, and is named from that peculiarity, although the character is somewhat unstable in the genus *Macrobiotus*. If we suppose it without eyes or flexible gullet (both somewhat untrustworthy characters) it would still be distinguishable from any species of *Macrobiotus* having similar pharynx, by the structure of the claws. The lower portion of the long claw seems to be less firm than the upper part. This is indicated (Fig. 1*c*) by shading the firmer portion. There is a little thickening at the end of the gullet in the pharynx in addition to those enumerated in the description. Six eggs, in a very early stage of development, are seen in the body. Total length 347μ, pharynx 33μ × 26μ; long claw (from base of pair) 21μ.

Hopetoun Woods, Linlithgowshire, 2nd December 1905 (W. Evans).

D. chilenense, Plate.—In the previous paper on Forth Tardigrada, and in several other papers, I have in error spelt the name *chilense*, though I now find that Dr. Plate spelt it *chilenense*.

D. scoticum, Murray.—In the key to the genus *Diphascon*, given in the previous paper, there is a mistake made in distinguishing this species from *D. spitzbergense*, Richters, by the thickenings in the pharynx. Dr. Richters has since sent me specimens of *D. spitzbergense*, and I find that the rods of the pharynx are alike in the two species. *D. scoticum* is distinguished by the much more slender gullet, oval pharynx, and lenticular bodies in the cells of the stomach. The mistake arose through Dr. Richters identifying a Scottish species, not yet described, as *D. spitzbergense*.

Additional localities: Winchburgh, Thornton, Davidson's Mains, and Bavelaw.

These additions bring the list of Tardigrada known to occur in the Forth area up to 18, but two of these are not yet named. The complete list of the species identified is here appended :—

Echiniscus arctomys, Ehr.
E. mutabilis, Murray.
E. wendti, Richters.
E. granulatus, Doy.
E. spitzbergensis, Scourfield.
Macrobiotus hufelandi, Schultze.
M. intermedius, Plate ?.
M. echinogenitus, Richters.
M. ornatus, Richters.
M. macronyx, Doy.
Milnesium tardigradum, Doy.
Diphascon chilenense, Plate.
D. scoticum, Murray.
D. bullatum, Murray.
D. angustatum, Murray.
D. oculatum, n.sp.

Edinburgh.

ON THE NOMENCLATURE OF BRITISH PLANTS AS AFFECTED BY THE LAW ADOPTED BY THE BOTANICAL CONGRESS AT VIENNA.

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The rule which was passed by a majority of botanists attending the Vienna Congress in 1905, which insists on the earliest specific name being retained in the valid name, except in such instances where the original specific name is now employed in a generic sense, or where the specific name has already been used to designate a plant in the same genus, leads if adopted to a considerable change in