

## Further notes on the mouth-parts of the Oribatids.

By

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In a previous paper (3) I emphasized the importance of studying the mouth-parts of the Oribatids and gave several instances when an examination of them threw light on the relation between different groups. As an example of how imperfect our knowledge was in this respect I especially mentioned the *Phthiracarinae* (l. c., p. 210): »As a matter of fact the mouth-parts of the Phthiracarinae are so little known, that there seems to be some uncertainty as to the exact number of the joints of the palps. Nicolet says that they consist of four joints only, whereas Claparède and Berlese delineate five joints. Michael, on the other hand, supports Nicolet's view and thinks that Berlese has mistaken the insertion point of a hair on a small shoulder near the middle of the terminal joint as a suture between two joints. As pointed out by the author (1931, p. 554) there are only three free joints.»

Further investigations, embracing material of more genera than I had hitherto dissected, revealed, however, the astonishing fact that the number of joints of the palps varies in the different genera, a fact which a more thorough study of Berlese's drawings would have made plain, were it not that the correct drawings were almost concealed between the incorrect ones.

A closer examination of Berlese's drawings in »Acari, Myriopoda et Scorpioes Italiæ» discloses the following facts:

1. The short triangular joint delineated in *Tritia* (pl. 20) and *Tritia decumana* (pl. 23) does not exist, the oblique line crossing the base of the basal joint being simply the lateral edge of the maxillary plates, as shown in fig. 1.
2. The terminal joint is, as Michael asserts, never divided into two joints, as Berlese draws the palps of *Tritia nuda* (pl. 21) and of *Hoplophora stricula* (pl. 17).

Furthermore the ridges surrounding the base of the basal joint vary to a great extent and are sometimes missing, and for this

reason they cannot be interpreted as indicating that a basal joint has been fused with the maxillæ, as Michael and Nicolet believe.

On the other hand the number of joints varies in different genera, a fact which seems to have been overlooked by previous authors.

Thus in *Phthiracarus* there are only 3 joints (comp. Trägårdh 1, fig. 1) and the same applies to *Tropacarus* (fig. 2).



Fig. 1. Right maxilla with palp of *Oribotritia decumana*.

In the genus *Oribotritia*, on the other hand, it seems curiously enough as if the number of joints was not quite fixed. In *O. decumana* (fig. 1) there are four distinct joints, the 2nd joint being evidently the additional joint and having no hairs. In *Oribotritia färöensis* Selln., on the other hand (comp. Trägårdh 2, fig. 77) there are only 3 joints, and an African species of the same genus not yet described (fig. 3) has an intermediate position between both in so far that there are 4 joints, but the 2nd one is short and only through a fine suture divided from the 1st joint.

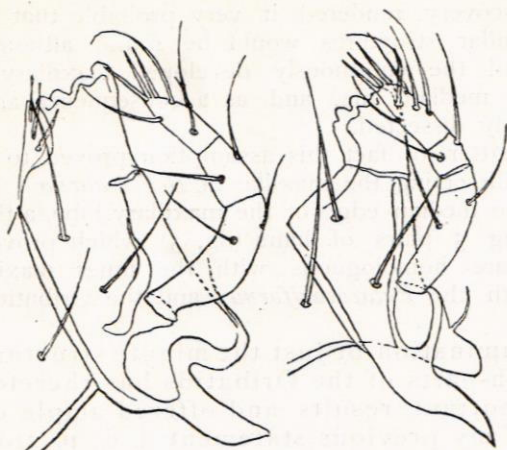
In the same paper I also added some information about the lingula of *Hypochthonius* and of the *Phthiracarinae* and pointed out that these forms, as far as is known, are the only ones where,

owing to the excavation of the median edge of the maxillary lobes, these organs take part in the formation of the floor of the mouth cavity (l. c., p. 217).

In reality these thin blades have nothing to do with the lingula, which is concealed behind them. Little did I guess, when I started the investigations of these minute structures, chiefly, I must admit, because Jacot's contention that they were of no importance rankled in me, what important results would so soon accrue from them.

A comparison between the maxillæ of these two forms and those of the new suborder *Palaeacariformes*, instituted by me, the organisation of which is more primitive than that of any other acarina, at once revealed the fact that these blades are very ancient structures and correspond to the inner maxillary appendages



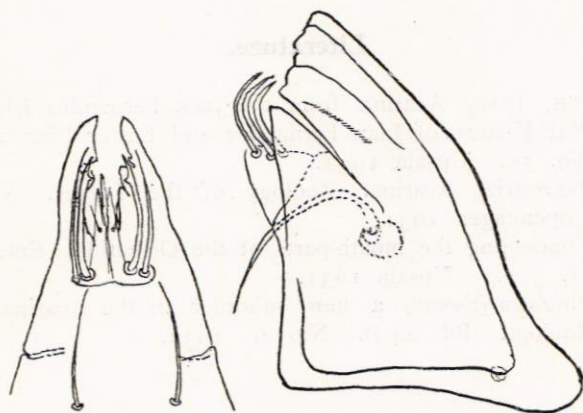


2.

3.

Fig. 2. Left maxilla with palp of *Tropacarus carinatus*.

Fig. 3. The same of *Oribotritia* sp. from Natal.



4.

5.

Fig. 4. Top of maxilla of *Hypochthonius rufulus*.

Fig. 5. Left maxillary lobe of *Belba aurita*, with maxillary plate carrying 3 hairs, seen from inner side.

of the *Palaeacariformes* (comp. Trägårdh, 4, fig. 5) which also carry 3 pairs of hairs exactly as *Hypochthonius* (fig. 4) and the *Phthiracarinae*, where there also are 3 hairs, not 2 as previously wrongly stated (l. c., fig. 11 & 12).

This discovery rendered it very probable that also in other Oribatids similar structures would be found, although they are hidden behind the enormously developed maxillary lobes which meet in the median line, and as a consequence are not visible unless properly dissected.

As a matter of fact this assumption proved to be true; immediately on dissecting the maxillæ of *Belba aurita* I found, partly hidden by the median edge of the maxillary lobe, a thin triangular blade carrying 3 pairs of hairs (fig. 5), which proves that these appendages are homologous with the inner maxillary appendages of both the *Palaeacariformes* and the Oribatids mentioned above.

The examination of just the minute structural features of the mouth-parts of the Oribatids has therefore already yielded important results and offered ample evidence of the truth of my previous statement (l. c., p. 210): »A more detailed investigation of the mouth-parts of them (the Oribatids) will without the slightest doubt enable us to solve many as yet unsettled questions regarding the relationship of many forms».

### Literature.

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