(*Rev. Zool. Bot. Afr., LXXVI, 3-4*). (*A paru le 30 décembre 1967*).

Solenidiotaxy of leg I in the hypopi of the Acaridiae

(Acari: Sarcoptiformes)

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The number, the shape and the situation of the solenidia on the legs of hypopi are very important characters in the classification of these instars. So far these characters have been studied only in a few groups of hypopi.

In the course of studies on hypopi living on birds or mammals (Labidophorinae, Rodentopinae, Echimyopinae and Hypoderidae), I have observed that the tarsi I always bear two solenidia (*omega 1* and *omega 3*) and not only one as it had been thought so far.

Recently, on studying a small collection of hypopi belonging to the families Acaridae and Saproglyphidae, I found that *omega 3* (ω *3*) is also present in these groups. The only family where I did not observe this solenidion is that of the Anoetidae, but curiously enough in that family the tibiae I bear an additional solenidion (*phi 2*) which actually could be the ω *3* that has migrated towards the tibia.

These observations are summarized here below.

1. Hypopi of the genus *Acarus* (Acaridae) (fig. 1).

ZAKHVATKIN (1941, p. 99) described the chaetotaxy of the hypopi in the Tyroglyphidae (= Acaridae) but, except for *omega 1* which is called « olfactory club », he did not distinguish clearly the sensory setae. According to HUGHES (1961, pp. 13-14): « The solenidion *omega 3* (ω *3*) ... is first developed in the last nymphal stage ». GRIFFITHS (1964, p. 429), in his study of the genus *Acarus*, expresses the same opinion.

Our observations show that in the hypopi of *Acarus siro* the following solenidia are present on leg I: the tarsus bears two solenidia: *omega 1* (*ω 1*), which is club-shaped and *omega 3* (*ω 3*) which is thin and cylindrico-conical (= seta *b a* of GRIFFITHS 1964, fig. 21). There is a very thin famulus, it is prolonged in the depth of the tarsus where it is visible as a very thin black line. This thin prolongation has also been observed in the *Dermatophagoides* spp. (FAIN, 1967c). Tibia with one long recurved solenidion *phi*. Genu with a cylindroconical solenidion *sigma* (fig. 1).

2. Hypopi of the genus *Psylloglyphus* FAIN (Saproglyphidae) (Fig. 2).

In the hypopi of *Psylloglyphus uilenbergi* FAIN (1966) the tarsus I bears 3 solenidia: *omega 1* (*ω 1*) is short; *omega 3* (*ω 3*) is longer, it is situated closely to the former but is a little more distal; *omega 2* (*ω 2*) is very short and situated more basally than the two others. Tibia I with one long solenidion *phi*. There is one solenidion *sigma* on genu I (fig. 2).

3. Hypopi of the family Anoetidae (fig. 3).

In a new species that I have described recently (FAIN, 1967f), the formula for the leg I is as follows: tarsus with only one solenidion (*ω 1*); tibia with two, rather long, solenidia situated close to each other (*phi 1* and *phi 2*); genu with one solenidion (*sigma*) (fig. 3). This disposition seems to be constant in all the hypopi of this family. It is to be noted that the tibia II bears one solenidion, thus it appears that the additional solenidion *phi 2* on tibia I could be actually the *omega 3* that had migrated towards the tibia.

4. Hypopi of the subfamily Labidophorinae (Glycyphagidae) (fig. 4).

Formula of leg I as follows: tarsus with *omega 1* and *omega 3*; tibia with one *phi*; genu with one *sigma*. This formula has been observed in the genera *Dermacarus, Tenrecopus, Marsupialichus* and *Labidophorus*. In some rare species there is an additional vestigial solenidion on genu I (*sigma 2*). (FAIN, 1967a and 1967b).

5. Hypopi of the subfamilies Rodentopinae and Lophuromyopinae (Glycyphagidae) (fig. 5).

Legs I with the same formula as in the Labidophorinae group (fig. 5). In one species (*Lophuromyopus* (*Apodemopus*) *apodemi* FAIN) the solenidion of genu I is lacking (FAIN, 1965, 1967a and 1967b).

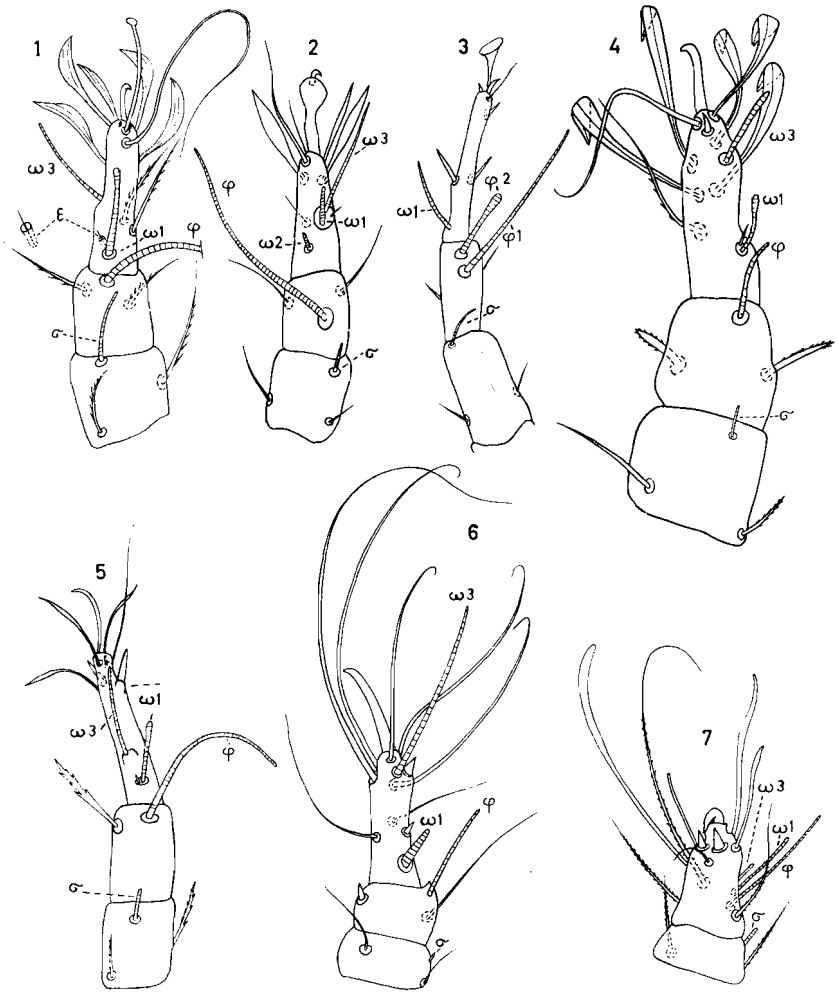

Fig. 1-7. — Leg I (tarsus, tibia and genu) in dorsal or dorso-lateral view, in various groups of hypopi: 1: *Acarus siro* L. (Acaridae); - 2: *Psylloglyphus uilenbergi* FAIN, 1966 (Saproglyphidae); - 3: *Anoetostoma* sp. (Anoetidae); - 4: *Dermacarus rhynchocyoni* FAIN, 1967a (Glycyphagidae, Labidophorinae); - 5: *Rodentopus muris* FAIN, 1965 (Glycyphagidae, Rodentopinae); - 6: *Neottialges* (*Caloenectes*) *giebeli* FAIN, 1966 (Hypoderidae); - 7: *Echimyopus brasiliensis* FAIN, 1967e (Glycyphagidae, Echimyopinae).

6. Hypopi of the subfamily Echimyopinae (Glycyphagidae) (fig. 7).
   In these hypopi the tarsi are completely fused with the tibiae. The tibio-tarsus I bears three solenidia, the two distal-ones represent the *omega 1* and *omega 3*, the most basal one is the *phi*. The genu I bears one solenidion *sigma* (fig. 7) (FAIN, 1967e).

7. Hypopi of the family Hypoderidae (fig. 6).
   The formula of leg I is similar to that of the Rodentopinae. In some rare species the solenidion of genu I (*sigma*) is lacking (see FAIN, 1967d).

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