

OBSERVATIONS ON THE PIGEON CHEYLETIELLIDAE
VOLGIN, 1966

OSSERVAZIONI SU CASI DELLA FAMIGLIA
CHEYLETIELLIDAE VOLGIN, 1966 NEL COLOMBO

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SUMMARY

Mites from the pigeon and from *Pseudolynchia canariensis*, a lousefly of the pigeon, were mounted for clearing in Hoyer's medium and examined. The morphological features of mites let us to identify the species as *Ornithocheyletia hallae* (Smiley, 1970). The characteristics of our mites are identical with the females and omeomorphic males described and drawn by Smiley (1970, 1977); only the palpal femurs appear much thicker in our heteromorphic males compared with those drawn by Smiley (1977).

Original drawings and description of the pigeon mite, *Cheyletus heteropalpus* (Megnin, 1878), inserted from time to time in the genus *Cheyletiella*, *Neocheyletiella*, *Apodileches*, are evaluated from the systematic point of view. Unfortunately, Megnin specimens are lacking and description and drawings are inadequate to acquire an exact taxonomic arrangement of the species. The dorsal setal pattern and the shape of palpi reported in the drawings, beyond the presence of the same host, the pigeon, approach this species to *O. hallae*; it is different because the Megnin species has 2 pairs of posterior long setae, while *O. hallae* has only 1 pair of posterior long setae. However, the Megnin mite appears to belong to genus *Ornithocheyletia* and the species may be called *O. heteropalpa*.

Keywords: *Ornithocheyletia hallae*, pigeon, *O. heteropalpa*.

RIASSUNTO

Le caratteristiche morfologiche di acari prelevati dal piccione e dalla mosca parassita del piccione, *Pseudolynchia canariensis* hanno permesso di classificarli come *Ornithocheyletia hallae* Smiley, 1970. Essi risultano identici alle femmine ed ai maschi omeomorfi descritti e disegnati da Smiley (1970, 1977); l'unica differenza è stata notata nel maschio eteromorfo che, nei nostri esemplari, è caratterizzato dai femori palpali molto più spessi.

Gli acari esaminati sono stati infine comparati con *Cheyletus heteropalpus* (Megnin, 1878) sulla base della descrizione e dei disegni originali dell'autore. Sfortunatamente gli acari raccolti e studiati da Megnin sono scomparsi e la descrizione ed i disegni sono ina-

deguati per delineare una esatta classificazione tassonomica della specie, che in tempi diversi è stata inserita nei generi *Cheyletiella*, *Neochyletiella*, *Apodileches*. Infatti, Megnin non indica gli scudi dorsali e riporta in maniera piuttosto superficiale la chetotassi del parassita, elementi importanti per una classificazione di genere e di specie. L'organizzazione delle setole dorsali e la struttura dei palpi avvicinano questa specie a *O. hallae*; quest'ultima, però, si distingue per la presenza di un paio di lunghe setole posteriori, mentre l'acaro di Megnin ne ha due paia. Comunque le caratteristiche strutturali permettono di ritenere le due specie classificabili nello stesso genere, per cui *Cheyletus heteropalpus* può essere denominato *Ornithocheyletia heteropalpa*.

Parole chiave: *Ornithocheyletia hallae*, pigeon, *O. Heteropalpa*.

INTRODUCTION

Smiley (1970) elevated the subfamily Cheyletiellinae, family Cheyletidae, to familial rank including 8 genera: *Cheyletiella* Canestrini, *Euchyletiella* Volgin, *Hemichyletus* Lawrence, *Crikeron* Volgin, *Bakericheyla* Volgin, *Ornithocheyletia* Volgin, *Ornithocheyla* Lawrence, *Neochyletiella* Baker; Fain (1979) detected the new genus *Apodileches* and included it in the new family.

Females and males of *Ornithocheyletia hallae* Smiley, 1970 from the pigeon are described and compared with the description and drawings of Smiley (1970, 1977).

The description and drawings of the pigeon *Cheyletus heteropalpus* (Megnin, 1878), previously inserted in the genus *Cheyletiella*, *Neochyletiella* and *Apodileches*, are evaluated from the systematic point of view.

MATERIALS AND METHODS

Mites from the pigeon, identified as *Neochyletiella heteropalpa* and preserved in a collection of Department of Animal Pathology, Pisa University, were mounted for clearing in Hoyer's medium and examined; mites of the same species, removed from *Pseudolynchia canariensis*, a lousefly of the pigeon, present in the same collection, were also examined.

Twenty one mites (7 not ovigerous females, 2 ovigerous females and 3 males from pigeons; 9 not ovigerous females from louseflies) were measured and the means are reported.

RESULTS

General characters

Oval and yellowish body with finely striated cuticle. Distal part of gnathosoma cone shaped; palpi different in males and females, ending in a curved strong spine. Legs rather short and well developed, each with a pair of robust claws and a rayed empodium. Leg II distinctly separated from leg III; legs I-II and III-IV contiguous; posterior legs lightly longer than the anterior ones.

Female (Fig. 1, 2, 4)

Total length of body (including gnathosoma) 330 μm and maximum width 208 μm . Gnathosoma relatively large; palpi short; femur and genu with a long, dorsal, serrate seta; tibia, with two simple setae, characterized by apical curved downward spine at level of anterior end of rostrum. Eggs 100 μm long and 70 μm wide.

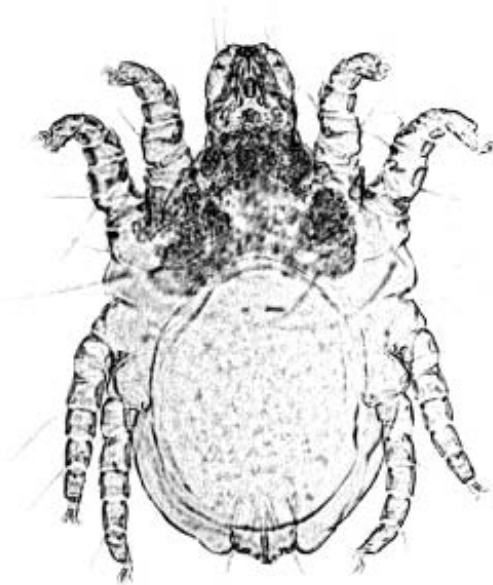


Fig. 1. Ovigerous *Ornithocheyletia hallae* female. Femmina ovigera di *Ornithocheyletia hallae*.

Dorsum

Dorsal line between propodosoma and hysterosoma present. Three shields very poorly sclerotized and with punctuations: propodosomal shield, trapezoidal in shape, with 2 anterior pairs of short, finely serrate setae and 2 pairs of long simple setae, 1 anterior and 1 posterior; laterally and near to posterior side of propodosomal shield 2 pairs of simple setae, 1 short before and 1 long behind. Hysterosoma with a pair of simple setae anteriorly; hysterosomal shield, rectangular in shape, with 2 pair of short simple setae, 1 pair anterior and 1 pair posterior. Opisthosomal shield, oval in shape and very small, bearing 1 pair of long simple setae.

Venter

Epimera of legs I-II joined, those of legs III-IV free. Coxae poorly defined with setal formula 2,1,2,1; 4 pairs of ventral simple setae disposed from forward to backwards. Vulva termino-ventral surrounded by 4 pairs, 2 simple and 2 serrate, of short setae.

Male (1 omeomorphic and 2 heteromorphic) (Fig. 2)

Total length of body (including gnathosoma) 310 μm and maxi-

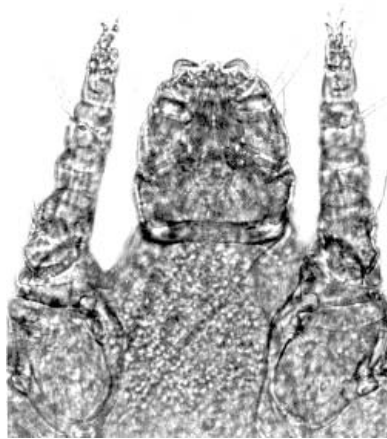


Fig. 2. Anterior extremity of *O. hallae* female. Estremità anteriore di femmina di *O. hallae*.

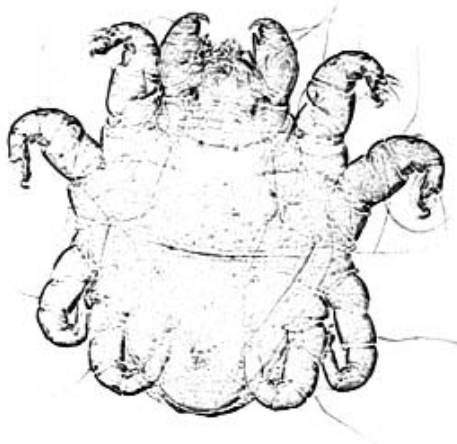


Fig. 3. Heteromorphic male of *O. hallae* . Maschio eteromorfo di *O. hallae*.

mum width 197 μm . Palpi short and strong with a less recurved spine, compared with female, ending more forward the extremity of rostrum. Palpi of heteromorphic males, thicker than in omeomorphic male, bearing a strong apophysis on inner margin of palpal femur. Palpal femur with 3 serrate setae; genu with 2 serrate setae (besides 1 simple seta in omeomorphic male); tibia with 1 serrate and 4 simple setae and 1 solenidion.

Dorsum

Propodosoma wider than long, almost all covered by propodosomal shield, with 3 latero-dorsal pairs of short, serrate setae and 3 pairs of long, simple setae, 1 pair anterior and 2 pairs posterior. Hysterosomal shield, semiovoidal in shape, with 4 pairs of short simple setae.

Venter

Coxal setae formula: 2,1,2,1. Idiosoma with 3 pairs of short simple setae.

DISCUSSION

The morphological features of the mites, observed both on the

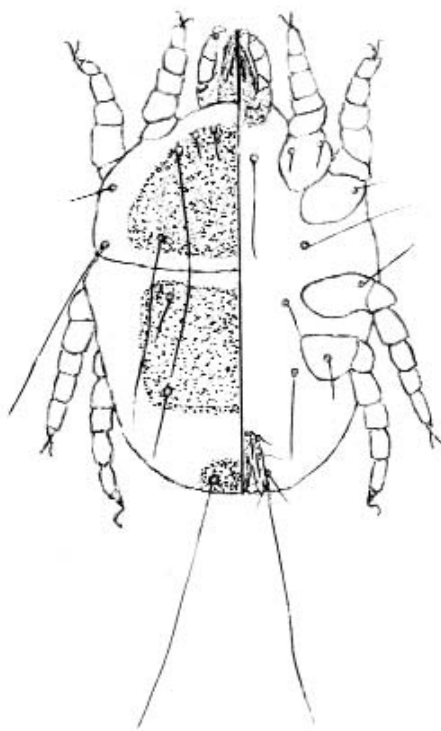


Fig. 4. *O. hallae* female (drawing) femmina di *O. hallae* (disegno).

pigeon and on the pigeon louse fly, let us to identify the species as *Ornithocheyletia hallae* Smiley, 1970. Smiley (1977) studied males of *O. hallae* finding two morphotypes, one omeomorphic with the female and one heteromorphic (Fig. 5, 6, 7).

The characteristics of mites are identical with the females and omeomorphic males described and drawn by Smiley (1970, 1977); only the palpal femurs appear much thicker in our heteromorphic males compared with those drawn by Smiley (1977).

Fain (1980) redefined the genus *Neocheyletiella* and gave a description and a key for males and females of the included species. *Neocheyletiella heteropalpa* (Megnin, 1878) was not examined by Fain because this species was probably lost; according to Fain, who observed the Megnin description and drawings of the species, it does not belong to the genus *Neocheyletiella* but it seems close to the new genus *Apodileches*, which contains two species, both from afro-tropical swifts. Unfortunately, Megnin specimens are lacking and descrip-

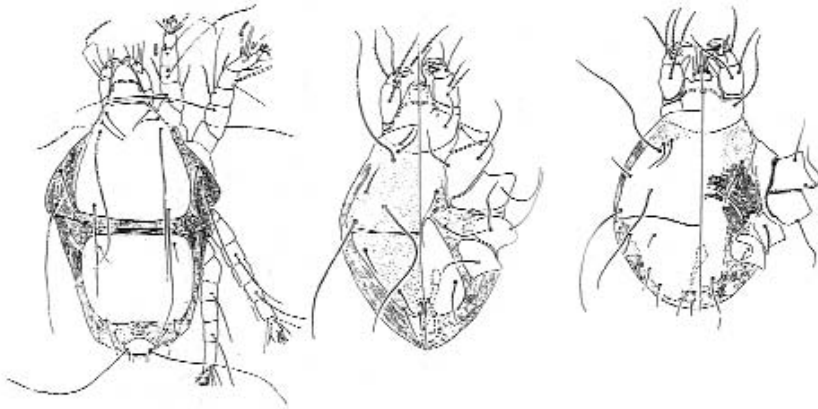


Fig. 5. *O. hallae* female from Smiley (1970). *O. hallae* female da Smiley (1970).

Fig. 6. Omeomorphic male of *O. hallae* () from Smiley (1977). Maschio omeomorfo di *O. hallae* (da Smiley (1977)).

Fig. 7. Heteromorphic male of *O. hallae* from Smiley (1977). Maschio eteromorfo di *O. hallae* (da Smiley (1977)).

tion and drawings are inadequate to acquire an exact taxonomic arrangement of the species. In fact, Megnin does not indicate dorsal shields and touch insufficiently upon chaetotaxy, important elements for generic and specific classification (Fig. 8, 9, 10). The dorsal setal

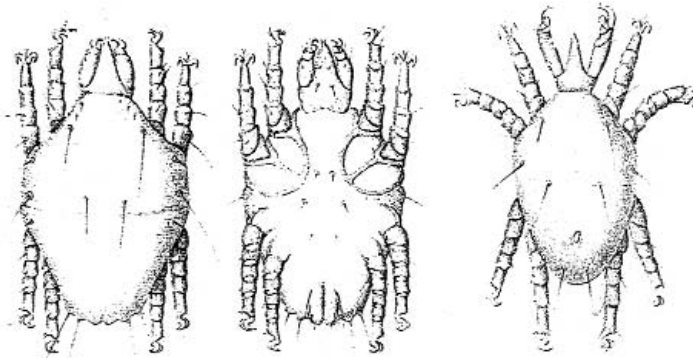


Fig. 8. Dorsal view of *O. heteropalpa* female from Megnin (1878). Faccia dorsale di femmina di *O. heteropalpa* (da Megnin (1878)).

Fig. 9. Ventral view of *O. heteropalpa* female from Megnin (1878). Faccia ventrale di *O. heteropalpa* da Megnin (1878).

Fig. 10. *O. heteropalpa* male from Megnin (1878). maschio di *O. heteropalpa* da Megnin (1878).

pattern and the shape of palpi reported in the drawings, beyond the presence of the same host, approach this species to *O. hallae*; it is different because the Megnin species has 2 pairs of posterior long setae, while *O. hallae* has only 1 pair of posterior long setae.

Therefore, I think that the Fain's supposition, that this species belongs to genus *Apodicheles* is not correct; more probably, it appears to belong to genus *Ornitocheyletia* and the species may be called *O. heteropalpa*.

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