HYPERPARASITISM OF STORKS BY HYPOPI OF HYPODERIDAE WITH DESCRIPTION OF A NEW SPECIES OF THE GENUS **Neottialges** (Acarina : Sarcoptiformes)

by A. FAIN*

INTRODUCTION

Hypopi belonging to the genus *Neottialges* have been found by Dr J.M. TUFTS, (Veterinary department, Ralston Purina City, St-Louis, U.S.A.), in enormous number, under the skin of three storks which died in the Zoo of St-Louis, Missouri, U.S.A.

The cause of the death of these birds was not clear. Postmortem examination did not reveal any significant gross lesions or any evidence of the cause of death other than heavy concentrations of this peculiar mite distributed throughout the subcutaneous tissues of all three birds. Concentrations of the mites were especially heavy on the fascia of the thighs. The birds apparently did show signs of leg weakness prior to death. One of the birds was in thin condition, but the other two appeared to be in fair flesh. Considerable water was present in the respiratory tract of one bird which apparently got down in the water prior to death. The wood stork is a native bird and the painted storks were imported from Europe about six months prior to death of the birds. (Dr J.M. TUFTS, *in litt.*)

These hypopi belong to two different species of Hypoderidae, from which one is new and is described here.

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FAMILY HYPODERIDAE MURRAY, 1877

Genus **Neottialges** FAIN, 1966

Subgenus **Caloenectes** FAIN, 1966

1. **Neottialges (Caloenectes) kutzeri** FAIN, 1967

This species has been described from *Ibis leucocephalus*. This bird died in the Zoo of Vienna, Austria.

About two thirds of the total number of hypopi found in the skin of the painted stork (*Ibis leucocephalus*), from the Zoo of St-Louis, U.S.A., belong to this species. The hypopi were very numerous. A small piece of skin of about 1 cm square, from the abdominal wall, contained several hundreds of hypopi belonging to this species.

2. **Neottialges (Caloenectes) ciconiarum** spec. nov.

This new species is distinguished from the other species in the subgenus by the following characters : setae *d 2* long, setae *d 3* very short, presence of a long sclerotized longitudinal band in front of the epimera III and fused posteriorly with these epimera.

HYPOPUS (fig. 1-5) : The holotype is 816 µ long and 330 µ wide. In 1 paratype (length x wide) : 840 µ x 355 µ. The sejugal furrow is present dorsally. Cuticle uniformly punctate except along the sejugal furrow and two postero-lateral longitudinal and curved lines (= ecdysis lines). The sclerotization of the cuticle is more marked in the regions of the posterior coxae, the propodosoma dorsally and the palposoma area. Epimera I fused in Y ; other epimera free. Genital suckers subequal distinctly divergent and separate by a strongly sclerotized area, a true genital sclerite however is absent. Anus very small situated 51 µ behind the genital suckers. Tarsi I and II long, 30 µ and 39 µ, respectively, ending in a slightly recurved spine, shorter (19 µ) than the respective tarsi. Tarsus III 69 µ long, ending in a slightly curved spine. Tarsus IV 51 µ long, with a strong and long barbed apical hair.

Chaetotaxy of idiosoma : setae *sc i, sc e, d 1, d 2, d 5, l 1, h, sh* very thin and respectively 60 µ, 200 µ, 300 µ, 200 µ, 180 µ,

250-300 μ, 150 μ and 120 μ. Setae *d 3, d 4, l 2, l 3, l 4, l 5* very thin and very short (less than 15 μ).

Chaetotaxy of legs : tarsus IV with 3 spines and 1 strong barbed apical hair, 300 μ long.

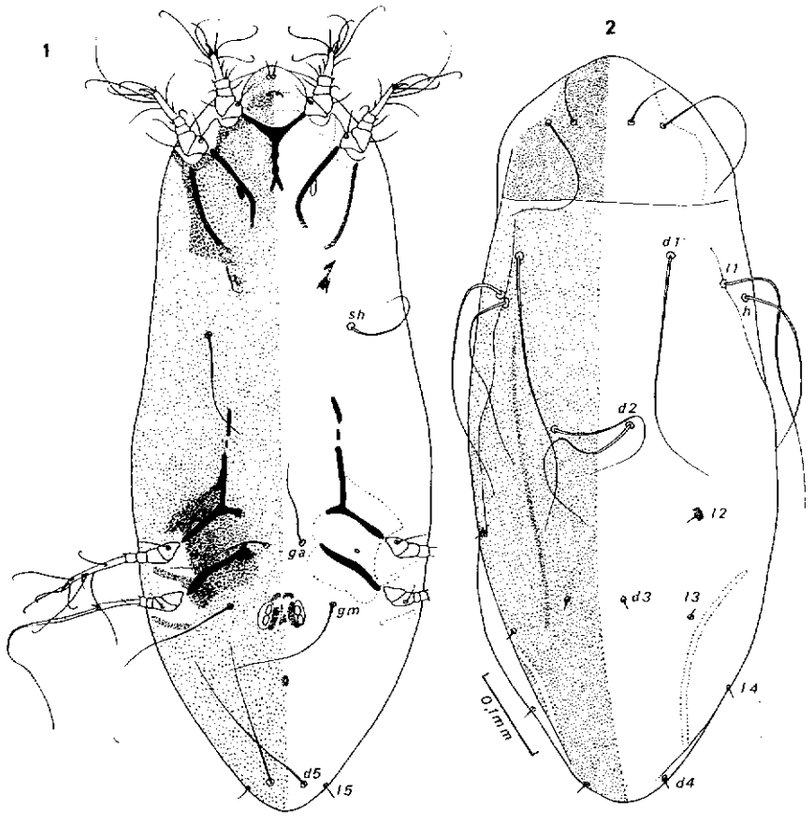

FIG. 1-2. —*Neottialges* (*Caloenectes*) *ciconiarum* sp.n. Hypopi in ventral and dorsal view.

Host and locality :

On a painted stork. *Ibis leucocephalus,* which died in the St Louis Zoo in August 1972 (Holotype and numerous paratypes).

The other storks (one painted stork and one wood stork *Mycteria americana* were parasitized by apparently the same hypopi but the latter have not been examined.

Types and paratypes in the U.S. National Museum, Washington. Paratypes in Institut royal des Sciences naturelles de Belgique and in the collection of the author.

Pathological action of these hypopi.

The hypopi have been found in enormous quantities in the abdominal walls and along the fascia of the thighs. It has not been

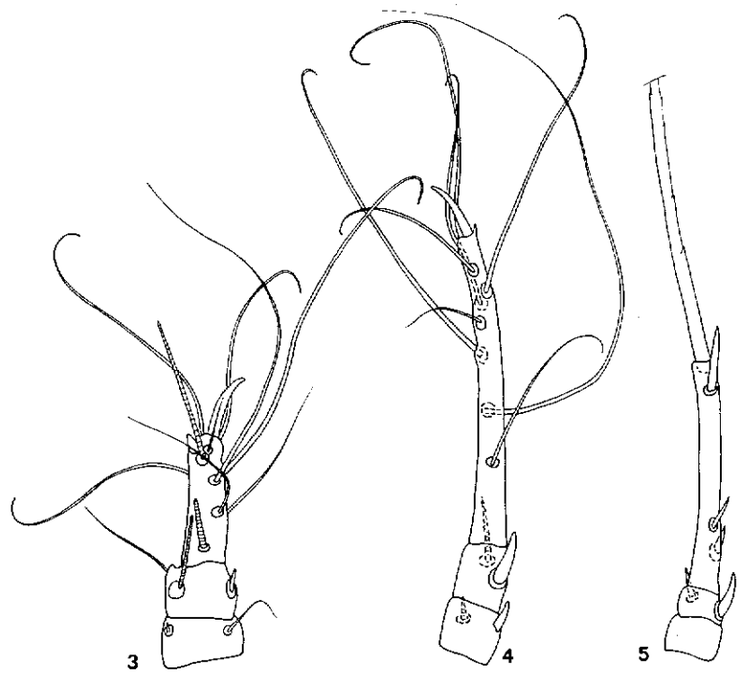

FIG. 3-5. — *Neottialges* (*Caloenectes*) *ciconiarum* sp.n. Hypopi. Fig. 1 : tarsi, tibia and genu of legs I ; fig. 2 : of leg III ; fig. 3 : of leg IV.

investigated in detail if they were present in other parts of the body.

It is well known that in some cases the hypopi of Hypoderidae may invade the connective tissus of any place of the body walls and of the viscera. We have found such hypopi previously in the following localisations, e.g. under the nasal mucosa, around the oesophagus, in the rachis of the feathers, in the air-sacs, on the surface of the lungs, in the lungs, in the gular pouch tissue, attach-

ed to the walls of the main blood vessels of the pleural cavity, between the pericardium and the heart muscles, etc. (FAIN and HYLAND, 1962, FAIN, 1967, FAIN and AMERSON, 1968).

It is not certain whether their presence in these localisations is always harmless. One may surmize that they could produce some toxic effect when they are extremely numerous as it was the case here. They also could produce local impairment when they invade the superficial layers of some vital organ such as the heart and the main blood vessels.

ACKNOWLEDGMENTS

I thank very much Dr J.M. TUFTS, Senior Veterinary Pathologist of the Ralston Purina Cy, St-Louis, Missouri, U.S.A. who sent me the hypopi and provided me with data concerning the occurence of these parasites.

I also wish to express my gratitude to Dr C. YUNKER, Rocky Mountain Laboratory, who allowed the forwarding of this material to me.

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ENTOMOLOGIE ET MEDECINE LEGALE :

Acariens et Insectes trouvés sur un cadavre humain en décembre 1971

par M. LECLERCQ* et P. WATRIN**

L'étude que nous présentons ici a un double intérêt. Elle fait connaître une faune entomologique particulière à une période hivernale favorable et en outre, elle contribue à préciser les données de l'application de l'Entomologie à la Médecine légale.

ENQUETE MEDICO-LEGALE

Il s'agit d'un cadavre découvert le 29 décembre 1971 dans le bois de Cointe (Liège), cette femme était portée disparue depuis le 3 décembre 1971, donc depuis 26 jours.

Etat du cadavre : phlyctènes généralisées, tache verte abdominale, transformation adipocireuse du visage. Au niveau de la bouche et du nez, il y avait des parties molles rongées par les insectes nécrophages.

RAPPEL DE QUELQUES NOTIONS CONCERNANT L'ALTERATION DES CADAVRES

Lorsque la mort survient, la température du corps s'équilibre avec le milieu ambiant. La rigidité cadavérique s'établit progressivement et est généralisée, suivant les circonstances, après sept heures environ, par production d'acide lactique et elle se résout en quarante-huit à soixante-douze heures.

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