

Notes on gamasid mites (Acari: Mesostigmata) associated with small mammals and birds in Liberia, West Africa

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Abstract

Gamasid mites associated with small mammals and birds from different localities in Liberia were examined. The collection was found to consist mainly of three genera: *Laelaps*, *Androlaelaps* and *Ptilonyssus*. This fauna is discussed against the background of similar studies in Nigeria.

Introduction

The fauna of mesostigmatic mites parasitic on wild vertebrates and birds in the Ethiopian zoogeographical region is relatively poorly studied. Present knowledge of this fauna is based mainly on studies in Southern Africa, Angola, Zaire, Sudan and Egypt. The fauna of the West Africa subregion has remained comparatively less well known, although some contribution to studies in this subregion has been made from Nigeria between 1968 and 1979 (OKEREKE 1968, 1970, 1971, 1973, 1979) Ghana (PAPERNA et al. 1970) and Liberia (FAIN et al. 1974).

The present report based on a collection from Liberia is, therefore, of particular interest. The mites were collected by Dr. J. VOELKER between 1968 and 1971 during his studies of the helminths of Liberian mammals and birds at the department of the Tropical Institute of Hamburg in Bongtown near Monrovia. The bulk of the collection is deposited in the Zoological Institute and Zoological Museum of the University of Hamburg.

This paper reports on a representative collection of gamasid mites consisting of 82 slides from rodents and 56 from birds, most of them sent to the senior author for determination by Dr. GISELA RACK of the Zoological Institute and Zoological Museum of the University of Hamburg.

Tab. 1: Summary of host species and Gamasid material examined

Host	Collection No.	Number of slides	Locality and date of collection
<i>Mus musculoides</i> ♂	290	6	Gengema, 20. 10. 1970
<i>Mastomys erythroleucus</i>	340	5	Putu Range, 27. 11. 1970
<i>Mastomys</i> sp. ♀	321	2	Putu Range, 24. 11. 1970
<i>Dasymys incomtus</i> ♂	387	3	Mabahn-Kaba, 6. 1. 1971
" ♂	390	3	" 6. 1. 1971
<i>Praomys tullbergi</i>	160	3	St. Paul water-fall, 26. 6. 1971
" ♀	216	2	Hendi, 28. 8. 1970
" ♀	219	2	Bongtown, 29. 8. 1970
" ♀	225	2	Bongtown, 8. 9. 1970
" ♂	278	2	Bong Peak, 14. 10. 1970
" "	279	5	Bong Peak Road, 14. 10. 1970
" ♂	305	4	Mount Gibi, 3. 11. 1970
" ♂	375	3	Putu Range, 4. 12. 1970
" ♀	383	2	Beyantown, 30. 12. 1970
" "	438	2	Waidei-Creek, 27. 4. 1970
<i>Lophuromys sikapusi</i> ♀	282	3	Njeble, 16. 10. 1970
" ♀	276	7	Bong Peak, 14. 10. 1970
" ♂	277	3	" 14. 10. 1970
" ♂	281	6	Njeble, 16. 10. 1970
" ♂	292	3	Gengema, 20. 10. 1970
" "	392	2	Mabahn-Kaba, 6. 1. 1971
<i>Pycnonotus barbatus</i>	213	13	Bong Mine Areal, 22. 8. 1970
<i>Plesiositagra cucullatus</i> ♀	453	15	Hendi, 4. 6. 1971
<i>Cinnamopteryx castaneofuscus</i> ♀	469	28	Hendi, 9. 6. 1971

Material

The material under review is summarised in Table 1, which lists the hosts as well as the localities from which they were collected. Brief details on the various locations in Liberia from which collections were made are as follows:

Gengma: St. Paul-River, above Doubli Island, opposite Sambeta, Bong County.

Putu Range: Up to 750 metres, Grand Gedeh County primary high forest; the collection area extends to 10 kilometres from Bong-Mine-Camp near Peloken.

Mabahn-Kaba: Coastland near Monrovia; grassland with scattered dumps of trees, swampy spots and pools, Montserrado County.

St. Paul Water-Fall: Along St. Paul-River.

Hendi: End of Kakata Highway at St. Paul-River opposite to Doubli Island, Bong County. The collection area extends 4 km upstream close to Sambeta and includes the water pump station area of the Bong Mining Company at the river.

Bongtown: Situated at the western end of Bong Range (Kakata Highway), seat of the Bong Mining Company and the Unit of Tropical Institute, Hamburg, Bong County.

Bong Peak: Highest level of the Bong Range, 400 metres, Bong County.

Bong Peak Road: Road leading to Bong Peak.

Mount Gibi: Some 400 metres, to the South East of the Gibi Ridge, high forest, Montserrado County.

Beyantown: (St. Paulville) at the upper St. Paul-River, road to Zorzor (border Bong County); Lofa County.

Waidei-Creek: Little waterfalls and rapids 3 miles to the upper part of Sambeta. The Waidai Creek takes up mountain streamlets of the Bong Range from the north and falls as a little's affluent into the St. Paul-River near Sambeta.

Njeble: Located near Bongtown, Kakata Highway, Bong County. Collecting area extends up to Holderfarm.

Bong Mine Area: Rest of area around the Bong Mine of the Mining Company.

Family Laelapidae BERLESE, 1892

Genus *Laelaps* C.L. KOCH, 1839

Laelaps nigeriensis KEEGAN, 1962

This species was found in Liberia on *Mus musculoides* (TEMMINCK). The original description (KEEGAN 1962) is based on three females collected of *Crocidura* sp. and *Mus musculoides* from Adu in Nigeria. It has also been collected on *Lophuromys sikapusi* (TEMMINCK) and *Dasymys incomptus* (SUNDEVALL) in Western Nigeria (OKEREKE 1970).

Material: Coll. no. 290.

Laelaps benoiti TAUFFLIEB, 1964

L. benoiti was found on *Mastomys erythroleucus* (TEMMINCK) from Putu Range, Liberia. This species, originally described from specimens collected off *Leggada bella* THOMAS (TAUFFLIEB 1964)

has been recorded from a wide range of rodents including *Mastomys* spp. in Nigeria.

Material: Coll. no. 340.

Laelaps liberiensis HIRST, 1925

This collection was made off *Praomys tullbergi* (THOMAS) in Liberia. The original description (HIRST 1925) was based on a single female found on *Rattus defua* (MILLER) in Liberia. It has also been found on a wide range of hosts in Nigeria. *L. liberiensis* is widely distributed in the Ethiopian region.

Material: Coll. nos. 216, 278, 279, 305, 375, 383, 438.

Laelaps roubaudi TAUFFLIEB, 1954

TAUFFLIEB's description of this mite (1954) is based on material from *Dasyms incontus* (SUNDEVALL). The examples taken in Liberia were also found on this host. Previous studies from Nigeria revealed that *L. roubaudi* shows a high predilection for *D. incontus* (OKEREKE 1971).

Material: Coll. nos. 387, 390, 392.

Laelaps sp.

Some 5 females, 2 males, 5 deutonymphs and 2 protonymphs of an unidentified species of *Laelaps* were taken off *Lophuromys sikapusi*. The status of this species is being studied with a view to ascertaining whether it is a new species.

Material: Coll. nos. 277, 281, 282, 292.

Laelaps (Echinolaelaps) muricola TRÄGÄRDH, 1910

This species lives in the fur as well as in the nests of several Muridae in the Ethiopian region. It has been collected off different species of rats (ZUMPT 1961). In Liberia, it was taken off *Mastomys erythroleucus* (TEMMINCK), *Mastomys* sp. and *Praomys tullbergi* (THOMAS).

Material: Coll. nos. 160, 219, 279, 305, 321, 340.

Laelaps (Echinolaelaps) gigantus BERLESE, 1918

L. gigantus is also widely distributed in the Ethiopian region, where it has also been found on various species of rats (ZUMPT 1961). In Liberia, it occurred on *Dasyms incontus* (SUNDEVALL).

Material: Coll. no. 387.

Genus *Androlaelaps* BERLESE, 1903

Androlaelaps sudanicus (ZUMPT & TILL, 1954)

According to ZUMPT (1961) the chief host of this mite in Sudan and Kenya is probably *Lophuromys flavopunctatus* THOMAS. In Liberia, they were collected off another host belonging to the same genus, *Lophuromys sikapusi* (TEMMINCK).

Material: Coll. nos. 276, 277, 281, 282.

Androlaelaps zuluensis (ZUMPT, 1950)

There are relatively few records of this species in the Ethiopian region. It has, nevertheless, been taken off different mammalian hosts in South Africa, Namibia, East Africa and Egypt. The three examples collected during a study in Nigeria were taken off *Tatera kempii* WROUGHTON and *Rattus rattus* (LINNAEUS). In Liberia, *A. zuluensis* was taken off an avian host, *Pycnonotus barbatus* (DESFONTAINE).

Material: Coll. no. 213.

Androlaelaps sp.

An unidentified species of *Androlaelaps* was taken off *Praomys tullbergi* (THOMAS) in Liberia. These specimens are still being studied and may well represent a new species.

Material: Coll. nos. 225, 279.

Family Rhinonyssidae TROUESSART, 1895

Genus *Ptilonyssus* BERLESE & TROUESSART, 1889*Ptilonyssus ploceanus* FAIN, 1956

These mites, like others in the genus, inhabit the nasal passages of birds. Earlier records in Ethiopian region are from Ruanda-Urundi where they were taken off diverse species of Ploceidae (FAIN 1957). In Liberia, they have been taken off the ploceid birds *Cinnamoptyx castaneofuscus* (LESSON) and *Plesiositagra cucullatus* (MÜLLER, 1776) (= *Othyphantes (Textor) c.*).

Material: Coll. nos. 453, 469.

Discussion

The collection under review involves mites associated with 6 species of small mammals, namely, *Mus musculoides*, *Mastomys erythroleucus*, *Mastomys* sp., *Dasymys incommutus*, *Praomys tullbergi* and *Lophuromys sikapusi*, as well as 3 species of birds, *Pycnonotus barbatus*, *Plesiositagra cucullatus* and *Cinnamoptyx castaneofuscus*.

On the basis of previous studies from Nigeria (HAPPOLD 1975) the host rodents from which collections were made in Liberia can be assigned to two main vegetational zones: forest (*Praomys*, *Lophuromys*, *Mus*) and savanna (*Mastomys*, *Dasymys*, *Mus*). Some of the most abundant of these rodents hosts particularly in savanna zones in Nigeria (e.g. *Myomys*, *Lemniscomys*, *Tatera* and *Taterillus*) are absent from the Liberian collection.

The parasitic mites in the collection, including those from birds, belong to three genera (*Laelaps*, *Androlaelaps* and *Ptilonyssus*) and nine species, namely: *Laelaps nigeriensis*, *L. benoiti*, *L. liberiensis*, *L. roubaudi*, *Laelaps* sp., *L. (Echinolaelaps) muricola*, *L. (Echinolaelaps) gigantus*, *Androlaelaps sudanicus*, *Androlaelaps zuluensis*, *Androlaelaps* sp. and *Ptilonyssus ploceanus*. One species of *Laelaps* and one of *Androlaelaps* are still being studied; it is possible that these represent new

species. Nevertheless, the above list indicates a fauna which is definitely Ethiopian in character but with stronger affiliation to the West African subregion of the Ethiopian zoogeographical region.

The distribution of gamasid mites on the small mammalian and avian hosts is summarised in Table 2. Inferences on parasite host relationships particularly with regard to predilection are, however, difficult to make because of the nature of the sample examined. A much more detailed and systematic survey of this fauna is, therefore, likely to yield interesting results.

Tab. 2: Distribution of Gamasid mites on mammalian and avian hosts in Liberia

Gamasid mites	Hosts	<i>Mus musculoïdes</i>	<i>Mastomys erthroleucus</i>	<i>Mastomys</i> sp.	<i>Praomys tullbergi</i>	<i>Dasymys incomtus</i>	<i>Lophuromys sikapusi</i>	<i>Pycnonotus barbatus</i>	<i>Plesiositagra cucullatus</i>	<i>Cinamopteryx castaneofuscus</i>
<i>Laelaps nigeriensis</i>		+								
<i>Laelaps benoiti</i>			+							
<i>Laelaps liberiensis</i>					+					
<i>Laelaps roubaudi</i>						+				
<i>Laelaps</i> sp.					+		+			
<i>Laelaps (Echinolaelaps) muricola</i>			+	+	+					
<i>Laelaps (Echinolaelaps) giganteus</i>						+				
<i>Androlaelaps sudanicus</i>							+			
<i>Androlaelaps zuluensis</i>								+		
<i>Androlaelaps</i> sp.					+					
<i>Ptilonyssus ploceanus</i>									+	+

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References

- HAPOLD, D.C.D., 1975: The effects of climate and vegetation on the distribution of small rodents in Western Nigeria. - Z.Säugetierkd., 40 (4): 221-242. Berlin.
- FAIN, A., 1957: Les Acariens des familles Epidermoptidae et Rhinonyssidae parasites des fosses nasales d'Oiseaux au Ruanda-Urundi et au Congo belge. - Ann. Mus. R. Congo Belge, (Série in 8^o) 60: XII + 176 pp. Tervuren.
- FAIN, A., LUKOSCHUS, F.S. and RACK, G., 1974: Notes on parasitic mites from small mammals in Liberia. - Mitt.hamb.zool.Mus.Inst., 71: 165-174. Hamburg.
- OKEREKE, T.A., 1968: A new laelapine mite from Western Nigeria. - Acarologia, 10 (1): 1-5. Paris.
- OKEREKE, T.A., 1970: A contribution to the study of parasitic gamasid mites (Acari: Mesostigmata) in Nigeria. - Bull.ent.Soc.Nigeria, 2: 136-141. Ibadan.
- OKEREKE, T.A., 1971: On the distribution of blood-sucking gamasid mites (Acari: Mesostigmata) on small mammalian hosts in Western Nigeria. - Bull.ent.Soc.Nigeria, 3: 50-55. Ibadan.
- OKEREKE, T.A., 1973: The laelapine mites of the *Echinolaelaps* complex from Nigeria with description of a new species (Acarina: Mesostigmata). - J.Med.Ent., 10 (2): 117-123. Honolulu.
- OKEREKE, T.A., 1979: Notes on some fur-inhabiting ectoparasites of common rodents from the Olokemeji Forest Reserve, Western Nigeria. - Proc. 4th Internat.Congr.Acarology, Saalfelden 1974: 277-283. Budapest.
- PAPERNA, I., FURMAN, D.P. and ROTHSTEIN, N., 1970: The parasite fauna of rodents from urban and suburban areas of Accra-Tema, South Ghana. - Rev.Zool.Bot.Afr., 81: (3-4): 330-336. Bruxelles.
- ZUMPT, F. (Ed.), 1961: The arthropod parasites of vertebrates in Africa South of Sahara (Ethiopian region). Vol. 1 (Chelicerata). - Publ.South Afr.Inst.Med.Res., No. 1 (Vol. 9): 1-457. Johannesburg.

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