# ON THE GENERA "CICONIPHILUS" AND "ARDEIPHILUS" WITH DESCRIPTIONS OF SIX NEW SPECIES (Mallophaga, Menoponidae) 1

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(With 27 text-figures)

This paper consists of a complete review of all of the species of *Ciconiphilus* in the author's collection, both described and new to science.

The morphology of certain described species is carefully reviewed, with critical comments on the differences presented by species of the parasites from the avian families Ardeidae and Ciconidae, and on the generic validity of certain morphological characters present in *Ciconiphilus* and other genera of the Menoponidae.

I am greatly indebted to various european workers for pertinent material received from them in exchange, species infesting Old World hosts.

All drawings were prepared by the author and all measurements are in millimeters.

### Ciconiphilus Bedford, 1939

Ciconiphilus Bedford, 1939, Onderstepoort J. vet. Sci., 12:141 (Type species: Colpocephalum quadripustulatum Burmeister.)

Anseriphilus Eichler, 1944, Dtsch. ent. Z., 1943:57 (Type species: Colpocephalum pectiniventer Harrison.)

Pseudocolpocephalum Ansari, 1951, Proc. Nat. Inst. Sci. India, 17:154 (Type species: P. doriabagla Ansari; Nomen nov. for Colpocephalum minor Piag., 1885, nec C. minus Piaget, 1880)

There are 16 species of the genus listed in the 1952 *Checklist of Mallophaga* with the hosts of 7 from the Western Hemisphere, the remainder from Europe or Africa. Eight of the above species are in the Carriker collection, including

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the type species of *Ciconiphilus* and the two genera placed under its synonymy. Six species, apparently new to science are described and figured below, together with the male genitalia of 7 of the described species, none of which have ever been adequately illustrated, if at all.

BEDFORD figured the  $\delta$  and  $\varphi$  of C. africanus, together with an adequate figure of the  $\delta$  genitalia, but he failed to figure the type species of his new genus. It will be noted that the male genitalia of six species are remarkably similar, differing only in detail, while those from Ciconia c. ciconia and Mycte-ria americana (both Ibises) are very different from those of the Herons, but similar inter se. To a certain extent the differences in the genitalia correspond roughly to differences in shape of head.

The chaetotaxy, especially of the abdomen, is very uniform in the whole genus, differing only in length and thickness of setae, but there seems to be considerable individual variation in measurements.

The 14 species which I have examined are not entirely a homogeneous group. The type species of the genus, *C. africanus* Bedford and *C. maculipes* (Giebel) are all from Ibises (Ciconidae), while the remaining species are from the Herons (Ardeidae), with the exception of two species from the common Goose.

All of the new forms described below are from the Herons, and are, together with the described species from that family, a very homogeneous group, the exceptions being those from the Ciconidae and, to a lesser extent, the two from the Goose (Anser), G. parvus (Blagoveshtchensky) and pectiniventris Harrison which may possibly be synonyms, or else generically distinct.

In *C. quadripustulatus* and *C. maculipes* there is present in the last abdominal segment of the females, a most peculiarly shaped sclerite lying back of the genital plate (figs. 1 and 7). This sclerite is entirely absent in all species of the genus parasitic on the Herons (Ardeidae). The male genitalia in these two species also differs from those from the Herons.

In *G. pectiniventris* Harrison, from the domestic Goose, the head differs somewhat in shape, and there is in the distal segment of the abdomen of the female a narrow, flatly circular, transverse sclerite, lying back of the genital plate, the ends of which do not reach the lateral margins of the segment. It is not clear whether the fringe of fine setae posterior to this sclerite are attached to it, or to the margin of the anal opening. The male genitalia of this species also differ from those species infesting the Herons (see figs).

However, the most striking morphological discrepancy in *pectiniventris* is the type of pharyngeal sclerite (fig. 9), a type not found on any of this group infesting the Herons or Ibises, but is very similar to a new species, described below (*Ardeiphilus* (?) tigrasomus) and also to that of the genera *Menacanthus* and *Desumenopon*, among others.

It will be noted that the genus Anseriphilus Eichler was based on the slight differences found in pectiniventris, while Pseudocolpocephalum Ansari, represented the large number of species infesting the Herons.

Apparently we have here a situation analogous to that of Kurodaia haliaeti (Denny) and the other Menoponidae similar to it which were placed under Kurodaia in the 1952 Checklist.

If we would follow the theory of certain students of Mallophaga, then the genus Ciconiphilus would be restricted to Colpocephalum quadripustulatus, Burm., Menopon maculipes Giebel, and possibly Ciconiphilus africanus Bedford, all of which possess a peculiar sternal sclerite in the distal abdominal segment of the female, not present in all of the other Menoponidae infesting the Herons and Geese, and the latter would be left to Pseudocolpocephalum and Anseriphilus, presently classed as synonyms of Ciconiphilus, and, I believe, quite correctly.

There is no large genus of Mallophaga, especially of the Menoponidae, in which all included species follow closely a certain morphological pattern. There will always be exceptions, border-line species, as we may call them, or those possessing some small character at variance to the greater portion of the genus. However, I believe that these are no reasons for erecting small genera based on these small peculiarities, a procedure which does not seem either logical or convenient. Much better to call such small differences specific, rather than generic.

It is unfortunate that in *Kurodaia*, *Giconiphilus* and *Degeeriella* that the particular species upon which the genus was based should be so different from most of the other species which have later been placed under them, but I do not consider that these small differences are sufficient motive for restricting the genus to the species which possess them.

Mallophaga from altogether too many hosts are still unknown, and too many avian hosts may have disappeared during the mists of antiquity for us to make positive nomenclatural assertions regarding the material now available for study. I am not in favor of large, unwieldly genera, neither am I in favor of restricting a genus to species possessing certain small morphological characters which are of more specific than generic value.

#### Ciconiphilus quadripustulatus (Burmeister, 1838)

(Figs. 1 and 2)

Colpocephalum, Handb. Ent., 2:438 (Host: Ciconia c. ciconia (Linné).

3 & and 3  $\circ$  in author's coll. This is the largest of the known species: female, body, 2.34; head, temples, 0.40 x 0.65; frons, 0.50.

### Ciconiphilus boisduvali (Eichler, 1937) (Fig. 3)

Colpocephalum, Sitz. ges. naturf. Fr. Berlin, 1937:96 (nomen novum for C. major Piaget, 1880:549, nec p. 519 (Host: Egretta garzetta (Linné).

2 & 3 and 2 9 9 examined. Female, body, 1.71; head, 0.345 x 0.51; from, 0.37.

### Ciconiphilus obscurus (Giebel, 1874) (Fig. 4)

Colpocephalum, Insecta Epizoa, p. 273 (Host: Casmerodias albus egretta (Gmelin). C. laticeps Kellogg, 1896, Proc. Cal. Acad. Sci., (2)6:149, pl. 12, fig. 5 (Same host).

1 & and 2 9 examined. Male genitalia very similar to that of species from *Nyctinassa* and *Nycticorax*. Female, body, 1.85 to 2.17; head, 0.39 x 0.60 to 0.37 x 0.75; frons, 0.40 to 0.43.

### Ciconiphilus doriabagla (Ansari, 1951) (Fig. 5)

Pseudocolpocephalum, Proc. Nat. Inst. Sci. India, 17:134, fig. 11 (Host: Bubulcus ibis coromandus (Boddaert). Nomen novum for Colpocephalum trochioxum minor Piaget, 1885.

1 & and 1  $\circ$  in author's coll. Female: body, 1.78; head, 0.36 x 0.55; from, 0.38.

# **Ciconiphilus maculipes** (Giebel, 1874) (Figs. 6 and 7)

Menopon, Insecta Epizoa, p. 298 (Host: Mycteria americana Linné). Ciconiphilus maculipes (Giebel), Carriker, 1963, Mem. Soc. Ci. Nat. La Salle, 23:17, fig. 2 (same host). Florida Ent., 37 (3):1954, p. 142.

Female: body, 1.93; head, 0.40 x 0.64; from, 0.467. 3 & &: 4  $\,$   $\,$   $\,$  Carr. coll.

### Ciconiphilus femoratus (Piaget, 1885)

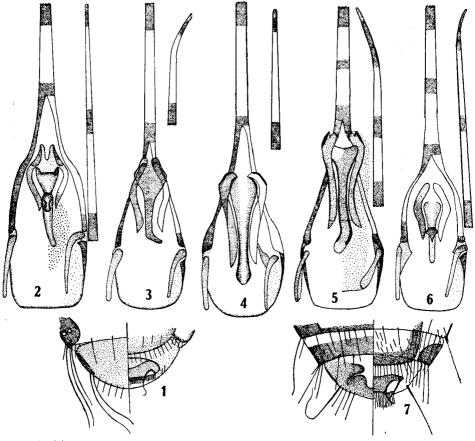
Colpocephalum, Pediculines Suppl., p. 124, pl. 13, fig. 7 (Host: Mycteria americana (Linné).

Ciconiphilus femoratus (Piaget), Carriker, 1963, Mem. Soc. Ci. Nat. La Salle 23:17, fig. 1. Florida Ent., 37 (3):142, 1954.

1 9 in author's coll. Body, 2.02; head, 0.40 x 0.63; frons, 0.434.

My original opinion of this species was that its host actually was Mycteria americana, although Hopkins & Clay thought that was an error, and I thought

that two species of *Ciconiphilus* infested the one host. Since the preparation of this paper I have changed my views in this matter, and now agree with the above authors that *Mycteria americana* was not the host of *femoratus*.



Distal abdominal segment of female — Fig. 1: Ciconiphilus quadripustulatus (Burm.); fig. 7: C. maculipes (Giebel). — Male genitalia of: — Fig. 2: Ciconiphilus quadripustulatus (Burm.); fig. 3: C. boisduvali (Eichler): fig. 4: C. obscurus (Giebel); fig. 5: C. doriabagla (Ansari); fig. 6: C. maculipes (Giebel).

The explanations given in the introduction will explain the reasons for this statement. The female specimen in question, which I had called femoratus certainly agrees very well with Piager's description and figure of that species. I am positive that C. maculatus is the parasite infesting Mycteria, since I recently collected several specimens of it from a freshly killed bird, when it was the only bird killed at the time. It is highly improbable that both maculipes and femoratus would be found on the same host. To further strengthen this view, I may say that the single  $\mathfrak P$  in question was received by me from Señor Anduze, of Caracas, together with a small lot of Mallophaga, and there was some question of the authenticity of the hosts of several of the species sent. There is no possible way of determining the correct host of this specimen.

### Ciconiphilus decimfasciatus (Boisduval & Lacordaire, 1835) (Fig. 8)

Liotheum, Fauna ent. Environs Paris, p. 123 (Host.: Ardea c. cinerea Linné).

1  $\circ$  and 2  $\circ$   $\circ$  in author's coll. A large species, the  $\circ$  as large as one of the 2  $\circ$   $\circ$  of quadripustulatus. The movable sclerite of the male genitalia is of a very different type from that of any other species of the genus I have seen (fig. 8). Female, body, 2.17; head, 0.395 x 0.62; from, 0.436.

### Ciconiphilus pectiniventris (Harrison, 1916) (Figs. 9 and 10)

Colpocephalum, Parasitology, 9:53. Nomen novum for Colpocephalum pectinatum (Neumann) 1912. nec Osborn, 1902 (Host: Anser anser domesticus).

1  $\circ$  and 1  $\circ$  in author's coll. One of the smaller species, female body, 1.78; head, 0.36  $\times$  0.57; froms, 0.445. The species fully discussed in the introduction.

Table of body and head r	measurements for the	eight described	species listed above
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Ciconiphilus sp.	Body	Head length	Head width	Width of
	length	at temples	at temples	frons
$boisduvali. \qquad \qquad$	1.40 1.71 1.76 2.17 2.02 1.61 1.78 1.87 1.93 1.53 2.17 1.85 1.69 1.78 1.96 2.08	0.30 0.345 0.37 0.395 0.40 0.358 0.358 0.39 0.402 0.326 0.39 0.37 0.347 0.36 0.40	0.465 0.51 0.565 0.62 0.63 0.52 0.553 0.61 0.64 0.50 0.608 0.575 0.553 0.575 0.651	0.326 0.37 0.41 0.436 0.434 0.38 0.467 0.458 0.36 0.444 0.402 0.43 0.445 0.498 0.50
»Q	2.17	0.415	0.69	0.51
	2.34	0.40	0.651	0.50

### Ciconiphilus nyctardis hoactli subsp. n.

(Figs. 11 and 12)

Types, 3 and 2 adults, from Nycticorax nycticorax hoactli (Gmelin), collected by the author at Puerto Yessup, Peru, Feb. 3, 1930 (Type No. 805 in author's coll.).

Diagnosis - I have not seen specimens of C. nyctardis (Denny), from Nycticorax n. nycticorax, and when material from that host can be compared with the present subspecies they may possibly prove to be inseparable.

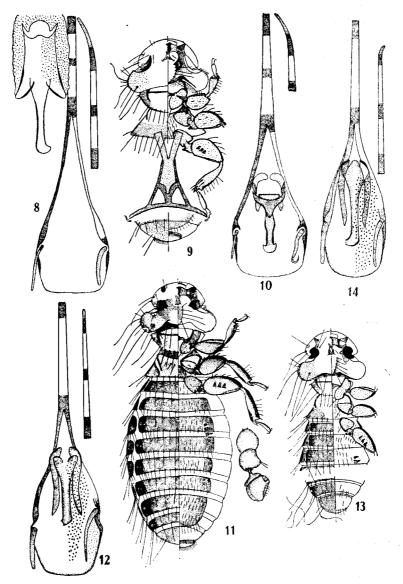


Fig. 8 — Ciconiphilus decimfasciatus (Boisduval & Lacordaire), male genitalia. — Ciconiphilus pectiniventris (Harrison) — Fig. 9: Head, thorax, tip of abdomen and pharyngeal sclerite; fig. 10: male genitalia. — Ciconiphilus nyctardis hoactli subsp. n. — Fig. 11: Body and antenna of female; fig. 12: male genitalia. — Ciconiphilus nyctardis violaceus subsp. n., male — Fig. 13: Head, thorax and 5 abdominal segments; fig. 14: genitalia.

Denny's figure and description are useless for showing subspecific differences. However, since the parasites from other closely related hosts in this

genus may be separated subspecifically, I am assuming that such will be true in the present case.

It is a large species, with head of female wider at temples than most species of the genus (0.402). It possesses no outstanding characters, excepting the narrow hyaline area between the pleurites and tergites, with the outer ends of the latter almost blackish, in contrast to the median portion. The sternites are entire and are shorter (transversely) than the tergites; prothorax rather small and pterothorax short, with lateral margins much less divergent than in most species.

The endomeral sac of the genitalia is wider than in *C. nyctardis violacea* (described below), the lateral supporting rods longer, while there are differences in the movable sclerites, but both have enclosing hyaline sac granulated in a similar manner. Represented by the holotype  $\, \circ \,$ , allotype  $\, \circ \,$  and  $\, 1 \, \circ \,$  and  $\, 3 \, \circ \, \circ \,$  paratypes. See table for measurements.

### Ciconiphilus nyctardis violaceus subsp. n.

(Figs. 13 and 14)

Holotype &, and only specimen, from Nyctanassa v. violacea (Linné), collected by the author at Regeneración, Dept. Bolivar, Colombia, Feb. 20, 1948 (Type No. 806 in author's coll.). [Mr. Todd states that the colombian race of this species is violaceus and not cayennensis of Venezuela and the Guianas].

Diagnosis — Smaller in all measurements than the male of hoactli. The pleurites are narrow and blackish in both races, there is a slight separation of pleurites from tergites in violaceus, absent in hoactli.

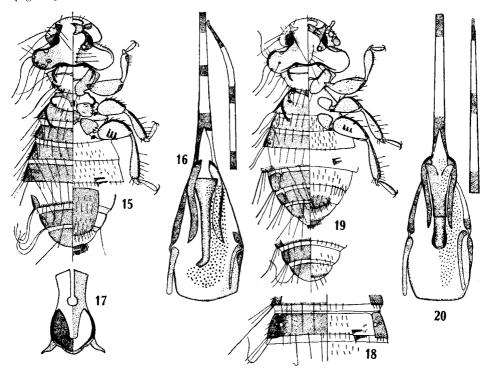
As noted under *hoactli*, the endomeral sac is decidedly narrower in *violaceus*, with its supporting rods shorter, while the movable sclerite differs considerably in detail (fig. 14). See table for measurements.

# Ciconiphilus pilherodii sp. n. (Figs. 15-18)

Types, & and Q adults, from *Pilherodias pileatus* (Boddaert), collected by the author at Distracción, Dept. of Magdalena, Colombia, May 11, 1945 (Type No. 807 in author's coll.).

Diagnosis — A medium sized species, with head wider at temples than all of the new species here described, excepting floridus. The ocular nodi are divided by a diagonal line, the inner portion being black, the outer brown; the meso metathoracic suture strongly developed, and lateral margins of mesothorax rounded: a large metasternum, large coccyces and a very large genital sternite. The pleurites are narrow, blackish and fused with tergites,

which are uniformly pigmented; in segments III-VII there is a small hyaline spot inside the spiracle, and 2 larger hyaline circles back of the ocular nodi (fig. 15).



Ciconiphilus pilherodii sp. n. — Fig. 15: Head, thorax, legs and 6 abdominal segments of female; fig. 16: male genitalia; fig. 17: pharyngeal sclerite; fig. 18: abdominal segments II and III of female, with setac. — Ciconiphilus agami sp. n. — Fig. 19: Head, thorax, legs and 5 abdominal segments of female and 2 of male; fig. 20: male genitalia.

The 8 genitalia is of the same general type as that of nyctardis and several others (see figs.), but the endomeral sac is shorter and wider than most, with thicker parameres; the sides of the basal portion of the basal plate are almost straight, while the movable sclerite differs considerably in details.

Represented by the  $\circ$  holotype,  $\circ$  allotype and  $1 \circ \circ \circ$  paratypes. For measurements see table.

# Ciconiphilus agami sp. n. (Figs. 19 and 20)

Types, & and Q adults, from Agamia agami (Gmelin), collected by the author at La Raya, Dept. Bolívar, Colombia, Jan. 28, 1948 (Type No. 808 in author's coll.).

Diagnosis – Of medium size, with head very similar to that of pilherodii in size and shape, with the same clear pustules back of ocular nodi; the

setae of temples are shorter and set in much smaller hyaline alveoli; the distal segment of abdomen is bluntly pointed in the female, not rounded as in *pilherodii*, with fringe of fine setae different.

The pleurites are closely fused with tergites and of same pigmentation, excepting the very narrow black lateral margin; fringe of setae around posterior margin of genital sclerite short and dense, with about 4 longer, submarginal setae on each side.

The male genitalia differ from all others mentioned in this paper. The endomeral sac is narrow, rather long and with parameres as long as sac and with the endomeral rods extending almost to its posterior margin. The movable sclerite differs decidelly (fig. 20). Represented by the  $\circ$  holotype, the  $\circ$  allotype and by  $\circ$   $\circ$  and  $\circ$   $\circ$  paratypes. See table for measurements.

# Ciconiphilus floridus sp. n. (Figs. 21 and 22)

Types, & and Q adults, from *Florida caerulea* (Linné), collected by the author at Mamotoco, Dept. Magdalena, Colombia, Dec. 24, 1945 (Type No. 809 in author's coll.).

Diagnosis — One of the larger species, with more than usual difference in the size of the sexes (see table). The head of female is the widest at temples of all of the new species here described, but the length is the same as most, and with width of frons the same as hoactli and agami.

The ocular nodi are oval, with sharply defined margins, dark brown in color, but with a narrow, black diagonal band across median portion; occipital carina consists of a narrow, flatly rounded, black band, with ends not extending to lateral margins of temples.

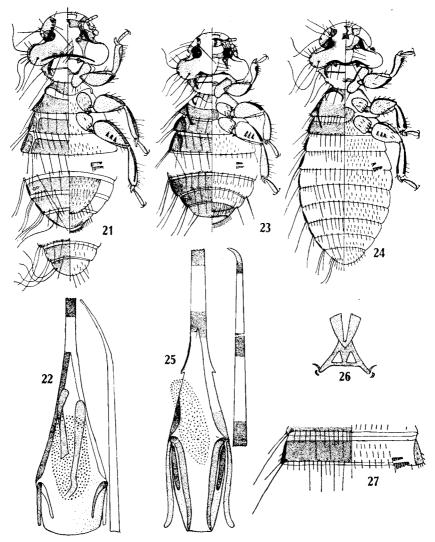
The meso-metathoracic suture is quite wide, the lateral margins of mesothorax rounded. Pleurites narrow and separated from tergites, the former with narrow dark lateral margins which become black in posterior segments. Genital sclerite large, covered sparsely with short setae; fringes of vulvular setae short (see fig.).

The male genitalia is typical of the genus, in shape and structure, but the movable sclerite is entirely different from all other species of the genus seen by the author, consisting of two long, slender sclerites within the densely spiculated endomeral sac (fig. 22). Represented by  $\circ$  holotype,  $\circ$  allotype and 1  $\circ$  paratype. See table for measurements.

# Ciconiphilus butoridiphagus sp. n. (Fig. 23)

Holotype, 9 adult, from *Butorides virescens (maculatus?*) (Boddaert, collected by the author at Acandí, Dept. del Chocó, Colombia (on Panama frontier), Dec. 30, 1949 (Type No. 810 in author's coll.).

Diagnosis — The smallest of the new forms here recorded, with small head and widely rounded temples; ocular nodi black, but with outer edge dark brown; pterothorax with straight; widely divergent sides; pleurites fused with



Ciconiphilus floridus sp. n. — Fig. 21: Head, thorax, legs and 5 abdominal segments of female and 2 of male; fig. 22: male genitalia. — Ciconiphilus butoridiphagus sp. n., female — Fig. 23: Head, thorax, legs and 5 abdominal segments. — Ardeiphilus incertus sp. n. — Fig. 24: Body of female; fig. 25: male genitalia; fig. 26: pharyngeal sclerite; fig. 27: abdominal segments II and III.

tergites, and with outer margins black; terminal abdominal segment short and wide, with large vulva and prominent fringes of setae (see fig.). Represented by the  $\circ$  holotype and  $\circ$   $\circ$  paratypes.

#### Ardeiphilus Bedford, 1939

Onderstepoort J. vet. Sci., 12:130 (Type species: Colpocephalum trochioxum "Nitzsch").

A very small genus of Menoponidae, apparently restricted to the Ardeidae (Herons), and presently containing but three valid species, two from the genus Ardeola and one from Botaurus, all european. I have seen no specimens of this genus, but Bedford's description and figures of its type species are very good. The new species described below differs considerably from the type of the genus, but it seems to be closer to it than to any other genus of the Menoponidae, especially the male genitalia, which is very different from that of the genus Ciconiphilus.

# Ardeiphilus incertus sp. n. (Figs. 24-27)

Holotype, adult 3, and only specimen, from *Tigrasoma l. lineatum* (Boddaert), collected by the author at Norosí, Dept. Bolivar, Colombia, March 14, 1947 (Type No. 811 in author's coll.).

Diagnosis — The head is very similar to that of Ciconiphilus, with same pattern of chaetotaxy and ocular nodi as in C. pilherodii and agami, but there is one striking difference which cannot be ignored. The pharyngeal sclerite is totally different from that of all species of Ciconiphilus seen by the author, also differs from that of Menacanthus and Desumenopon (figs. 17 and 26). I consider the pharyngeal sclerite to be one of the basic generic characters in the Menoponidae, especially when it differs as radically as it does in this case. The chaetotaxy of prothorax is similar to that of Ciconiphilus, but these setae differ in length in the different species.

The abdomen is elongated oval; the pleurites reduced to a barely perceptible lateral carina on I-VIII; tergites closely fused with pleurites and continuous, separated from each other by wide hyaline spaces, both anterior and posterior. Abdominal chaetotaxy sparse, rather than abundant, and is correctly shown in figure. It will be seen that the abdominal chaetotaxy is quite different from that of *Ciconiphilus*, with a series of 4 short, post-marginal setae following the long post-spiracle seta, then followed by 5-6 longish setae; there are no short anterior setae on tergites, while there are two median rows of short setae on sternites, in addition to the very short post-marginal setae (Figures 18 and 27 show the setae of segments II-III of *Ciconiphilus pilherodias* and that of the new species of *Ardeiphilus*).

There are 3 combs of spines on the 3rd femora and 2 on 3rd sternite. The genitalia is strikingly different from that of *Ciconiphilus*, and in this

instance may be considered as a valuable generic character, taken in connection with the pharyngeal sclerite. The genitalia differs considerably from that of A. trochioxus, as figured by Bedford, but is much nearer to that type than to Ciconiphilus.

The parameres are long, as long as the endomeral sac, narrow anteriorly and slightly pigmented, and widening posteriorly slightly and becoming quite clear, very difficult to observe. There are two pairs of longitudinal carinae within the endomeral sac, a shorter marginal pair and a very long internal pair, extending from base of paramers to tip of endomeral sac.

There is no movable sclerite present, although there is a medium sized granulated membraneous sac within the basal portion of basal plate which may have enclosed the movable sclerite, and which may have been lost in handling the specimen, although it is not on the slide.

Measurements of the holotype 3:

		Length	Width
Body		1.56	
	temples	0.347	0.546
Head (	frons	1.56 —— temples 0.347 0.546 frons —— 0.37 ax 0.205 0.39 orax 0.217 0.50 en 1.02 0.66 late 0.61 0.09 (at base) res 0.15 ——	0.37
Protho	rax	0.205	0.39
Pterotl	norax	0.217	0.50
Abdon	nen	1.02	0.66
Basal	plate	0.61	0.09 (at base)
Parameres		0.15	
Endon	neral sac	0.15	0.11 (anterior end)

Table of measurements of new species

Ciconiphilus spp. n.	Body length	Head	Frons	Prothorax	Pterothorax	Abdomen	Basal plate	Para- meres
nyctardis hoactli	1.67 2.02 1.56 1.65 1.89 1.72 1.74 1.82 1.54 1.93	0.37x0.53 0.38x0.564 0.35x0.50 0.37x0.52 0.37x0.565 0.35x0.52 0.37x0.53 0.38x0.55 0.38x0.55 0.35x0.52 0.37x0.53	0.40 0.39 0.37 0.36 0.39 0.35 0.38 0.40 0.37 0.40	0.17x0.35 0.18x0.38 0.14x0.303 0.15x0.337 0.18x0.37 0.174x0.36 0.155x0.35 0.174x0.38 0.16x0.337 0.206x0.39	0.174x0.434 0.23x0.54 0.17x0.38 0.19x0.42 0.22x0.50 0.18x0.495 0.20x0.434 0.24x0.51 0.195x0.41 0.24x0.52	1.06x0.59 1.35x0.84 0.945x0.52 1.01x0.55 1.21x0.69 1.11x0.70 1.09x0.60 1.24x0.72 0.90x0.56 1.24x0.80	0.61x0.11 0.586x0.11 0.61x0.11 0.67x0.10 0.70x0.12	0.06 0.07 0.07 0.07 0.07

#### SUMMARY

A list of the eight described species in the author's collection, with critical remarks on certain forms, and with the genitalia of seven of them figured, together with a table giving body length and measurements of their heads.

Four species and 2 subspecies of *Ciconiphilus* are described and figured, all from hosts resident in the Western Hemisphere. Condensed measurements are given of both sexes of all new forms, with figures of the holotypes and of the male genitalia of five. The genus is apparently confined to the avian families Ardeidae and Ciconidae, with two somewhat aberrant species found on the domestic goose. The species infesting the Ardeidae are very homogeneous, but those from the Ciconidae differ in many respects from those from the Herons. The species from the Herons are not always easily separated, even the movable sclerites of the male genitalia are very similar in species from closely related hosts.

Apparently the genus is not common, and is rarely collected, so that much more material, from additional hosts, is necessary before a more comprehensive study of its morphology and specific characters can be attempted.