

NEW SPECIES OF ARDEICOLA (MALLOPHAGA) FROM COLOMBIAN HOSTS

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Genus *Ardeicola* Clay, 1936

Proc. Zool. Soc. London, p. 615. Type species: *Esthiopterum ardeae* (Linn.)
The genus is a large one, containing 31 valid species, with 20 others listed as synonyms. It seems to be restricted to Herons and Ibises, and thus far only seven species have been described from neotropical hosts.

All but one of these seven species (*gracilentus* (Piaget from *Eudocimus ruber* (Linn.)) are represented in the author's collection, as well as a neoparatype of the genotype from *Ardea cinerea*. Of the remaining six species two are from hosts not found in Colombia (*Plegadis ridwayi*, Peru and *Theristicus branickii*, Bolivia).

The following species have been described from hosts resident in Colombia.

- A. *albus* Eichler (*Casmerodius albus egretta* (Gmelin).
- " *loculator* (Giebel) (*Mycteria americana* (Linn.).
- " *theristicus* (Pessoa & Guimaraes) (*Theristicus caudatus caudatus* (Boddaert).
- " *plataleae ajajae* Carriker (*Ajaia ajaja* (Linn.))

In the present paper six additional species are described from hosts resident in Colombia, although the types of two of them were actually collected in other countries, *Eudocimus albus* in Costa Rica and *Nycticorax nycticorax hoacitli* in Peru. Unfortunately both sexes are represented in only three of the new species, the remainder being all females, a very unfortunate circumstance when dealing with species which may be dimorphic sexually and which may have strikingly different male genitalia. However, it has seemed best to describe them, although incompletely.

The measurements are in millimeters and have been reduced to 2 decimal points instead of the usual 3. All drawings were prepared by the author, using a style somewhat different from his usual work, but which it is hoped will be satisfactory.

Ardeicola cruscula new species

fig. 1

Type, female adult, from *Ardea h. herodias* Linn., collected by the author at La Gloria, Dept. Magdalena, Colombia, May 17, 1943 (in coll. USNM).

Diagnosis. Very closely related to the genotype, *A. ardeae*, of Europe, which would be expected since the two hosts are very closely related.

The abdomen is relatively short for the genus, not parallell-sided, but elongate oval, being widest at segments V and VI and tapering to a narrow, bifid tip. The pleurites are deeply pigmented, pitchy black, while the tergites are very faintly colored and widely separated by hyaline areas.

The legs are unusually short and stout, more so than in *ardeae*; the anterior plate is similar, with rows of dark dots on anterior portion, not parallell lines as in other species. The preantennary carinae, the temporal carinae and those supporting the anterior plate are all wider than in *ardeae*, especially the former; there is a hook-shaped, pitchy marking in front of the eye, the same as in *ardeae*. The length of the head is the same, but width at temples less (.48 against .52); the anterior plate is longer and slightly wider (.17 x .20 against .15 x .19). The chaetotaxy seems to be the same. Species represented by the female holotype only.

Note: The host is a seasonal migrant in Colombia, not breeding there. The measurements follow the next species.

Ardeicola florida new species

fig. 2

Type, female adult, from *Florida caerulea* (Linn.), collected by the author at Gaira, Dept. Magdalena, Colombia, Apr. 11, 1913 (in coll. author).

Diagnosis. Of the same general type as *cruscula* and *ardeae* but smaller in all measurements except length of anterior plate. The anterior plate is narrower, head much smaller and body shorter; head narrower at temples which are much more angulated; sides of head straighter; the antennary fossae are enclosed by a broad, deeply colored carina; eye obsolete; preantennary and temporal carinae narrower than in *cruscula*, about equal to those of *ardeae*.

The sides of pterothorax are almost straight, not constricted medially as in *cruscula*; the abdomen is similar to that of *cruscula*; the pleurites are also similar but the tergites (also almost hyaline) are large, almost filling the segments, with inner ends nearly straight (inner anterior corners are more rounded than shown in figure). The chaetotaxy seems to be similar, except the setae at posterior edge of abdominal tergites number 2 instead of 3, as in *cruscula*. Species represented by the female holotype and 1 female paratype.

Measurements of the types:

	<i>cruscula</i> (female)		<i>florida</i> (female)	
	length	width	length	width
Body	3.19	—	3.02	—
Head ant. plate	.17	.20	.17	.15
Head temples	.76	.48	.66	.39
Prothorax	.26	.37	.22	.31
Pterothorax	.37	.54	.32	.45
Abdomen	1.93	.69	1.71	.50

Ardeicola hoactly new species (1)

Type, female adult, from *Nycticorax nycticorax hoactli* (Gmelin), collected by the author at Lake Junin, Peru, Jan. 30, 1931 (in coll. of author)

Diagnosis. Decidedly different from the two previously described species, although resembling them in certain characters.

Abdomen less oval, but not parallell-sided, being widest at segment IV; the legs are also short and stout; chaetotaxy the same excepting 4 long setae in hyaline circle inside 3rd coxae, instead of 3; more setae on VII and VIII.

Differs as follows: Anterior plate marked with parallell lines on anterior portion instead of rows of dots; no carina encircling antennary fossae; head shorter and slightly narrower at temples, which are more rounded than in *cruscula*; preantennary carinae wide, deeply colored and pitchy black in posterior portion; temporal carinae narrow but black; sides of pterothorax straight posterior to bases of acetabular bars, which are narrow, but not pitchy black as shown in figure.

Pleurites rather narrow, sharply delineated and not heavily pigmented, with "heads" of ventral portion longer than dorsal; tergites deeply pigmented, more so on outer half, and almost filling segments longitudinally, also more widely separated medially, the hyaline area widennig posteriorly.

The sternites are divided into two slender longitudinal sclerites in segments I-III, one on each side of median line, but are fused into a single median sclerite in IV-VII. (Unfortunately shown on wrong side of median line in figure).

In segments III-VII there is an oval hyaline spot at anterior edge of tergite, near median portion, and connected by a dark line with the dorsal "head" of pleurite. I am unable to define their function. Species represented by female holotype and 1 female paratype. Measurements follow next species.

(1) In a recent communication from Col. Emerson he suggested that my new species of *Ardeicola* from *Nycticorax n. hoactli* might be a synonym of *A. goisagi* Uchida, 1953. Unfortunately I had not seen this paper by Uchida, so could not resolve the question. However, I have just received from Col. Emerson a fine pair of *Ardeicola goisagi*, which proves to be very different from *A. hoactli* n. sp. One of the chief differences is the style of markings on the anterior plate. It will be noted that in *hoactli* these markings consist of lines of dashes, viz. while in *goisagi* they consist of rows of rather large, dark, oval dots. Also, in *goisagi* the antennal fossae are surrounded by wide heavily pigmented carinae, while in *hoactli* there is merely the marginal carina. There are other small differences but the above are sufficient to distinguish the two species. Unfortunately the male genitalia of *hoactli* is unknown, and will probably prove to be quite different.

Ardeicola cruris new species

figs. 4, 4a, 4b and 5

Types, male and female adults, from *Mesembrinibis cayennensis* (Gmelin), collected by the author at Norosi, Dept. Bolivar, Colombia, Mar. 4, 1947 (coll. USNM)

Diagnosis. This is the smallest of the six species described in this paper, the head of the female being only .61 x .37 and the male .51 x .29. The sides of the head are flatly angulated at antennary fossae, the pre and postantennary margins being straight, with temples paralell-sided and posterior angles slightly rounded. Cranial carinae rather wide, deeply pigmented, and with portions pitchy black (see fig.)

Prothorax small and quadrangular, with well defined lateral carinae reaching nearly to middle of posterior margin. Pterothorax longer than wide, nearly paralell-sided; lateral carinae wide and rounded at anterior end, narrowing to base of acetabular bars, whose distal ends do not articulate with the 3rd. pair of coxae, as in most species.

Abdomen of male almost paralell-sided, but slightly constricted at junction of segments II and III; segments I-III longest and about equal, the remainder much shorter, with VIII slightly wider. Pleurites narrow, sharply defined, with "heads", and deeply pigmented; tergites entire across abdomen, those of I-III nearly filling segment, but with wide hyaline area between in IV-VII (see fig.)

Second and third pair of legs long and strong, first pair short and thick. Antennae with 1st. segment long and swollen; 3rd very short, rounded, and with 4th. inserted on side. For genitalia see fig. 5.

The female differs from male in much larger size; antennae simple and slender; temples wider and more rounded, with sides of head quite straight; legs more slender, with very narrow, dark, marginal carinae.

Abdominal segments I-III about same length, paralell-sided, but widening slightly to end of III; IV to VII become progressively narrower, with VIII half as wide as I at anterior margin.

Pleurites poorly defined, with pitchy lines in IV-VII; tergites fill segment I but are divided medially by a clear line; II-VII are widely separated medially, with flatly rounded inner margins, more widely separated on III and IV.

Species represented by the male holotype, female allotype and 1 male and 1 female paratypes.

Measurements of the types:

	<i>hoactli</i> (female)		<i>cruris</i> (male & female)				
	length	width	length	width	length	width	
Body	3.15	—	2.21	—	3.10	—	
Head	ant. plate	.13	.14	.13	.13	.14	.15
	temples	.59	.35	.51	.29	.61	.37

Prothorax	.22	.29	.19	.24	.22	.28
Pterothorax	.49	.63	.34	.31	.40	.38
Abdomen	1.98	.54	1.35	.24	2.02	.40
		Basal plate	.33	.05		
		Parameres	.04	.04		
		Endomera	.03	.04		

Ardeicola praegracilis new species

figs. 6, 6a, 6b and 7

Types, male and female adults, from *Phimosus infuscatus berlepschi* Hellmayr, collected by the author at Simití, Dept. Bolívar, Colombia, Apr. 7, 1947 (coll. USNM)

Diagnosis. Sexes strongly dimorphic, in antennae, anterior plate and abdominal segments, also in size, the female being much larger.

Female holotype: Anterior plate constricted laterally in median portion and with parallel lines around anterior third. Sides of head strongly divergent, from anterior plate to rounded temples; cranial carinae well developed, with portions pitchy black, excepting the narrow ones supporting anterior plate; antennal fossae not encircled by carinae, but there is a black, marginal carina in front of eye, ending in a hook, as in *cruscula*; acetabular bars well developed with tips resting in cavities of coccyx.

The most striking character of the female is the shape of the abdomen, which is clearly shown in fig. 6, as well as structure of tergites and sternites and the chaetotaxy in general.

The male differs from the female in much smaller size; anterior plate with rounded sides and wider than long (.14 x .16); sides of head less divergent and temples narrower. Antennae with 1st. segment long and swollen (.17 x .06), 2nd. short; 3rd. bent inward with the 4th. attached at its side; thorax and legs as in female.

Abdomen almost parallel-sided, narrow and slightly swollen at segments IV and V, then tapering slightly from VI to the wide tip; pleurites narrow and pitchy black as in female; tergites rather complicated, as shown in fig. 6b. Sternites not visible. Male genitalia, as shown in fig. 7, are quite distinct from the other two males here described. Species represented by female holotype, male allotype and 1 male and 1 female paratypes. Measurements follow next species.

Ardeicola elongata new species

fig. 8

Types, male and female adults, from *Eudocimus albus* (Linn.), collected by the author at Pozo Azul, Costa Rica, June, 1902 (in coll. author)

Diagnosis of male. Body long and very slender, especially the posterior half of abdomen; anterior plate almost circular but posterior portion constricted; markings consist of rows of dots (Clear median area wider than shown in

figure) Preantennary margins strongly convex, with wide carinae, darker along inner edge; temples narrow, strongly convex with rounded posterior angles.

Antennae strongly dimorphic, similar to that of *praegracilis*; prothorax very small; pterothorax long, with undulating sides and acetabular bars well developed, together with their respective cavities on coccyx.

Legs very slender, except 1st femora which are short and thick; 4 long setae inside of posterolateral angle of pterothorax. Abdominal segments as shown in figure 8.

Genitalia very simple, consisting of a short basal plate with bifid tip, to which are attached the short, curving, pointed parameres; there is no visible endomerite sclerite, merely a short, slender tube in basal plate between bases of parameres. The species is easily recognized by the shape of the head and the male genitalia.

The female: Much larger than male, with simple filiform antennae; abdomen less slender, approaching that of *florida* in shape. Unfortunately the only female of the species is in poor condition, so that the details of the abdominal sclerites are not clearly visible and are impossible to describe.

Species represented by the male holotype, female allotype and 2 male paratypes.

	<i>praegracilis</i> (male & female)				<i>elongata</i> (male & female)			
	length	width	length	width	length	width	length	width
Body	2.41	—	3.36	—	3.17	—	3.77	—
Head ant. plate	.14	.16	.15	.15	.15	.16	.20	.20
Head temples	.58	.33	.63	.37	.63	.34	.75	.43
Prothorax	.18	.27	.22	.29	.21	.26	.24	.33
Pterothorax	.39	.34	.48	.40	.41	.33	.54	.39
Abdomen	1.43	.33	2.17	.39	2.00	.33	2.76	.47
Basal plate	.26	.16			.26	.06		
Parameres	.05	.03			.12	.03	(at base)	

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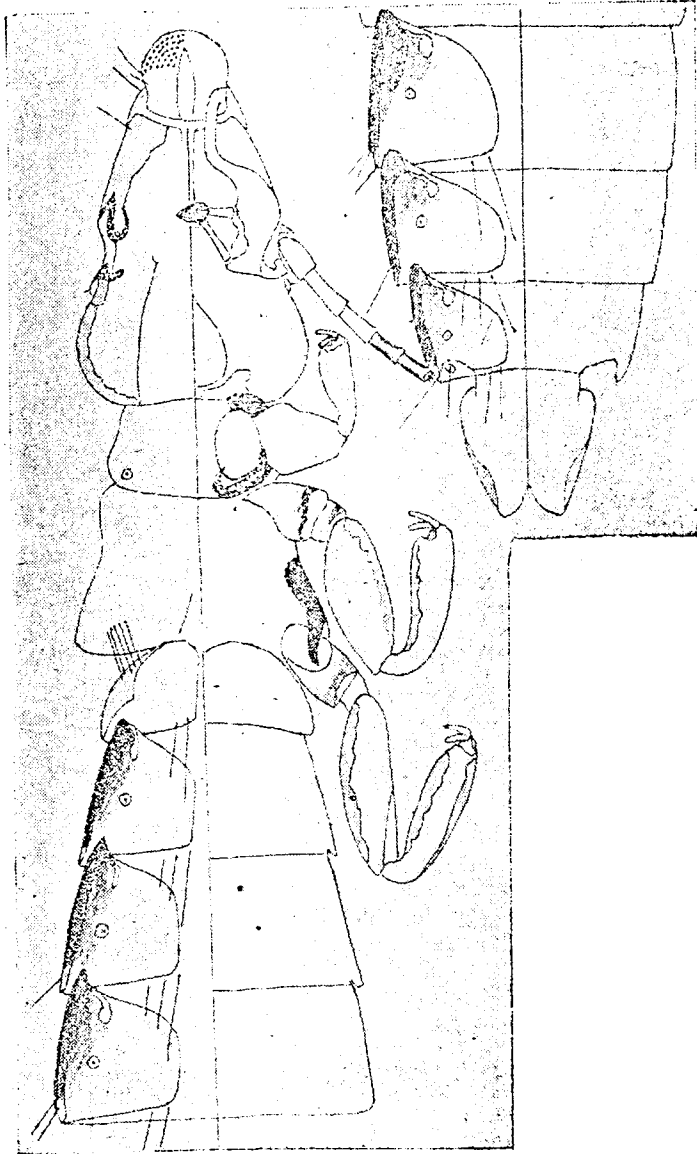


Fig. 1. *Ardeicola cruscula* ♀ (*Ardea herodias*)

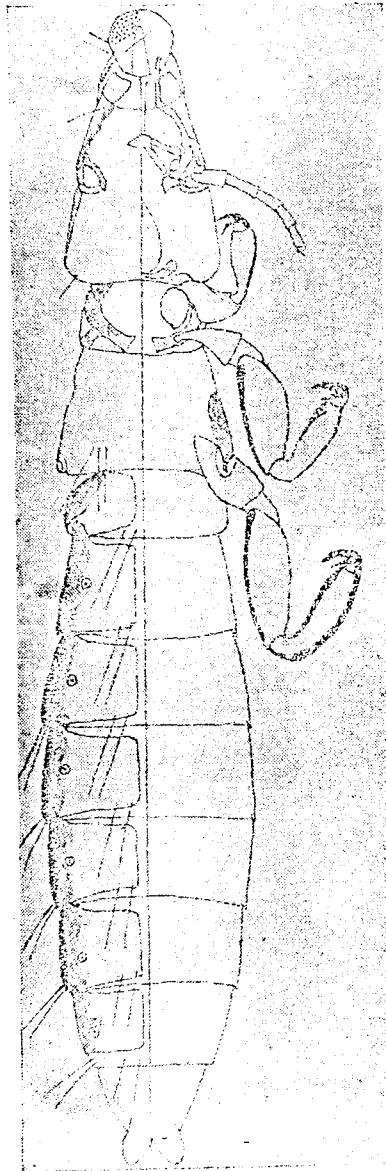


Fig. 2. *Ardeicola florida* ♀ (*Florida caerulea*)

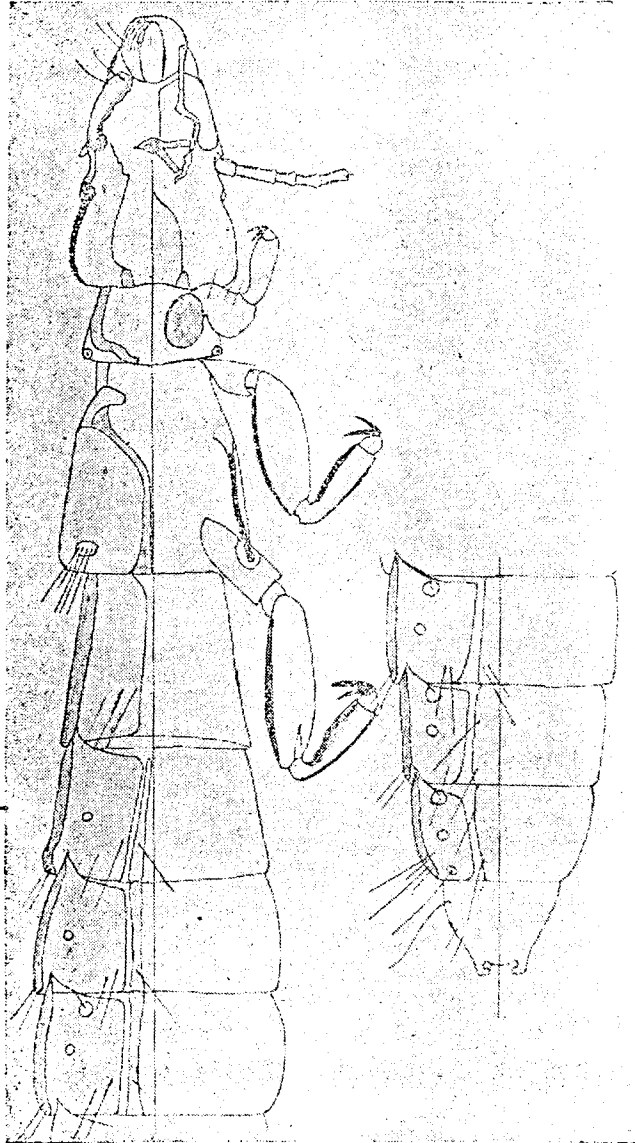
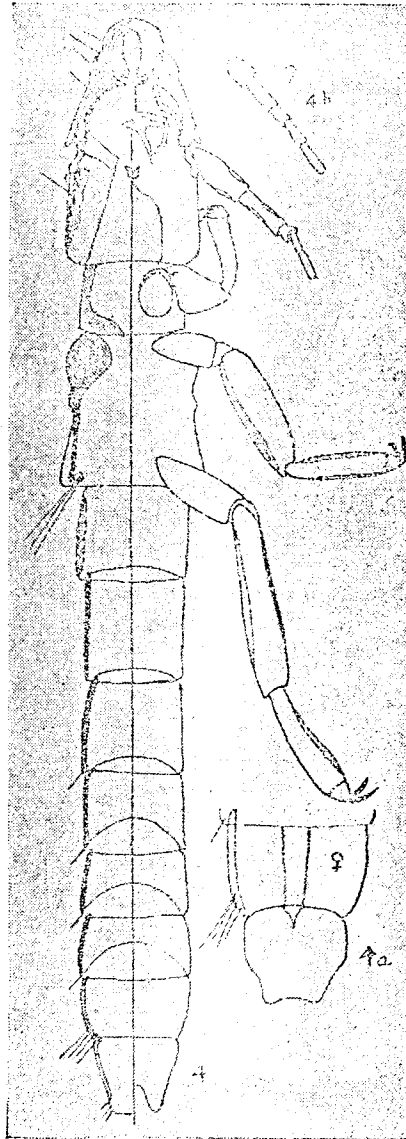


Fig. 3. *Ardeicola hoactli* ♀ (*Nycticorax nycticorax hoactli*)



Figs. 4, 4a + 4b. *Ardeicola cruris* ♂ (*Mesembrinibis cayennensis*)

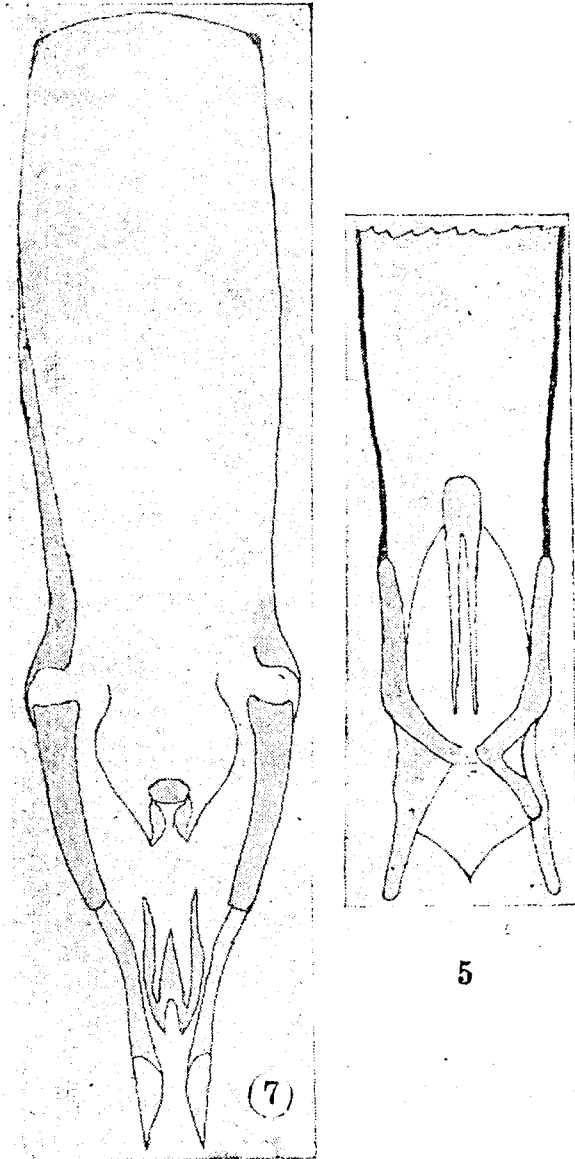


Fig. 5. *Ardeicola cruris* (*Mesembrinibis cayennensis*) (δ genitalia)
Fig. 7. *Ardeicola prae-gracilis* (δ genitalia)



Fig. 6, 6a. y 6 b. *Ardeicola praegracilis* ♀ (abdominal segments III - VIII
+ antennae of ♀ (*Phimosus i. berlepschi*))



Fig. 8. *Ardeicola elongata* ♂ (*Guara alba*)