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STUDIES IN NEOTROPICAL MALLOPHAGA. XII (PART 8): LICE OF THE TINAMOUS[1]

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(With 18 text-figures)

This is the last paper of the series treating the Lice of the Tinamous and contains a review of the genera *Austrokelloggia, Kelloggia* and *Heptagoniodes,* with description of 2 new species and 3 new subspecies, together with new figures of certain other forms previously described.

All measurements are in millimeters and all figures prepared by the author. Lastly I wish to express my thanks to Dr. H. Lent for the publication of this series of papers and for his labors in arranging the illustrations and the reading of the proof.

Austrokelloggia Carriker, 1936

Proc. Acad. Nat. Sci. Phila., 88: 175 (Type species: *A. intermedia* Carriker).
Hypocryptus Carriker, 1936. *Ibid.*: 178 (Type species: *Strongylocotes (Lepidophorus) coniceps* Taschenberg).
Hypocrypturellus Carriker, 1940, *Lloydia,* 3: 298. *Nomen novum* for *Hypocryptus* Carriker, 1936, not Förster, 1868.

After a careful study of the species placed under *Hypocrypturellus* and *Austrokellogia* it becomes apparent that these two genera must be united, and since *Austrokelloggia* has page priority over *Hypocryptus,* the former takes preceedence.

Austrokelloggia intermedia Carriker, 1936

Proc. Acad. Nat. Sci. Phila., 88: 176, pl. 36, fig. 1 (Host: *Nothocercus n. nigrocapillus* (G. R. Gray)).

Since the publication of my 1944 report on this family I have received from Col. K. C. Emerson a single male of this species, taken from a skin of

[1] Received for publication August 1, 1962.

Parts 1, 2, 5, 6, and 7 of this series of papers have appeared in this publication; 3 and 4 in the Boletín de Entomologia Venezolana.

the type host, collected in Bolivia. There are no differences between it and the holotype. No further information concerning this species.

Attention may be called to the taking of *A. intermedia* on *Nothocercus bonapartei,* as noted in 1944. I have rechecked this material and find that the previous identification was correct. However, I have since taken I ♂ and 3 ♀ ♀ of *intermedia* from *Nothocercus julius,* which is subspecifically different from the nominate form, and is described below.

Austrokelloggia intermedia colombiana subsp. n.
(Figs. 1-3)

Types, ♂ and ♀ adults, from *Nothocercus j. julius* (Bonaparte) collected by the author at Hacienda Las Vegas, Santander, Colombia, Aug. 31, 1939 (in author's coll., type No. 738).

Diagnosis — Very closely related to the nominate form *intermedia,* with no appreciable differences in shape of the various body segments.

The measurements average about the same, there being considerable individual variation in this species, as shown by a series of *intermedia* from *Nothocercus bonapartei* of Colombia, and are of no value in separating the two races. As stated in the original description of *intermedia,* there is a marked sexual dimorphism in the shape of the head, that of the female having the preantennary portion longer and narrower and with the frons more rounded.

The male genitalia, however, show important, subspecific differences, as seen at a glance in comparing the genitalia of the two races, that of *colombiana* having the parameres longer, with longer, slenderer tips; the endomera is similar in pattern but varies in detail of the apical portion. However, the figure of the genitalia of *intermedia* is not quite correct in the endomera, it being, in reality, more like that of *colombiana* but with tip differently shaped. Represented by the ♂ holotype, ♀ allotype and 1 ♀ paratype.

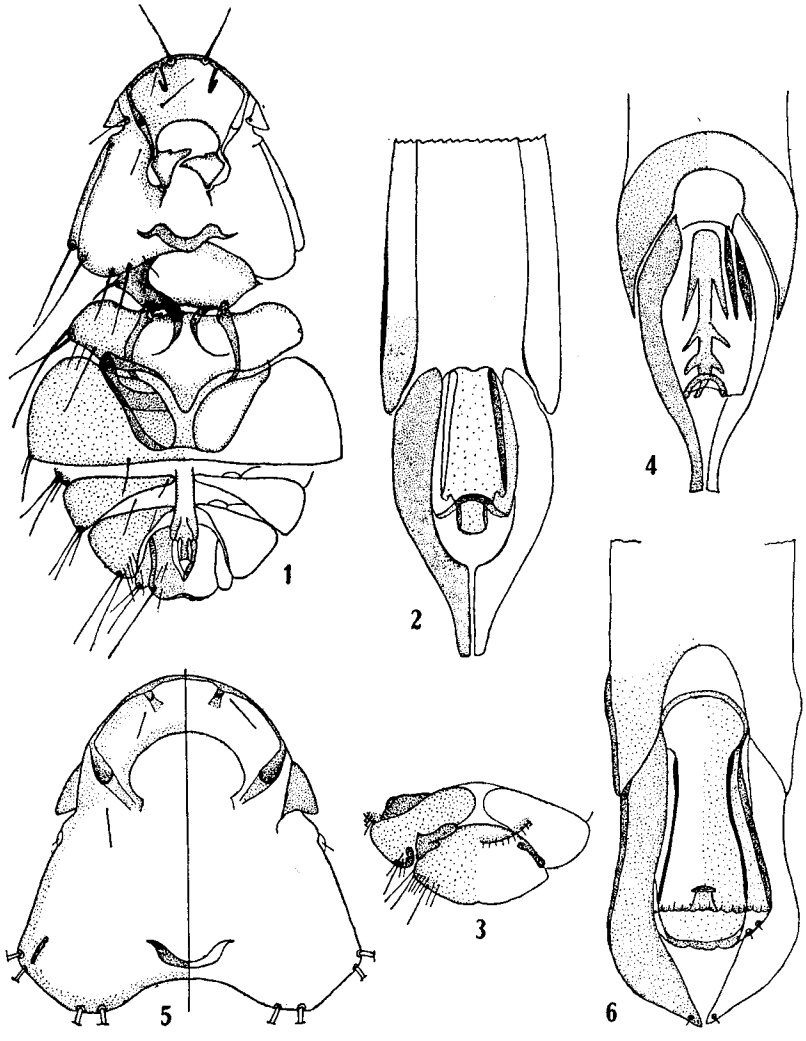
Measurements of the types:

	♂		♀	
	Length	Width	Length	Width
Body	1.74	—	1.84	—
Head: frons	—	0.356	—	0.342
Head: temples	0.56	0.616	0.63	0.60
Head: occiput	0.51	—	0.523	—
Prothorax	0.17	0.38	0.17	0.37
Mesothorax	0.275	0.60	0.29	0.59
Metathorax	0.25	0.43	0.245	0.435
Abdomen	1.00	0.82	1.05	0.86
Basal plate	0.26	0.073		
Parameres	0.118	0.065		
Endomera	0.06	0.038		

Austrokelloggia coniceps coniceps (Taschenberg) (Fig. 4)

Strongylocotes (Lepidophorus) coniceps Taschenberg, 1882, *Nova Acta Leop. Carol.*, 44: 63, pl. 1, fig. 8 (Host: *Crypturellus v. variegatus* (Gmelin).
Hypocryptus c. coniceps (Taschenberg), Carriker, 1936, *Proc. Acad. Nat. Sci. Phila.*, 88: 178; Guimarães, *Arq. Mus. Nac.*, Rio de Janeiro, 42: 234.
Austrokelloggia coniceps (Taschenberg), Hopkins & Clay, *Checklist of Mallophaga*, 1952: 45.

GUIMARÃES published a complete review of the known species of this genus in 1953, giving a complete description and figure of *coniceps*.



Austrokelloggia intermedia colombiana subsp. n. — Fig. 1: Head, throat and tip of abdomen of male; fig. 2: male genitalia; fig. 3: female, tip of abdomen. *Austrokelloggia c. coniceps* (Taschenberg) — Fig. 4: Male genitalia. *Austrokelloggia heterura* (Carriker, 1936), male — Fig. 5: Head; fig. 6: genitalia.

Three new forms were described and figures given of several of the known species, including genitalia. The figures are good, and apparently without errors. In 1952 I secured 4 ♂♂ and 4 ♀♀ of *coniceps* from the type host, collected at Puerto Venecia, Caquetá, Colombia. I must admit that the genitalia of these males do not completely agree with the figure presented by GUIMARÃES. I can find no trace of the "penis" shown by him, although the endomera as a whole does agree with my specimens. The endomera of my specimens resembles strongly those of *A. c. nigriceps,* a form which I have found to be parasitic on several subspecies of *Crypturellus soui,* details of which will be given on subsequent pages.

Austrokelloggia coniceps inconspicua (Carriker, 1936)

Hypocryptus coniceps inconspicuus Carriker, *Proc. Acad. Nat. Sci. Phila.,* 88: 180, fig. 2, pl. 32 (Host: *Crypturellus soui inconspicuus* Carriker); Guimarães, 1953, *Arq. Mus. Nac.,* Rio de Janeiro, 42: 238.

Austrokelloggia inconspicua (Carriker, 1936) (same host), Hopkins & Clay, 1952.

This race is represented in my collection by a single ♀ paratype, therefore I cannot check on the correctness of the figure of the ♂ genitalia. GUIMARÃES saw no specimens of it and merely remarks that the figure of the genitalia shows a tubular process at posterior end which is "much exposed" resembling those of *c. coniceps.*

However, I may say that the genitalia of this race shows little in common with that of *coniceps* (see figs.) No additional material examined.

Austrokelloggia coniceps undulata (Carriker, 1936)

Hypocryptus coniceps undulatus Carriker, *Proc. Acad. Nat. Sci. Phila.,* 88: 180, fig. 4, pl. 32 (Host: *Crypturellus u. undulatus* (Temminck); Guimarães, 1953, *Arq. Mus. Nac.,* Rio de Janeiro, 42: 237, fig. 2g.

Austrokelloggia undulatus (Carriker), Hopkins & Clay, 1952: 46.

GUIMARÃES had numerous specimens of this subspecies and says that the measurements are close to those of *strigulosus* Guimarães, 1953; the shape of the abdomen and preantennary portion of head nearest to *latifrons* Guimarães, 1953, and the ♂ genitalia nearest to *strigulosus.*

The subspecies was described from the ♂ holotype, no female having been taken. GUIMARÃES designates the ♀ allotype, a specimen from Matto Grosso, Brasil, No. 45,646. His figure of the ♂ genitalia is quite similar to the original published by me.

Austrokelloggia coniceps nigriceps (Carriker, 1936)

Hypocryptus coniceps nigriceps Carriker, *Proc. Acad. Nat. Sci. Phila.,* 88: 180, pl. 32, fig. 1 (Host: *Crypturellus soui nigriceps* (Chapman); Guimarães, 1953, *Arq. Mus. Nac.,* Rio de Janeiro, 42: 241, figs. 4a-f.

Austrokelloggia nigriceps (Carriker), Hopkins & Clay, 1952: 46.

GUIMARÃES states that in his opinion *nigriceps* should have specific rank, due to differences in pre-antennary region of head, the abdomen and the ♂ genitalia. It is true that the endomera of *nigriceps* is quite distinct from *coniceps,* but the other differences mentioned by GUIMARÃES do not seem to be of specific value, and it seems best, for the present, to give *nigriceps* merely subspecific rank. There is a slight error in the figure of *nigriceps,* in the apical portion of endomera and in the shape of the parameres.

Specimens from *C. soui caucae; C. soui caquetae* and *C. soui mustellinus* cannot be separated from *A. c. nigriceps* (from *C. soui nigriceps).* There are practically no differences between the genitalia of the four races; whatever slight differences there may be in shape of body segments and measurements can be taken care of under individual variation.

I also have 5 ♂♂ and 2 ♀♀ of *A. coniceps,* from *Crypturellus s. soui,* collected at Sta. Elena, Gran Sabana, Venezuela, and these specimens are also *A. c. nigriceps* Carriker, without any doubt, the genitalia being exactly the same.

Austrokelloggia coniceps obsoletus (Carriker, 1936)

Hypocryptus coniceps obsoletus Carriker, *Proc. Acad. Nat. Sci. Phila.,* 88: 181, pl. 32, fig. 3 (Host: *Crypturellus obsoletus punensis* (Chubb).

Hypocrypturellus obsoletus (Carriker), Guimarães, *Arq. Mus. Nac.,* Rio de Janeiro, 42: 238.

Austrokelloggia obsoletus (Carriker, 1936), Hopkins & Clay, 1952: 46 (Host, *idem).*

GUIMARÃES states that he doubts the distinctness of this race from *coniceps,* but he had not seen specimens of it. He also states that the host given is incorrect, that it should be *C. obsoletus crucis* Bond & d'Schauensee.¦ The type of *crucis,* collected by the author, is merely a very large and old specimens of *punensis,* and was placed in the synonimy of *Cr. o. punensis* by HELLMAYR & CONOVER. The genitalia of *A. c. obsoletus* is quite different from that of *coniceps,* as may be seen by comparing the figures of the two genitalia. I have a fine ♂ of *obsoletus,* collected at Samaipata, Bolivia, which has the genitalia exactly the same as shown in the original figure (1936, pl. 32, fig. 3).

I have examined a male of this race of *coniceps,* received from Col. Emerson, which he collected from a dried skin, labelled *C. o. obsoletus,* Brazil. This ♂ cannot be distinguished from a series of *A. c. obsoletus* (Carriker). Either the host was wrongly labelled or else this bird is host to two species of *Austrokelloggia,* that listed above and *A. ribeiroi* (Guimarães).

Austrokelloggia coniceps idoneus (Carriker, 1944)

Hypocrypturellus coniceps idoneus Carriker, *Proc. U. S. Nat. Mus.,* 95 (3180): 226, fig. 29-a. (Host: *Crypturellus idoneus* (Todd)); Guimarães, 1953, *Arq. Mus. Nac.,* Rio de Janeiro, 42: 238 (same host).

Austrokelloggia idoneus (Carriker), Hopkins & Clay, 1952: 46 (same host).

This race was fully described and genitalia figured in 1944. It resembles *A. c. boucardi* (on following page), but is smaller. The genitalia are of the same type, but the endomera is different. It is not an outstanding race, differing mostly in the endomera and size of body.

Austrokelloggia coniceps boucardi (Carriker, 1944)

Hypocrypturellus coniceps boucardi Carriker, *Proc. U. S. Nat. Mus.*, 95 (3180): 226, fig. 29b (Host: *Crypturellus b. boucardi* (Sclater)); Guimarães, 1953, *Arq. Mus. Nac.*, Rio de Janeiro, 42: 238 (same host).
Austrokelloggia boucardi (Carriker), Hopkins and Clay, 1952: 45.

GUIMARÃES saw no specimens of this species, and makes no comment on its position systematically or otherwise.

It may be recognized by the male genitalia, which was figured in the original description. I know of no other form of this genus with similar genitalia. The parameres are similar to those of *idoneus* and *nigriceps,* but the endomera is quite different, as well as the basal plate, which is much wider and has a circular band uniting the two prongs in basal portion. The tip of the endomera is slightly transverse, with a small protuberance in median portion, possibly the penis.

Austrokelloggia coniceps cinnamomea Carriker, 1954

Florida Ent., 37 (4): 207 (Host: *Crypturellus cinnamomeus mexicanus* (Salvadori).

This race was based on a single ♂, with genitalia same as *boucardi,* but all measurements of body much smaller. 3 ♀ ♀ from *C. c. sallaei* were placed provisionally with it. I have since received a ♂ from *C. c. sallaei,* collected in Yucatan, which is exactly like the holotype of *mexicanus*. This leaves no doubt that the 3 ♀ ♀ from Tres Zapotes are *A. c. mexicanus*. Their measurements, compared with *boucardi* show the same comparative difference, being very much smaller. This race is, therefore based solely on its smaller size, with genitalia same as in *boucardi*.

Austrokelloggia coniceps strigulosus (Guimarães, 1953)

Hypocrypturellus coniceps strigulosus Guimarães, *Arq. Mus. Nac.*, Rio de Janeiro, 42: 236, figs. 2a-c (Host: *Crypturellus strigulosus* (Temminck).
Austrokelloggia strigulosus (Guimarães), Hopkins & Clay, 1955, Suppl. to Checklist, p. 178.

The host of this species is found in the State of Pará, Brazil, and GUIMARÃES says of it: This subspecies is very close to the nominate form, differing in smaller size, with shape of abdomen less conical, and with lobes on segment VIII of different shape in the male. One of the principal differences is in the structure

of the male genitalia, as may be seen from the figures. The figure given resembles somewhat that of *nigriceps* (genitalia).

Austrokelloggia coniceps latifrons (Guimarães, 1953)

Hypocrypturellus coniceps latifrons Guimarães, *Arq. Mus. Nac.*, Rio de Janeiro, 42: 236, pl. II, figs. d-f (Host: *Crypturellus n. noctivagus* (Wled).
Austrokelloggia latifrons (Guimarães, 1953), Suppl. Checklist of Mall. 1955: 178.

An adequate series was examined by Dr. Guimarães. Like the preceeding race *(strigulosa)*, the present one is close to the nominate from, according to GUIMARÃES, and is intermediate between *coniceps* and *strigulosa*, with the conical portion of abdomen less accentuated; the preantennary portion of the head of different shape, being more rounded than in *coniceps* and *strigulosa*. The male genitalia closely resemble those of the nominate race, the principal difference being the lack of sclerotization of the cylindrical shaped endomera; measurements identical with those of *strigulosa*. This is a very poor race, at best, and it seems to me that there is a chance that the host is incorrect. Attention may be called to the type of genitalia of *A. romainei* sp. n., whose host is *C. noctivagus garleppi*. That identification is not questionable, since it was the only species of *Crypturellus* taken at Todos Santos.

From the appearance of the genitalia its host might very well be *Cr. undulatus vermiculatus*, a species found also in the same region as *C. n. noctivagus*.

Austrokelloggia coniceps ribeiroi (Guimarães, 1953)

Hypocrypturellus ribeiroi Guimarães, *Arq. Mus. Nac.*, Rio de Janeiro, 42: 239. figs. 3a-e (Host: *Crypturellus o. obsoletus* (Temminck)).
Austrokelloggia ribeiroi (Guimarães), Hopkins and Clay, Suppl., 1955: 178 (same host).

I have in my collection a pair of this species collected by Plauman, at Nova Teutonia, Brazil, Sept. 20, 1938. The genital armature of the male is very clearly visible, and agrees exactly with GUIMARÃES' figure of the genitalia of *ribeiroi*, even to the minute spine at tip of the lateral prongs of the endomera. According to GUIMARÃES the principal character for the separation of this species is the ♂ genitalia. In reality, that statement holds good for species and subspecies of this genus, that and the shape of head and abdomen. In a footnote GUIMARÃES says: that it may very likely be a subspecies of *obsoletus (C. obsoletus punensis)*, on account of certain resemblances in the genitalia. In fact, there is no resemblance whatever between the endomera of the two forms. I have 3 ♂ ♂ of *obsoletus* from the type host, collected at Samaipata, Bolivia, and the genitalia of these three are the *same* as the figure presented in 1936.

It seems to me to be more logical to make it a subspecies of *coniceps*.

Austrokelloggia coniceps caquetae subsp. n.

(Figs. 13-15)

Types, ♂ and ♀ adults, from *Crypturellus soui caquetae* (Chapman), collected by the author at Puerto Venecia, Caquetá, Colombia, June 2, 1952 (in author's coll. type No. 741).

Diagnosis — Very much smaller than *A. c. nigriceps* in most measurements of both sexes; considerable sexual dimorphism in shape of head, much more than in *nigriceps,* with preantennary portion longer in female and slightly pointed medially, while in male the frons is flatly circular; postero-lateral margins of temples in ♂ are convex, in ♀ straight.

The male genitalia are smaller in some measurements, greater in others (basal plate: 0.274 x 0.082 against 0.35 x 0.08; parameres, 0.142 x 0.07 against 0.158 x 0.06; endomera, 0.10 x 0.045 against 0.087 x 0.046). The parameres are thicker in subapical portion and narrower in median portion; endomera very similar in structure, but longer.

Measurements of *A. c. nigriceps* and *A. c. caquetae*:

	♂		♀		♂		♀	
	Length	Width	Length	Width	Length	Width	Length	Width
Body	1.69	—	1.95	—	1.61	—	1.70	—
Head frons	—	0.35	—	0.39	—	0.31	—	0.322
Head temples	0.54	0.64	0.65	0.69	0.49	0.60	0.523	0.65
Prothorax	0.16	0.345	0.16	0.35	0.137	0.32	0.124	0.32
Mesothorax	0.217	0.63	0.235	0.694	0.205	0.59	0.205	0.59
Metathorax	0.195	0.39	0.195	0.42	0.151	0.375	0.137	0.36
Abdomen	1.02	0.825	1.20	0.90	0.915	0.795	1.07	0.74
Basal plate	0.35	0.08			0.274	0.082		
Parameres	0.157	0.066			0.142	0.07		
Endomera	0.087	0.046			0.10	0.045		

Austrokelloggia genitalis (Carriker, 1936)

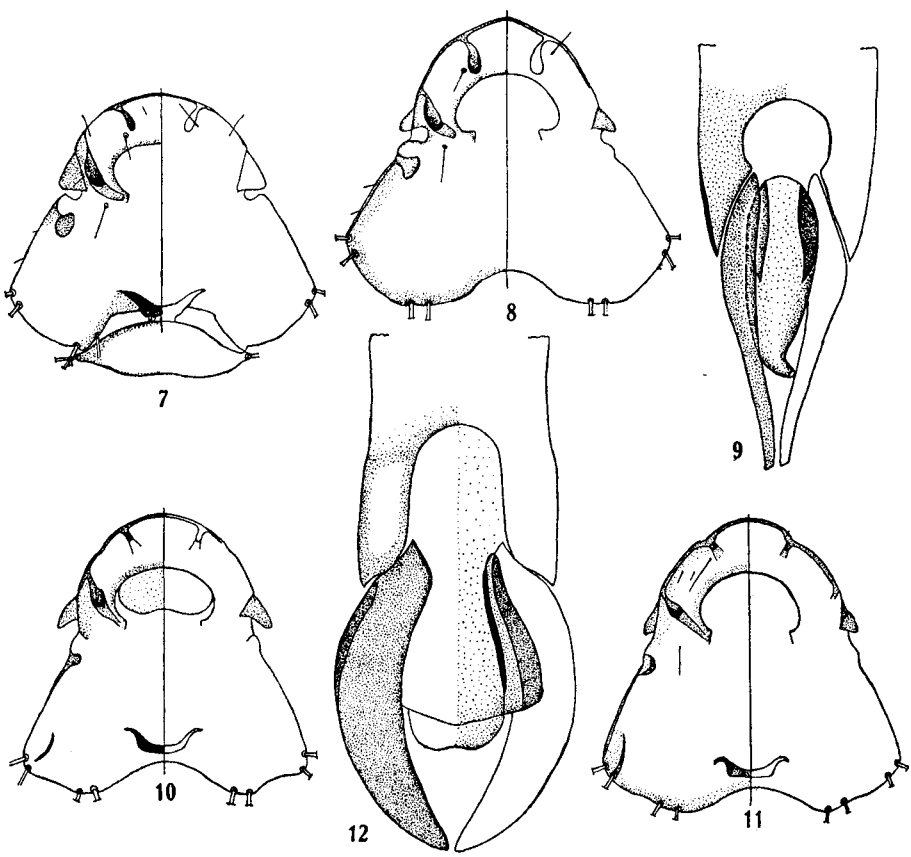
Hypocryptus genitalis Carriker, 1936, *Proc. Acad. Nat. Sci. Phila.,* 88: 181, pl. 31, fig. 3 (not fig. 2, as given under original descr.) (Host: *Crypturellus, t. tataupa* Temminck).

Hypocrypturellus genitalis (Carriker), Guimarães, *Arq. Mus. Nac.,* Rio de Janeiro, 42: 240, figs. 3f-g.

Austrokelloggia genitalis (Carriker), Hopkins & Clay, 1952: 46.

GUIMARÃES had a large series of this species and his description and figures of it coincide with the original description and figure of the author. This is

the smallest known species of the genus. The temples are broad as in *coniceps*, and its races, with the posterolateral portion somewhat rectangular. There is very little in general shape and details of body to distinguish this species, other than the small size and the extraordinary ♂ genitalia, the latter being totally different from all species of the genus, excepting those of *A. romainei* sp. n., described on subsequent pages. The parameres are long and very slender apically, with a rounded swelling at base, from which extend posteriorly a rather thick, pointed spur. The striking character is the endomera, which is in the form of a pouch, filling the space between the parameres, with the pointed tip curved sidewise, extending beyond the paramer, and furnished with a round opening.



Austrokelloggia romainei sp. n. — Fig. 7: Head of male; fig. 8: head of female; fig. 9: male genitalia
Austrokelloggia chocoana sp. n. — Fig. 10: Head of male; fig. 11: head of female; fig. 12: male genitalia.

Austrokelloggia genitalis mendax (Guimarães & Hopkins, 1949)

Hypocrypturellus genitalis mendax Guimarães & Hopkins, *Ann. Mag. Nat. Hist.*, (12) 2: 65 (Host: *Crypturellus parvirostris* (Wagler)).

Goniodes coniceps Paine & Mann, 1913, *nec* Taschenberg, 1882, *Psyche*, 20 (1): 16.

Hypocryptus genitalis Carriker, 1936: 181 (*partim*) 1 ♂ and 6 ♀ ♀ from Marajó Id. were listed as being *genitalis*, but they must be *mendax*, since the host of *genitalis* is *C. t. tataupa*, which is not found on that island, but is replaced by *C. parvirostris*, host of the present form).

Austrokelloggia mendax (Hopkins & Guimarães), Hopkins & Clay, 1952: 46.

This subspecies differs from *genitalis* only by the shape of the male genital armature. This organ is, as a whole, smaller than in *genitalis;* the endomera is shorter and the median structure, which, in *genitalis* is a large, elongated sac, with the tip turned to one side and furnished with a small opening, is in *mendax* a short, subcylindrical body, with the distal extremity directed backward. The females are inseparable.

There is, perhaps sufficient evidence to recognize this race of *genitalis,* but it is a poor one at best.

Austrokellogia heterura (Carriker, 1936)
(Figs. 5 and 6)

Hypocryptus coniceps heterurus Carriker, 1936, *Proc. Acad. Nat. Sci. Phila.,* 88: 179, pl. 31, fig. 2 (Host: *Crypturellus cinereus cinerascens* = *Cr. c. cinereus* Gmelin).

Hypocrypturellus heterurus (Carriker), Guimarães, *Arq. Mus. Nac.,* Rio de Janeiro, 42: 241, figs. 5a-g. (Allotype ♂ described and figured, slide 45, 811).

Austrokelloggia heterura (Carriker), Hopkins & Clay, 1952; 46 (same host).

This species was described from a single ♀, and it was not until 1952 that I was able to secure fresh material of both sexes. Meanwhile GUIMARÃES had secured 5 ♂ ♂ and a ♀ of the species and described and figured it. Its genitalia shows at a glance that it is a distinct species. A figure of the genitalia, drawn from a ♂ taken at Puerto Venecia, Caquetá, Colombia, is here presented, and is very similar to that given by GUIMARÃES. It is an outstanding species and needs no further comment.

Austrokelloggia romainei sp. n.
(Figs. 7-9)

Types, ♂ and ♀ adults, from *Crypturellus noctivagus garleppi* (Berlepsch) collected by the author at Todos los Santos, Bolivia, Aug. 2, 1937 (in author's coll., type No. 739).

Diagnosis — A medium sized species, about the size of *idoneus* and *boucardi,* but it is very different from all others of the genus.

There is a considerable amount of sexual dimorphism in the head (see figs.), that of the ♂ having the preantennary portion shortened and flatly

rounded, and with much larger clavi, while in the ♀ the lateral margins of head are slightly constricted at the antennary fossae, with the temples more expanded laterally and the anterior portion of head narrower and the frons slightly pointed medially.

However, the striking differences are in the ♂ genitalia. The endomera consists of an elongated pouch, as in *genitalis,* but of slightly different shape and also with the tip attenuated and bent to the side. The conspicuous difference, however, between this species and *genitalis,* is the entire absence of the swelling at base of parameres and the long spur-like attachment so prominent in *genitalis*. Represented by the ♂ holotype, ♀ allotype and 3 ♂ ♂, and 3 ♀ ♀ paratypes

Measurements of the types:

	♂		♀	
	Length	Width	Length	Width
Body	1.55	—	1.78	—
Head frons	—	0.33	—	0.355
Head temples	0.478	0.595	0.545	0.63
Head occiput	0.425	—	0.476	—
Prothorax	0.124	0.33	0.125	0.345
Mesothorax	0.195	0.63	0.21	0.645
Metathorax	0.14	0.384	0.15	0.385
Abdomen	0.865	0.82	1.01	0.836
Basal plate	0.22	0.07		
Parameres	0.124	0.058		
Endomeral pouch	0.085	0.035		

Austrokelloggia chocoana sp. n.
(Figs. 10-12)

Types, ♂ and ♀ adults, from *Crypturellus cinereus berlepschi* (Rothschild), collected by the author at Rio Nuquí, Choco, Colombia, Feb. 17, 1951 (in author's coll., type No. 740).

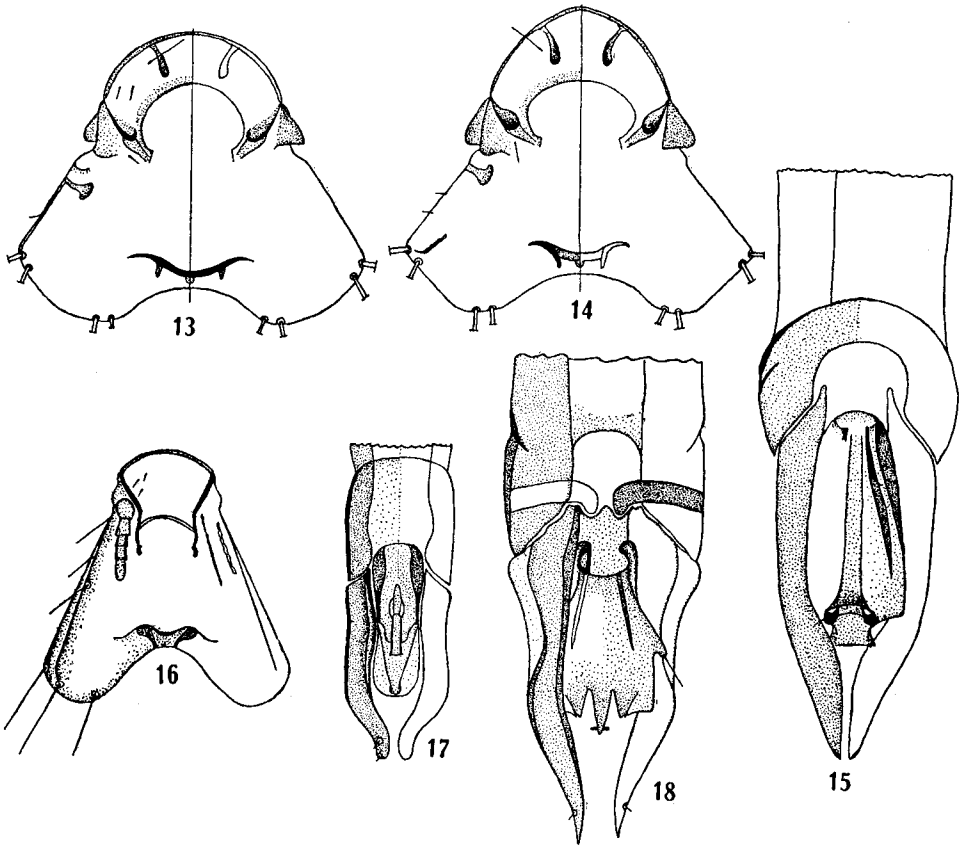
Diagnosis — Rather closely related to *heterura,* with same peculiar type of ♂ genitalia but differing much in many details (see figs.). The genitalia are *very much* larger, specially the parameres, which are semicircular in shape and much thickened medially; the endomera is also much wider in apical portion, buth with the same style of tip.

The genitalia, alone are sufficient identification for this species, but there are other additional differences of importance. The head is slightly narrower at frons in the male, with much smaller and differently shaped clavi; the head is constricted at the clavi and narrower at the temples; the posterior margin of temples concave between the two pairs of strong setae, while in *heterura* this margin is straight. The abdomen in the male is shorter and wider (0.90 x 0.87

against 0.94 x 0.83). Represented by the ♂ holotype, ♀ allotype and 2 ♀ ♀ paratypes.

Measurements of the types:

	♂		♀	
	Length	Width	Length	Width
Body	1.61	—	1.78	—
Head { temples	0.525	0.548	0.553	0.548
Head { occiput	0.463	—	0.495	—
Prothorax	0.14	0.335	0.14	0.345
Mesothorax	0.22	0.59	0.245	0.62
Metathorax	0.164	0.39	0.155	0.42
Abdomen	0.90	0.87	1.06	0.89
Basal plate	0.25	0.075		
Paramercs	0.12	0.096		
Endomera	0.11	0.08		



Austrokelloggia coniceps caquetae subsp. n. — Fig. 13: Head of male; fig. 14: head of female; fig. 15: male genitalia. *Kelloggia brevipes chocoensis* subsp. n. — Fig. 16: Head of female; fig. 17: male genitalia *Ornicholax alienus felisae* subsp. n. — Fig. 18: Male genitalia.

Kelloggia Carriker, 1903

Univ. Neb. Stud., 3: 153 (Type species (by monotypy): *K. brevipes* Carriker).

The genus was thoroughly revised in 1944 (*Proc. U. S. Nat. Mus.*, 95 (3180): 217-223), but the same corrections for names of hosts as given under *Ornicholax* applies to this genus also.

Kelloggia brevipes chocoensis Carriker, 1944
(Figs. 16 and 17)

Proc. U. S. Nat. Mus., 95 (3180): 222, fig. 28 (Host: *Tinamus major latifrons* (error) = *T. m. saturatus* Griscom).

Described from 2 ♂♂ taken on the lower San Juan River, Dept. Chocó, Colombia. I have since taken a large series of this subspecies from the type host collected at numerous localities in N. W. Colombia.

I now designate a ♀ collected at Unguía, Dept. Chocó, Colombia, as the allotype of the subspecies. A figure of the female head and a figure of the ♂ genitalia are here presented, since the latter was not published in 1944.

The female allotype has a very narrow and very circular frons, closest in this respect to the nominate race and *ruficeps*, being somewhat intermediate between the two, but the frons of the ♂ is different from both.

The endomera is also of the same type as in *brevipes*, but differs strongly in detail (see figs., 1944: 219). The parameres also differ in being bent inward apically, not uniformly circular as in *robustus*.

The subspecies is represented by a large series of both sexes from the type host collected at numerous localities in the Depts. of Chocó, Antioquia, Cordoba and Bolivar. Measurements of ♀ follow next species.

Ornicholax Carriker, 1903

Univ. Neb. Stud., 3: 151. (Type species (by monotypy): *O. robustus* Carriker).

Ornicholax alienus felisae subsp. n.
(Fig. 18)

Types, ♂ and ♀ adults, from *Tinamus major saturatus* Griscom, collected by the author at Tarazá, Dept. Antioquia, Colombia, Apr. 27, 1948 (Type No. 742 in coll. of author).

Diagnosis — This is the largest of the known races of *O. alienus*, with head wider than long (♂ : 0.836 x 0.846; ♀ 0.857 x 0.913). All measurements are greater excepting length of pro and mesothorax, which are about the same as in *boliviensis* (the next largest race).

The ♂ genitalia differ from all others of the known races, especially in the width at the base of parameres, being much narrower than all others, but nearest to *mexicanus* in this respect, but the basal plate differs in the shape of the transverse carinae across basal portion, to which are attached the parameres; also there is a break in the lateral margins of the basal plate just anterior to the transverse carinae.

Subspecies represented by the ♂ holotype, ♀ allotype, 9 ♂ ♂ and 3 ♀ ♀ paratypes and 15 ♂ ♂ and 4 ♀ ♀ from the type host taken in other localities.

This subspecies of *O. alienus* is named in honor of my wife, Felisa, to whose untiring labors in the field with me over the past 20 years, much of our success has been due.

Measurements of ♀ of *Kelloggia brevipes chocoensis* and *Ornicholax allienus felisae*:

	♀		♂		♀	
	Length	Width	Length	Width	Length	Width
Body	1.94	—	2.50	—	2.80	—
Head	0.652	0.673	0.836	0.846	0.857	0.913
Prothorax	0.217	0.40	0.22	0.52	0.228	0.522
Mesothorax	0.303	0.65	0.33	0.91	0.337	0.955
Metathorax	0.347	0.50	0.337	0.61	0.347	0.655
Abdomen	1.15	0.976	1.39	1.23	1.67	1.37
Parameres			0.19	0.087		
Endomera			0.112	0.058		

For a complete review of the genus *Ornicholax* see *Proc. U. S. Nat. Mus.*, 1944, vol. 95, (3180): 211-217. Several correction are necessary to the names of the hosts given in this review, due to subsequent changes in their nomenclature. *T. s. serratus* = *T. major peruvianus* Bonaparte; *T. t. tao* = *T. tao septentrionalis* Brabourne & Chubb; *T. serratus ruficeps* = *T. major zuliensis* Osgood & Conover.

Heptagoniodes Carriker, 1936

Proc. Acad. Nat. Sci. Phila., 88: 166 (Type species: *H. mirabilis* Carriker).
Heptagoniodes Carriker, Hopkins, *Ann. Mag. Nat. Hist.*, (11) 2: 420.
Kellogia Carriker, 1936, Hopkins & Clay, 1952: 166.

GIEBEL had 2 ♀ ♀ of *Goniocotes agonus*, and TASCHENBERG studied and figured the same specimens. No others existed. The figure published by TASCHENBERG is clearly that of the female of *Heptagoniodes*, of which I have examined seven specimens. A careful examination of the female of *Kelloggia* will show that it differs from the ♀ of *Heptagoniodes* in several ways. The shape of the head is not the same, being longer and narrower in *Kelloggia;* the abdomen of *Kelloggia* is wide in anterior portion, tapering to the tip from

segment II, while in *Heptagoniodes* the taper is much less, segment VI being quite wide and VII much narrower. In *Kelloggia* VII is wider at anterior margin than VI at posterior margin, thus extending laterally beyond VI. The same shape of head and abdomen, with very little variation, runs through all of the races of *Kelloggia brevipes,* as well as in the four species of *Heptagoniodes.* In *Kelloggia* the bipartite lateral margins of head are sharply marked, while in *Heptagoniodes* they are not. In *Kelloggia brevipes* we have a very homogeneous lot of ♂ genitalia in all of its races, with only slight variations, while in *Heptagoniodes* the genitalia are entirely different in three of the four species, only two being similar (*agonus* and *dimorphus),* while those of *mirabilis* and *clayi* are very different, and none resembling those of *Kelloggia brevipes.*

It is now definitely recognized that in the Tinamou lice the male genitalia are a very important factor in their systematic classification, and may not be disregarded. Finally, the matter of the extreme sexual dimorphism of the head in *Heptagoniodes.* This cannot be passed over lightly.

In the genus *Pterocotes* we have a similar case, which no worker in this groups has hesitated to recognize as a perfectly good genus, taken together with the genitalia. It seems very improbable that in a genus like *Kelloggia* where all of its forms but two are conspecific, and with scarcely any sexual dimorphism, that there should be included these four species of *Heptagoniodes* which are so totally different in the male sex, and in such important characters. The fact that the females of the two genera have a superficial resemblance is no proof that the two are congeneric. Other similar cases are known where the females of two genera can be separated with difficulty, while the males are quite distinct. These two genera very likely have the same primogenital ancestry. Just why *Heptagoniodes* should have evolved such a fantastically different head and genitalia, while parasitic on certain hosts, is one of the inexplicable mysteries of evolution, but that does not necessarily imply that the two should be placed in the same genus. As far as we now know the genus *Heptagoniodes* is confined to *Tinamus tao* and its races and *T. solitarius,* while *Kelloggia,* has been taken on all the races of *Tinamus major,* as well as on *Tinamus tao septentrionalis* and *T. t. weddelli,* the hosts for two species of *Heptagoniodes.*

Heptagoniodes agonus (Nitzsch, 1874)

Goniocotes agonus Nit. *in* Giebel, *Insecta Epizoa,* p. 190 (Host: *Crypturus tao* ;= *Tinamus t. tao* Temminck).

Kelloggia agonus (Nit.) in Giebel, Hopkins & Clay, 1952: 179.

Lepidophorus agonus (Nit.) Taschenberg, *Die Mallophagen,* p. 61, pl. I, fig. 6 (♀).

Kelloggia agona (Nit.) Carriker, 1936, *Lice of the Tinamous* I, p. 175.

This species has been thoroughly treated by KELLER, HOPKINS and especially GUIMARÃES, the latter having collected specimens from the type host and also

taking the ♂ and ♀ in copulation (of *H. clayi),* thus proving conclusively that *Goniocotes agonus* (Nit.) is the female of *Heptagoniodes* Carriker, 1936.

Heptagoniodes mirabilis Carriker, 1936

Proc. Acad. Nat. Sci. Phila., 88: 167, pl. 30, figs. 3 and 3a (Host: *Tinamus tao* (error) = *T. tao septentrionalis* Brabourne & Chubb).

Kelloggia mirabilis (Carriker), 1936, Hopkins & Clay, 1952: 180 (same host).

When *H. mirabilis* was described its relationship with *Goniocotes agonus* had not been established, and when KELER published his findings he declared that *Heptagoniodes mirabilis* was the ♂ of *Goniocotes agonus* Nit.

This statement was accepted until 1948 when GUIMARÃES secured ♂ and ♀ of *Heptagoniodes clayi* in copulation, and cleared up the whole matter once for all (*Bol. Mus. Par. E. Goeldi,* 10: 162-166). He published a key to the four species of *Heptagoniodes,* viz: *agonus, mirabilis, dimorphus* and *clayi.* Meanwhile, in 1937 GUIMARÃES had described *H. clayi* from *Tinamus solitarius* and in 1944 I had described *H. dimorphus* from *T. tao weddelli.*

The female of *mirabilis* is still unknown, but the ♂ has been fully described and figured, so that no further comments are necessary, except to state that the ♂ genitalia of the species is totally different from the other three (see fig., 1936).