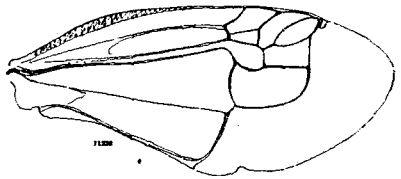
Coloración fundamental: negro pardo, piezas del cuello de la base rojizo-pardo; en la parte anterior del apéndice pronotal paralela a la carina media una faja blanca (compacta o compuesta por puntos) la cual se dirige detrás de los segmentos de esfera a cada lado hacia el humeral. Detrás de la mitad del apéndice pronotal hay líneas blancas y oblicuas hacia arriba y hacia adelante. Pero después de llegar a la mitad de la altura vuelve en dirección apical y se une en una curva circular en el dorso. Este punto de reunión está situado más hacia cephalad que el nacimiento de la línea en los márgenes laterales. El espacio entre estas dos líneas transversales es de color rojizo-pardo. El fin apical lleva un número de puntos blancos muy variables en número y tamaño, pero también pueden faltar por completo.

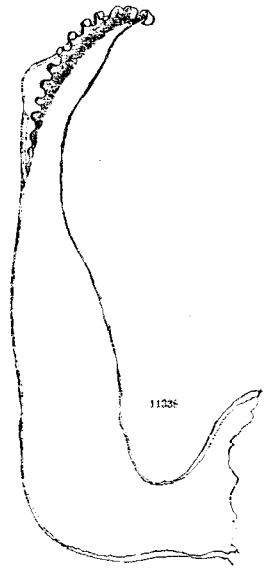
La cabeza: Basalmente presentan dos cuernos cónicos romos, cuya parte basal está distintamente abombada; genæ bien visibles; antenas situadas en el plano de la parte frontal de la cabeza. La coloración es la misma que el color básico del apéndice pronotal. Manchas debajo de los ocelos y en el clípeo (amarillas); en las genae marginales manchas difusas de igual color. La superficie de la cabeza tiene hendiduras de bordes muy distintas de los poros del apéndice pronotal, son profundas y densas. Labrum y epifaringe descomensurablemente largos. Ocelos más próximos a los ojos compuestos que a la sutura epicraneal. Los ocelos están situados un poco por encima de los límites basales de los ojos.



Tegmina: Una celda discoidal. Separación de la media y del cúbito especialmente clara. Tercera celda apical stylata.

Aedagus: Como en las especies anteriores extraordinariamente grande. El asta cephalad hinchada. Forma en general igual a la de las especies anteriores. El dibujo muestra la diferencia de la disposición, forma y número de los lóbulos laterales.

Tipo: ♂ + ♀. L. Richter, N° 11338: Universidad Nacional. Bogotá. Colombia: localidad del tipo: Río Guayuriba (Intendencia del Meta), 450 metros sobre el nivel del mar. 27. VI. 1942.



Todos los animales fueron capturados por el autor en distintos lugares de los Llanos Orientales, y se encontraban siempre en leguminosas (*Inga* y *Cowelocasia*, sp. sp.) Los ejemplares encontrados en la última clase de plantas tiene el colorido más claro. El color fundamental, gris plateado, corresponde enteramente al color de la corteza de esta planta habitáculo. Sin embargo el dibujo de las líneas del apéndice pronotal es siempre igual; solamente el ápex lleva un mayor número de manchas claras, las que también ocupan por lo tanto una mayor superficie, es decir, se extienden casi hasta la mitad del apéndice. Los animales viven siempre cerca del suelo; en un caso se hallaron un poco dentro de éste en una excavación que las hormigas habían hecho alrededor de la raíz de la planta habitáculo. No se pudo observar si saltan o vuelan. En las especies antes descritas el macho se distingue de la hembra especialmente por su tamaño que es más reducido, pero no por su coloración o dibujo.

STUDIES IN NEOTROPICAL MALLOPHAGA (VII) [1]

GONIODES AND ALLIED GENERA FROM GALLINACEOUS HOSTS.

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The present paper is a report on certain genera of Mallophaga from the Gallinaceous hosts of the New World, almost entirely neotropical, and is based principally on the collections of the author, but also includes specimens which are the property of the U. S. National Museum, and others loaned to the author by Col. Meinertzhagen and Dr. G. H. E. Hopkins. Mention is made under each species as to the source of the material.

Unfortunately the material available for this report has been much too fragmentary to enable the author to arrive at definite conclusions covering some groups, but it will at least serve as a groundwork for future research.

I may, perhaps, be criticized by some of the workers in this group of insects, for excessive splitting up of existing genera, but I believe that the facts in all cases have warranted this proceedure. It will be noted that I have erected *no monotypic genera*, all being represented by a goodly number of species and subspecies, which invariably are very homogenic, and are always parasitic on closely related genera or families of birds.

I am convinced that it is only by assembling and studying a large amount of material from a certain family, or group of closely related families of hosts, that we can arrive at anything like a comprehensive idea of the systematic position and relationships of their parasites. There are still very many species, and not a few genera, of the New World Gallinaceous birds from which no Mallophaga have been recorded, and until many of these gaps have been filled we cannot get a true and complete picture of their parasites.

As in previous papers of this series, all measurements are in millimeters, and all drawings were prepared by the author.

In conclusion I wish to caution most strongly against the acceptance of Mallophagan records from hosts where there can be any doubt of their authenticity. Straggling in the game bag, or on the collector's skinning table have been, and still are the greatest source of error and confusion, as I can say from my own experience. Whenever I find among my material specimens attributed to a host which are at variance from our knowledge of the parasites of that host, genus or family of such hosts, I always check over the species of birds collected on that day to see if there was not some other bird to which such aberrant parasite could belong, and by so doing almost invariably locate the true host.

However, to do this intelligently requires a fairly broad knowledge of the type of Mallophaga which may safely be attributed to any given host. Fortunately we have now reached the point in our study of the Mallophaga when we can safely say that certain genera of Mallophaga are parasitic *only* on certain families of avian hosts, or that a certain "type" of species of a genus is found only on certain birds.

A most unfortunate case in point came to my attention in a recent paper on Venezuelan Mallophaga, where a species of *Philopterus* and *Brüelia* were attributed to parrots: a true parrot louse was recorded from *Cacicus cela*, etc. Also in the same paper many specimens of Mallophaga were iden-

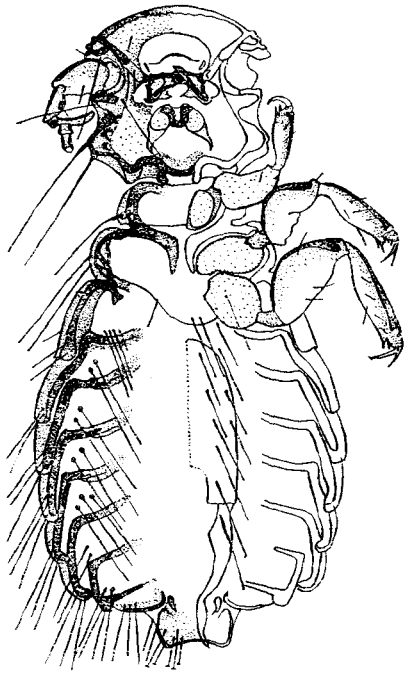


Fig. 1.—**Goniodes colombianus colombianus** ♂

(1) Parts V and VI of this series, treating the Lipeuroid forms from the New World Galliformes, appeared in the december 1944 and march 1945 issues of the Revista Brasileira de Biologia, Rio Janeiro.

tified as species which had been described from an entirely different species of host, just because there was a superficial resemblance between the two, and species described by previous authors were placed in synonomy for the same reason, and without ever having seen a specimen of them, while another species described by one of the old authors, was redescribed and figured from specimens taken on quite a different host, although from the same family. Such work only adds to the existing confusion, instead of attempting to bring some order out of the chaos in which the systematics of the Mallophaga have remained for so many years.

* * *

Goniodes Nitzsch, 1818.

Goniodes colombianus colombianus new species.

Types.—Male and female adults, from *Colinus cristatus decoratus*, collected by the author at Codazzi, Dept. Magdalena, Colombia, March 12, 1942 (in U. S. Nat. Mus.)

Diagnosis: Distinguished at a glance from *G. ortygius* Denny, also taken on *Colinus*, by the strikingly different male genitalia, and from *G. mamillatus* Rudow, which it resembles superficially, by the same character.

It differs from *ortygius* in having the frons much more flattened, with all segments of the antennae more slender, and segment I much longer; the head is shorter and proportionately narrower at the temples (in *ortygius* the temples are wider than frons, in *colombianus* equal); the sharp angles at sides of occiput extend beyond the posterior margin of the "neck" in *ortygius*, but not in *colombianus*; the arrangement and shape of the chitinous bands of the thorax also differ, as well as those of the pleurites: the abdominal chaetotaxy differs, as well as the shape of the last two abdominal segments.

The most striking difference, however, between the males of *ortygius* and *colombianus* is the male genitalia, that of *ortygius* consisting of a long, attenuated basal plate, chitinized along the sides and open medially, tapering apically and ending in two slender points. These slender points seem to be a continuation of the basal plate itself, or are very closely fused to it, while there are no apparent traces of endomera.

The females of the two species are not so easily distinguished, but that of *ortygius* has the same circular frons as the male, while in *colombianus* it is flatly rounded. There are the same proportions between width of frons and temples, but the head is larger in *ortygius* (.67 by .76 against .50 by .608); the shape of the pleurites also differs, but the last abdominal segment is the same.

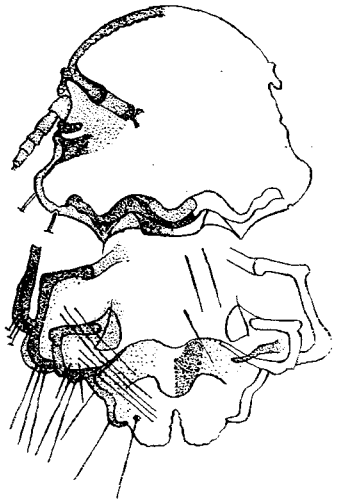


Fig. 2—Goniodes c. colombianus ♀ (Head and apical segments of abdomen). (Scale: 1 space = 2 mm.)

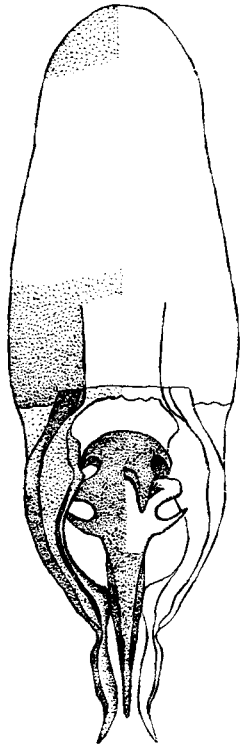


Fig. 3
Goniodes c. colombianus
♂ Genitalia
(Scale:
1 space = 1 mm.)

From *mamillatus* the male is distinguished at a glance by the genitalia, while the head in *colombianus* is smaller and the frons more flattened, with the frons wider than the temples in *mamillatus* and

equal in *colombianus*. The females may be separated on size and proportions of head, shape of thoracic segments, and shape of terminal abdominal segments, as well as the shape of the clavi (Clay, 1940, p. 60).

Measurements of the types:	male length	male width	female length	female width
Body	1.55		1.76	
Head: frons	....	.46	....	.51
Head: temples	.456	.467	.50	.608
Head: occiput	.456	....	.50	....
Prothorax	.119	.337	.12	.347
Pterothorax	.26	.475	.27	.498
Abdomen	.90	.79	1.04	.89
Antennae	.315	.087	.206	.054
Basal plate	.41	.24		
Paramers	.37	.206		
Endomera	.26	.122		
C. I.	1.01 and 1.02		1.02 and 1.21	

Goniodes colombianus latafasciatus new subspecies.

Types.—Male and female adults, from *Colinus cristatus leucotis*, collected by the author at Ayacucho, Santander N. Colombia, June 3, 1943 (in U. S. Nat. Mus.)

Diagnosis: While close to *colombianus*, this race is easily distinguished from the nominate form by the wider pigmented bands throughout the whole body.

Especially noticable is the greater width of the bands along the outer edge of the first three segments of the antennae, the clypeal and antennal bands, as well as those bordering the legs and those of the pleurites. The clavi are also very different. In *colombianus* the clavi are unusually large, while in the present form they are barely distinguishable, being reduced to a sight flattened protuberance.

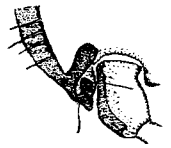


Fig. 4
Goniodes colombianus latafasciatus ♂

Any difference in the structure of the last two abdominal segments are too slight to be worthy of mention, but the male genitalia, while of exactly the same type, differ considerably in details, as may be seen from the accompanying figures.

There is a considerable difference in size and also in proportion of the various body segments. The whole insect is larger in both sexes (♂: 1.68 by .97 against 1.55 by .79; ♀: 2.08 by 1.15 against 1.76 by .89). There is but little difference in size and proportion between the heads of the males, but in the females it is considerable (.586 by .716 against .50 by .608); the abdomen is also much larger in the female of *latafasciatus* (1.32 by 1.15 against 1.04 by .89).

The male genitalia differ but little in size between the two races: the basal plate is longer, but narrower in *latafasciatus*, while the paramers and endomera are actually smaller. (See measurements).

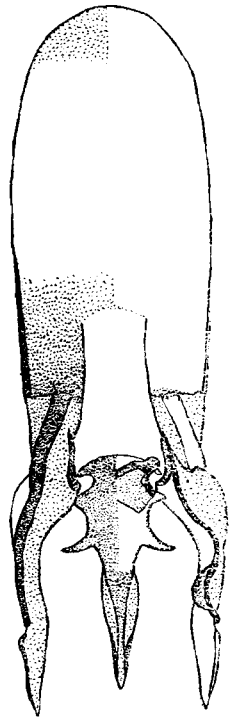


Fig. 5
Goniodes colombianus latafasciatus
(♂ Genitalia)
(Scale:
1 space = 1 mm.)

Measurements of the types:	male length	male width	female length	female width
Body	1.68		2.08	
Head: frons	....	.498	....	.608
Head: temples	.477	.49	.586	.716
Head: occiput	.49	....	.586	....
Prothorax	.13	.337	.13	.369
Pterothorax	.26	.48	.30	.542
Abdomen	1.00	.966	1.32	1.15
Antennae	.38	.098	.27	.065
Basal plate	.43	.195		
Paramers	.35	.174		
Endomera	.25	.115		
C. I.	1.02 and 1.00		1.04 and 1.05	

Goniodes nebraskensis new species.

Types.—Male and female adults, from *Pediocectes phasianellus campestris*, collected by the author at Sioux County, Nebraska, U. S. A., June 23, 1901 (In coll. of the author).

Diagnosis:—In the present species we have a much larger insect than *colombianus*, but the male has the same squarish head, flatly rounded frons

and shape of temples, so characteristic of *colombianus*. The thoracic segments are also very similiar in shape, but the legs are quite different, especially the 2nd. and 3rd. femora, which are almost unique. The first three segments of the antennae are also different, the first being short and elongated oval, the 2nd. thickened basally and tapering apically (in colombianus it is thickened medially), while the 3rd. segment is narrowest between the articulation of the 4th. and the tip. The structure of the abdominal sclerites is somewhat uncertain, but seems to be as follows: The pleurites are rather wide, with the inner portion faintly pigmented, and the usual hook-shaped bands along the outer and anterior margins; inside of the pleurites are what seem to be tergites, also faintly pigmented, widely separated medially, and slightly overlapped by the pleurites. This structure is the same in both sexes.

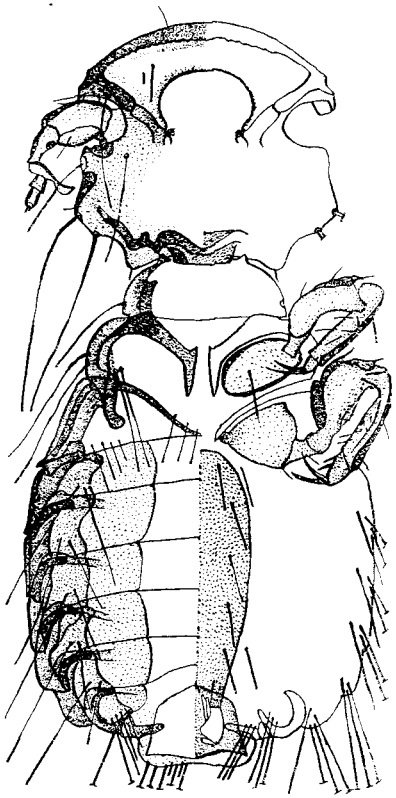


Fig. 6.—**Goniodes nebraskensis** ♂
(Scale: 1 space = 2 mm.)

The ♂ genitalia seem to be quite distinct, with a long, broad basal plate, and comparatively small paramers and endomera. The paramers are short and broad, but with a narrow appendage attached at their tips, which is folded inward at right angles; the endomera is a complicated series of rods and curving plates, and I am not positive that they are correctly deliniated in the figure.

The chaetotaxy of the head and thorax is simple and fully shown in the figures, but that of the abdomen is more complex, most all of the marginal hairs of the pleurites being ventral (See right side of figure), while there are two dorsal hairs on inner, posterior portion of the pleurites in segments II to VI, and with four in I and VII. There is a strong sexual dimorphism of the head, that of the ♀ being much larger, with the temples much wider and the frons more rounded; the thorax is almost equal in size, the abdomen much longer in the ♀ but of the same width. The structure and chaetotaxy of the last abdominal segment is very different in the female, and seems to be distinctive.

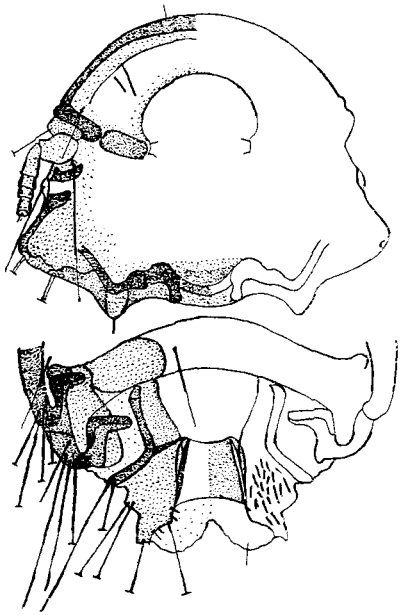


Fig. 7.—**Goniodes nebraskensis** ♀
(Head and apical abdominal segments)
(Scale: 1 space = 2 mm.)

It would appear that this species is closely related to *G. merriamus* Packard, which was described from a single male. According to Packard's rather meager description and figure, the two species agree very closely in shape of head, thorax and abdomen, although the present species is much smaller, if we take Packard's measurement of .10 inch for the length of the male of *merriamus*. However I am inclined to doubt the correctness of this measurement.

Miss Clay states that since *merriamus* is of the *colchici* type (1940, p. 48), that it may possibly have been a straggler from some introduced species of pheasant, such as *Phasianus colchicus*. However Miss Clay fails to take into consideration that at the date on which *merriamus* was collected, it is very doubtful if there were any introduced pheasants in the United States west of the Alleghany mountains. From my personal knowledge I am sure that there were none west of the Missouri River as late as 1900.

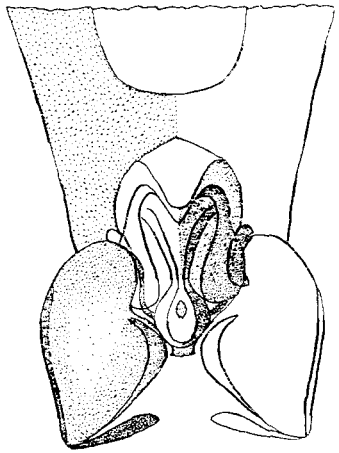


Figura 8.—**Goniodes nebraskensis**
(♂ Genitalia). (Scale: 1 space = 2 mm.)

Also, since we have in *nebraskensis* the same type of *Goniodes* as *merriamus*, taken from a freshly killed specimen of a closely related host in western Nebraska, it seems that there can be no further reason to doubt the validity of Packard's host record.

Measurements of the types:	male length	male width	female length	female width
Body	1.79		2.08	
Head: frons	....	.64	....	.66
Head: temples	.63	.65	.66	.80
Head: occiput	.608	....	.64	....
Prothorax	.16	.41	.16	.434
Pterothorax	.26	.61	.27	.586
Abdomen	.945	.88	1.19	.88
Antennae	.41	.11	.25	.062
Basal plate	.61	.25		
Paramers	.11	.143		
Endomera	.087	.076		
C. I.	1.01 and 1.03		1.00 and 1.21	

Goniodes lagopi greenlandicus new subspecies.

TYPES.—Male and female adults, from *Lagopus mutus reinhardi* collected by Harry Lance on Jensen Island, Melville Bay, Greenland, July 23, 1934 (In coll. of author).

Miss Clay has recorded *G. lagopi* (Linné) from three species and three subspecies of *Lagopus*, ranging from Esthonia to Greenland and northern Canada. The three males and four females here discussed which were taken on *L. mutus reinhardi* at Melville Bay, seem to me to be subspecifically distinct from *lagopi* as described and figured by Miss Clay from a specimen collected in Esthonia, which was selected as a typical specimen of the species.

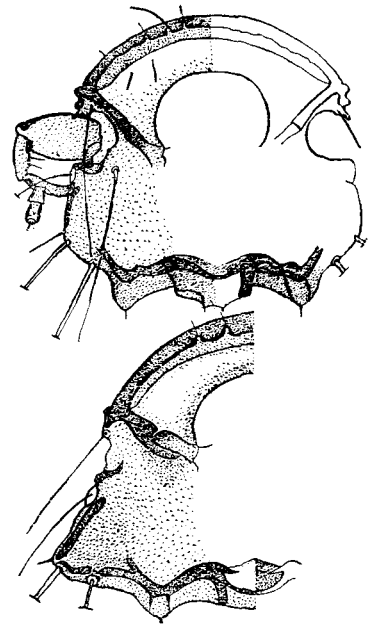


Fig. 9.—**Goniodes lagopi greenlandicus**
(♂ Head)
(Same ♀ — Head)
(Scale: 1 space = 2 mm.)

Diagnosis.—The male genitalis are almost exactly the same as Miss Clay's figure for *lagopi*, but the shape of the head in the male is very different, it being of the same squarish type as in *colombianus* and *nebraskensis*, the temples being but .01 mm. wider than the frons; the frons itself is flattened in the figure of *lagopi*, but in *greenlandicus* it is strongly arched; the clavi in the male are rather long, very slender, and with a hair on the inner edge at base; in the female they are obsolete, merely a slight swelling, on which is set a long, strong hair. Segments I and II of the antennae are considerably longer: the antennal bands extend almost to the anterior condoyle of the mandibles, and differ in the sexes (See figs.); the occipital band is

much wider, and of different pattern, while there is a wide, deeply colored area along the inner side of the clypeal band not indicated in the figure of *lagopi*. The shape and chaetotaxy of the last three abdominal segments of *greenlandicus* agree very closely with the female figure of *lagopi*, although the exact position of some of the hairs is not quite the same.

Measurements: (maximum and minimum of 3 ♂ ♂ and 3 ♀ ♀).

	males		females	
	length	width	length	width
Body	1.76 — 2.08		2.17 — 2.30	
Head: frons	.... —	.59 — .63	.... —	.65 — .694
Head: temples	.586 — .65	.62 — .65	.673 — .738	.87 — .933
Head: occiput	.564 — .63	.... —	.66 — .705	.... — ....
Prothorax	.174 — .195	.435 — .477	.165 — 1.95	.47 — .49
Pterothorax	.26 — .29	.55 — .67	.26 — .28	.61 — .65
Abdomen	.955 — 1.03	.84 — 1.00	1.24 — 1.39	.865 — .89
Antennae	.395 — .415	.10 — .11	.24 — .26	.065 — .097
Basal plate	.55 — .58	.20 — .22		
Paramers (type)	.14 —	.18		
Endomera (type)	.16 —	.096		
C. I. (frons)	.94 to 1.00		1.26 to 1.27	
C. I. (temples)	.95 " 1.06		1.26 to 1.30	

Colinicola new genus.

GENOTYPE, ***Goniodes numidianus*** Denny.

G. numidianus Denny was placed by Miss Clay under ***Lagopoecus***, in her revision of that genus (P. Z. S., London, July, 1938, p. 197), but with the remark that it did not closely resemble any of the *Lagopoecus*, but was apparently nearest to *L. docophoroides* (Piaget) from *Lophortyx californica*, and that she had seen no female of it.

Miss Clay further stated that a comparison of Denny's types with Mc. Gregor's description and figure of *Lipeurus aberrans*, and with specimens of that species from *Colinus virginianus* subsp., proves beyond a doubt that Mc. Gregor's species is a pure synonym of *Goniodes numidianus* Denny, and that the true host of the species is *Colinus virginianus*.

I have a fine pair of this interesting species taken on *Colinus v. virginianus*, collected at Guntersville, Alabama. A careful study of this pair, in connection with three closely allied forms taken on *Colinus c. cristatus, C. cristatus decoratus* and *C. cristatus leucotis* from Colombia, S. A., seem to prove conclusively that they are not congeneric with *Lagopoecus* Waterston, even as amplified by Miss Clay, and I herewith propose the genus *Colinicola* for their reception.

Description of genus: Medium sized species with head larger, longer than wide, with more or less circumfasciate *frons*, rounded or slightly flattened temples; highly dimorphic antennae, pronounced trabeculae in both sexes; clypeal, antennal and occipital bands well developed, but the last not reaching to the occiput; pharyngeal sclerite and gland and occipital signature well developed; clypeal and post-antennal sutures apparently absent in both sexes. Prothorax well developed, with rounded sides; pterothorax small, wider posteriorly, but no longer than prothorax. Abdomen of nine segments, short and oval in both sexes; pleural plates normal, with deeply re-entrant heads; tergal plates well developed and separated medially, slightly in ♂, more widely in ♀. Male genital armature massive; basal plate large; both paramers and endomeral plates strongly developed, strongly chitinized and deeply pigmented, the latter as wide, and nearly as long as the former; penis small and short, lying between the bases of the endomeral plates.

In the male antennae the 1st. segment is much enlarged, but without appendage; both 2nd. and 3rd. segment well developed and both with a hook at distal end (less in 3rd.); 4th. and 5th. small. In the female segment 1 is somewhat thickened, but short; the 2nd. is the longest, while the remainder are subequal and rather short.

In my opinion this genus is closer to *Cuclotogaster* Carriker (equals *Gallipeurus* Clay) than to *Lagopoecus* Waterston, although it differs strongly from both.

The appearance and structure of the head and thoracic segments in both sexes are strikingly similiar to *Cuclotogaster heterographus* (Giebel), genotype of *Cuclotogaster*, whose host is the domestic fowl, but the male genitalia is entirely different, being probably much closer to *Lagopoecus*, but not at all similiar, as well as the relative size, shape and chaetotaxy of the abdomen, and the structure of the abdominal sclerites in the male.

In *Colinicola* the abdomen is very similiar in size and in shape in the two sexes, and is proportionately much smaller than in *Cuclotogaster*. *Colinicola* differs from the genotype of *Lagopoecus* in the following characters: Strongly dimorphic antennae; absence of clypeal and post-antennal sutures; size and shape of prothorax; entirely different type of abdominal chaetotaxy, and lastly in the type of the ♂ genitalia.

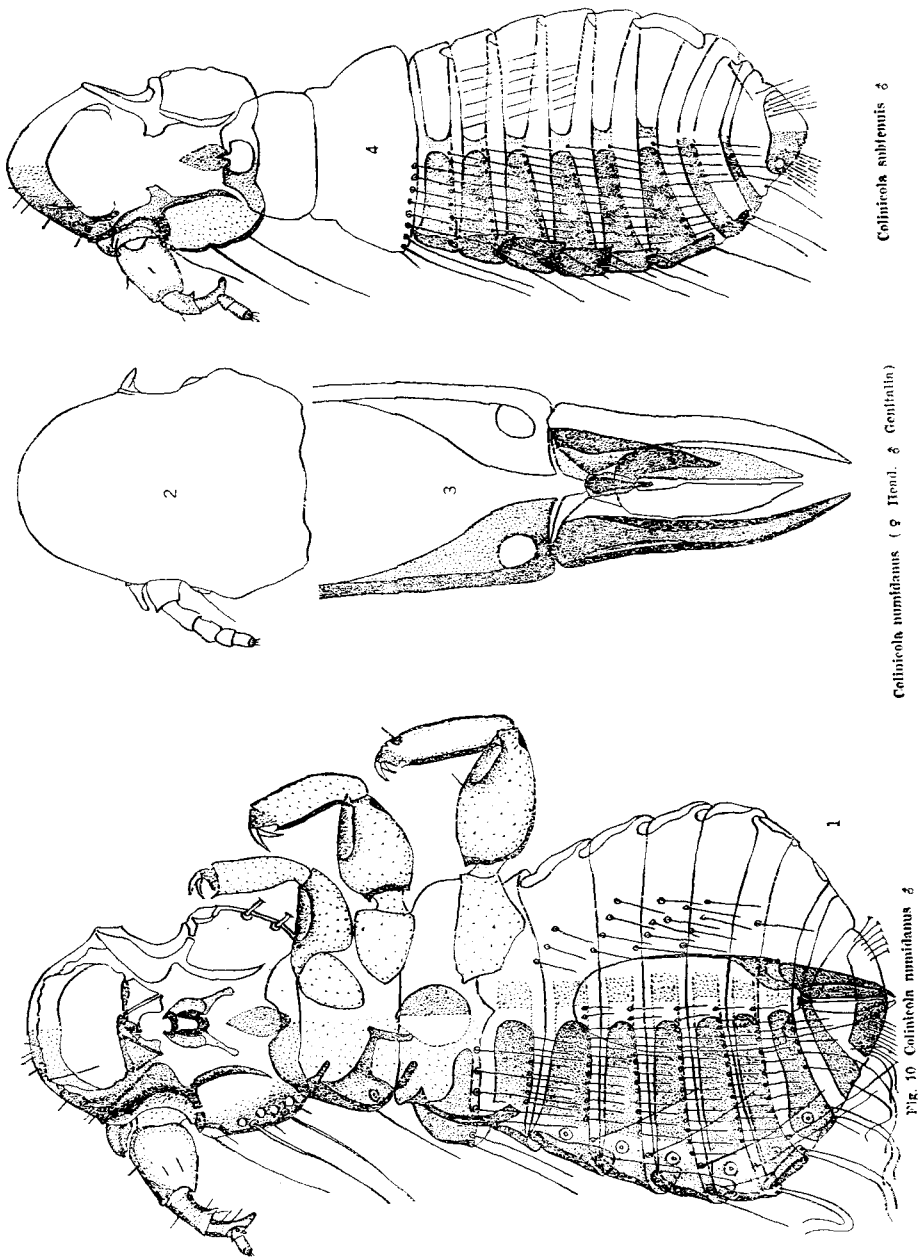


FIG. 10 Colinicola numidianus ♂

Colinicola numidiana (Denny).

Goniodes numidiana Denny, Anop. Brit., 1842, p. 163; pl. XIII, fig. 7 (Host: *Numida meleagris domestica*).

Liperus aberrans Mc. Gregor, Psyche, Vol. XXIV, Nº 4, 1917, p. 112; pl. VII, fig. 1 (Host *Colinus virginianus texanus*).

Lagopoecus numidianus (Denny), Clay, P. Z. S. London, Vol. 108, Pt. 2, 1938, p. 197.

Denny's description of this species is not very illuminating, but nevertheless it agrees with my male from *Colinus v. virginianus* in every particular except the shape of the pterothorax. His statement that the "base (is) subangular" does not agree with my specimens, which have this segment flatly rounded on the posterior margin, but with a small, rather sharply angulated median projection, as also do the closely related forms from Colombian species of *Colinus*, but without the median angulation. His figure, except for the detail above mentioned, clearly represents a species close to the ones before me, while other evidence seems to prove them to be the same.

Mc. Gregor's description of *Lipeurus aberrans* is much better, and also agrees with my specimens. His measurements of the male "R", while not exactly the same, are very close, especially for the head and pterothorax (head, .619 × .532 against .63 × .532; pterothorax, .24 × .608 against .26 × .61). There is a considerable discrepancy between his measurements for the prothorax and mine, but this may be due to a distortion in my specimen, since the female agrees very closely in this respect with his figures (.21 × .37). The abdominal measurements may be disregarded, since they are often unreliable.

Therefore I think that we are safe in assuming that my pair of specimens are precisely the same as Mc.Gregor's, even subspecifically, although their host was a different race of *Colinus virginianus*. Moreover, since the specimens from three different subspecies of *Colinus* from Colombia are not strikingly different from the Alabama pair, I feel safe in making this assertion.

The figure of the male of *C. numidianus* herewith presented shows in considerable detail the structure and chaetotaxy of the species, so that a detailed description seems superflous. In Mc. Gregor's description certain hairs on head and body are mentioned which seem to be absent from my specimen, but since it was recently demounted, cleared and remounted, these hairs may very easily have been lost. He also mentions the fact that segment 2 of the antennae is hooked at the distal end, but less so than in the 3rd., as shown in my figure. In my male the tips of both paramers have been broken off, so that their length, as given in the table, may not be exactly correct. In all of the colombian specimens of the species they have slender, acuminate tips, and I have so delineated them in my figure of *numidianus*. The ♂ in my possesion also has the tip of the abdomen (last four segments) somewhat distended. I have corrected this in the figure, as near as possible, but in the measurements given no correction has been made, so that the abdomen may not be actually more than .96 mm.

Measurements of the types:	male length	male width	female length	female width
Body	1.97		2.06	
Head { temples	.63	.456	.63	.445
Head { frons	.63	.532		.52
Prothorax	.28	.435	.24	.38
Pterothorax	.26	.61	.24	.575
Abdomen	1.01	.91	1.17	.88
Antennae	.42	.14	.28	.068
Basal plate	.49	.23		
Paramers	.32	.18		
Endomeral plates	.26	.11		

Colinicola subtenuis subtenuis n. sp.

Types.—Male and female adults, from *Colinus cristatus decoratus*, collected by the author at Casacará, Dept. Magdalena, Colombia, May 18, 1942 (types in U. S. Nat. Museum).

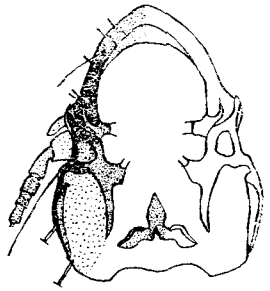


Fig. 11
Colinicola subtenuis subtenuis
(♀ Head)
(Scale: 1 space = 2 mm.)

Diagnosis.—About the same length as *C. numidiana*, but very much slenderer in all body segments (See table of measurements); the head is not only more slender, but has the *frons* elliptical in shape instead of rounded, while there is considerable sexual dimorphism in the shape of the head, that of the female being much wider at the temples than at base of trabeculae. The unpigment pustules along the border of the temples in *numidiana* are absent in this species; the pleural plates are wider and are uniformly pigmented, except for a very narrow border; the long, pustulated hair just inside the pleural plate, posterior to the tergite, on segments II to VII is absent in *subtenuis*, but is replaced by a shorter, less conspicuous hair on the posterior margin of the pleural plate, towards the inner corner; the chaetotaxy of the abdominal, sternal plates is also different (See figures).

The species may be separated from *numidiana* at a glance, by the shape of the head and the narrow thorax and abdomen, but the genital armature is very similiar, the principal difference being the narrower, differently shaped basal plate and shorter endomeral plates, with narrower basal portion, also the shape of the basal portion of the paramers (See figure).

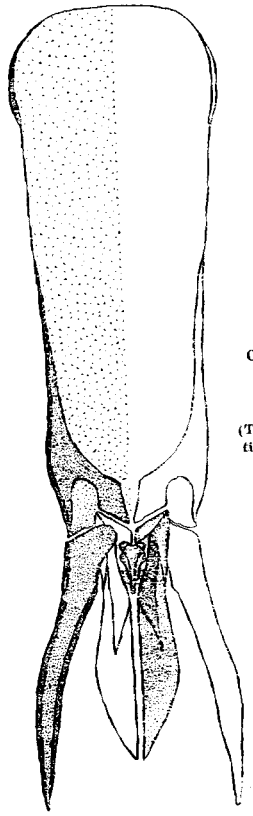


Fig. 12
Colinicola subtenuis subtenuis
(♂ Genitalia)
(Twice the magnification of fig. of body)

Measurements of the types:	male length	male width	female length	female width
Body	1.65		1.80	
Head { frons		.326		.38
Head { temples	.54	.42	.59	.445
Prothorax	.16	.29	.16	.30
Pterothorax	.195	.445	.195	.435
Abdomen	.846	.53	.93	.70
Antennae	.34	.098	.23	.054
Basal plate	.575	.24		
Paramers	.326	.15		
Endomeral plates	.28	.09		
C. I.	.60 and	.78	.644 and	.754

Colinicola subtenuis similis n. subsp.

Types.—Male and female adults, from *Colinus c. cristatus* collected by the author at Riohacha, Dept. Magdalena, Colombia, April 3, 1941 (types in U. S. Nat. Museum).

Diagnosis.—This race is more or less intermediate between *numidiana* and *subtenuis*, but much closer to the latter, with the *frons* even more pointed than in *subtenuis*. It is slightly longer than the nominate form, but the head in both sexes is of different proportions, that of the male being shorter and wider at both *frons* and temples, while that of the ♀ is practically the same as in *subtenuis*. The prothorax is longer and wider and the pterothorax of equal length but also wider; the abdomen is both longer and wider in both sexes.

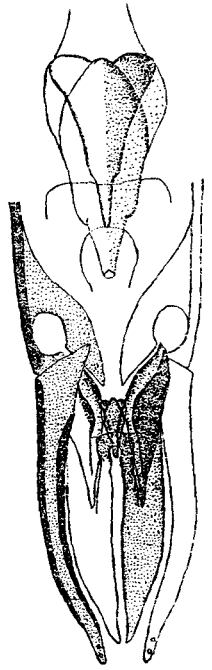


Fig. 13
Colinicola subtenuis similis
(♂ Genitalia-penis)
(Four times magnification of genitalia)
(Scale: 1 space = 4 mm.)

The genital armature differs in detail from both *subtenuis* and *numidiana*, with the distal portion of the basal plate similiar to that of the latter, but the plate itself is very much shorter, being but little more than half the length of that plate in both *numidiana* and *subtenuis*. The endomeral plates are heavier and longer than in either of the other two forms, and with the paramers of different shape basally. In the female the tergal plates are wider (longitudinally) than in the other two forms, nearly filling the segment, but are widely separated medially; the plural plates resemble those of *numidiana* rather than of *subtenuis*.

Unfortunately the bodies of the males of this race are in poor condition and cannot be intelligently compared with those of the other two forms, as to detailed structure of sclerites or chaetotaxy. When well prepared material can be studied it is possible that they will prove to be specifically distinct from *subtenuis*.

Measurements of the types:	male length	male width	female length	female width
Body	1.74		1.97	
Head frons	.52	.358	.597	.373
Head temples		.456		.445
Prothorax	.195	.315	.19	.326
Pterothorax	.195	.48	.195	.49
Abdomen	.92	.76	1.11	.759
Antennae	.337	.11	.25	.065
Basal plate	.282	.195		
Paramers	.315	.16		
Endomeral plates	.302	.098		
C. I.	.69 and	.877	.625 and	.745

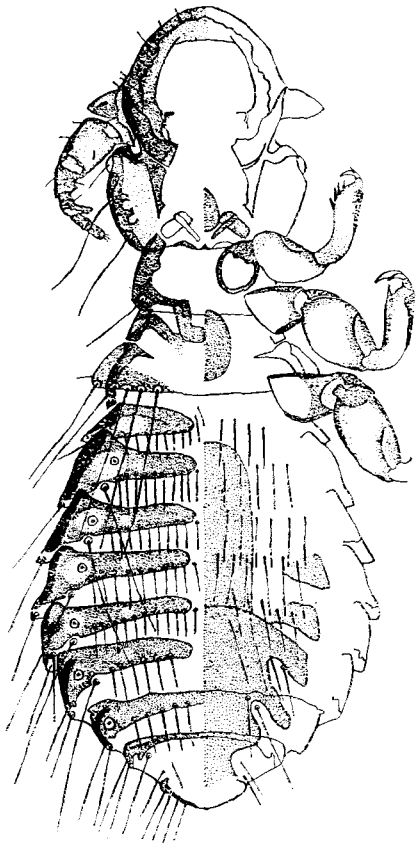


Fig. 14.—Colinicola opima

Colinicola opima new species.

TYPES.—Male and female adults, from *Colinus cristatus leucotis*, collected by the author at Ayacucho, Santander N., Colombia, June 3, 1943 (in the U. S. Nat. Mus.)

Diagnosis.—Closer to *numidiana* than to *subtenuis* in its larger size, wider head, thorax and abdomen, but with the genital armature nearer to that of *subtenuis*.

The head is of the same width as in *numidiana* at both the frons and temples, and of practically the same length, but the pre-antennal region is considerably longer and much more pointed; the trabeculae are larger in both sexes (especially the width); the occipital bands are straight (instead of curving) and of different shape: there are but two clear postules on the temples instead of four, while the hair arising from the eye is less than half the length.

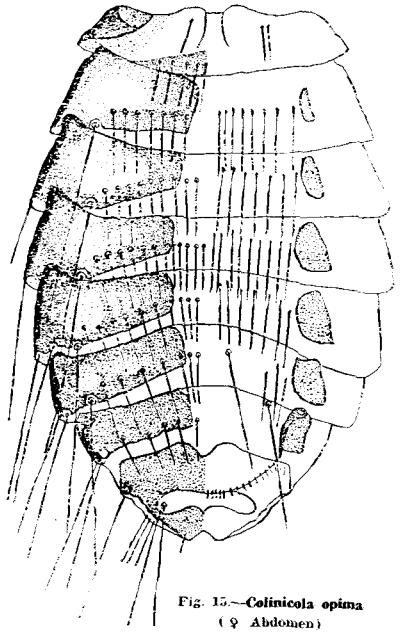


Fig. 15.—Colinicola opima
(♀ Abdomen)

The pterothorax is very differently shaped from that of both *numidiana* and *subtenuis* (See figures), and like *subtenuis* and *similis* lacks the median angulation of *numidiana*. The abdomen is close to that of *numidiana* in shape and size, although the pleural plates are narrower, while the tergites are also narrower (longitudinally), more tapering towards their inner end, and have fewer hairs along the posterior margin.

The sternal plates are somewhat differently shaped in the three species. In the male figure of *opima* the median sternal plate on segment II to V is, in reality, the anterior portion of the basal plate, with a large sternite covering most of segments V to VIII, with small, isolated sclerites on segments IV V. The hairs on the sternal face of the abdomen are more numerous than on the dorsal, and are not set in pustules.

The genital armature is very similiar in all the forms here discussed from *Colinus*, although different somewhat in size and proportions of their component parts.

The type series of this species consists of 5 ♂ ♂ and 3 ♀ ♀ adult, and 1 ♂ and 3 ♀ ♀.

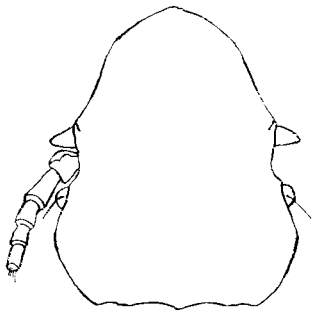


Fig. 16
Colinicola opima.
(Head of ♀)

Measurements of the types:	male length	male width	female length	female width
Body	1.96		2.21	
Head frons	.63	.456	.63	.456
Head temples		.51		.332
Prothorax	.185	.37	.20	.358
Pterothorax	.217	.585	.25	.586
Abdomen	1.03	.89	1.26	.90
Antennae	.423	.108	.303	.065
Basal plate	.50	.195		
Paramers	.293	.14		
Endomeral plates	.293	.076		
C. I.	.72 and	.81	.72 and	.84

Colinicola docophoroides (Piaget).

Lipeurus docophoroides Piaget, Les Pediculi., 1880, p. 357, pl. XXVIII, fig. 9.

(Host: *Lophortyx c. californica*).

Lagopoecus docophoroides (Piaget), Clay, P. Z. S., 1938, Ser. B, vol. 108, pt. 2, 195; text fig. 43d.

I have seen no specimens of this species, but Piaget's figure and description show conclusively that it belongs to this genus. The shape and markings of the head and the male antennae are the same, as well as the shape, markings and chaetotaxy of the thorax, while the abdomen and legs are practically identical. The male genitalia, while differing considerably in detail, seem to be of the same type, as shown by Miss Clay's figure, although the rather complicated penis of *numidiana* and *subtenuis* is apparently wanting.

Unquestionably the New World species of *Lagopoecus* are closely related to *Colinicola*, much more so than those of the Old World. Our knowledge of this group is as yet extremely fragmentary, and not until all of its representatives from the *Odontophorine* have been studied, together with those from the american genera of the *Tetraonidae*, shall we be able to form a comprehensive idea of their relationships and systematic position.

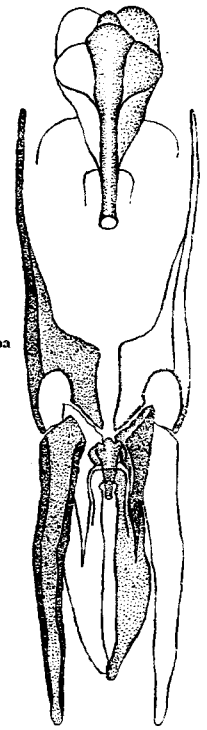


Fig. 17.—Colinicola opima
(♂ Genitalia)

It is possible that other species, with non-dimorphic antennae, such as *Lagopoecus californicus* (Kell. & Chap.), will prove to be congeneric with those here placed in *Colinicola*, although I doubt it. It is more probable that we shall find that there are two groups, superficially similiar, but differing in the dimorphic character of the antennae, somewhat anallogous to *Goniodes* and *Goniocotes*. The male genitalia, structure of abdominal sclerites and chaetotaxy of both sexes must be taken into consideration before this can be satisfactorily determined, and which does not fall within the scope of the present paper.

TRICHODOMEDEA new genus.

GENOTYPE: *T. setosa setosa* n. sp. Host: *Odontophorus gujanensis polionotus*. Nearest to *Virgula*

Clay, but differing from that genus in the shape and sexual dimorphism of the head; shape and comparative size of abdomen in the sexes; structure of terminal segments of abdomen in male; chaetotaxy of head and abdomen in both sexes; and in the male genitalia.

Head of ♂ with frons much narrower than in the ♀ and more flatly rounded: shape of head ranging from rougly triangular (with rounded points) to almost quadrilateral, with temples usually rounded and with the lateral angles *always considerably in front of the occiput*, never produced backward and pointed; temples with four long hairs in the ♂ and three in ♀. Antennae dimorphic, 1st. segment in ♂ long, but not thickened, rarely thicker than 2nd., and usually without trace of flap or hook; 3rd. usually set at an angle of 45 degrees to 2nd., and with its distal end either truncate or slightly beveled, but never produced appreciably beyond base of 4th., which is small, with 5th. longer and slenderer.

The "clavi" in the males of *Virgula melcagridis* and *lervicola*, as shown by Miss Clay, are not present in *any* of the males of *Trichodomedea* which I have examined. There is, however, a very fine hair (usually about .03 mm. long) set near the lateral margin, on the ventral surface of the head, just forward of the base of the anteunae, but this hair invariably points outward, at right angles to axis of body. Neither is it a *spine* or *stiff*, since it is frequently seen with the tip curved backward. In the males there is a strong hair set on dorsal surface of head, near the margin, just at base of clypeal band and extending backward beyond the eye. This hair is *apparently* absent in one species and reduced to a short spine in another. In the females the "clavi" (?) are more or less as described for the females of *Virgula melcagridis* and *lervicola*, but rarely as pronounced as shown in *lervicola*, and sometimes obsolete.

Prothorax much shorter than pterothorax, both segments with divergent sides and somewhat produced postero-lateral angles; pterothorax produced posteriorly and angulated in median portion.

The abdomen in both sexes consists of nine segments *(apparent* exception noted below), segment I being equal to or less than the width of II (same as *Virgula)*. In the ♂ the abdomen is short, oval or round (excepting for the protruding segments VIII and IX), and always smaller than in the ♀ (the reverse true in the genotype of *Virgula)*. A large, spatulate appendage, more or less hirsute apically, is attached near the base of segment VIII on ventral side, and usually extends considerably beyond tip of segment IX (rarely even with it, but never shorter). This appendage is always much larger than the "finger-shaped" appendage of *Virgula*. In addition there is a second appedage (absent in *Virgula)*, which lies between tergite VIII and the spatulate appendage, with its hinge-like points of attachment at each side of the wider, anterior end, which lies just under the point of attachment of the spatulate appendage, and is supported by the same lateral struts which strengthen the latter. Its posterior end is narrow, while the whole appendage seems to be more or less concave on the upper side. The genitalia are extruded from the abdomen at the posterior end of segment VII, pass along the upper surface of this supporting member, and through its narrowed tip, which is either concave or in the form of a ring (not clear which in all species). Beyond this point there is no further support for the genitalia, whose tip is often seen bent laterally and projecting from the side of segment IX. (See figures).

In the female segments VIII and IX are completely fused, with IX almost, to totally, surrounded by VIII, while the line of fusion is more or less clearly visible along each side of IX in the greater part of the genus. There is, however, a small group of species in which segment VIII is furnished with dense patches and fringes of setae, and in some of these species the line of fusion between VIII and IX has been completely lost, so that the combined segments VIII and IX appear as a *single segment*. The abdominal pleurites are well developed in both sexes, but usually wider and more deeply pigmented in the females, with prominent re-entrant heads and are, in many cases, marked by deeply pigmented incrassautions of varying pattern. The tergites are widely separated medially in segments I to VI in both sexes, and along the sutures in the males, and are more or less closely fused with the pleurites. Tergite VII is apparently entire in the ♂ but more often seperated slightly in the ♀. It is not clear whether or not the sternites are present in all species, but they exist in at least some forms in the shape of isolated sclerites, rather widely separated from the pleurites and each other.

In *Virgula* the 3rd. femora are about as long, or longer, than the tibiae, but in the present genus the tibiae are much longer and unsually slender, with numerous spines on apical portion, as in *Virgula*. The meso-metasternal plate is usually triangular in shape, but with the points of the triangle rounded, and with but two hairs on each point, *six in all*, never more. However in the species from *Ortalis* and one or two other genera of the *Cracidae*, this plate is reduced to three small, oval sclerites, one at each point of the triangle, and with two hairs in each sclerite.

The chaetotaxy of the abdomen, while similiar in pattern to that of *Virgula*, is much sparser, with one hair in lateral angles of segments II to IV and two in V to VII (in *Virgula* there are four hairs in all segments from III to VIII, and three in II); there is a single long hair at posterior edge of the tergites (as in *Virgula)*, but the median hairs on I to VI are much shorter and never exceed six (three on each side), usually but four, while in some species there are more median in the female than in the male.

The male genital armature is one of the most rudimentary that I have seen, and proved to be unusually uniform in all of the species for which males

were available. It consists of a simple, very long, gently tapering, flat filament (nearly as long as abdomen from I to VII in most cases), with narrow chitinized borders and hyaline center for about half its length, beyond which the chitinized borders coalesce, the width decreases, and the remaining apical portion continues either as a hair-like or flattened filament, sometimes with pointed tip, and again bipartite. In some species there is a slight subapical widening, of the filament, with an indistinct minute central body. There is absolutely no trace of the usual component parts of the male genitalia, such as paramera, endomera, etc., while in *Virgula melcagridis* and *lervicola* such parts are present, although in a very rudimentary form.

The species of the genus, as now known, fall roughly into two groups, the smaller one with temples rather broadly expanded laterally in both sexes, so that the shape of the head is roughly triangular, especially in the ♂, with the three points rounded. In the other group the temples are much narrower, with the frons wider and more arched, and with the sides of head less divergent. Some of the species are intermediate and are not typical of either group. In the wide headed group the females are apparently characterized by having on the terminal abdominal segment thick patches or fringes, or both patches and fringes of setae, while in the narrow headed group the only setae on this segment are those composing the fringe of short, weak setae along the posterior border of the genital plates, which fringe is also present in the other group in some species. In other words, all females seen by me, in which there are patches or long fringes of setae on segment VIII have broadly expanded temples. There are four known hosts from which both types were taken from the same individual bird, viz.: *Odontophorus erythrops melanotis, O. gujanensis gujanensis, O. gujanensis simonsi* and *Penelope m. montagnii*.

Unfortunately the material available for the study of this genus is somewhat fragmentary, except from the genus *Odontophorus*, which is represented by ten species and subspecies, from which were taken 13 species and subspecies of *Trichodomedea*, all but two of which are represented by both sexes, and seven species by rather large series. The *Cracidae* are poorly represented in number of parasites, while those are mostly females. This scarcity of material makes it impossible to draw a comprehensive picture of the relationships between the parasites of the different host families and genera. Another handicap was encountered in the poor condition of a considerable number of the specimens, some of which were apparently left too long in the clearing solution, while others were old mounts which were cleared and remounted, with consequent loss of hairs, and it is not clear whether or not some of them were slightly shrivelled in the process. Mention is made under any species where doubt exists as to the accuracy of the drawings.

During the preparation of this paper I have examined parasites from the following genera of hosts: *Crax, Penelope, Chamaepetes, Ortalis, Odontophorus* and *Dendrortyx*. Miss Clay (Parasitology, March, 1941) lists in addition material from *Agriocharis, Oreophasis, Pauxi Penelopina* and *Callipepla*, all of which she placed under *Virgula*. Undoubtably the material to wich she referred under *Pauxi, Oreophasis* and *Penelopina* was the species *longipes eximius* and *diversis*, described by Piaget and Row under *Goniodes*, and to which reference is made at the end of this paper. These three species are all typical *Trichodomedea*, as I have explained on subsequent pages. I have seen no material from either *Agriocharis* or *Callipepla*, but I feel certain that they will prove to be *Trichodomedea*.

I am fully aware that opinion differs as to the generic value of some of the characters which have been used for separating *Trichodomedea* from *Virgula*. I also admit that in *Goniodes* and closely allied genera the genitalia differ astoundingly between *apparently* closely related species, and that sexual dimorphism of the antennae is not always a reliable generic character, unless taken in combination with others. However I maintain that in the present instance we have a certain combination of characters persisting through an imposing number of species taken on *eleven genera* of *hosts*, from *two families*, while Mallophaga still remain to be taken from at least half of the species of these genera, so that it seems to me that we are dealing with one of the most natural and homogenous genera that I have ever studied, and whose species may be very easily recognized. There is most certainly no object in creating unnecessary genera, but it is equally confusing to lump a large number of species into a single genus just because they happen to have a more os less superficial resemblance.

Section of the genus in which the temples are rather widely expanded laterally, and in which the females possess prominent fringes and patches of setae on segment VIII.

Trichodomedea setosa setosa new species.

TYPES.—Male and female adults, from *Odontophorus gujanensis polionotus*, collected by the author at Bellavista, Santander Norte (Río Tarra), Colombia, July 7, 1943 (in U. S. Nat. Mus.)

Description of male.—Frons narrow and flatly rounded; sides of head strongly divergent, the width at temples being more than double that of frons; temples bluntly angulated (much less rounded than is usual) eye prominent, hyaline, with a strong hair extending to far behind temples; posterior margin of temple concave, as well as occiput, with a rather prominent angulation at each side of latter. Antennae long and slender, with 1st. segment as long as the remaining four, and of same thickness as 2nd. Clypeal band wider medially and with inner margin strongly crenulated; antennal bands short, slender, but slightly convergin posteriorly, and of a peculiar twisted appearance (See

figure). The ocular blotches prominent, the anterior one extending nearly to base of clypeal band, but deeply pigmented only in posterior portion; posterior blotch short and rounded, and entirely pigmented. The occipital bands are prominent, as in all of the genus, somewhat complicated, and best understood by consulting the figure. There are two short, fine hairs on each side of clypeal band, and two more on each side of pre-antennal area; two short bristles on segment one of antennae, four on 2nd., three on 3rd., one on 4th., and the usual tuft of fine setae at tip of 5th.

A short, slender hair on ventral surface between base of antenna and end of clypeal band, at the point where the "clavi" are located in *Virgula* (see description of genus); on the dorsal surface, directly over this fine hair, is set a long, strong hair, pointing backward; there are two dorsal hairs on each side of head between anterior ocular blotch and bucal cavity, and two more between posterior ocular blotch and posterior condoyle of mandibles. There are four long, strong hairs on each temple, one on side, just back of posterior ocular blotch (not pustulated) and three (pustulated) on posterior margin; a rather long hair in angle at side of occiput, and another of equal length just outside it on posterior margin of temple.

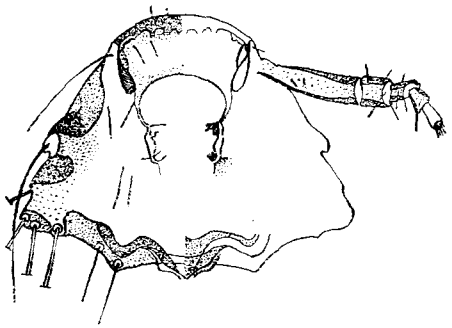


Fig. 18.—**Trichodomedea setosa setosa**
(♂ Head). (Scale: 1 space = 2 mm.)

The thorax is shorter and narrower than the head; the prothorax has straight, slightly divergent sides and protruding, bluntly-pointed posterior angles set with one longish hair. The pterothorax also has straight sides, but strongly divergent, the width at postero-lateral angles being nearly as wide as temples, and with this angle furnished with two long, closely set hairs, and with two other long hairs (also close together) on posterior margin at outer edge of the acetabular bar; the posterior margin is almost circular, not angulated as in most species of the genus. The meso-metasternal plate is well developed, roughly triangular in shape, but with lateral angles rounded. There is one long hair on each side of anterior portion and two on each side, one near margin, the other inside it, making a total of six hairs (a generic character).

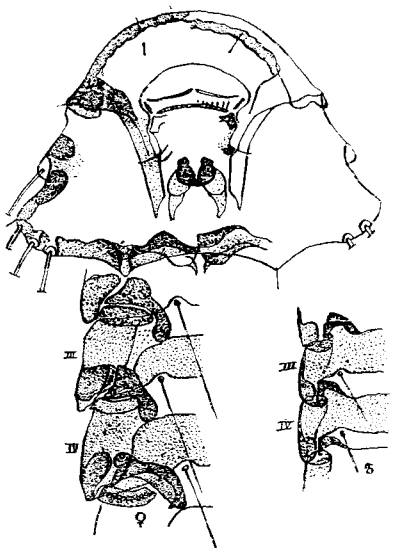


Fig. 19.—**Trichodomedea setosa setosa**
(♀ Head. Scale: 1 space = 2 mm.)
(Pleurites ♀ III to IV) (Pleurites ♂ III to IV

The abdomen is small, with segments I to VII forming an oval, with lateral angles rounded and not protruding, except on segment I, which is the shortest segment, while II is the longest. Segments II to IV have one rather short hair in angles, while V to VII have two longer hairs; VIII has a long hair near margin in anterior portion, and another at posterior end, while IX has three short ones on each side near tip, which is bifurcated. Segments II to VI have one longish hair at posterior margin of tergites; there are two dorsal and two ventral median hairs on I to VI. There are a pair of long, strong, pustulated hairs on ventral surface in middle of segment VII, and another at inner end of the lateral strut supporting the spatulated appendage (shown as dorsal in drawing, but is ventral).

The pleural plates are wide, with rather complicated structure, strongly re-entrant heads, wider in anterior portion and more deeply pigmented along outer edge. The tergal plates in I to VI are faintly pigmented, separated medially and along the sutures by hyaline areas, but are closely united with the pleurites. In segment VII there is a single triangular tergal plate, jointed to the pleurites at the antero-lateral angles, and with the posterior portion ending in a point at the base of the spatulate appendage on VIII. There are no visible sternal plates.

Segment VIII is much narrower (transversely) than VII, longer than wide, with converging sides,

while the much smaller segment IX is closely joined to it, so that the two combined segments form a more or less triangular body posterior to the oval abdomen proper. Both VIII and IX have rather deeply pigmented pleural plates, but the structure of the tergites is not clear, probably being a single thinly chitinized plate in VIII, while IX seems to be bifurcated for half its length. The structure of spatulate appendage, inner supporting plate, and genitalia have all been fully discussed under the generic description. The legs are strongly developed, especially the 3rd. pair, both femora and tibiae having pigmented anterior marginal bands, while all tibiae bear six to eight stiff bristles or spines. The claws are of medium length and nearly equal.

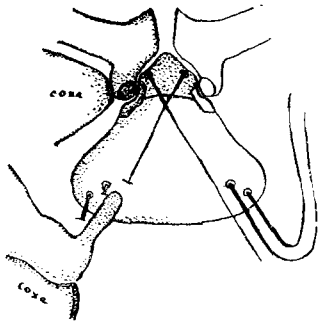


Fig. 20.—**Trichodomedea setosa setosa** ♂
(Meso-metasternal plate)
(Scale: 1 space = 1 mm.)

The female is considerably larger than the male, especially in head and abdomen, the former being very differently shaped from the male, while the latter is a more or less uniform oval. The antennae are small, with segment one short and thick, with 2nd. about the same length but much thinner, while 3, 4 and 5 diminish gradually in thickness, with the 4th. being the shortest. The antennal bands in the female are very differently shaped, being much heavier, with dorsal and ventral aspects quite different, and extend inward to the anterior mandibular condoyle. The ocular blotches are also differently shaped (See figure), but the occipital bands are the same. The chaetotaxy of head differs from male as follows: Hairs on pre-antennary area shorter; short ventral and long dorsal hairs at base of antennae *absent;* a very short marginal hair near base of clypeal band; *all* dorsal hairs on post-antennary area *absent;* but three long, pustulated hairs on temples, the fourth (the anterior) being reduced to a short bristle; long hairs at occipital angle of temples reduced to a short bristle, and one on posterior margin of temple absent.

Abdominal pleurites are wider and of slightly different structure (See figure), but the tergites are practically the same; sternites are visible, extending inward beyond the ends of the tergites, but are widely separated medially, and it is not clear whether or not they are separated from the pleurites. In segment VII the sternite seems to be entire, with the tergites slightly separated medially.

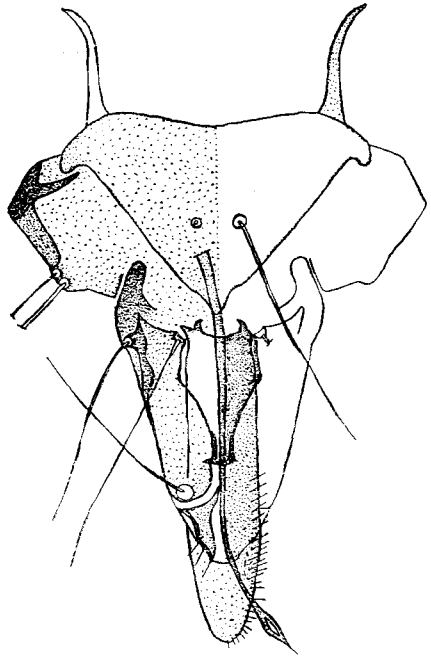


Fig. 21.—**Trichodomedea setosa setosa**
(Tip of ♂ abdomen)

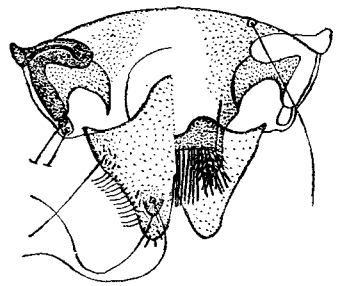


Fig. 22.—**Trichodomedea setosa setosa**
(Tip of ♀ abdomen)
(Scale: 1 space = 2 mm.)

Segment VIII (the fused VIII and IX) is small, about as long as wide, with angulated anterior margin, straight, tapering sides, bifurcated tip, and no trace of line of fusion between VIII and IX. Sternite VII extends over anterior portion of segment

VIII. Its posterior margin is concave medially, with a backward extending oval protuberance on each side. These protuberances, as well as the median margin, are thickly set with long, fine setae; a dorsal, marginal fringe of rather long, fine setae covers the greater portion of the sides of the segment, while a small dorsal patch of very short setae occupies the antero-lateral portion. There are two short marginal hairs in anterior portion of segment, and two long and one short dorsal hairs at each side of apical bifurcation.

The remainder of the abdominal chaetotaxy in the female differs but little from that of the male, the chief difference being in the number of ventral median hairs, which are shorter, finer and more numerous, there being four on each side in segments III to V, but with only two on I, II and VI. The dorsal hair at inner end of tergites is longer and thicker in the female.

The thorax is but little longer, although considerably wider than in male, while the posterior margin of the pterothorax is *angulated* medially, not rounded, as in the male, and with straight sides. The type series consists of 8 ♂ ♂ and 13 ♀ ♀, with 6 ♂ ♂ and 7 ♀ ♀ from another individual of the same host, taken at Petrólea, Santander Norte.

Measurements of the types (1):	male length	male width	female length	female width
Body	2.08		2.47	
Head frons	....	.326	....	.63
Head temples	.54	.727	.65	.90
Prothorax	.195	.423	.217	.49
Pterothorax	.28	.64	.326	.74
Abdomen	1.23	.78	1.53	1.22
Segments VIII and IX	.477	.25	.369	.40
Antennae	.438	.062	.30	.055
Genitalia	.89	.025	....	....
C. I.	.60 and 1.35		.97 and 1.43	

Trichodomedea setosa gujanensis new subspecies.

Types.—Male and female adults, from *Odontophorus g. gujanensis*, collected in British Guiana, June, 1904 (types in Meinertshagen coll, the ♂ on slide Nº 3250a and ♀ on Nº 3250, together with ♀ type of *T. calva*).

Diagnosis.—This subspecies of *setosa* is very close to the nominate form, but unfortunately the types, and only specimens, were cleared to a point where many details of structure are impossible to decipher, especially the abdominal sclerites and segments VIII and IX of the ♂. In my own collection are 2 ♂ ♂ and 6 ♀ ♀ from the same host, taken near Callao, eastern Venezuela, in 1910, but they are in no better condition that the types, so that for the presente I can only indicate the more obvious differences between them and *setosa*.

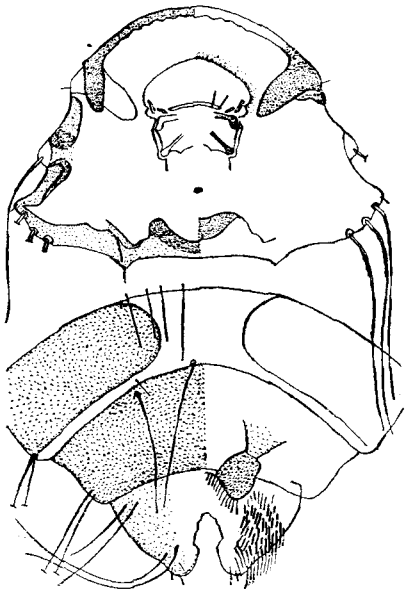


Fig. 23.—**Trichodomedea setosa gujanensis**
(♀ Head and tip of abdomen)

Male: The frons is slightly more arched; the clypeal band serrated on inner margin instead of coarsely crenulated; the antennal bands are of same size, but seem to lack the "twisted" formation found in *setosa;* antennae are more slender, with 3rd. segment longer and 4th. smaller; the sides of head are straighter and the temples much more rounded at the lateral angles. No further details can be given for the male.

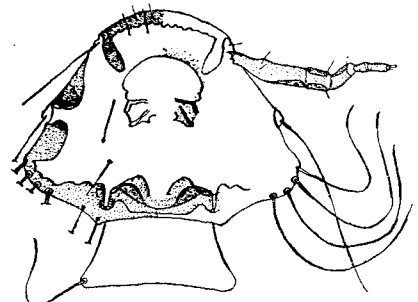


Fig. 24.—**Trichodomedea setosa gujanensis**
(♂ Head and prothorax)

Female: The frons is slightly narrower and more uniformly circular in shape; the antennal bands are of different shape (See figure), and the clear bands running back along side the mandibles and pharyngeal sclerite seem to be absent, although they may have dissapeared through excessive clearing. Segment VIII (VIII and IX fused) differs radically in shape and chaetotaxy (see figs.), the anterior margin being convex instead of strongly angulated medially with concave sides; the lateral margins are convex instead of straight, while the genital plates are quite unlike, as well as most of the chaetotaxy. The shape of the pleural plates in VI and VII cannot be clearly distinguished, and are therefore ommited in figure.

Measurements of the types:	male length	male width	female length	female width
Body	2.04		2.46	
Head frons	....	.335	....	.61
Head temples	.564	.716	.65	.90
Prothorax	.225	.40	.24	.48
Pterothorax	.303	.625	.39	.75
Abdomen	1.21	.86	1.45	1.24
Segments VIII and IX	.40	.30	.26	.47
Antennae	.456	.055	.33	.055
Genitalia	.72	....		
C. I.	.59 and 1.27		.94 and 1.39	

Trichodomedea setosa major new subspecies.

Type.—Female adult, from *Odontophorus p. parambae*, collected by the author at Potedo, Rio San Juan, Intendencia del Chocó, Colombia, May 4, 1918 (in coll. of the author).

Diagnosis.—The two females representing this subspecies are, with the exception of *T. craxae*, the largest of the genus which I have seen. The head is very similiar in shape to that of *setosa;* the clypeal band and ocular blotches the same; the antennal bands are slightly different, with rounded inner ends, and lack the faintly pigmented backward extension; the temporal and occipital bands are also slightly different.

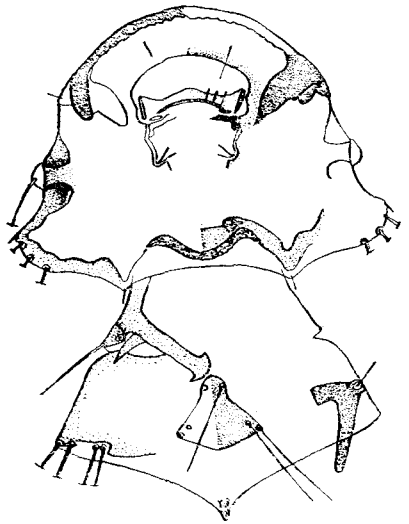


Fig. 25.—**Trichodomedea setosa major**
(♀ Head and thorax)

The meso-metasternal plate is distinct, having the anterior end round, sides straight, and posterior margin angulated medially, with nearly straight sides; the posterior margin of the pterothorax has the two sides slightly concave (not straight or convex).

The abdomen is oval, with slightly protruding postero-lateral angles, and with the chaetotaxy similiar to that of *setosa*, as well as the structure of the pleurites.

Segment VIII is somewhat larger than in *setosa*, but the genital plates and chaetotaxy are very similiar (see figs.)

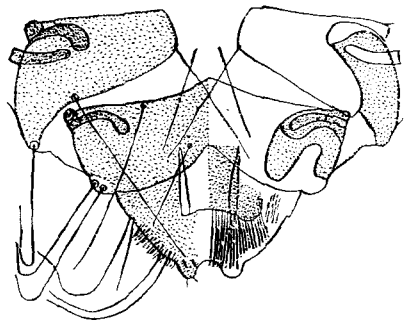


Fig. 26.—**Trichodomedea setosa major**
(Tip of ♀ abdomen)

This race may be separated from *setosa* by the larger size; difference in antennal bands, meso-metasternal plate, posterior margin of pterothorax; longer and narrower abdomen; larger segment VIII; slight difference in shape of genital sclerites, and difference in Cephalic Index. The male may very likely present specific differences in the structure of head, segments VIII and IX and genitalia.

Measurements of type:	female length	female width
Body	2.69	
Head frons	....	.65
Head temples	.695	.91
Prothorax	.24	.52
Pterothorax	.39	.79
Abdomen	1.60	1.12
Antennae	.34	.055
Segments VIII and IX	.347	.456
C. I.	.94 and 1.31	

(1) The length of head is measured from frons to tip of angle at each side of occiput, while body and abdominal lengths do not include the projecting tip of the spatulate appendage, but length of segments VIII and IX does include this appendage. Cephalic Index is given for both width of frons and temples.

Trichodomedea setosa subspecies (?)

A single male specimen in the Meinertzhagen collection (slide N° 3252), taken on *Odontophorus* ***gujanensis marmoratus*****, collected in Panamá, January, 1900, cannot be satisfactorily identified, due to its poor condition. However, it is very evident that it is conspecific with *T. setosa*, having** many of the characters of that species.

The frons and clypeal band are very similiar to *setosa*, the latter being much wider medially and with the same festooned inner margin. The general shape of the head is the same except for the lateral angles of the temples, which are exactly as in ***macropoda*****, while the posterior margin is different from both, being nearly straight from lateral to occipital angle. The base of the spatulate appendage is practically the same as in *setosa* (apical half of** this appendage, the whole genital apron and segments VIII and IX are missing); **tergite VII is also like that of *setosa*, with sharply angulated posterior margin;** and pleurites of VII are also very **similiar.**

There can be little doubt but that this is a valid subspecies of ***setosa*****, but until better material of both sexes is available for study, it seems best to** leave it without a name.

Measurements:	length	width
Body	2.01	....
Head frons	....	.326
Head temples	.57	.705
Prothorax	.195	.41
Pterothorax	.27	.63
Abdomen	....	.84
Antennae	.456	.065
C. I.	.57	and 1.24

Trichodomedea macropoda new species.

Types.—Male and female adults, from *Odontophorus gujanensis simonsi*, collected by the author at Boca Chapare, Rio Chapare, Bolivia, Aug. 25, 1937 (in collection of the author).

Diagnosis.—This is a very distinct species in many ways, but is perhaps nearest to ***longisetosa*** in shape of head in the male and apical segments of the abdomen in the female. Excepting ***longisetosa*** and *pilosa* it is the smallest of the group (in which the female has patches or fringes of setae on segment VIII of abdomen), but unlike ***longisetosa*** the spatulate appendage of the male has the tip perforated, as in ***minuta*** and ***heterura***, species belonging to the group in which segment VIII in the female is without patches and fringes of setae. In some respects ***macropoda***, as well as ***longisetosa*** seem to be a connecting link between these two groups, as shown by the shape of the head in the female and by the chaetotaxy of segment VIII, which has only a large patch of setae on each side in ***macropoda***, but also fringes in longisetosa, but both species have the suture partially or entirely present between VIII and IX, as in the group without setae on VIII.

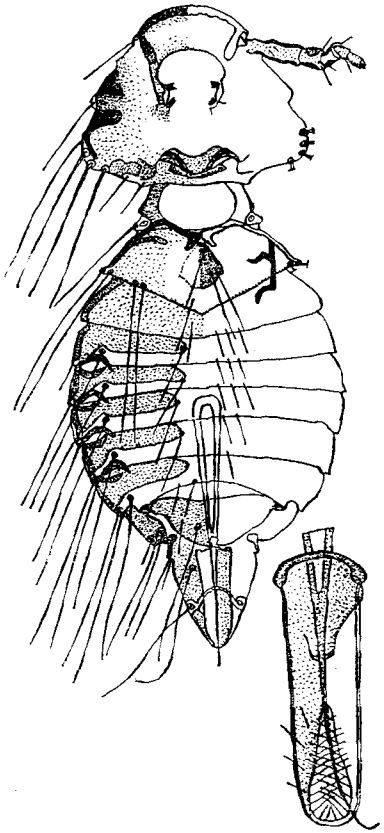


Fig. 27.—Trichodomedea macropoda ♂
Body and spatulate appendage (ventral face).
(Scale: 1 space = 4 mm.)
(Magnification of ♂ body = 25% less than other figures).

Male: The frons is more arched than in any other male of this group; the antennae, while similiar in pattern, are considerably longer than in *longisetosa;* the ocular blotches are of different shape, as well as the temporal and occipital bands; the occipital region is shorter and the whole head has different proportions (See cephalic indices).

The sides of prothorax are almost straight, with scarcely any overhang of the dorsal integument; the pterothorax has the sides less undulating, and all bands (including the acetabular bars) are narrower.

The abdomen is of same shape and proportion as in *longisetosa*, and with the same narrow pleurites and pleural incrassations; the same narrow tergites on segments II to VII, but segment I is unusually long, having the exposed lateral margins as long as II. Tergite VII is differently shaped, having the sides of posterior margin undulating (circular in ***longisetosa)***, and with the median tip ***incised*** (see fig.), the latter a unique character.

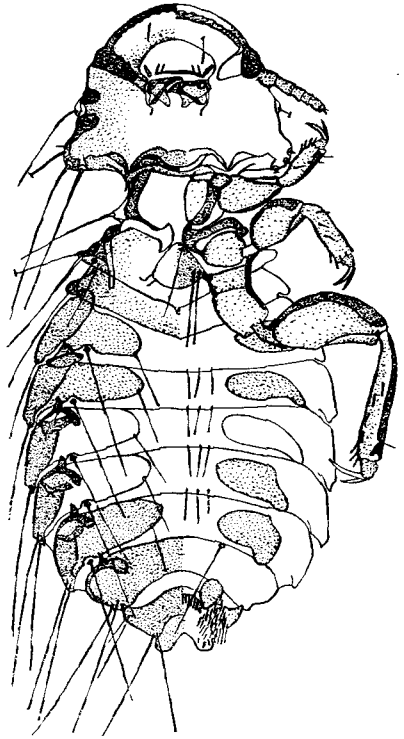


Fig. 28.—**Trichodomedea macropoda**
(♀ Body)
(Magnification 25% less than other figures)

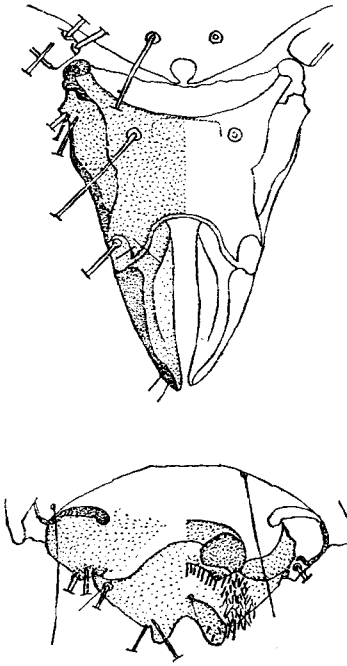
Segments VIII and IX are also quite distinct, in shape of pleurites and chaetotaxy (see fig.) (1).

The male genitalia are also unique, the greater part of the filament being wider, with wide chitinized margins along basal half and narrow hyaline center, but at middle portion the marginal bands become narrow and the hyaline center wide. At the point where the chitinized margins coalesce the filament contracts rapidly to the short, very slender, hair-like tip.

(1) Figures 27 and 28 (body of ♂ and ♀) were drawn to a different scale than the remainder of the genus, being 25% smaller. This fact must be taken into consideration when making comparisons, and the tables of measurements consulted for true size.

Female: The frons is strongly arched, as in ***longisetosa***, but the clypeal band is wider on dorsal face and more deeply crenulated; the antennal bands are shorter and wider, but there is more marginal offset at their bases (see fig.) The sides of the head are very similiar in shape, but the occipital area is very short, with whole occipital margin almost transverse, excepting for the strongly project-

Fig. 29.—**Trichodomedea macropoda**
(Segments VIII and IX of ♂)
(Scale: 1 space = 1 mm.)



(The same. Segments VIII and IX of ♀)
(Scale: 1 space = 2 mm.)

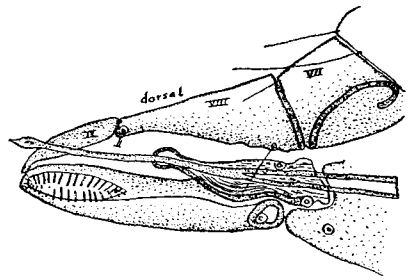


Fig. 30.—**Trichodomedea macropoda** ♂
(Segments VII to IX, with genitalia. Lateral aspect).
(Scale: 1 space = 4 mm.)

ing angles at each side of occiput. This is a very unusual character, and present in only one other know species of the genus, *quadracapitis*, where it is slightly less pronounced.

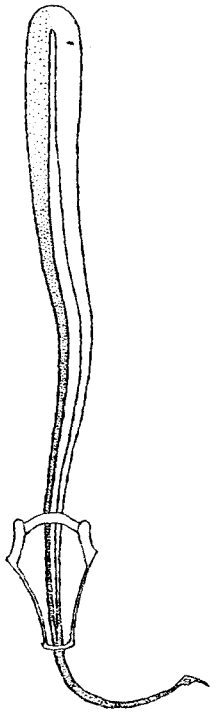


Fig. 31
Trichodomedea macropoda
(♂ Genitalia)
(Magnification double that of other figures)

The abdomen is similiar to that of *longisetosa*, although the tergites are much smaller, with far wider median hyaline area, as well as along the sutures, while tergite VII seems to be entire. The pleural incrassations are also slightly different. Segment VIII has the anterior margin somewhat different; the genital plates are smaller and of distinct shape, while the chaetotaxy is very different, resembling *T. setosa gujanensis* in this respect. Segment IX, unlike most species in this group, is rather clearly outlined, but not quite so sharply as in *longisetosa*. The type series consists of 6 ♂ ♂ and 6 ♀ ♀, while there are 1 ♂ and 2 ♀ ♀ from the same host, collected at Sta. Ana, Río Coroico, Bolivia.

Measurements of the types:

	male		female	
	length	width	length	width
Body	1.81	....	2.16	....
Head frons	....	.335	....	.56
Head temples	.52	.65	.597	.80
Prothorax	.16	.38	.174	.445
Pterothorax	.24	.575	.326	.66
Abdomen	1.06	.76	1.30	1.09

Measurements of the types:

	male		female	
	length	width	length	width
Segments VIII and IX	.35	.27	.24	.42
Antennae	.38	.054	.28	.063
Genitalia	.82	.065		
C. I.	.64	and 1.25	.94	and 1.34

Trichodomedea longisetosa new species.

TYPES.—Male and female adults, from *Odontophorus columbianus*, collected by the author at La Cumbre de Valencia, Venezuela, Oct. 10, 1910 (in coll. of the author).

Diagnosis.—Very much smaller than *T. setosa*, and differing from that species as follows: Male. Sides of head slightly convex, with eye less prominent; temples strongly rounded, with the four pustulated hairs evenly spaced, from end of post-ocular blotch, backward; two dorsal hairs between ante-ocular blotch and bucal cavity are *absent;* all hairs of head much longer, especially the ones in occipital angles of temples, which are as long as the head; the clypeal band is somewhat narrower and much less crenulated, while the occipital bands differ decidedly (see fig.)

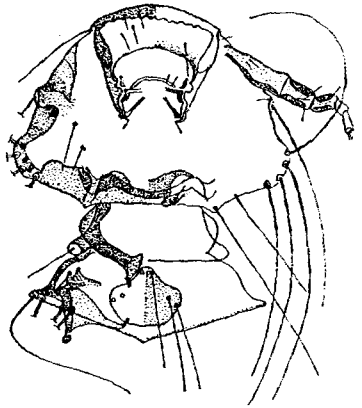


Fig. 32.—**Trichodomedea longisetosa**
(♂ Head and thorax)
(Scale: 1 space = 2 mm.)

Both thoracic segments have the sides undulating instead of straight, while in the prothorax the dorsal integument extends beyond the ventral in anterior portion of sides. The pterothorax has the posterior margin angulated medially, with sides straight, as in the ♀ of *setosa;* the sternal plate is less pointed anteriorly, and more rounded posteriorly.

The abdominal structure differs but little, except in segment VII, VIII and IX. The single tergal plate on VII is rounded on posterior margin (not pointed,—see fig.), but the manner of its attachment to the pleurites is similiar, while it has two long, median, *dorsal* hairs in addition to the ventral pair. Segment VIII is shorter and wider (proportionately), being *wider* than *long*, and with heavier pleural plates; segment IX is also wider, with heavier lateral plates and thickened tips. This segment appears to be completely divided longitudinally, consisting merely of the heavy, channeled pleurites (see fig.) The spatulate appendage is shorter and thicker, scarcely extending beyond the tip of segment IX, with heavier chitinized margins, especially towards the base; the lateral struts are also of different shape; there are two long, marginal hairs (instead of one) at the base, while the single hair at tip is very short; the bristles on appendage are fewer in number and pustulated, except those at its tip.

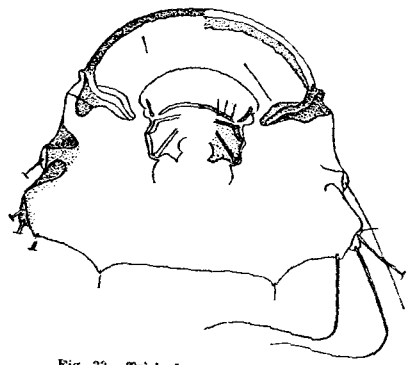


Fig. 33.—**Trichodomedea longisetosa** ♀
(Scale: 1 space = 2 mm.)

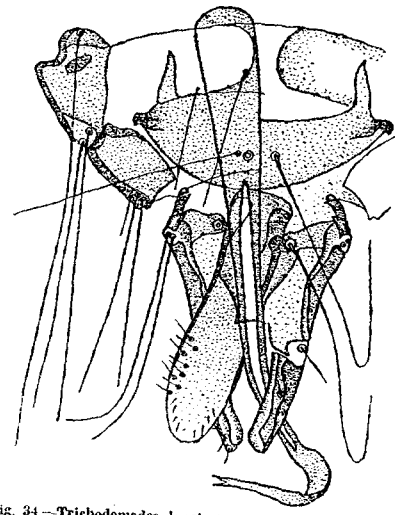


Fig. 34.—**Trichodomedea longiseta** (Tip of ♂ abdomen)

The genital armature is much shorter and wider for its entire length, resembling somewhat a slender blade of grass (see fig.), and being the only one seen of this particular type.

Female.—The females of this species all seem to have the temples more or less shrunken, so that I am not positive that the figure of the head is entirely correct. However, the frons is more circular, the sides of head less divergent, with temples less expanded than in ♀ of *setosa;* the pleural and tergal plates of abdomen are more closely joined, the latter are more deeply pigmented and without hyaline margins along the sutures, while the incrassations of the pleurites are different (see fig.)

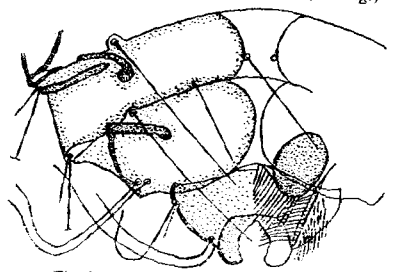


Fig. 35.—**Trichodomedea longisetosa** ♀
(Tip of ♀ abdomen)
(Scale: 1 space = 2 mm.)

Segment VIII is also very different, with sides rounded, the segment much wider than long and with outline of suture around IX complete, the latter being somewhat horse-shoe shaped. The pair of oval genital plates lie for greater portion under VII, the posterior fourth being under VIII, and the two are connected by a curving line of long fine setae. On each side of segment VIII there is a ventral ridge of shitin extending from the outer side of the oval genital plate, back to the margin at point of fusion between VIII and IX. These ridges bear a fringe of slender setae, *pointing inward*, while a patch of setae covers most of the space between this ridge and the lateral margin, and merges into a posterior, marginal fringe (see fig.) The type series consists of 5 ♂ ♂ and 8 ♀ ♀.

Measurements of the types:

	male		female	
	length	width	length	width
Body	1.59		1.97	
Head frons	....	.28	....	.575
Head temples	.445	.60	.60	.74
Prothorax	.14	.347	.174	.456
Pterothorax	.195	.50	.38	.65
Abdomen	.933	.65	1.19	1.04
Segments VIII and IX	.29	.22	.23	.37
Antennae	.33	.045	.25	.043
Genitalia	.71	.08	....	....
C. I.	.63	and 1.35	.96	and 1.23

Trichodomedea elongata new species.

TYPES.—Male and female adults, from *Odontophorus erythrops melanotis,* collected by the author at Guapiles, Costa Rica, March, 1903 (in coll. of the author).

Diagnosis.—In this species we have the male nearly as long as in *setosa,* but the abdomen, instead of being oval, is widest at segment II, and tapers uniformly from there to the tip of IX, with merely a slight constriction at suture between VII and VIII.

The frons is narrower and flatter, the eye region more protuberant and the temples uniformly rounded, as in *longisetosa,* but with the distance from line of temples to occiput greater (see fig.) The chaetotaxy of the head is different from both *setosa* and *longisetosa.*

There is a line of four dorsal hairs on each side of head, the 1st. inside ante-ocular blotch, while there is *no trace of the long dorsal hair at base of antennae.* With the exception of a single species which has a short spine at this site, all other males which I have seen of this genus posesses this long hair.

The prothorax resembles that of *longisetosa,* except that the margin of the overhanging dorsal integument is nearly straight, instead of rounded, while the posterior margin of the pterothorax is rounded, as in *setosa.*

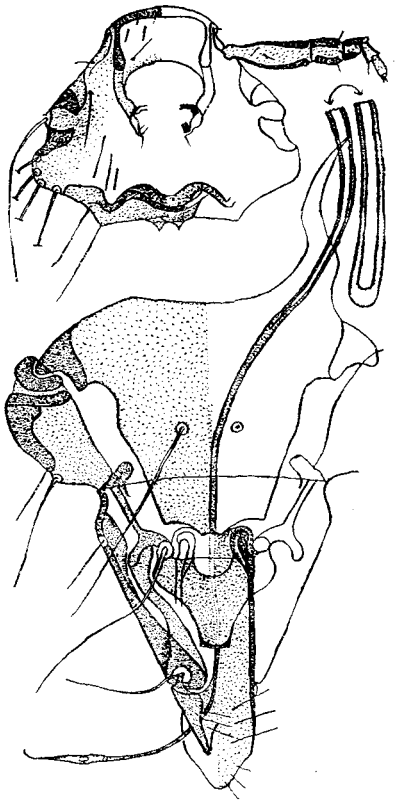


Fig. 36.—**Trichodomedea elongata** (♂ Head)
(Scale: 1 space = 2 mm.)

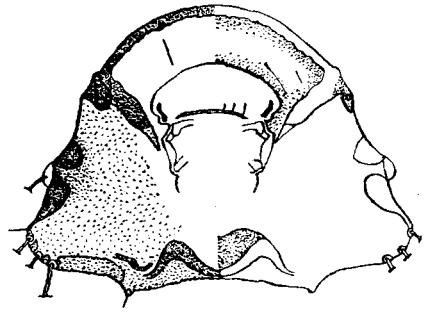


Fig. 37.—**Trichodomedea elongata**
(♀ Head)
(Scale: 1 space = 2 mm.)

There is nothing distinctive in the abdominal chaetotaxy, except the unusual *shortness* of most all hairs. The pleurites are wide, with only narrow margin deeply pigmented; the tergites are as in *setosa,* but the deeply pigmented incrassations of the pleurites are distinctive. The large sternite covering segment VII is of unusual shape, differing from both *setosa* and *longisetosa* (see fig.)

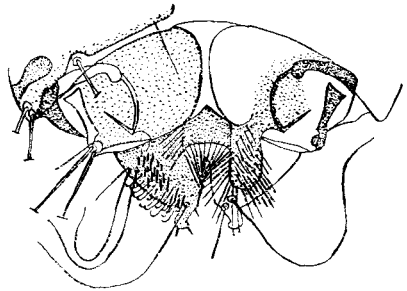


Fig. 38.—Trichodomedea elongata
(♀ Tip of abdomen. Segments VII-IX)
(Scale: 1 space = 2 mm.)

Female.—The head is very similiar in shape to that of *setosa,* but the clypeal band is slightly narrower, with antennal bands much narrower and of different shape. The ocular blotches are almost identical, as well as the hairs of the temples, but the occiput bands are different (see fig.) Segment VIII is of the type of *setosa,* with deeply bifurcated tip and no trace of segment IX, but it has the

Trichodomedea elongata (♂ Tip of abdomen)
(Segments VII to IX) (Scale: 1 space = 4 mm.)

genital plates of a different shape (see fig.), and the sides of segment convex instead of straight; the anterior margin is of the same shape, but the tips are different, and have one dorsal hair and two ventral, instead of two dorsal (as in *setosa).*

The male genital armature is very long and sleuder, and more hair-like than most species of the genus of which I have seen males. The type series consists of 6 ♂ ♂ and 6 ♀ ♀.

Measurements of the types:	male length	male width	female length	female width
Body	1.91		2.24	
Head frons	....	.28	....	.60
Head temples	.55	.66	.65	.846
Prothorax	.195	.45	.20	.50
Pterothorax	.25	.59	.29	.738
Abdomen	1.14	.74	1.32	1.15
Segments VIII and IX	.395	.285	.26	.40
Antennae	.456	.06	.303	.065
Genitalia	1.11	.038	....	....
C. I.	.53 and 1.25		.92 and 1.30	

Trichodomedea pilosa new species.

TYPE.—Female, adult, from *Penelope m. montagnii,* collected by the author at Cachirí, Santander Norte, Colombia, Nov. 21, 1916 (in coll. of the author).

Diagnosis.—This species is known only from a single female, the type. Superficially it resembles *T. glabra,* from the same host, but the females may be distinguished at a glance by the presence of well developed fringes of setae on segment VIII in *pilosa,* while in *glabra* the only setae present are the very short, fine fringe along posterior margin of genital plate. It also differs from *glabra* in the shape of genital plates and shape of segments VIII and IX (see figs.) It is also smaller in all measurements except length of prothorax and thickness of 1st. segment of antennae. The cephalic index also differs (1.00 and 1.22 against 1.06 and 1.27). The incrassations on the pleurites are narrower and slightly different in design (see fig.)

T. pilosa has the least expanded temples (laterally) of all the known species posessing fringes of setae on segment VIII in female, while the antennal bands are also different.

Measurements of the type:	female length	female width
Body	1.91	....
Head frons	....	.55
Head temples	.55	.673
Prothorax	.15	.434
Pterothorax	.29	.63
Abdomen	1.15	1.02
Segments VIII and IX	.205	.37
Antennae	.24	.046
C. I.	1.00 and 1.22	

Section of genus from *Odontophorus* and *Dendrortyx* in which the females have no patches or

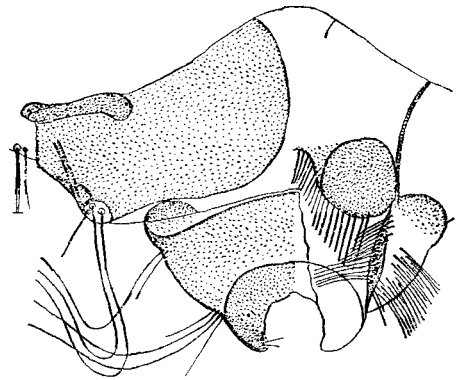


Fig. 39.—**Trichodomedea pilosa** ♀
(Tip of abdomen). (Double the magnification of other figures)

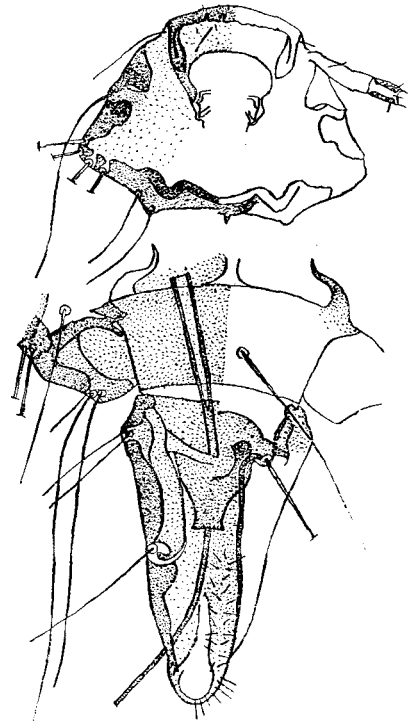


Fig. 40.—**Trichodomedea heterura**
(♂ Head. Scale: 1 space = 2 mm.)
(♂ segments VIII to IX. Scale: 1 space = 4 mm.)

fringes of setae on segment VIII and IX, except the very short, sparse row around posterior margin of genital plate.

Trichodomedea heterura new species.
(Fig. 40).

TYPES.—Male and female adults, from *Odontophorus erythrops melanotis*, collected by the author at Guapiles, Costa Rica, March, 1903 (in coll. of the author).

Diagnosis.—Considerably smaller in all dimensions, with C. I. quite different. The head in both sexes has the temples wider, more nearly approaching the type of *setosa* in this respect, from which it differs as follows:

Male.—Frons more flattened, antennae much more slender, with 2nd. segment longer (nearly half the length of 1st.); the eye is less prominent, but with attached hair much longer, and with ocular blotches of different shape.

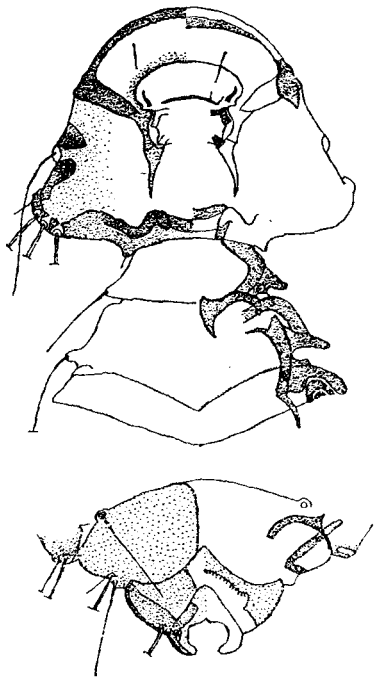


Fig. 41.—**Trichodomedea heterura**
(♀ Head and thorax)
(♀ Segments VII to IX)
(Scale: 1 space = 2 mm.)

The terminal segments differ radically in shape, proportions and structure, with the spatula-shaped appendage much shorter and extending but slightly beyond the tip of IX, while it has a considerable opening in the apical portion (see fig.) The chaetotaxy of the whole terminal segment (VIII and IX) and the spatulate appendage is different, as well as the shape of the inner appendage which supports the genitalia. Tergite VII also differs radically in shape, being flatly convex on anterior margin and slightly concave on posterior side (triangular in *setosa*).

Female.—In addition to the smaller size and glabrous terminal segments of abdomen, the female has the antennal bands of a different shape, as well as the temples, while the pattern of the pleural incrassations is not the same. Segment VIII has anterior margin sharply angulated medially, with each side deeply concave and the lateral margins strongly convex. Entire anterior margin of segment IX is clearly outlined, while its shape and chaetotaxy are unusual (see fig.)

This species was taken togther with *T. elongata* on the same individual host, and is represented by 4 ♂ ♂ and 9 ♀ ♀.

Measurements of the types:	male		female	
	length	width	length	width
Body	1.58		1.80	
Head frons	....	.285	....	.50
Head temples	.47	.61	.54	.695
Prothorax	.143	.37	.15	.39
Pterothorax	.205	.50	.27	.575
Abdomen	.91	.68	1.04	.87
Segments VIII and IX	.35	.22	.20	.37
Antennae	.35	.043	.22	.04
Genitalia	.67	.087	....	....
C. I.	.61	and 1.30	.93	and 1.29

Trichodomedea guttata new species.

TYPES.—Male and female adults, from *Odontophorus c. capueira*, collected by Plaumann at Novo Teutonia, Brazil, April, 1940 (in coll. of G. H. E. Hopkins).

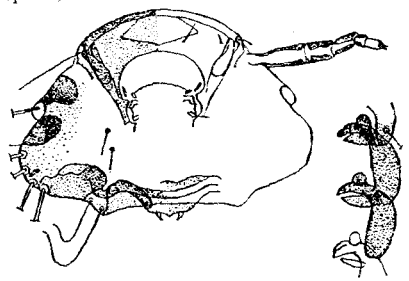


Fig. 42.—**Trichodomedea guttata** ♂
(Head and pleurites)

Diagnosis.—In the male the head is short, wide at temples, with frons unusually wide, and lateral angles of temples broadly rounded. In the female the head is larger than in *heterura* and of similiar shape, but the temples are more attenuated and less expanded laterally, while the antennal and occipital bands are quite different. Segment VIII of the female is very similiar to that of *heterura*, but IX is quite distinct.

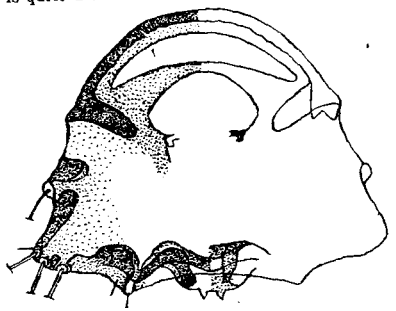


Fig. 43.—**Trichodomedea guttata**
(♀ Head)
(Scale: 1 space = 2 mm.)

The terminal segments in the male also differ strongly from *heterura* in detail of structure, VIII being wider basally and IX with tips broad and rounded (pointed in *heterura*). The tip of the spatulated appendage is attenuated, and without apical perforation, and with supporting apron of genitalia also different.

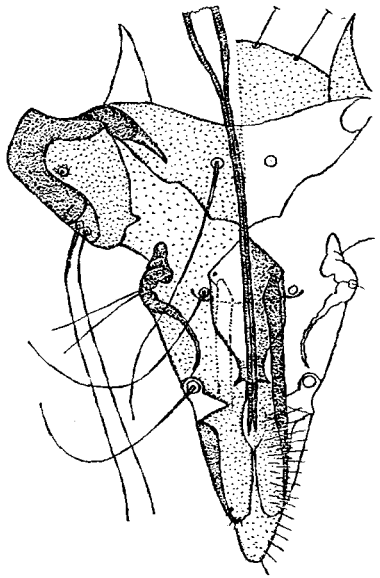


Fig. 44.—**Trichodomedea guttata**
(♂ Segments VII, VIII and IX)
(Scale: 1 space = 4 mm.)

Tergite VII in male has the anterior margin concave, sides undulating and convergin to a narrow truncate tip, slightly angulated medially. The pleurites in both sexes are much heavier, more deeply pigmented and with much heavier incrassations. The figure given illustrates fully the many distinguishing characters of the species, which is represented by 5 ♂ ♂ and 12 ♀ ♀.

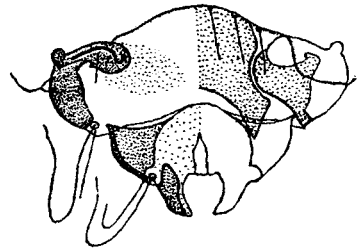


Fig. 45.—**Trichodomedea guttata**
(♀ Segments VII to IX)

Measurements of the types:	male		female	
	length	width	length	width
Body	1.95		2.10	
Head frons	....	.39	....	.597
Head temples	.50	.727	.61	.78
Prothorax	.16	.41	.195	.45
Pterothorax	.24	.60	.29	.67
Abdomen	1.21	.836	1.27	1.11
Segments VIII and IX	.355	.24	.25	.39
Antennae	.36	.05	.26	.047
Genitalia	.71	.054	....	....
C. I.	.78	and 1.45	.98	and 1.28

Trichodomedea quadrata new species.

TYPES.—Male and female adults, from *Odontophorus balliviani*, collected by the author at San Cristóbal, Dept. Cochabamba, Bolivia, Jan. 24, 1937 (in coll. of the author).

Diagnosis.—This species is an outstanding example, in both sexes, of that section of the genus in which the temples are less expanded laterally, especially in the female, which has the frons very broad and strongly arched, the C. I. for frons being 1.00 and for the temples only 1.15.

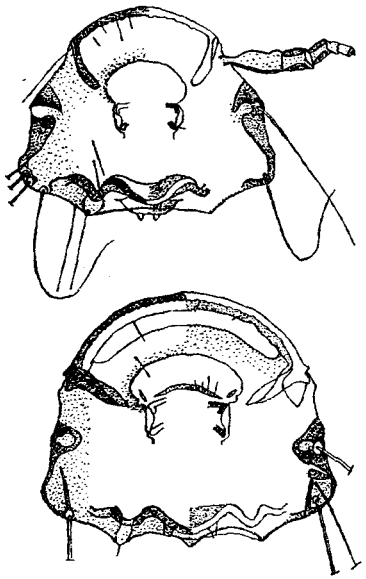
Male: The ocular region is strongly protuberant, with ocular blotches large and deeply pigmented (especially anterior one), while the eye itself seems to be on the *under* side of the head. The 1st. segment of the antennae is unusually short, 2nd. and 3rd. long and thick, and 4th. and 5th. very small.

The terminal segments of the abdomen are well developed, long and tapering to a point, with spatulate appendage wide, not protruding beyond the end of segment IX, and with unusually profuse amount of setae on apical portion, while the hairs along its sides are abundant and long. The genital armature tapers to a long, slender, hair-like tip.

Female.—The antennal bands closely resemble those of *heterura*, except that the long, faintly pigmented bands which extend backward from ante-

rior mandibular condoyle nearly to the occipital band, are wanting. The ocular blotches are coalesced, forming a ring, with the eye on ventral side of margin (see fig.), while two of the long hairs on the temples are apparently attached on the ventral side of head (see fig.)

Fig. 46.—**Trichodomedea quadrata**
(♂ Head)



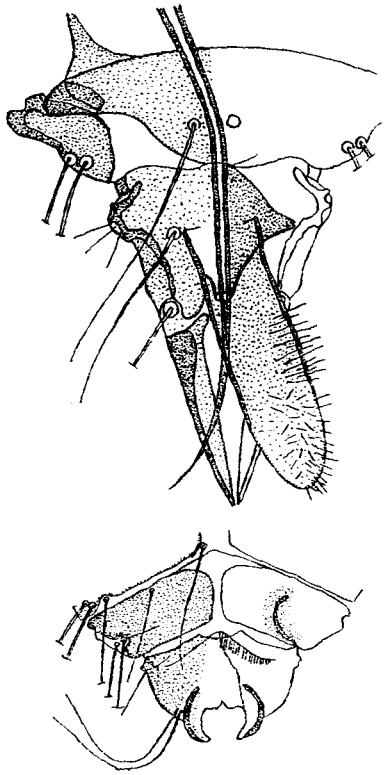
Trichodomedea quadrata
(♀ Head)
(Scale: 1 space = 2 mm.)

Segment VII is smaller than in *heterura*, with tergites of a very different shape, while the prominent incrassations of the pleurites are absent. Segment VIII has anterior margin with median portion concave (not shraply angulated as in *heterura*). Segment IX has a narrow chitinized band around the circular sides, at point of fusion with VIII, but all trace of this suture is lost around anterior portion of segment. The chaetotaxy is also different. Species represented only by the ♂ and ♀ types.

Measurements of the types:	male length	male width	female length	female width
Body	1.65		1.69	
Head frons	....	.314	——	.532
Head temples	.467	.57	.553	.63
Prothorax	.13	.326	.13	.37
Pterothorax	.195	.477	.19	.53
Abdomen	1.00	.67	.955	.77
Segments VIII and IX	.37	.228	.24	.35

Measurements of the types:	male length	male width	female length	female width
Antennae	.30	.048	.24	.054
Genitalia	.76	.043	....	....
C. I.	.67	and 1.22	.96	and 1.14

Fig. 47.—**Trichodomedea quadrata**
(♂ Segments VII to IX)
(Scale: 1 space = 4 mm.)



(Same. ♀ Segments VII to IX)
(Scale: 1 space = 2 mm.)

Trichodomedea minuta new species.

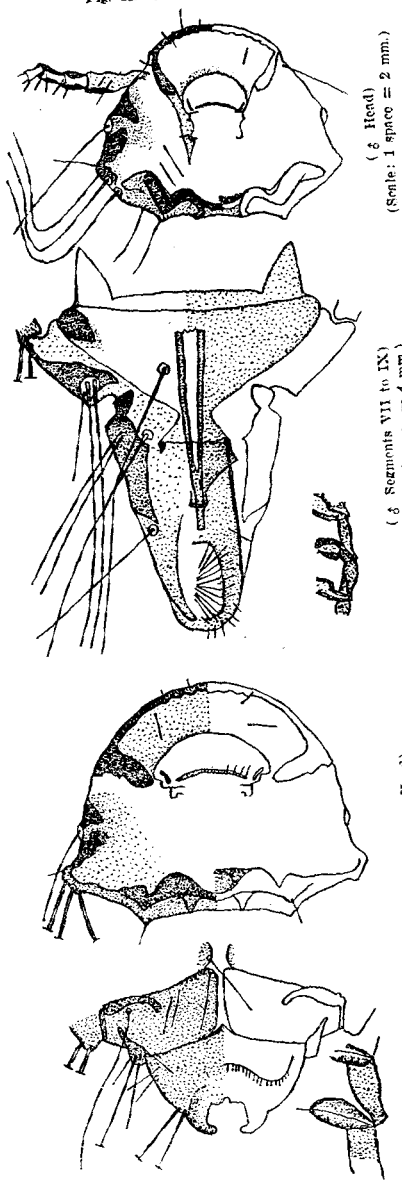
Types.—Male and female adults, from *Odontophorus atrifrons varicgatus*, collected by the author at Monte Elias, Sierra Perijá, Dept. Magdalena, Colombia, Aug. 2, 1941 (in coll. of U. S. Nat. Museum).

Diagnosis.—This is the smallest known species of the genus.

Male: The head is shaped much as in *quadrata*, but the ocular region is slightly less protruding, while the eye itself is clearly on the dorsal surface at the margin.

All segments of the antennae are long, except the 1st., which is quite short, as in *quadrata*. The thorax is of normal size, the sides of both segments being slightly concave.

Fig. 48.—**Trichodomedea minuta**



(♂ Head)
(Scale: 1 space = 2 mm.)

(♂ Segments VII to IX)
(Scale: 1 space = 4 mm.)

(♀ Head)
(Scale: 1 space = 2 mm.)

(♀ Segments VII to IX)
(Scale: 1 space = 2 mm.)

The abdomen is unusually small (exclusive of segments VIII and IX), and much rounded, being wider than the length of segments I to VII. Tergite VII is triangular, with short, wide, anterior prongs, and with posterior end constricted subterminally, then expanded to base of the ventral appendage. Segment VIII is very short, IX normal, with curving, pointed tips; spatulate appendage short and wide, extending but slightly beyond IX, and with a large, oval open space at apical end, fringed with longish hairs, pointed inward. This species and *heterura* are the only ones seen which have the spatulate appendage perforated at tip. The incrassations of the pleurites are long, but rather slender, while in the female they are very long, as well as wide, the pleurite extending inward from margin one fifth of the width of the abdomen.

Female: The frons is wide and strongly arched, with temples small and eye set far back, with sides of head more divergent than in *quadrata*, but much less than in *heterura*. Segments VII and VIII are much like female of *quadrata* in shape, but in the present species there are pleural incrassations (absent in *quadrata)*, but no genital bar on VII. Anterior margin of VIII is pointed medially, as in *heterura*, but not doubly concave. Segment IX is rounded, but the line of suture with VIII is barely indicated along sides only. The type series consists of 1 ♂ and 4 ♀ ♀, but there are 2 ♂ ♂ and 1 ♀ taken on *Odontophorus a. atrifrons*, from the Sierra Nevada de Santa Marta, Colombia, which seem to be the same, at least the differences between them and the type series are too small to be worthy of note.

Measurements of the types:	male length	male width	female length	female width
Body	1.38		1.59	
Head frons	....	.29	....	.52
Head temples	.42	.53	.51	.655
Prothorax	.11	.30	.13	.358
Pterothorax	.174	.44	.23	.51
Abdomen	.78	.61	.89	.76
Segments VIII and IX	.26	.19	.23	.347
Antennae	.29	.043	.22	.04
Genitalia	.54 (?)	.054	....	....
C. I.	.69	and 1.26	1.02	and 1.29

Trichodomedea longicephala new species.

Types.—Male and female adults, from *Odontophorus gujanensis simonsi*, collected by the author at Sta. Ana, Río Coroica, Bolivia, July 22, 1934 (in coll. of the author).

Diagnosis.—Male: This species is easily distinguished by the unique shape of the head, which is nearly as long as broad, with narrow, arching frons, protuberant eye-region, and narrow, broadly rounded temples. The clypeal band is very narrow; the

antennal bands very small and short (the heavily pigmented portion). The ocular blotch is unique (see fig.), while the eye is invisible, apparently being on under side of head, but its attached hair is long and strong; the occipital band is also distinctive.

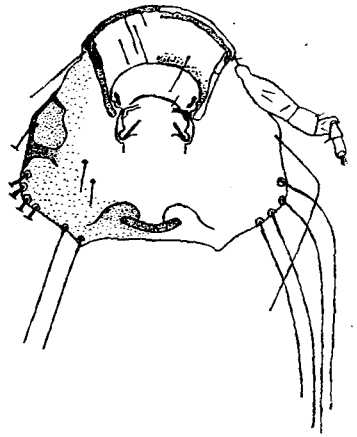


Fig. 49.—**Trichodomedea longicephala** ♂
(Scale: 1 space = 2 mm.)

The male type is either not fully adult, or has just shed its integument, since the abdominal sclerites are not clearly visible, although the chaetotaxy seems to be complete, while segments VIII and IX are well developed, as are also the two appendages and the genital armature. The abdomen is small, and almost circular (exclusive of segments VIII and IX), being as wide as long, but with sides slightly flattened. Segments VIII and IX are small, but little longer than wide (.31 by .265),

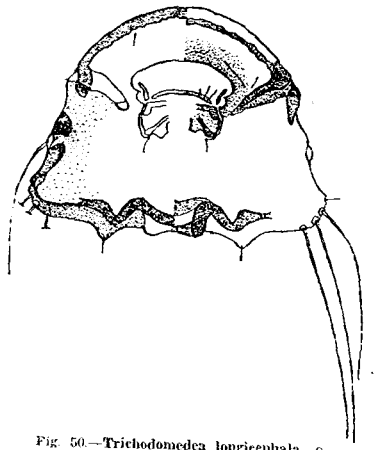


Fig. 50.—**Trichodomedea longicephala** ♀
(Scale: 1 space = 2 mm.)

with the spatulate appendage extending slightly beyond their tip (.035); the hirsute appendage is short and wide, slightly expanded apically, and with broadly rounded tip, while the apron supporting the genitalia is unusually small (see fig.)

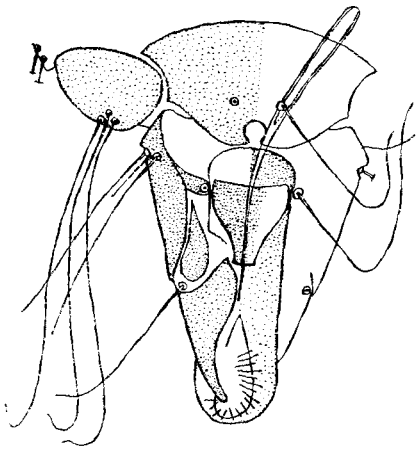


Fig. 51.—**Trichodomedea longicephala**
(♂ Segments VII to IX)

Female: Unusually small, the total length being actually slightly less than that of male, while the head is shorter. The head resembles in general shape that of *calva*, but is smaller, with narrower bands, while the "clavi" are extremely long and pointed (see fig.), the species being almost unique in this character.

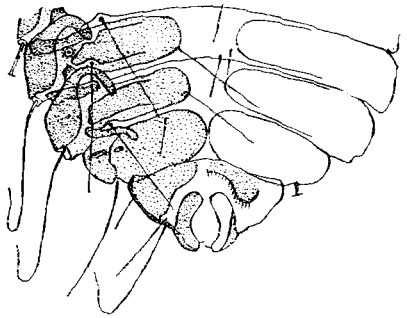


Fig. 52.—**Trichodomedea longicephala** ♀
(Tip of abdomen)
(Scale: 1 space = 2 mm.)

The pleurites are large, with developed heads and prominent cross-bar, with tergites and chaetotaxy normal. Segments VIII and IX are large (in proportion to size of abdomen), with IX unusually large, and entire suture clearly visible. Known only from the two types. A ♂ and 2 ♀♀ of

T. macropoda were taken on the same individual host.

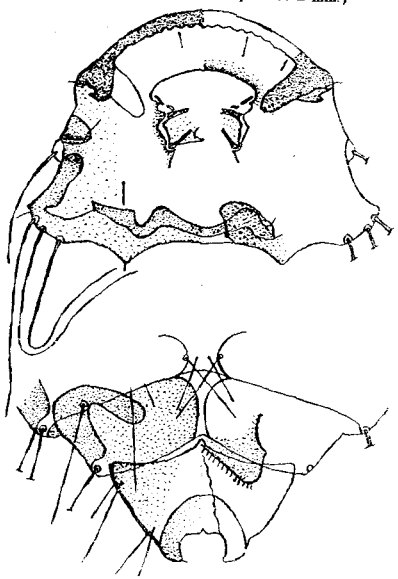
Measurements of the types:	male length	male width	female length	female width
Body	1.80	....	1.71	....
Head { frons	....	.337	....	.51
Head { temples	.54	.597	.51	.675
Prothorax	.174	.38	.14	.36
Pterothorax	.26	.54	.28	.553
Abdomen	1.05	.74	1.01	.88
Segments VIII and IX	.37	.27	.20	.36
Antennae	.347	.054	.195	.033
C. I.	.62	and 1.11	1.00	and 1.32

Trichodomedea calva new species.

TYPE.—Female adult, from *Odontophorus g. gujanensis*, collected in British Guiana, June, 1904 (type in coll. of Col. Meinertzhagen, slide N° 3250, together with female type of *T. setosa gujanensis*).

Diagnosis.—The single female representing this species has the head more or less of the same type as the females of *heterura* and *guttata*, but differs from both. The frons is narrower than in *guttata*, but wider than in *heterura*, and much flatter than either; the clypeal band is wider and more strongly crenulated than in either, while the "clavi" are also different, as well as the occipital bands (see figs.)

Fig. 53.—Trichodomedea calva
(♀ Head) (Scale: 1 space = 2 mm.)

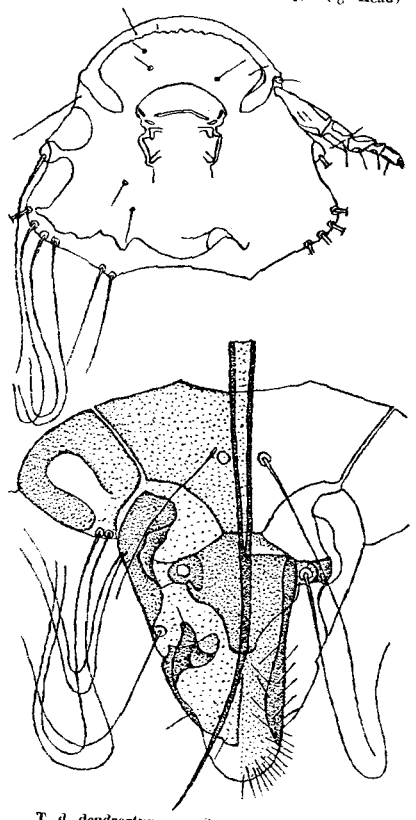


Trichodomedea calva (♀ Segments VII to IX)

The tergites of VII are similiar in shape to those of *quadrata*, but larger, while the pleural incrassations are wide and prominent. Segment VIII has front about as in *heterura*, but sides are less convex; segment IX is circular, and has entire outline of suture visible; the genital plates are more prominent than usual in the species of this group from *Odontophorus*. The type has been excessively cleared, so that details of abdominal sclerites cannot be clearly distinguished.

Measurements of the type:	female length	female width
Body	1.90	....
Head { frons	....	.546
Head { temples	.542	.75
Prothorax	.174	.39
Pterothorax	.26	.60
Abdomen	1.12	.99
Segments VIII and IX	.217	.40
Antennae	.26	.043
C. I.	1.01	and 1.38

Fig. 54.—**Trichodomedea d. dendrortyx** (♂ Head)



T. d. dendrortyx (♂ Segments VII to IX)

Trichodomedea dendrortyx dendrortyx new species.

TYPES.—Male and female adults, from *Dendrortyx l. leucophrys*, collected in Guatemala, 1896 (Meinertzhagen coll., slide N° 3231). (Fig. 54).

Diagnosis.—Male: May be distinguished from all known males taken on *Odontophorus* by the shape of the head and terminal segments of abdomen, together with their appendages. The frons is considerably broader and more arched, with the antennal bands extending diagonally inward towards the anterior mandibular condoyle at almost the same angle as in the female. The 3rd. segment of the antennae has the distal end cut at an angle of 45° to the axis, instead of nearly rectangular, as in most species. The eyes are very strongly protruding, with attached hair unusually long and thickened. The pleurites are of medium width, uniformly pigmented, and *without complicated incrassations*, while in the female they are much larger, with well developed, curving "heads", but no thickened ridges of chitin. (The specimens have all been cleared to a point where the detailed structure of the abdominal sclerites cannot be distinguished with certainty).

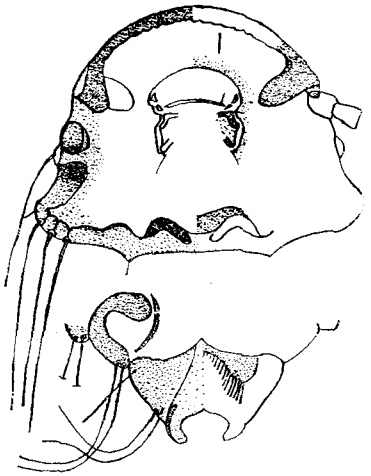


Fig. 55.—**Trichodomedea d. dendrortyx**
(♀ Head; ♀ Segments VII to IX)
(Scale: 1 space = 2 mm.)

The two terminal segments of the abdomen are short and broad, being as wide as long, with IX considerably wider than long, with tip bluntly rounded. The spatulate appendage is also short and broad, with unusually wide, chitinized lateral margins and with all setae of uniform length. The supporting apron for the genitalia is also short and broad, while the genital armature itself is rather wide basally, but tapers to a long, very slender tip.

Female: Without the male it would be hard to separate from several other species, except for the abdominal pleurites, which are unusually prominent. The clypeal band is also wider than usual, with the antennal bands short and thick, and "clavi" more or less distinctive. The terminal segment (VIII and IX) is small, with anterior margin angulated medially and sides concave; lateral margins nearly straight and segment IX short and wide, with suture indicated only at side. (In figure a line at left side is incorrect).

The fringe of setae on VIII is much longer than in any other species of this section of the genus. The species is represented by 4 ♂♂ and 3 ♀♀.

Measurements of the types:	male length	male width	female length	female width
Body	1.74	....	1.98	....
Head frons	....	.435	....	.575
Head temples	.54	.673	.586	.77
Prothorax	.175	.37	.195	.412
Pterothorax	.28	.565	.28 (?)	.61
Abdomen	.97	.785	1.17	.94
Segments VIII and IX	.27	.275	.25	.347
Antennae	.326	.058	.27	.052
Genitalia (broken off)	....	.055	....	....
C. I.	.80 and 1.25		.98 and 1.31	

Trichodomedea dendrortyx similis new subspecies.

TYPES.—Male and female adults, from *Dendrortyx m. macroura*, collected in Mexico, August, 1899 (in Meinertzghagen coll., slides N° 3234).

Diagnosis.—This race is represented by 2 ♂♂ and 1 ♀, all in poor condition, so that it is not possible to make a very clear comparison with the nominate form. However, it is clear that they are closely related, both sexes having the same type of head, the males the same type of terminal abdominal segments, but differing in size and detail.

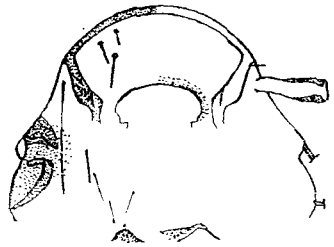


Fig. 56.—**Trichodomedea dendrortyx similis**
(♂ Head. Scale: 1 space = 2 mm.)

This race is larger in most of its measurements, but not *all*, having head in male longer and wider at temples, but with same width at frons. The prothorax has the same length, but the pterothorax is *less;* abdomen longer and wider; segments VIII and IX longer, but of same width, and with IX more pointed (details are very indistinct).

In the female the head is considerably larger in *all* measurements, and with the last abdominal segment of same length but wider. Well prepared material of these two forms will undoubtably show other important differences, possibly specific.

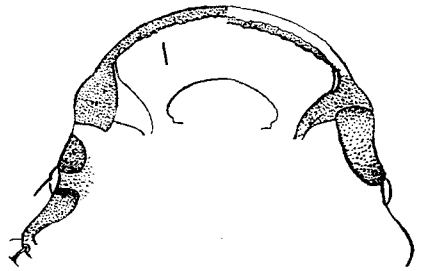


Fig. 57.—**Trichodomedea dendrortyx similis**
(Scale: 1 space = 2 mm.)

Measurements of the types:	male length	male width	female length	female width
Body	1.89	....	2.14	....
Head frons	....	.434	....	.65
Head temples	.575	.694	.684	.85
Prothorax	.17	.41	.20	.456
Pterothorax	.26	.62	.303	.69
Abdomen	1.04	.89	1.23	1.08
Segments VIII and IX	.35	.282	.24	.41
Antennae	.39	.054	.30	.05
Genitalia (invisible)	....	....		
C. I.	.75 and 1.21		.95 and 1.24	

This section of the genus contains all species from the Cracidae which have segment VIII in female without patches and fringes of setae.

Trichodomedea latafrons latafrons new species.

TYPES.—Male and female adults, from *Ortalis guttata adsperso*, taken by the author La Oroya, Dept. Puno, Peru, June 6, 1931, and Chiñiri, Rio Kaka, Bolivia, Aug. 26, 1934 (in coll. of the author).

All forms which I have seen from genus *Ortalis* have the following characters in common: Wide, circular frons and "ridge" antennal bands in the female; meso-metasternal plate in both sexes reduced to three small, oval sclerites, each bearing two hairs; pleurites of females with wide longitudinal, internal bands, large re-entrant heads with a conspicuous appendage on inner side, expanding to a large circular or oval end; segment IX of female consisting of two semicircular lobes, with anterior ends almost touching and with entire suture visible; genital fringe always, consisting of very fine, short setae, sometimes almost obsolete.

Diagnosis.—Male: The head is nearest in shape to that of *T. d. dendrortyx*, from which differs as follows: Antennae much more slender, especially first three segments, the 3rd. having the distal end truncate, and the 4th. attached at *end* of 3rd., while segments diminish in length from 1 to 4, with the 5th. nearly twice the length of 4th.; last three segments strongly pigmented. The clypeal band is nearly twice as wide on ventral side as on dorsal; antennal bands strongly developed, deeply pigmented, and extending almost to the anterior mandibular condoyle. Ocular blotches and occipital bands of different shape, with hairs on temples and eyes shorter.

The meso-metasternal plate, instead of being triangular, is reduced to three small sclerites, each occupying a tip of the triangle, and each having two hairs. This character characterizes all species of the genus taken on *Ortalis*. The pterothorax has the sides undulanting (not straight), while the segment is much shorter than in most species, and the median angle of posterior margin is much less acute.

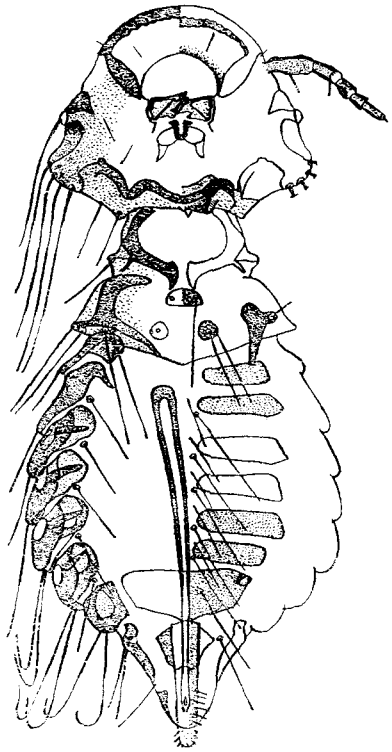
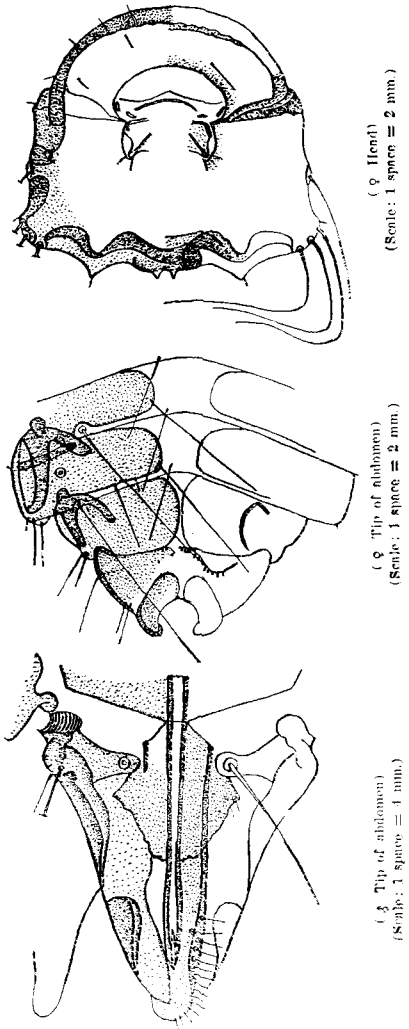


Fig. 58.—**Trichodomedea l. latafrons** (♂ body)

The abdomen is small, and *wider* than *long* (excluding segments VIII and IX), while the structure of the pleurites seems to be unique (see fig.)

(There is an error in the figure of the male, the sclerites depicted on right side of abdomen being the tergites, which should have been placed on the *left* side). Segments VIII and IX are short and wide, being about as wide as long (excluding tip of spatulate appendage), while the points of attachment between VII and VIII are unique (see fig.) The pleurites of both VIII and IX are channeled, as in many other species of the genus. The spatulate appendage is more slender than in most species, with tapering tip and sparser chaetotaxy. The supporting apron of the genitalia is also of an unusual shape, with sides and tip irregular in outline (see fig.) and it has two fine setae on each side, not seen in any other species of the genus.

Fig. 59.—Trichodomedea l. latafrons



Female: But slightly larger than the male, except for head, which has a somewhat unique shape, with temples but little wider than frons, and with a peculiar structure of antennal bands (see fig.) The abdominal pleurites are very similiar to those of male, but the tergites are larger, nearly filling the segments, except for median hyaline space, while that of segment VII is also divided medially. Segment VIII is small, without median angle on anterior margin, while IX is somewhat heart-shaped, with entire surrounding suture clearly visible. The abdominal chaetotaxy is similiar to that of the male, except for length of hairs (see fig.)

The male type was taken from a bird collected at La Oroya, Rio Inimbari, Perú, while the female type and 4 ♀ ♀ paratypes came from a bird shot at Chiñiri, Rio Kaka, Bolivia.

Measurements of the types:	male length	male width	female length	female width
Body	1.77	....	1.88	....
Head frons	....	.40	....	.59
Head temples	.53	.65	.57	.673
Prothorax	.15	.37	.15	.39
Pterothorax	.23	.553	.27	.57
Abdomen	.97	.80	1.09	.91
Segments VIII and IX	.333	.30	.206	.38
Antennae	.355	.038	.25	.045
Genitalia	.80	.05		
C. I.	.75	and 1.23	1.03	and 1.18

Trichodomedea latafrons crassus new subspecies.

Type.—Male adult, from *Ortalis g. guttata*, collected in Ecuador, May, 1898 (slide N° 3207, Meinertzhagen coll.)

Diagnosis.—The single male representing this race differs from the nominate form in larger size; differs slightly in C. I.; larger and more protuberant eyes, and slenderer and more tapering spatulate appendage on segment VIII. It is possible that the female may present other differences.

Measurements of the type:	male length	male width
Body	1.95	....
Head frons	....	.445
Head temples	.575	.72
Prothorax	.175	.37
Pterothorax	.235	.575
Abdomen	1.17	.91
Segments VIII and IX	.38	.337
Antennae	....	.054
Genitalia	.91	.056
C. I.	.77	and 1.25

Trichodomedea latafrons subsimilis new subspecies.

Type.—Female adult, from *Ortalis T. ruficrissa*, collected by the author at Casacará, Dept. Magdalena, Colombia, May 15, 1942 (in coll. of U. S. Nat. Mus.)

Diagnosis.—The differences in measurements from *latafrons* are not great, some being slightly more, others less, but *all* might easily fall within the range of individual variation. The clypeal band is much more crenulated on dorsal surface, and of uniform width around frons (wider medially in *latafrons)*, while the same band is wide, and also uniform in width on ventral surface (see fig.) The temples are more constricted, with the three long hairs set close together; the ocular blotches are of different shape, while the position of the eye is not the same, it being either on dorsal or ventral surface, not marginal (it is not clear whether it is ventral or dorsal).

The incrassations of the pleural plates also differ in detail, with segment IX larger, and with that portion enclosed within VIII more circular and posterior emargination wider. Sub-species represented by a single female, the type. When the male of this is taken it may prove to be a distinct species, since the shape of the head in the female is rather aberrant.

Measurements of the type:	female length	female width
Body	1.96	....
Head frons	....	.586
Head temples	.56	.662
Prothorax	.14	.39
Pterothorax	.28	.597
Abdomen	1.19	.91
Segments VIII and IX	.20	.36
Antennae	.25	.05
C. I.	1.05	and 1.18

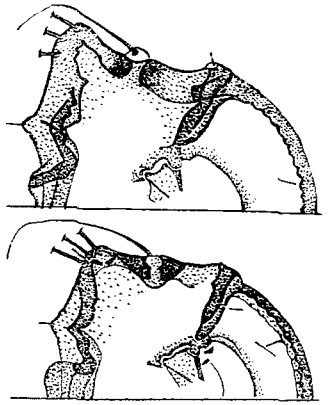
Trichodomedea latafrons grandis new subspecies.

Type.—Female adult, from *Ortalis ruficauda*, collected in Venezuela, Dec. 1899 (slide N° 3208, Meinertzhagen coll.)

Diagnosis.—This is the largest of the known races of *latafrons*. It has the temples very much wider, with greater C. I., while the general shape of the head itself is much closer to the species parasitic on *Odontophorus*. The structure of the antennal bands is, however, typical of *latafrons* and its races, as well as the abdominal pleurites and the meso-metasternal plates. They are no other distinguishing characters present in the female, but the male, when discovered, will undoubtably show others.

A single female of this species taken on *Ortalis wagleri* (Mexico, Nov., 1909, coll. Meinertzhagen, slide N° 3212) cannot be separated from *T. l. grandis*. The measurements are all very close, never differing by more than .03 mm., while the shape and markings of the various segments and sclerites, and entire chaetotaxy are almost identical).

Fig. 60.—Trichodomedea latafrons grandis (♀ Head)



Trichodomedea latafrons subsimilis (♀ Head)

Measurements:	female type length	female type width	female from Ortalis wagleri length	female from Ortalis wagleri width
Body	2.21	....	2.17	....
Head frons	....	.66	....	.674
Head temples	.64	.81	.635	.80
Prothorax	.18	.42	.195	.42
Pterothorax	.31	.66	.28	.65
Abdomen	1.34	1.12	1.34	1.11
Segments VIII and IX	.24	.456	.28	.43
Antennae	.30	.045	.305	.043
C. I.	1.03	and 1.27	1.06	and 1.26

Trichodomedea latafrons intermedia new subspecies.

Type.—Female adult, from *Ortalis a. araucuan*, collected in Brazil, Oct. 1901 (slide N° 3210, Meinertzhagen coll.)

Diagnosis.—Without the male sex it is not possible to clearly indicate the characters which differentiate this race of *latafrons*. In size it is intermediate between *latafrons* and *grandis*, but larger than *crassus*, while the shape of the head is between that of *grandis* and *subsimilis* (in lateral expanse of temples), but with eye and ocular blotches as in *grandis*. There are no appreciable differences in structure or chaetotaxy of the abdomen. A single female (slide N° 3209, Meinertzhagen coll.) taken on *Ortalis canicollis*, from Paraguay, is exceedingly close to *intermedius* in all of its measurements, with the C. I. practically the same. Apparently it is not fully adult, since the abdominal sclerites are very indistinct. Until more and better material can be studied from this host, especially males, it

seems better to place the single female under *T. l. intermedius*.

Measurements:	female type length	female type width	female from Ortalis c. canicollis length	female from Ortalis c. canicollis width
Body	2.00	....	1.96	....
Head frons	....	.65	....	.64
Head temples	.63	.76	.62	.76
Prothorax	.19	.40	.17	.39
Pterothorax	.28	.61	.30	.60
Abdomen	1.13	1.00	1.10	.94
Segments VIII and IX	.217	.40	.24	.42
Antennae	.31	.054	.28	.047
C. I.	1.03	and 1.22	1.03	and 1.23

Trichodomedea oculari oculari new subspecies.

TYPES.—Male and female adults, from *Penelope purpurascens brunnescens*, collected by the author at Caracolicito, Dept. Magdalena, Colombia, May 27, 1941 (in U. S. Nat. Mus.)

Diagnosis.—Male: This is a small, very distinct species in many ways. The head is a rough quadrilateral, as long as broad, with wide, flatly rounded frons; sides of head nearly straight; temples narrow, and occipital region unusually long (from angle of temples). The clypeal band is narrow, but strongly crenulated, and the antennal bands are long and wide, reaching almost to anterior mandibular condoyle. The antennae are short, with 1st. joint unusually short, and with a slight flap; 2nd. and 3rd. about equal in length and thickness, with the 4th. and 5th. very small.

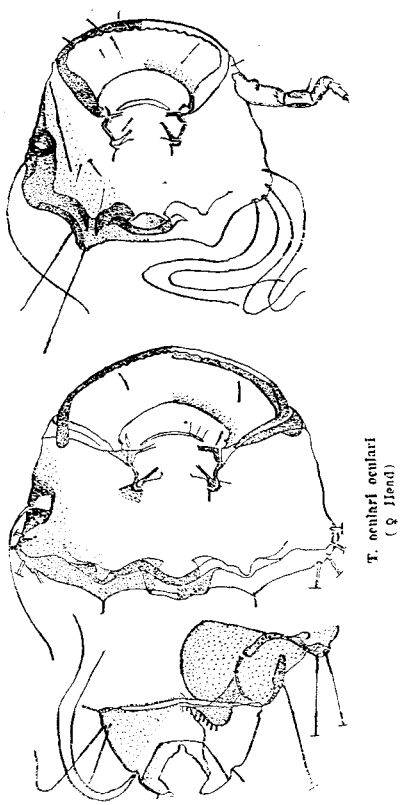
The eyes are on the under side of the head, while the pitchy ocular blotches are coalesced into a rough ring over them; hairs of eye and temples very long; five short dorsal hairs on each side of clypeal area and three on each temple, inside the temporal bands. The posterior ocular blotch (or temporal band) is wide and continuous with the equally wide occipital band.

Thoracic segments normal, with straight, divergent sides; the sternal plate is short and wide, anterior end truncate, with a narrow, deeply chitinized border in which the two hairs are set, with the customary two hairs in each rounded lateral angle.

The abdomen is of a peculiar shape, being widest at segment II, from where it tapers backward to VII, which is somewhat wider than VIII. The pleural plates are narrow, with the long re-entrant heads reaching to middle of preceeding segment. All hairs of thorax and abdomen are very long. Combined segments VIII and IX comparatively small, with the spatulate appendage extending considerably beyond tip of IX. Appendage slightly chitinized medially, with a few short bristles on apical fifth, and with about three longer hairs just forward of them on each side. The genital apron is small, but is not clearly visible. Genitalia normal, quite long, with apical half uniformly slender.

Female: Considerably larger than the male, with broad, rounded frons and narrow, crenulated clypeal band; antennal bands resembling those of *latifrons*. The location of eye and shape of the ocular blotch same as in male. The sides of the head are straight, slightly divergent, and with temples scarcely produced laterally, while the occipital region (unlike the male) is short. The pleurites are much wider than in the male, but the incrassations are narrow. Segment VIII normal, with very fine and short genital fringe: segment IX, like that of *latifrons*, is composed of two lobes, with suture entire, but there is a sharp angle on each side, at edge of VIII (see fig.) The first two pairs of legs are normal, of medium size in both sexes, but the third pair have both femora and tibiae very large, with tibiae unusually long and slender. The species is represented by the two types and 1 ♀ paratype.

Fig. 61.—Trichodomedea o. oculari

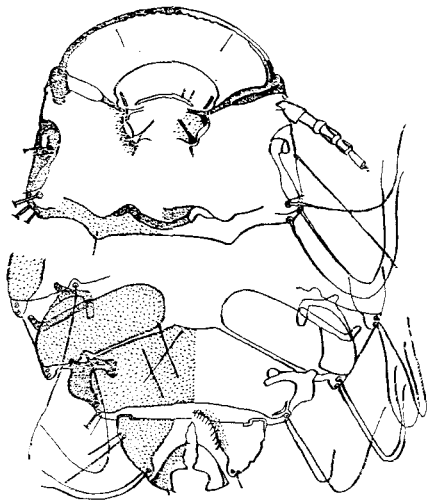


Measurements of the types:	male length	male width	female length	female width
Body	1.65	....	1.97	....
Head frons	....	.39	....	.61
Head temples	.49	.545	.564	.705
Prothorax	.15	.35	.17	.43
Pterothorax	.217	.456	.303	.63
Abdomen	.93	.61	1.20	.90
Segments VIII and IX	.347	.25	.217	.35
Antennae	.326	.055	.26	.045
Genitalia	.68	.043		
C. I.	.80	and 1.11	1.08	and 1.25

Trichodomedea oculari quadracapitis new subspecies.

TYPE.—Female adult, from *Penelope obscura bridgesi*, collected by the author at Samaipata, Dept. Cochabamba, Bolivia, Oct. 26, 1937 (in coll. of the author).

Fig. 62.—Trichodomedea oculari quadracapitis



Diagnosis.—The single female representing this subspecies has the head of the same type as in *oculari*, differing from the nominate form in having the frons wider, sides of head straighter; ocular blotch and occipital bands slightly different: anterior hair of temples set considerably inside of margin, and with the posterior margin of temples much more concave. The abdominal pleurites are very similiar, but the tergites of VII are continuous, not divided medially as in *oculari*. Segments VIII and IX are also very similiar, except for the narrow, deeply pigmented band around the antero-lateral angle of VIII.

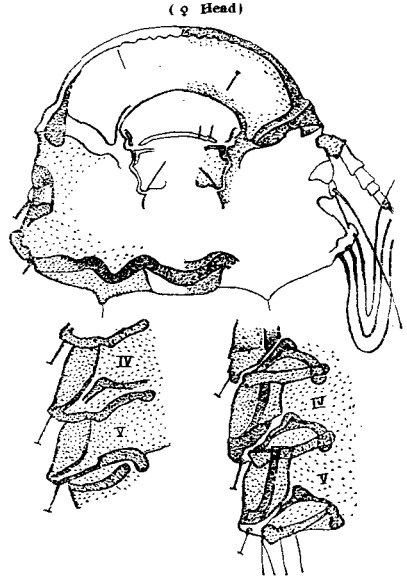
A study of the male may prove it to be a distinct species, but for the present it is better to leave it as a subspecies of *oculari*.

Measurements of the type:	female length	female width
Body	2.09	....
Head frons	....	.63
Head temples	.62	.727
Prothorax	.16	.43
Pterothorax	.29	.65
Abdomen	1.22	1.06
Segments VIII and IX	.288	.393
Antennae	.282	.044
C. I.	1.01	and 1.17

Trichodomedea oculari glabra new subspecies.

TYPE.—Female adult, from *Penelope m. montagnii*, collected by the author at Cachirí, Santander Norte, Colombia, Nov. 21, 1916 (in coll. of the author).

Fig. 63.—Trichodomedea oculari glabra



Diagnosis.—The single female available of this sub-species (the type) is not in the best condition for study. It is intermediate between *quadracapitis* and *oculari*, resembling the former in some respects, the latter in others. The frons is of the same width as *quadracapitis;* the antennal bands are wider apically than either, with the "clavi" distinct from both; sides of head somewhat undulating, as in *oculari*, with ocular blotch also similiar, but the

occipital bands differ from both; outline of posterior margin of head nearer to *oculari*.

The incrassations of the pleurites are very heavy, nearer to *quadracapitis*, but more strongly developed. Segment VIII is also close to *quadracapitis*, but has the bands around antero-lateral angles longer and of different shape (see fig.); genital plate and fringe of setae poorly developed, but closer to *oculari*, while segment IX differs from both (see fig.)

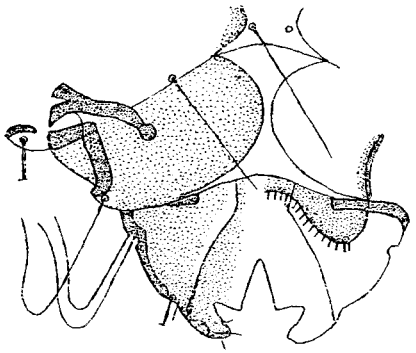


Fig. 64.—**Trichodomedea oculari glabra**
(♀ Segments VII to IX)

Measurements of the type:	female	
	length	width
Body	2.05	....
Head { frons	....	.63
Head { temples	.597	.76
Prothorax	.16	.455
Pterothorax	.27	.653
Abdomen	1.20	.935
Segments VIII and IX	.24	.373
Antennae	.26	.043
C. I.	1.06	and 1.27

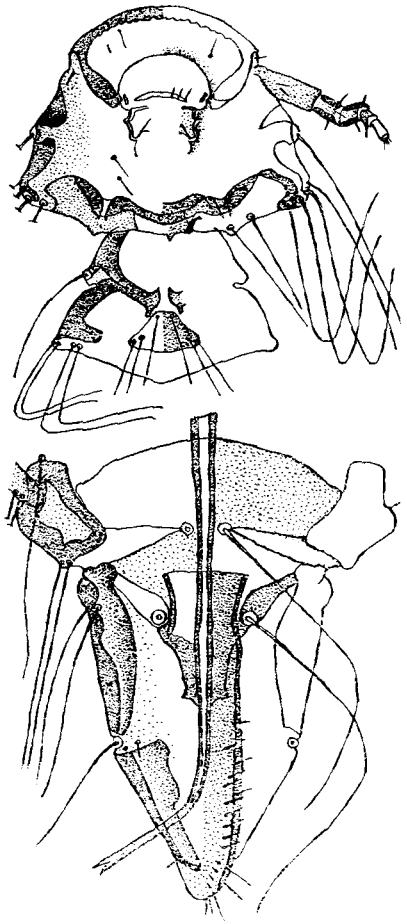
Trichodomedea stigmata new species.

TYPE.—Male adult, from *Penelope argyrotis albicauda*, collected by the author at Tierra Nueva, Sierra Perijá, Dept. Magdalena, Colombia, July 3rd. 1941 (in coll. U. S. Nat. Mus.)

Diagnosis.—This species, of which only a single male is known, is totally different from *T. oculari*, from *Penelope purpurascens brunnescens*, being more nearly the type of *latafrons*, from *Ortalis*. It is unfortunate that the female is unknown, since it would throw additional light on the systematic position of the species. Apparently there are three types of *Trichodomedea* found on the *Cracidae*, but until adequate material of both sexes is available for study, we cannot properly define them.

In *stigmata* we have a wide *frons*, more flatly rounded than in *latafrons*; clypeal band also crenulated, but without the ventral extension; antennal bands long, well developed, and extending diagonally inward, nearly to mandibles. The antennae differ strongly, having first three segments much thicker, with 1st. longer and 2nd. shorter. The long dorsal hair set above the base of the antennae, which is present in almost all species of the genus, is here reduced to a *short spine*. The eyes are prominent, as well as the ocular blotches; temples well developed and occipital bands strikingly similiar to those of *latafrons*.

Fig. 65.—**Trichodomedea stigmata**
(♂ Head and thorax)
(Scale: 1 space = 2 mm.)



T. stigmata
(♂ Segments VII to IX)
(Scale: 1 space = 1 mm.)

The thorax is smaller, with the heavy lateral bands of both segments *entirely marginal* (not largely submarginal as in *latafrons*), while the meso-metasternal plate is *entire*, not reduced to three small sclerites. The abdomen is small, with sides more flattened than in *latafrons*, with pleurites very strongly developed, but differing decided in pattern from those of *latafrons* (see fig.) Segments VIII and IX are well developed, VIII being narrow at base, with very different points of attachment to VII. Segment IX is more pointed apically and with pleurites very different. The spatulate appendage has a differently shaped base, is wider apically, has more pustulated bristles along sides, and the lateral supporting struts run diagonally to base of pleurites instead of at right angles to appendage. The apron which supports the genitalia is very small and unique in shape. There are two long hairs at base of VIII instead of a long and a short. The two short, fine hairs on the genital apron in *latafrons* are absent in *stigmata*, but there are two small dorsal, pustulated hairs at the joint between VIII and IX. The pleurites of segment VII are also unique. The genital armature is rather small, and with the hyaline median portion extending to within a short distance of the bifurcated tip.

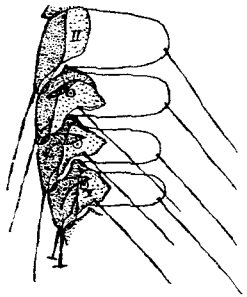


Fig. 66
Trichodomedea stigmata ♂
(Abdominal segments II to V)

Measurements of the type:	male	
	length	width
Body	1.73	....
Head { frons	....	.41
Head { temples	.52	.63
Prothorax	.152	.358
Pterothorax	.24	.49
Abdomen	.99	.62
Segments VIII and IX	.347	.27
Antennae	.36	.054
Genitalia	.67	.03
C. I.	.80	and 1.21

Trichodomedea chamaepetes new species.

TYPE.—Male adult, from *Chamaepetes goudoti fagani*, collected in Ecuador, August, 1900 (slide N° 3217, Meinertzhagen coll.)

There also two types of Trichodomedea found on the genus *Chamaepetes*, but again I have only a single male of one type, and a single female of both types. The present form, *T. chamaepetes* is clearly of the same type as the female of *costaricensis* (from *C. unicolor*), and not the type of the female of *T. subquadrata* (from *C. goudoti sanctaemarthae*), as would be expected from the host relationship.

Diagnosis.—In this species we have the head of the male closely resembling in shape the heads of several females of the genus taken on *Odontophorus* (treated previously in this paper). The frons is fairly wide, and strongly convex; the well developed antennal bands run diagonally back, nearly to mandibles; the eyes are strongly protuberant; both ocular blotches large, and temples much expanded laterally; the occipital bands are well developed and rather complicated. The antennae are both missing.

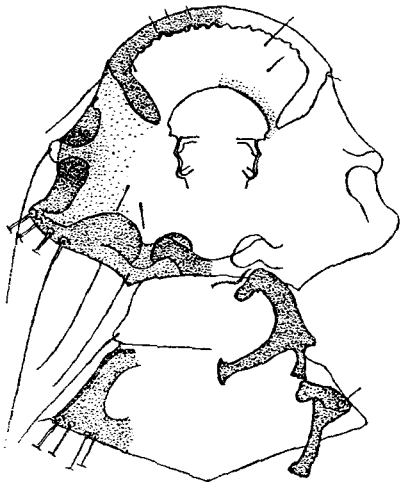


Fig. 67.—**Trichodomedea chamaepetes**
(♂ Head and thorax)
(Scale: 1 space = 2 mm.)

The prothorax is small, but pterothorax wide and rather short, with lateral bands marginal on both segments. The meso-metasternal plate is largely covered by foreign matter and cannot be clearly defined, and most of the hairs are missing, so that it is impossible to say whether or not it is of the conventional triangular type, or reduced to three small sclerites, as in the females of *costaricensis* and *subquadratus*. However, the hairs on one side are clearly visible, and one is long and strong, while the other is short and fine, differing in this respect from *all* other species of the genus seen by me. In the female of *costaricensis* the outer, lateral hair is slightly smaller than the inner, but the difference is negligable.

The abdomen is small, and quite round, being as wide as long (exclusive of segments VIII and IX). The structure of the pleurites is uncertain, due to excessive clearing, but they seem to be unique, and

quite different from those of the female of *costaricensis*. Segments VIII and IX are well developed, VIII of unusual shape with wide, deeply channeled pleurites. The hairs on the spatulate appendage are rather long and without pustules. The genital apron is well developed, with long, tapering apical portion, and narrow lateral struts. Genitalia with tip very slender and pointed.

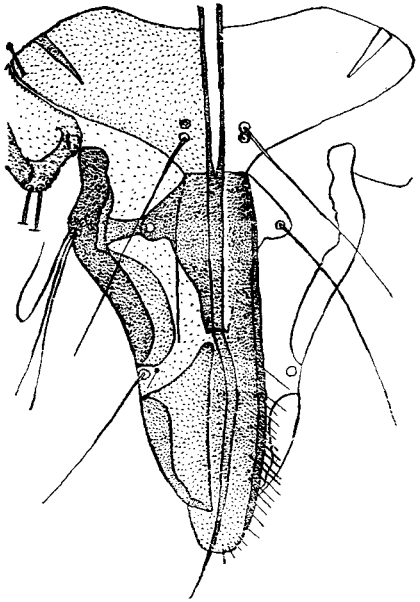


Fig. 68.—**Trichodomedea chamæpetes**
(♂ Segments VII to IX)

Measurements of the type:	male length	male width
Body	2.12	....
Head frons	....	.49
Head temples	.608	.80
Prothorax	.185	.43
Pterothorax	.29	.67
Abdomen	1.26	.97
Segments VIII and IX	.445	.326
Antennae (missing)	....	....
Genitalia	.80	.038
C. I.	.80	and 1.31

Trichodomedea costaricensis new species.

TYPE.—Female adult, from *Chamaepetes unicolor*, collected by the author on Volcano Turrialba, Costa Rica, April, 1906 (in coll. of the author).

Diagnosis.—The head is unlike any other known female of the genus, although resembling several rather closely. The frons is wide and strongly arched, with clypeal band wider medially; the antennal bands are not characteristic, but the antennae are unusually short. The eye is prominent, with sides of head almost parallel from frons to base of slightly expanded temples; occipital area unusually short (whole posterior margin of head from temple to temple almost transverse, except for the slight angles at sides of occiput).

The thorax is close to that of *chamaepetes*. The meso-metasternal plate is reduced to three small oval sclerites, as in the species of the genus from *Ortalis*.

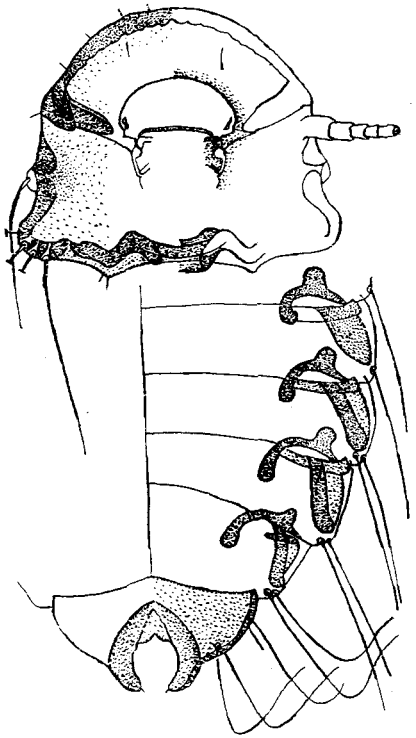


Fig. 69.—**Trichodomedea costaricensis**
(♀ Head and abdomen)
(Scale: 1 space = 2 mm.)

The abdomen is a perfect oval (unusually short and wide), with pleural incrassations in bold relief, the curving heads being much more deeply pigmented than the remainder of the sclerite. There is nothing characteristic about segment VIII, except the *entire absence of genital plate and genital fringe of setae*. The same thing is true of *T. subquadrata*, and apparently this is a character present *only* in the females taken on the avian genus *Chamaepetes*. *T. costaricensis* may prove to be a subspecies of *chamaepetes*, but until both sexes are known it is better to keep them as distinct species.

Measurements of the type:	female length	female width
Body	2.10	....
Head frons	....	.586
Head temples	.49	.705
Prothorax	.15	.40
Pterothorax	.27	.63
Abdomen	1.27	1.02
Segments VIII and IX	.26	.445
Antennae	.24	.047
C. I.	1.20	and 1.44

Trichodomedea subquadrata new species.

TYPE.—Female adult, from *Chamaepetes goudoti sanctae-marthae*, collected by the author at hacienda Cincinnati, Sierra Nevada de Santa Marta, July 21, 1913 (in coll. of author).

Diagnosis.—The shape of the head resembles strongly that of *quadracapitis*, having the same wide, flatly-rounded frons, nearly parallel sides and short occipital region. It differs from *quadracapitis* by having an entirely different type of antennal band; lack of abrupt offset between frons, proper, and base of antennal band; position of eye (marginal instead of sternal); and in the shape of the temples (see fig.) The occipital bands are heavier and more deeply pigmented.

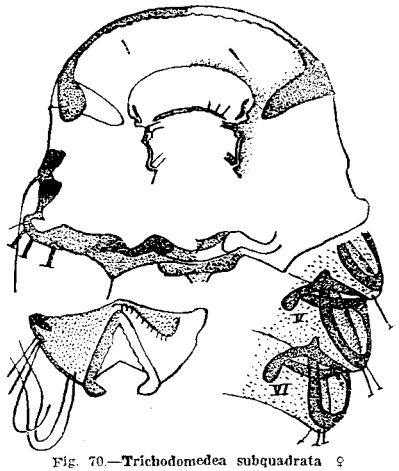


Fig. 70.—**Trichodomedea subquadrata** ♀
(Head; Segments VIII to IX; Pleurites V and VI)
(Scale: 1 space = 2 mm.)

The pterothorax has the sides more undulating, and each half of posterior margin is noticably concave (not straight). The three small sternal plates are poorly pigmented, but nevertheless clearly visible, and with the six hairs all present, the outer lateral one also shorter than the inner. The pleural incrassations of the abdomen are very prominent, and similiar to those of *costaricensis* (see fig.) Segment VIII is very small, of usual shape, and with slight bands at anterior angles. Segment IX differs from that of *costaricensis* (see fig.) The species is represented by a single female, the type.

Measurements of the type:	female length	female width
Body	1.97	....
Head frons	....	.61
Head temples	.586	.74
Prothorax	.16	.42
Pterothorax	.358	.63
Abdomen	1.15	.99
Segments VIII and IX	.205	.38
Antennae	.25	.044
C. I.	1.04	and 1.26

Trichodomedea craxae new species.

TYPE.—Female adult, from *Crax a. alberti*, collected in "Colombia", Sept. 1894 (slide № 3203 in Meinertzhagen coll.)

Diagnosis.—This is the largest known species of the genus, but in other respects it has few, if any, outstanding characters. Except for minor details the shape of the head is an enlarged replica of the female of *T. calva*, the differences being in the shape of the different bands (see figs.)

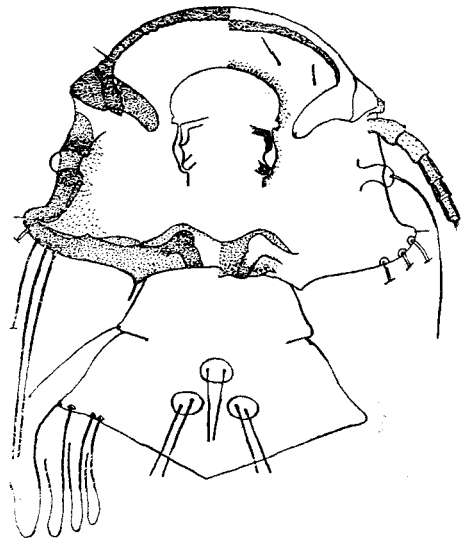


Fig. 71.—**Trichodomedea craxae** ♀
(Head and thorax)
(Scale: 1 space = 2 mm.)

Both segments of thorax have nearly straight, divergent sides, and straight posterior margins (each side of pterothorax), while the sternal plate is also reduced to three small sclerites, with two hairs on each. The abdomen is very short and wide for the females of this genus. The pleural incras-

sations seem to resemble those of *T. costaricensis*, but without the cross-bar. Segment VIII is small, with a narrow marginal band, while IX is not only small, but is *completely encircled* by VIII, which is a diagnostic character for the species, since no other has it.

The three females representing this species are all excessively cleared, while at least one seems to be immanture, so that a clear description and figure of the abdominal sclerites is impossible. The internal chaetotaxy of the abdomen is similiar to that of many species of the genus, viz; one long hair on posterior margin of tergites II to VI; a long hair at inner end of tergites I to VI; and a median pair of hairs on ventral surface of segments II to VI.

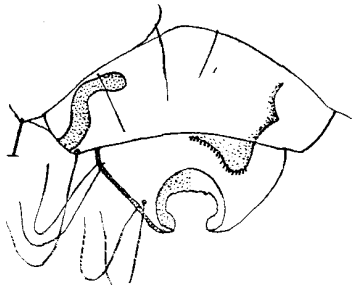


Fig. 72.—**Trichodomedea craxe**
(♀ Segments VII to IX)
(Scale: 1 space = 2 mm.)

A single female from *Crax globulosa*, collected in Perú, 1887 (also in Meinertzhagen collection, slide N° 3204) cannot be separated from the three females described above, although the specimen is in poor condition, due to excessive clearing and age, and cannot be intelligently studied. Fresh material of both sexes is badly needed to establish the systematic position of this group.

Measurements:	type of craxae		female from Crax globulosa	
	length	width	length	width
Body	2.47	....	2.56	....
Head frons	....	.76	....	.80
Head temples	.695	.987	.705	1.00
Prothorax	.22	.50	.217	.50
Pterothorax	.37	.77	.36	.78
Abdomen	1.47	1.26	1.52	1.28
Segments VIII and IX	.26	.49	.25	.48
Antennae	.347	.054	.347	.054
C. I.	1.09	and 1.42	1.14	and 1.42

Trichodomedea longipes (Piaget).

Goniodes longipes Piaget, Les Pedicul., 1880, p. 253, Pl. XX, fig. 7. Host: *Pauxi pauxi*, (equals *Crax galeata*).

Virgula longipes (Piaget), Clay, Parasitology, March, 1940, p. 128.

Piaget's description and figures of this species leave no doubt as to its systematic position. It is a typical *Trichodomedea*, as would be expected from the host, and in type of head and abdominal markings is closely allied with the species from *Crax, Penelope* and *Chamaepetes*. It has the same sexual dimorphism of head and antannae; the same shape of temples, the same chaetotaxy of head, thorax and abdomen, and with the terminal abdominal segment of the female (VIII and IX fused) the same. The different bands of the head are the same.

The abdomen of the male is also typical: "beaucoup plus court est aussi plus arrondi; le dernier segment arrondi et saillant; l'appareil genital large". (Piaget apparently mistook the spatulate appendage of segment VIII for the genitalia).

Trichodomedea bicolor (Rudow).

Goniodes bicolor Rudow, 1869, p. 26. Host: *Penelope marail* Müller *(Penelope Macalli)*.

Virgula bicolor (Rudow), Clay, Parasitology, March, 1940, p. 128.

Miss Clay is quite correct in assuming this species to be congeneric with *longipes* of Piaget, also in keeping it as a separate species. Although I have seen no material from this host, I do not hesitate to assume that it is speciafically distinct from *longipes*, although it may prove to be conspecific with one or more of the species described in this paper from the genus *Penelope*. The material from this genus now available for study is too meager to be certain of the exact status of some of the forms, whether they are specifically or subspecifically distinct.

Trichodomedea eximia (Rudow).

Goniodes eximius Rudow, 1869, p. 25. Host: *Oreophasis derbianus* Gray; Taschenber, 1882, p. 35, pl. III, fig. 1.

Virgula eximia (Rudow), Clay, Parasitology, March, 1940, p. 128.

This species is typical of that section of the genus found on the *Cracidae*, although not so closely related as the species from *Penelope, Chamaepetes, Crax* and *Pauxi*. In fact it is a well marked species, at least in the male, on account of the unusual shape of segments VIII and IX, providing Taschenberg's figure is correct, and there is no reason to assume otherwise. The shape of the head in both sexes is typical, also the antennae, the 3rd. pair of legs, and chaetotaxy of thorax and abdomen. It will be noted, however, that in both sexes he shows the hairs of the temples as being different, there being one *long* and three *short* ones. If this is correct, it is the only know species of the genus presenting this type of chaetotaxy of the temples.

I have seen no material of this genus from *Orreophasis*, and it is not impossible that they should differ thus in this particular, since the shape of segments VIII and IX are also aberrant, but even so, I am somewhat inclined to doubt the correctness of Taschenberg's figure in this respect. The hairs which he shows as being short may have been either broken or missing entirely, and merely placed thus at a venture.

Trichodomedea diversa (Rudow).

Goniodes diversus Rudow, 1870, p. 484. Host: *Penelopina nigra*.

Virgula diversa (Rudow), Clay, Parasitology, March, 1940, p. 128.

I have not seen Rudow's description of this species, nor of *Goniodes rotundus* from the same host. However, Piaget's short description (Les Pedicul., p. 284) seems to indicate that *diversa* is near the type of *Trichodomedea oculari* (described on a previous page) from *Penelope purpurascens brunnescens*. His statement: "La tete subquadraugulaire", and "angles temporaux tronques", would apply well to the female of either *oculari* or *subquadratus*, but he must be referring to a male when he says: "le 3 art. de l'antenne recourbe", but since the males of so few of the species from the *Cracidae* are known, it is not impossible that the male of *diversa* would have the head of this quadrangular type.

Any opinion regarding *G. rotundus* Rudow, would be pure speculation, but I might say that it is not impossible that we should have two distinct species of *Trichodomedea* found on *Penelopina nigra*, the same as on several species of *Odontophorus* and *Penelope m. montagnii*, one with a more or less quadrangular head, and the other with temples expanded laterally. However, for the present I prefer to follow Miss Clay and disregard *G. rotundus* Rudow, as being impossible to identify.

Goniocotes Burmeister.

The genus *Goniocotes* seems to be very rare on neotropical gallinaceous birds, especially the male sex. Over a period of forty one years of intermittent collecting from Mexico to the Argentine I have taken specimens of this genus as follows:

Chamaepetes unicolor, Vol. Turrialba, Costa Rica; 2 ♂♂ and 1 ♀; *Chamaepetes goudotii rufiventris*, Utcubamba, Perú, 1 ♀ *Penelope a. argyrotis*, La Cumbre de Valencia, Venezuela, 2 ♀♀; *P. m. montagnii*, Sierra Perijá, Colombia, 1 ♀; *P. m. montagnii plumosa*, Huacapistana, Perú, 3 ♀♀; *Crax annulata*, Don Diego, Dept. Magdalena, Colombia, 2 ♀♀; *Pauxi pauxi gilliardi*, Sierra Perijá, Colombia, 1 ♀; while there is, as far as I know, but a single female of this species in the Meinertzhagen collection, taken on *Crax r. rubra*, W. Ecuador, which was loaned to me by Miss Clay.

All of these specimens are quite similiar in size, shape of body segments and markings, and all are closely related to *Gc. guttatus* Tsch., taken on *Penelope purpurascens aequatorialis* and *Pipile p. pipile*. In other words, all of the above listed specimens are conspecific with *guttatus*, while few, if any can be separated, even subspecifically, from it. Having males from but a single host, I am not prepared to say whether or not the male genitalia would present subspecific differences, but since it is small and extremely rudimentary, I would hazard the opinion that any differences which there might be between them would be very minute.

Taschenberg's description of *guttatus* is, as far as it goes, very good, although he has erred slightly in his differentiation of the abdominal sclerites. His figure is far too small to be of any material assistance, although as far as it goes, it agrees closely with most of my specimens, these, however, differing slightly amongst themselves in the amount of lateral expansion of the temples, the width of the various markings and the intensity of the pigmentation.

Taking the host of the specimens listed above (including Taschenberg's) we have represented half of the ten genera comprising the *Cracidae*. Those not represented are *Ortalis, Mitu, Aburria, Penelopina* and *Oreophasis*, and of these, three are monotypic. I have taken numerous specimens of *Aburria* and *Mitu*, but no specimens of *Goniocotes* were ever found on them. It would seem, therefore, that we might be safe in assuming that the genus *Goniocotes* is represented on the family *Cracidae* by but a single species *(guttatus)*, which may, or may not, be divided up into very closely related subspecies. Generalizing further, we may also assume that this particular species of ectoparisite is extremely old, and has persisted with slight change through the incredibly long period necessary for the evolution of not only many species of its hosts, but numerous genera as well. There are very few such examples among the Mallophaga, *Degeeriella fusca*, found on so many diverse genera of Hawks, over wide areas, being another of the few.

Goniocotes guttatus Taschenberg.

Goniocotes guttatus Taschenberg, Die Mallophagen, Nova Acta, 1882, p. 89, Pl. II, fig. 14. (Hosts: *Penelope cristata* and *Penelope pipile;* — equals *Penelope purpurascens aequatorialis* and *Pipile p. pipile)*.

Description of female from *Penelope montagnii plumosa:* Front of head uniformly circular, apparently without setae; antennal fossae very shallow, with antennae attached on ventral side of head; anterior edge of fossae with a slight angular projection, on which is set a short hair a shorter bristle; sides of head, from base of frons to temporal angles, slightly divergent, almost straight, and with eye slightly protruding; temples obtusely angular, the lateral angles anterior to the posterior angles and occiput; lateral angles with two spines, the posterior half the lenght of the anterior; posterior margins of temples flatly convex, with a slight emargination on each side of occiput, and with a

long, strong hair set near the lateral angle. Clypeal band very narrow, completely encircling frons; antennal bands wide and deeply pigmented in anterior two thirds; anterior end ending in a slender point, which is attached to the clypeal band; a wider, faintly pigmented, ventral band also encircles the frons, ending posteriorly in a rounded tip which extends to posterior edge of antennal bands (see fig.) Mandibles slender, of medium size, both pointed, but the left with a lateral, subapical tooth. Pharyngeal sclerite and gland well developed, but occipital signature wanting. Temporal bands extend from eye to lateral angle, wider and more deeply pigmented in anterior portion; a faintly pigmented band extends from sides of occiput to lateral temporal angles; the points of attachment for the prothorax are strongly developed, deeply pigmented, and extend some distance inward. Prothorax short, with width ranging, from almost to fully three times the length; sides strongly divergent, lateral angles and blunt, bearing one short bristle; lateral bands and acetabular bars well developed and deeply pigmented; spiracle prominent.

Pterothorax with exposed lateral margins short, strongly divergent and convex, but posterior portion extending far backwards, with straight sides, and ending in an acute angle almost to the middle (of lateral margins) of segment II of abdomen.

Legs small, with small coxae, well developed trochanter, short, rather thick-set femora, and with tibiae also stout and slightly longer than femora; claws long and slender.

The abdomen is well developed, considerably longer than combined head and thorax, oval in shape and with well marked sclerites. The pleurites. The pleurites are rather narrow, with re-entrant heads, with the outer edge more deeply pigmented and in segments II to VI do not reach the posterior margin of the segment. The tergites are usually separated from the pleurites by a narrow hyaline space (some specimens lack this) in segments I to VI, but are fused with them in segments VII and VIII; tergites separated medially in segments I to VI, but entire in VII and VIII, while in all segments (except VIII and IX) they are separated by a hyaline space along the posterior margin of the segment

In the outer, upper corner of tergites I to VII is a deeply pigmented and curiously shaped incrassation, especially marked on tergites II to VI, where it bears a striking resemblance to the head of a long-snouted beast, with mouth open, and nose pointing outward. The spiracles are small, and set just under the tip of the "lower jaw" of the head (not shown in figure). In segments II to VI are faintly pigmented sternites, seen between the ends of the tergites, most plainly visible in segments V and VI, and fainter anteriorly; it is not clear whether or not they are median or extend across the whole segment.

In Taschenberg's description of the abdominal tergites he says that they are broken medially only on the first four segments, continuos on the remainder. This statement refers to the male, not to the female, since in the two males which I have seen, the tergites on segments I to IV are broken medially, but almost touch each other, while in segments V to VIII they are entire. Taschenberg makes no mention of the sternites, which would probably not be visible in an uncleared mount. Segment IX in both sexes is small, in the female fused with VIII, with the line of fusion visible as a narrow hyaline streak across the segment; while in the male the fusion is more complete, the suture being invisible. In segment VIII of the female there is a sternal fringe of setae in the form of a double loop across the anterior portion of the segment (see fig.)

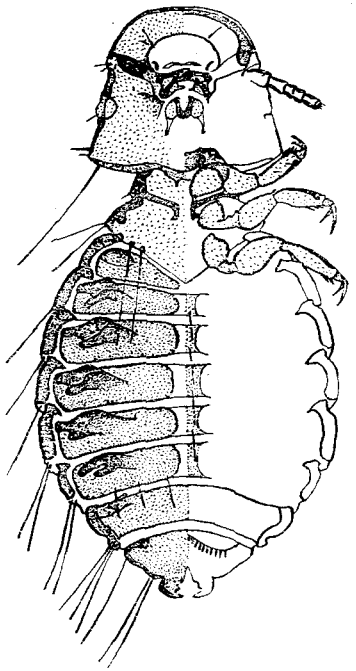


Fig. 73.—*Goniocotes guttatus* ♀

The chaetotaxy is rather sparse and simple, and is, I think, shown correctly in the figure of the female, but I am not certain about the male, since both males have lost many hairs in the process of clearing and remounting. The chaetotaxy of the female, as given, agrees with that of Taschenberg except for the three hairs on the posterior margin of tergite VI.

There is a little difference in size in the sexes, as far as I am able to judge from the two males and 1 ♀ which I have seen, from *Chamaepetes unicolor;* there is no sexual dimorphism other than of size, the difference in abdominal tergites V and VI, and in the shape, markings and chaetotaxiy of the fused segments VIII-IX.

The male genitalia, as represented in the specimens from *Chamaepetes unicolor,* agree very well with Taschenberg's meager description: "Der copulationsapparat ist Kurz; er reicht bis zum Hinterrande des fünften Segments und endet mit einer Spitze".

As may be seen from the figure, the tip of the genital armature in my males does end in what might easily be called "einer Spitze", while the anterior end of the basal plate lies exactly at the posterior margin of segment V.

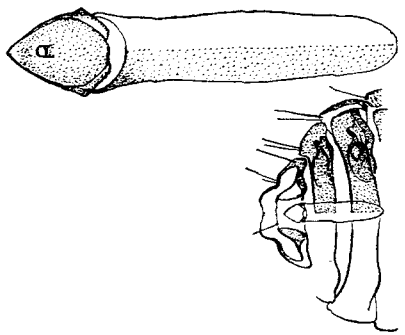


Fig. 74.—**Goniocotes guttatus**
(♂ abdomen; ♂ genitalia)
(Scale: 1 space = 2 mm.)

The genitalia are exceedingly rudimentary, in fact I have not seen any other quite like them. They consist of a short, rather slender, basal plate, poorly chitinized and without strengthening rods or margins of chitin; the tip is slightly expanded and ends in two slightly in-curving, pointed prongs, withing which lies a plate, with slight, lateral, angular projection on anterior portion, from which it tapers to a point, but with the sides flatly convex; inside, and nearly filling this plate is an ovate body which may represent the endomeral plate, while the thickened portion on each side of it, and to which it is fused, may possibly be rudimentary paramers. The seminal duct ends in a circular opening on the dorsal side of the ovate plate (see fig.), but this opening does no extend beyond the surface in the form of a tube.

The measurements of the ♀ ♀ from *Penelope montagnii plumosa* (from which the above description of the female was made) agree closely with Taschenberg's measurements of the female of *guttatus,* except for length of body and length of abdomen, and it is possible that in his specimen the abdomen was unduly extended. The head and thoracic measurements, as well as the width of the abdomen, are all very close, in fact any differences easily fall within the range of individual variation, so that taking all things into consideration, I do not hesitate to assume that my specimens from *Penelope montagnii plumosa* are inseparable from *Gc. guttatus* Tsch. Of the remainder of the specimens, the only ones which might conceivable be separated subspecifically are those from *Crax r. rubra, Crax annulata* and *Pauxi pauxi gilliardi,* the first on size (possibly other characters,—specimen in poor condition); the second on narrower pleurites and slight difference in shape of anterior margin of antennal fossae, and the last on size and slight difference in pleurites and tergites.

However, in my opinion, the material necessary for such separations is entirely inadequate, and I prefer, until additional material is available for study (especially males), to call all of my specimens, as well as the single female from *Crax r. rubra* (Meinertzhagen Coll.) merely *Goniocotes guttatus* Taschenberg.

Measurements:	Types by Taschenberg *Penelope brunnescens aequatorialis*				From *Chamaepetes unicolor*			
	male		female		male		female	
	length	width	length	width	length	width	length	width
Body	1.22		1.38		1.17		1.30	
Head frons						.326		.305
Head temples	.33	.39	.36	.41	.37	.38	.38	.39
Prothorax	.16	.33	.16	.35	.076	.228	.087	.228
Pterothorax					.195	.337	.206	.337
Abdomen	.73	.56	.86	.66	.65	.51	.70	.52
Antennae					.15	.032	.16	.03
Basal plate					.16	.04		
Paramers and Endomera					.048	.043		
C. I.	1.18		1.14		1.03		1.03	

(Females)	P. montagnii plumosa		Penelope m. montagnii		Penelope a. argyrotis		Chamaepetes goudoti ruficentris	
	length	width	length	width	length	width	length	width
Body	1.29		1.29		1.26		1.26	
Head frons		.326		.308		.314		.347
Head temples	.38	.423	.385	.447	.37	.475	.37	.434
Prothorax	.087	.24	.087	.25	.076	.24	.087	.228
Pterothorax	.206	.347	.215	.37	.185	.358	.217	.347
Abdomen	.803	.665	.78	.63	.77	.597	.76	.673
Antennae	.15	.038	.16	.036	.15	.033	.174	.032
C. I.	1.11		1.16		1.28		1.17	

(Females)	Crax annulata		Crax r. rubra		Pauxi pauxi gilliardi		maximum and minimum all females, except type			
	length	width	length	width	length	width	length	width	length	width
Body	1.28		1.41		1.20		1.20 —	1.29		
Head frons		.314		.372		.314			.308—	.347
Head temples	.38	.445	.40	.49	.369	.434	.369—	.385	.423—	.447
Prothorax	.095	.247	.098	.26	.087	.24	.076—	.095	.228—	.25
Pterothorax	.206	.37	.217	.38	.195	.358	.185—	.217	.347—	.37
Abdomen	.78	.655	.89	.74	.705	.608	.705—	.803	.597—	.673
Antennae	.174	.043	.195	.033	.15	.032	.15 —	.174	.032—	.033
C. I.	1.17		1.22		1.17			1.03 to 1.28		

Three females from Penelope m. plumosa	maximum and minimum length			width	
Body	1.29	to	1.23		
Head frons				.326 to	.31
Head temples	.38	"	.35	.423 "	.412
Prothorax	.087	"	.076	.24 "	.23
Pterothorax	.206	"	.205	.347 "	.341
Abdomen	.803	"	.78	.665 "	.64
C. I.	1.11 — 1.12 — 1.22				

LIST OF GALLINACEOUS HOSTS AND THEIR MALLOPHAGAN PARASITES TREATED IN THIS PAPER

Family *CRACIDÆ*

Crax alberti alberti Fraser:
Trichodomedea craxae new species.

Crax Globulosa Spix:
***Trichodomedea craxae* new species.**

Crax rubra rubra Linné:
Goniocotes guttatus Taschenberg.

Crax annulata Todd:
***Goniocotes guttatus* Taschenberg.**

Pauxi pauxi pauxi (Linné):
***Trichodomedea longipes* (Piaget).**

Pauxi pauxi gilliardi Wetmore and Phelps:
Goniocotes guttatus Taschenberg.

Penelope purpurascens aequatorialis Salvadori and Festa:
***Goniocotes guttatus* Taschenberg.**

Penelope purpurascens brunnescens Hellmayr and Conover:
Trichodomedea oculari oculari new species.

Penelope marail (P. L. S. Müller):
***Trichodomedea bicolor* (Rudow).**

Penelope montagnii montagnii (Bonaparte):
Trichodomedea pilosa new species.
Trichodomedea oculari glabra new subspecies.

Penelope montagnii plumosa Berlepsch and Stolzmann:
Goniocotes guttatus Taschenberg.

Penelope obscura bridgesi G. R. Gray:
***Trichodomedea oculari quadricapitis* new subspecies.**

Penelope argyrotis argyrotis (Bonaparte):
Goniocotes guttatus Taschenberg.

Penelope argyrotis albicauda Gilliard and Phelps.
***Trichodomedea stigmata* new species.**

Ortalis araucuan araucuan (Spix):
***Trichodomedea latafrons intermedia* new subspecies.**

Ortalis guttata guttata (Spix):
***Trichodomedea latafrons crassus* new subspecies.**

Ortalis guttata adspersa (Tschudi):
Trichodomedea latafrons latafrons new species.

Ortalis wagleri G. R. Gray:
***Trichodomedea latafrons grandis* new subspecies.**

Ortalis ruficrissa ruficrissa Sclater and Salvin:
Trichodomedea latafrons subsimilis new subspecies.

Ortalis ruficauda Jardine:
***Trichodomedea latafrons grandis* new subspecies.**

Ortalis canicollis canicollis (Wagler):
***Trichodomedea latafrons intermedia* new subspeceis.**

Penelopina nigra (Fraser):
***Trichodomedea diversa* (Rudow).**

Chamaepetes goudoti sanctnae-marthae Chapman.
Trichodomedea subquadrata new species.

Chamaepetes goudoti fagani Chubb:
***Trichodomedea chamaepetes* new species.**

Chamaepetes goudoti rufiventris (Tschudi):
Goniocotes guttatus Taschenberg.

Chamaepetes unicolor Salvin:
***Trichodomedea costaricensis* new species.**
***Goniocotes guttatus* Taschenberg.**

Pipile pipile pipile (Jacquin):
***Goniocotes guttatus* Taschenberg.**

Oreophasis derbianus G. R. Gray:
***Trichodomedea eximia* (Rudow).**

Family *TETRAONIDÆ*

Lagopus mutus reinhardi Brehm (1):
Goniodes lagopi groenlandicus new subspecies.

Pedioecetes phasianellus campestris Ridgway.
***Goniodes nebraskensis* new species.**

Family *PHASIANIDÆ*

Dendrortyx macroura macroura (Jardine and Selby):
***Trichodomedea dendrortyx similis* new subspecies.**

Dendrortyx leucophrys leucophrya (Gould):
***Trichodomedea dendrortyx dendrortyx* new species.**

Lophortyx californica californica (Shaw):
Colinicola docophoroides (Piaget).

Colinus virginianus virginianus (Linné):
***Colinicola numidana* (Denny).**

Colinus cristatus cristatus (Linné):
***Colinicola subtenuis similis* new subspecies.**

Colinus cristatus decoratus (Todd):
Goniodes colombianus colombianus new species.
***Colinicola subtenuis subtenuis* new species.**

(1) This is the name used by Hellmayr and Conover (American Gamebirds) for the bird of this region. Peters however uses the name L. m. rupestris (Gmelin) for the bird from the same region (West coast of Greenland, north of Lat. 66°).

Colinus cristatus leucotis (Gould):
***Goniodes colombianus latafasciatus* new subspecies.**
Colinicola opima new species.

Odontophorus gujanensis marmoratus (Gould):
***Trichodomedea setosa* subsp?**

Odontophorus gujanensis polionotus Osgood and Conover:
Trichodomedea setosa setosa new species.

Odontophorus gujanensis gujanensis (Gmelin):
***Trichodomedea setosa gujanensis* new subspecies.**
***Trichodomedea calva* new species.**

Odontophorus gujanensis simonsi Chubb:
Trichodomedea macropoda new species.
Trichodomedea longicephala **new species.**

Odontophorus capueira capueira (Spix):
***Trichodomedea guttata* new species.**

Odontophorus erythrops melanotis Salvin:
Trichodomedea elongata new species.
Trichodomedea heterura new species.

Odontophorus parambae parambae Rothschild:
***Trichodomedea setosa major* new subspecies.**

Odontophorus atrifrons atrafrons Allen:
***Trichodomedea minuta* new species.**

Odontophorus atrifrons variegatus Todd:
Trichodomedea minuta new species.

Odontophorus colombianus (Gould):
***Trichodomedea longisetosa* new species.**

Odontophorus balliviani Gould:
Trichodomedea quadrata new species.

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