REPORT ON A COLLECTION OF MALLOPHAGA,
LARGELY MEXICAN (PART II)

M. A. Carriker, Jr.

(Continued from p. 43, Vol. 39, No. 1)

Degeeriella angusta (Giebel), 1874
(Figures 43 and 44)

Nirmus angusta Giebel, Insecta Epizoa, p. 126. Host: Buteo lagopus
(Pontoppidan).

Giebel's description gives very few characters not common to many
species of the genus; however there is nothing which does not agree with
the specimens before me from Buteo lagopus sancti-johannis. Also, to
further corroborate this identity, Hopkins & Clay give the same species of
Craspedorhynchus from both Buteo l. lagopus and B. l. sancti-johannis,
so that there seems to be no valid reason for not doing the same with
Degeeriella, particularly since the two hosts are very closely related sub-
species.

The only character of value mentioned by Giebel in his description of
the species is the shape of the prothorax ("rectangular"), which agrees
with the present specimens. These have the exposed sides of the prothorax
nearly straight and the posterior angles but slightly curved. Most species
of this genus have the prothorax with noticeably convex sides. No measure-
ments are given by Giebel.

Diagnosis.—There is a slight sexual dimorphism in the shape of the
head and structure of the preantennal carina; the male has the frons
flatter and narrower than the female; the carina is slightly wider and is
unbroken medially at the frons, while in the female there is a decided
interruption (see figure); there are four setae "cauais" on each side of the
frons, more or less as in falconoides. The abdomen is very similar to that
of borealis, with no special distinguishing characters.

The male genitalia are closer to falconoides, but the shape of the en-
domera is quite different, with much smaller lateral wings and concave
posterior margin, while the penis is much shorter. The distinguishing
characters seem to be the shape of the preantennal portion of the head,
the sexual dimorphism of the head, the shape of the prothorax and the
male genitalia. The species is represented by 2 males and 2 females
from Buteo lagopus sancti-johannis, collected by R. Baker at Colorado Co.,
Texas, March 23, 1941; also by 3 females in my collection from the same
host collected by J. S. Hunter, at Lincoln, Nebraska, October 9, 1894.

2 There seems to be a strong similarity between specimens of parasites
from the different groups of raptors, those from Buteo being of one type,
with longer head and heavy preantennal carina with flattened frons and
often with strong sexual dimorphism of the head. Those from Falco are
smaller, with shorter, more rounded head, and those from the kites have a
long head, tapering to a narrow frons, these last being the most aberrant
forms of the genus that I have seen.
Measurements of Types of *D. genitalis* and Male and Female of *D. angusta* (Giebel).

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Genus *Picicola* Clay & Meinertzhagen, 1938.

Genotype: *P. praeposterus* Clay and Meinertz. Host: *Dendroctopus assemilis*. The genus was originally established for three species of Ichneumonidae parasitic on the Picidae, the genotype from India and the other two from Africa (*P. campethera* and *P. thripias*). I have not seen material of any of these three species, but have two pairs of *P. marginatus* Harrisson (= *Nirmus marginatus* Osborn) from *Dryocopus pileatus pinicus*, as well as several undescribed species from neotropical hosts. In the present collection there is a series of six specimens of the genus from *Melaneperus carolinus zebra* (Boddart) which are very closely related to *P. praeposterus*, the genotype.

Later (in the 1952 checklist) other species, not parasitic on Picidae, were placed in the genus, one of them, *Nirmus foedus* Kellogg and Chapman, 1899, is of special interest. This species, together with closely allied forms, is found on very many species of Passerine birds, both of North and South America, especially on the Tyrannidae and Furnariidae, and I am very doubtful of its congeneric relationship with *Picicola*. In typical *Picicola* the dorsal preantennal carinae encircle the whole front of the head from base of clavi, unbroken and uniform in width, heavily chitinized, and with four to six narrow “canals” across it on each side of the anterior portion, leading to marginal setae; the sternal carina also encircles the front but it is not always heavily chitinized and is somewhat wider than the dorsal carina. The inner carina, attached to the anterior mandibular condyle and the outer carina, encircles the large buccal cavity parallel to the marginal carina. There is no trace of any plate in the front of the head as in *Oxyticeurus*, *Trogonirmus*, *Epicoilinus* and *Cotingacola*.

In the *Nirmus foedus* group we have the preantennal carina heavily chitinized to the point where the sides of the head begin to curve around the frons, and here it is almost broken in some species and entirely so in others. From this point the carina widens and continues unbroken and
faintly chitinized around the frons, with 4 short, stout setae across its posterior margin. Posterior to this encircling, marginal carina the front of the head is filled by a plate extending backward to the point where the marginal carina is almost broken and where there is unquestionably a somewhat obsolete preantennal suture crossing the head. The posterior margin of this frontal plate is more or less thickened and corrugated, the whole front of the head resembling very strikingly that of the species of *Oxytaurus* found on the genus *Orectes*.

This group contains numerous, quite distinct species. Many of those from South American Tyrannidae and some Furnariidae tend to have the frons slightly pointed instead of flatly convex as in *Feodora*, but all have the same type of genitalia, abdominal structure, chaetotaxy and head structure, with the transverse suture very clear in some species, slightly obscured in others.

The abdominal tergites are continuous transversely in both sexes, quite strongly chitinized in some species, less so in others (almost colorless). The male genitalia resembles those of typical *Picicola* but differ in several details. The abdomen in the males is very small, tapering rapidly posteriorly from segment V to VIII, but IX is comparatively large, larger than in *Picicola* (see figures).

It seems logical to me that this large group of species, parasitic on entirely different families of birds, and with head structure so distinct, should merit at least subgeneric rank, and I have, accordingly, given them the name *Tyrannicolus* subgenus novum, since they are most abundant on the Tyrannidae.

*Picicola praeposterus americana*, n. subsp.

(Figures 45 and 46)

Types, male and female adults, from *Melanerpes carolinus zebrus* (Boddaert), collected by G. H. Lowery at Lawrence, Kansas, October 27, 1946 (in L. S. U. M. Z. coll.).

**Diagnosis.**—These specimens are in very poor condition for describing and figuring. They are possibly immature and were also evidently left too long in the clearing solution, so that many important details are invisible. This is very unfortunate since they constitute the second record of the genus from the New World, and the specimens are very similar to the genotype, apparently conspecific with it, differing more from *marginatula* (mentioned above) than from *praeposterus*. Unfortunately, Miss Clay gave no measurements with her description of the genotype, and only figured the head and genitalia, so that it is impossible to give full details of the differences between the two races.

The anterior portion of the head is more uniformly rounded in *americana*, with sides more divergent; the preantennal carina is wider, marginal, and uniformly, but not deeply, colored; the marginal temporal carinae are also narrow, very slightly submarginal, and pitchy black; the carinae of the thorax are also deeply colored (dark brown, almost pitchy in anterior portion of pterothoracic carinae).

Very little can be distinguished of the abdominal structure; however, the chaetotaxy seems to be the same as described by Clay for the male, excepting on segment IX, where in *americana* there are many more setae on the sides.
Miss Clay does not mention the abdominal sternites, but they are more deeply pigmented in *americana* than the tergites, which can be distinguished with difficulty, and are entire transversely but widely separated from the pleurites, and are visible only in the posterior segments of the abdomen. There is a faint outline, uncolored, of the cellulation along the inner edge of the cephalic carina, which is so conspicuous in several undescribed species in my collection and which is shown in the figure of *praeposterus*.

The genitalia are not clearly visible in the three males of *americana*, and the details of the median portion of the mesosome are impossible to delineate, so that there may be some errors in the figure here presented. The type of genitalia is the same, however, as in *praeposterus*, differing only in details, which, together with the other characters mentioned above, are sufficient to warrant subspecific rank.

There is one immature male in the series which presents a curious variation from the adults in the chaetotaxy of the entire body, all setae being almost double the length of those of the adults, even to the abundant setae on segment IX. This male must be in the preadult stage, since the genitalia are quite well developed, though they differ in some details from those of the adults.

The tip of the abdomen of the female agrees with Clay's description, being rounded and slightly bilobed; there is a small, pigmented, transverse sternite across anterior portion of IX; the sternites in VI is deeply colored and that in V somewhat less, while in 1 to 1V the sternites are not visible.

Across the posterior portion of VII may be seen a flatly curving line, which is, apparently, the posterior margin of the genital plate ("valve" of Clay) and which is sparsely set with short setae.

**Measurements of the Type of *Picicola praeposterus americana*.**

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This structure may be clearly seen in *P. marginatula*, as well as in other undescribed females of my collection. Clay says of the female of *praeposterus*: "somewhat similar to the male, with thorax and abdomen broader," but gives no further details. In the females of *americana*, and other undescribed forms, the abdominal tergites are clearly divided medially, but in the males which I have seen they are entire. The tergites in most
specimens are very faintly colored, and often quite invisible in the median portion of abdomen, so that their divided character is easily overlooked. The species is represented by the male holotype, female allotype, 1 male and 1 female adult and 2 male immature paratypes.

Subgenus *Tyrannica*, new subgenus

Type species: *Nirmus foedus* Kellogg & Chapman, 1899.

**Diagnosis.**—Most nearly related to *Pieicola* Clay and Meinertz, from which it differs in the structure of the anterior portion of the head, resembling in this respect species of *Oxytelipurus* parasitic on the genus *Ortalis*.

Differs also in the sexual dimorphism of the abdomen and antennae, the antennae of the males being longer and with larger first segment than in the females. In the genotype this character is not conspicuous, but in other undescribed species the 1st antennal segment in the male is twice as large as in the female; the abdomen of the male is slender apically and very small with segment IX large (see figure of *T. rubina*, n. sp.).

For more complete details of the differences between *Pieicola* and *Tyrannica* see remarks under *Pieicola* on previous pages.

*Pieicola* (*Tyrannica*) *foedus* (Kell. & Chap.) 1899

(Figures 47 and 48)

*Nirmus foedus* Kellogg and Chapman, Occ. Pap. California Acad. Sci., 6, p. 87, Pl. VI, fig. 7. Hosts: six hosts are given, three of them *Tyrannidae*, and the first mentioned is *Myiarchus c. cinerascens*. I have not seen specimens from *M. cinerascens* but have a series from another of Kellogg’s hosts, viz: *Tyrannus verticalis* (Sioux Co. Nebraska), and from *Sayornis phoebe*, while he gives *S. a. sagra* as one of his hosts. Since no particular host was designated by the describers I herewith designate *Tyrannus verticalis* as the type host of *Nirmus foedus*.

I also present figures of the male of this species from *Tyrannus verticalis*, together with the genitalia. Apparently these specimens are slightly immature, or were cleared too much, since the details of the abdominal structure, especially in the male, are not clearly visible. Also the abdomen of the male seems to be expanded laterally, specially in the posterior portion, being much wider than in other, closely related species of the genus (see figure of male of *P. rubina*, described below).

The species has been quite fully described under the remarks concerning the genus *Pieicola* and *Tyrannica* on previous pages.

*Pieicola* (*Tyrannica*) *rubina*, n. sp.

(Figure 49)

Types, male and female adults, from *Pyrocephalus rubinus mexicanus*


**Diagnosis.**—Male very much smaller than male of *P. t. foedus*, especially in thorax and abdomen; sides of head in preantennal portion more divergent, with from narrower and slightly pointed medially (see figure).

Abdominal segments I to III are much longer than the remainder, and
longer than in foedus, with the heads of the pleurites II to V extending far under succeeding segment; pleurites are narrow dorsally, with a narrow, submarginal, pitchy black stripe, but wider on ventral side and paler; tergites are entire and rather deeply and uniformly pigmented, at most filling the segments; sternites are also entire transversely, but widely separated from pleurites and deeply and uniformly pigmented; the genital sternite is large, covering median portion of segments VII and VIII and anterior part of IX; segment IX is longer than VIII and almost as wide, proportionately much larger than in foedus.

The legs are well developed and stout, as in foedus, with same style of marginal carinae; antennae are also similar.

The male genitalia are not clearly visible and could not be figured, but they apparently differ very little from those of foedus, excepting in size, the basal plate being slightly narrower basally, but the whole mesosome wider. A single female in my own collection from Pyrocephalus rubinus saturatus (Venezuela) seems to be inseparable from the Mexican material. The species is represented by the male holotype, female allotype, 1 male and 6 female paratypes.

**Measurements of P. (Tyrannicola) foedus and P. (T.) rubina.**

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- Body (at clavi)...
- Head (at temples)...
- Prothorax...
- Pterothorax...
- Abdomen...
- Antennae...
- Basal plate...
- Paramer...
- Mesosome...

**Genus Lunaceps** Clay & Meinertzhagen, 1939

*Genotype: Doecphorus octophilus* Kellogg & Chapman,

*Lunaceps pusillus*, n. sp. (Figures 50 and 51)


*Timmermann has recently described eleven new species of this genus, only one of which I possess (drosa), but with the exception of one host (Ereunetes muiri) all are Old World species or of genera very different from Ereunetes. I have not yet seen this paper. It is possible that the present species (pusillus) will closely resemble cabanisi Timmermann, from E. muiri. Measurements appear after the next species.*
Fig. 43a. *Degeeriella angusta* (Giebel) ♀ head, thorax, and abdominal segment I
Fig. 43b. *D. angusta* (Giebel) ♀, front of head
Fig. 44. *D. angusta* (Giebel) ♂, genitalia
Fig. 45. *Picicola praeposterus americana*, n. subsp. ♂, head, thorax, and portions of abdomen.
Fig. 46. *P. p. americana*, n. subsp. ♂, genitalia portions of abdomen
Fig. 47. *P. (Tyrannicola) foedus* (Kell. and Chap.), ♂, head, thorax, and portions of abdomen
Fig. 48. *P. (Tyrannicola) foedus* (Kell. and Chap.) ♂, genitalia
Fig. 49. *P. (Tyrannicola) rubina*, n. sp. ♂, head, thorax, and parts of abdomen; tip of ♀ abdomen
Fig. 50. *Lunaceps pusillus*, n. sp. ♂, head, thorax, and portions of abdomen
Fig. 51. *L. pusillus*, n. sp. ♂, genitalia
Fig. 52. *L. wilsoni*, n. sp. ♂, head, thorax, and portions of abdomen
Fig. 53. *L. wilsoni*, n. sp. ♂, genitalia
Diagnosis. The head, thorax, and abdomen are narrower than in actophilus, the shape of the head being more nearly as in phaopi (Denny), but the pterothorax, as well as the abdomen, is much narrower, and the marginal carinae of the head and the thorax are quite different, as is also the anterior plate of the head; there are also differences in the male genitalia.

From numenii (Denny) it differs in more slender and differently shaped thorax and abdomen, more slender legs and decidedly different male genitalia and thoracic carinae.

C. drosti Timmermann is also quite different, more closely resembling the species actophilus in the shape of its head, and in other characters.

The male genitalia of the type are partially obscured by foreign matter (at basal portion of paramera and endomera), so that a complete figure was impossible to draw. The genitalia of the single male paratype are in much worse condition. This is unfortunate, since the genitalia are very important characters for separating these closely related species. No females were taken. The species is represented only by the male holotype and 1 male paratype.

Lumaceps wilsoni, n. sp. 1
(Figures 52 and 53)

Type, male adult, from Charadrinus w. wilsoni Ord, collected by D. S. Farner near Lawrence, Kansas, May 25, 1946 (in L. S. U. M. Z. coll.).

Diagnosis.—This species seems to be closer to actophilus in shape of head and body segments. The head is, however, narrower in anterior portion, as well as more attenuated and longer in the portion anterior to the preantennal suture; it also lacks the prominent, deeply colored, narrow submarginal carina which in actophilus encircles the whole front of the head, anterior to the suture; there is a slight difference in the pattern of the preantennal carinae.

The thoracic carinae differ in shape, while the acetabular bars of the 2nd pair of coxae are entirely different, those of wilsoni being quite complicated and apparently unique (see figure). The paramera are thicker apically and less curving and lack the strongly developed nodi on inner side at base to which the endomera is attached; the apical prongs of the endomera are twice as long in wilsoni as in actophilus, and the whole endomera is slightly shorter (.076 x .038 against .087 x .04). The species is represented by a single male, the holotype.

Genus Brüelia Keler, 1936

The genotype of Brüelia is Nirmus brachythorax, 1936, Giebel, from Bombylella garrulus, and is of the same type as quite a large number of species found on the Thraupidae and Fringillidae of the Western Hemisphere, it seems to be nearest to B. angustifrons (Carriker) but has wider temples, while cedrorum (Piaget) is apparently very close to infrequens (Carriker) but has a wider frons and the sides of the preantennal portion of head are straight, not flatly convex. The species of this group are closely related and not easy to separate, but I doubt very much that exactly

1 A single male from Charadrinus wilsoni holdingi, collected on the Pacific coast of Colombia, S. A., is very close to wilsoni, as would be expected, but seems to be subspecifically distinct.
the same subspecies is found on any two host species. It seems advisable at this time, in connection with the description of new species of the genus to review some of the old species described from New World hosts and to publish new, enlarged figures of them. The species most commonly recorded from North American passerine birds is *R. vulgata* (Kell.), which the describer has listed from quite a number of hosts. This species will be considered first.

**Measurements of the Types of *L. pusillus* and *L. wilsoni***

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*Brachyurus vulgata* (Kellogg), 1896
(Figures 54 and 55)

*Nirmus vulgatus* Kellogg, Occ. Pap. California Acad. Sci. (2)6, p. 495, pl. 67, fig. 5. Eight hosts are given.

Kellogg did not designate any particular host as the type, and we cannot be certain which host furnished the specimens from which his description and figure were made and from which measurements were taken. The first host mentioned is *Carpodacus purpureus californicus*, which, accordingly may be accepted as the type host. Whether or not the material from the other hosts given by him is identical with the specimens from *Carpodacus* cannot be determined without actual examination of the material. I have not seen specimens from *Carpodacus purpureus* but have specimens from two species of finches (*Zonotrichia querula* and *Passerherbulus caudacatus*), which agree very closely with Kellogg's description and figure of *vulgatus*. One of the hosts given by Kellogg was *Zonotrichia coronata*.

There is considerable variation in head measurements of females from the same bird, for example females from *Zonotrichia querula* measure: .36 x .282; .40 x .305; and .38 x .303. Kellogg's measurements for the female head are .37 x .29. Females from *Passerherbulus* measure: body, 1.63 x .435 and 1.67 x .40; head, .37 x .29 and .39 x .303. Males of the above series are somewhat smaller than Kellogg's measurements: body, 1.31 x .36 and 1.28 x .37; head, .31 x .25 and .345 x .25, against Kellogg's 1.47 x .40 and .33 x .28, but here again we have much individual variation. It will be seen that in the above measurements a female from both *Zonotrichia* and *Passerherbulus* has exactly the same head measurements as given by Kellogg for the type
of *vulgata*, viz: .37 x .29, but males from both hosts have heads of slightly different proportions (.345 x .25 and .31 x .25 against .33 x .28).

The figures of *vulgata* here presented are specimens from *Passerherbulus caudacutus*. The genitalia of the male from *Zonotrichia querula* are exactly the same as those shown from *Passerherbulus*, except that they are slightly smaller in size, while those of *R. paraholicrybe* (Carr.) are of the same type, but have shorter, narrower paramers and smaller endomera.

*B. vulgata* may be recognized by the shape of the head and thorax and the detailed structure of these parts. The frons is narrow, with the entrance to the buccal cavity extremely small and with a rounded, hyaline protuberance (see figure). The buccal canal expands laterally to a point halfway to the buccal cavity, then abruptly narrows to same width as at frons. The buccal cavity is extremely small, being almost filled by the well developed mandibles.

Kellogg says that there is no "signature," but there is present a very minute one, rounded and pointed anteriorly, not easily distinguishable; he also gives the pterothorax as having a "flatly rounding posterior margin," which is incorrect, it being angulated medially, as in all of the species of this group here treated, excepting *paraboloecybe*, in which it is flatly convex.

The thoracic segments are small, but abdominal segment I is usually long (see figure). The shape of the head in *vulgata* is closest to that of *infrequens* (Carriker), excepting that it is considerably narrower at temples, clavi, and frons and the buccal cavity is much smaller and the canal narrower and of a different shape; there is a slight emargination of the lateral margin of the head at the anterior end of the preantennal carinae, which is quite noticable and characteristic of the species. The genital sternite is very similar in this whole group, but unfortunately the male genitalia are wanting in several species. In my specimens, which I have called *vulgata*, the abdominal tergites of the female are closer together medially than stated by Kellogg ("a rather broad, uncolored median line"), while in the male they are almost touching. Kellogg also states that there is but one seta at the posterolateral angles of the abdomen, but there are 2 setae in my specimens in segments III to VI, 3 in VII, 1 in II and none in I. There is a single seta set on posterior margin of tergites I to VI, just inside the head of the pleurites, quite small on I and increasing in length to VI.

I do not assume that the insect here described and figured is typical *vulgata*, since it has not been compared with Kellogg's type or with specimens from its supposed host (*Carpodacus purpurascens californicus*) but merely compared with Kellogg's description and figure. It certainly is conspecific, if not subspecifically the same.

*Nirmus infrequens* Carriker, Jour. New York Ent. Soc., V, 10, p. 220; pl. 20, fig. 5. Host: *Cecropis I. lapponicus*; type in coll. of M. A. C.)

**Diagnosis.**—The head is perhaps nearest in shape and structure to that of *vulgata* (as given in this paper) but differs in being wider at temples, clavi, and frons; the preantennal carinae are wider, the anterior
plate much larger and crescent-shaped; the buccal canal is much shorter and almost uniform in width; and the buccal cavity is much larger.

In vulgata the clavi are minute, pointed and colorless (as stated by Kellogg) but plainly visible, as in infrequens, although very difficult to observe in this species. The prothorax is much wider in infrequens but of same shape (sides strongly convex); the pterothorax is also much wider, with sides straight (convex in vulgata); and the thoracic carinae also differ (see figure). There is practically no difference in the abdominal sclerites, but the abdomen is somewhat wider. Measurements follow the next species.

Brüelia angustifrons (Carriker), 1902
(Figure 57)


Diagnosis.—This species has a very long, narrow head, very long in the preantennal portion. It is about the same width as in vulgata at temples but narrower at clavi, and the sides of head (anterior to clavi) are very flatly convex. The frons is about equal in width to that of infrequens, but buccal canal is wider, slightly expanded medially, and longer than in either vulgata or infrequens. The dorsal preantennal carinae are just as in vulgata, but the inner, ventral carinae differ (see figure); the anterior plate is round, as in vulgata, but longer; the thoracic segments are very similar to those of vulgata, except that the sides of the pterothorax are slightly concave instead of convex and the posterior margin is bluntly pointed medially (not flatly convex as shown in the figure here given). The abdominal sclerites are very similar to those of vulgata, excepting the genital sternite, which differs from that of both vulgata and infrequens (see figure). No males were taken, but “numerous females.” Type and paratypes are in collection of M. A. Carriker.

Measurements of Female Holotype of B. infrequens and B. angustifrons.

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<tr>
<th></th>
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<td>.33</td>
</tr>
<tr>
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<tr>
<td>Pterothorax</td>
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<td>.314</td>
</tr>
<tr>
<td>Abdomen</td>
<td>.92</td>
<td>.42</td>
</tr>
</tbody>
</table>

Brüelia parabolocybe (Carriker), 1903
(Figure 58)

Nirmus parabolocybe Carriker, Univ. Nebraska Stud. III, p. 137, pl. 2, fig. 3. Host: Tyrannus melanocholicus chloronotus, Costa Rica (type in coll. of M. A. C.)

Diagnosis.—This is a well-marked species easily distinguished from the three previous species by the shape of the head, which is very broad at
the frons, the whole frontal end being broadly rounded, with sides very slightly concave in front of the clavi. The preantennal carinae are wide, with inner margin corrugated and narrowly pitchy black, the outer portion pale brown; the marginal temporal carinae are narrow, submarginal, and pitchy; and the buccal canal is very wide, expanding posteriorly to the transverse, curving anterior plate. Prothorax wide, as in infrequens, but considerably longer; pterothorax long and narrow posteriorly, with convex sides and flatly rounded posterior margin; thoracic sternal plate narrow as in vulgata, but of almost uniform width. Abdomen rather similar in size and shape to that of infrequens, but the dorsal markings of the pleurites differ (see figure); segment VIII is wide and transverse, with IX very small; the genital plate is large, being slightly longer than in any of the three previous species, but with the shape of that of vulgata.

The genitalia of the male allotype are small, especially the parameres and the endomera, and cannot be clearly seen for drawing, the paramers being doubled back over the endomera, but they seem to be similar to those of vulgata. Measurements are given with those of following species.

*Brueliana straminea* (Denny), 1842
(Figures 59 and 60)

*Nirmus stramineus* Denny, Mon. Anop. Brit., p. 53, 139; pl. 8, fig. 9. Host: *Dendrocopus major anglicus*.

This is the first record of the taking of *Brueliana* on any New World species of Picidae, although two species, *R. superciliosa* (Nit.) and the present one, are known from European woodpeckers.

A series of 5 males, 1 female and 3 nymphs were taken on *Melanerpes carolinus zebra*, collected by G. H. Lowery near Lawrence, Kansas, on October 27, 1946, and are in the collection of the Louisiana State University Museum of Zoology.

In my own collection is a single female sent me by Col. Emerson, collected in Oklahoma, from the same host. In the L. S. U. M. Z. collection are 2 females from *Sphyrapicus varius*, collected by R. Newman at Cerro Conejo, S. L. P., Mexico, which seem to be very close to the series from *Melanerpes*, but they are in no condition for identification. I, also, have a good series of *Brueliana* from *Melanerpes formicivora flavigula* and *Chrysopilus a. atricollis*, the former close to *straminea* but the latter quite different, possibly somewhat like *superciliosa* (Nit.), considering the shape of the head.

There are very few discrepancies between Denny's description, as far as it goes, and these specimens, while the figure also agrees very well. He says: "vertex concave," but it is flatly convex in these specimens; he further says: "prothorax transverse, rotundate before and behind." The meaning of this phrase is not entirely clear to me, but at any rate the prothorax has convex sides, rounded anterior margin and transverse posterior margin. The "metathorax" is also wider than the head in my specimens and has a rounded posterior margin. Until actual comparison can be made with typical *straminea*, it seems best to identify these specimens as that species.

Referring to the species treated in this report, *B. straminea* resembles most strongly *paraboloyde* (Carr.), from which it differs in larger size and much paler coloration throughout; head wider at temples and clavi, and with temples less rounded; sides of preantennal portion of head more divergent and anterior portion less rounded; the preantennal carinae narrower but
otherwise similar; chaetotaxy of head the same; prothorax very similar, but pterothorax much wider and with sides straight instead of convex.

The abdominal sclerites are very similar to those of *parabolocybe*, but much paler in color, and the abdomen is more pointed posteriorly (see figure).

The male genitalia differ from those of all of the males treated in this paper. There is no unusual difference between the sexes, merely the usual sexual dimorphism of size and shape of apical segments of the abdomen.

**Measurements of Specimens of *Brütelia straminea* and *B. parabolocybe* (Carr.).**

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<thead>
<tr>
<th></th>
<th><em>B. straminea</em></th>
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<th><em>B. parabolocybe</em></th>
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<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
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<tr>
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<td>length</td>
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<tr>
<td>width</td>
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</tbody>
</table>

- **Body** 1.46 1.84 1.38 1.73
- **Head (at clavi)** .26 .282 .22 .25
- **Head (at temples)** .35 .314 .41 .386 .326 .27 .393 .314
- **Prothorax** .108 .185 .13 .24 .12 .185 .15 .22
- **Pterothorax** .195 .303 .205 .37 .14 .255 .185 .293
- **Abdomen** .89 .412 1.21 .50 .885 .347 1.13 .423
- **Basal Plate** .13 .07 .13 .06
- **Parameters** 0.043 .063 .026 (?)
- **Endomera** .026 .04 .02 .03

**Brütelia longifrons**, n. sp.

(Figure 61)

Type, female adult, from *Parus atricapillus longicaudatus* Harris, collected by D. S. Farner, Douglas Co., Kansas, March 29, 1947 (in L. S. U. M. Z. coll.).

Dr. Kollogg has recorded *B. vulgata* from *Parus atricapillus*, but I suspect that what he had was the species described below, which, while resembling *vulgata* in some ways, differs very much in others. Unfortunately no male of *longifrons* was taken.

**Diagnosis.** — A large species, the largest of the *vulgata* group, the female measuring 1.85 x .50. The head has a peculiar shape, the preantennal portion being very long, with flatly convex sides; the frons is of medium width and concave margin; the buccal canal narrows abruptly at posterior edge of the small, semilunar anterior plate, then gradually narrows to a very constricted opening into the long, narrow buccal cavity. No other species treated in the present report has a buccal canal approaching in shape that of the present species. The antennal sinus is V-shaped, with constricted inner end; the preantennal carinae are narrow, marginal, and pitchy black, but deeply shaded along inner side (see figure), the shading not uniform, but somewhat scalloped; the marginal temporal carinae are
Fig. 54. Brüelia vulgata (Kell.) ♀, head, thorax, and portions of abdomen
Fig. 55. B. vulgata (Kell.) ♂, genitalia
Fig. 56. B. infrequens (Carr.) ♀, head, thorax, and apical segments of abdomen
Fig. 57. B. angustifrons (Carr.) ♀, head, thorax, and apical segments of abdomen
Fig. 58. B. paraboloxybe (Carr.) ♀, head, thorax, and apical segments of abdomen
Fig. 59. B. straminea (Denny) ♀, head, thorax, and portions of abdominal segments
Fig. 60. B. straminea (Denny) ♂, genitalia
Fig. 61. B. longiferons, n. sp. ♀, head, thorax, and apical segments of abdomen
Fig. 62. B. nitzi moriona, n. subsp. ♀, entire body
Fig. 63. B. n. moriona, n. subsp. ♂, genitalia
also pitchy black, and corrugated along inner edge, with adjacent area deeply shaded; the gular plate extends beyond occipital margin.

The pterothorax has straight sides, while the sides of the flatly pointed posterior margin are also straight; the thoracic carinae are also deeply colored and the thoracic sternite of distinct shape.

The abdomen is of the usual shape and structure of the vulgata group. The pleurites are narrow and of medium coloration, with a marginal hyaline border; the color of the pleurites becomes paler anteriorly, those of I and II being almost uncolored and III slightly colored. In fact almost the entire portion of segments I and II is without color, excepting a slight patch of brown on anterior portion of tergite adjoining the pleurite. Segments IV to VIII are of normal color, as shown in figure. The tergites are rather deeply colored contiguous to the paratergals, paler in median portion, and are more deeply colored than in most of the vulgata group. The genital sternite is typical of this group. The remaining sternites are of same density of color in V and IV, paler in III, and practically invisible in II and I. The chaetotaxy is characteristic of the group. The legs are unusually small, with much thickened femora and tibiae, the latter with expanded, rounded ends with one long straight claw and the other very minute; pitchy bands cross subapical portion of tibiae and various parts of femora.

The species is represented by a single specimen, the female holotype. Measurements appear with those of following species.

*Brueelia nitzschi moriona*, n. subsp.

(Figures 62 and 63)

Types, male and female adults, from *Psilorchis morio* (Wagler), collected by M. Newman at Xilitla, S. L. P., Mexico, February 14, 1947 (in L. S. U. M. Z. coll.).

**Diagnosis.**—Very similar to *B. nitzschi* Keler from *Cyanocorax cyanomelas*. The markings of the head, thorax and abdomen are exactly the same; the length of the female is the same (1.88), but head measurements differ (.40 x .45 against .423 x .454). The male measures (body) 1.49 against 1.47 for *nitzschi*; head, .445 x .44 against .405 x .417. The head in *moriona* is narrower at the clavi, with sides of preantennal area less convex, so that the whole head presents a somewhat triangular shape, with the three angles rounded, while in *nitzschi* the head has a more squarish appearance.

All of the segments of the legs are short and stout, largely hyaline, but with pitchy markings on both femora and tibiae; the 1st and 2nd segments of the antennae are hyaline, the last three deeply colored except for a narrow band across base.

Keler gives no data at all on the male genitalia, which in *moriona* are quite large for this genus, especially the paramers (see figure). The male is much smaller than the female, with a short, rounded abdomen (.85 x .58 against 1.20 x .54) and a protruding, rounded apical segment; the shape of head and thorax is the same, but smaller; the markings of the abdomen are also quite similar, though the genital sternite is slightly different in shape.

Comparison with other related species shows the following differences: the shape of the head is similar to that of *varia* (Burm.) from
Corvus monedula, but the markings are quite different; the abdominal markings are similar, but not the same; the head is much more pointed than in multipunctata (Clay) from Nucifraga multipunctata, while markings of both head and abdomen differ. It is also quite different from both bioellata (Piaget), nigripicti (Carriker) and rotundata (Osborn), all three from species of Corvidae.

Specimens from Cyanocorax chrysops (So. Bolivia) are extremely close to nitzschi, practically inseparable without the genitalia. Specimens from C. violaceus (E. Peru), while of the same type, have sides of preantennal area quite straight and frons narrow, with sides of temples less convex. Three males from C. cyanus (Venezuela) are also very close to nitzschi. A single male from C. affinis (Colombia) has the head the same shape as moriana, but small, as in nitzschi. A pair from Xanthoura yneas seems to be a distinct species. The new form is represented by female holotype, male allotype and 3 female paratypes, also 2 other females and a nymph from the type host.

**Measurements of B. longifrons and B. nitzschi moriona.**

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<td>Male</td>
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<tr>
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<tr>
<td>Body</td>
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(To be continued)