SOME BIRD LICE OF THE GENERA ACIDOPROCTUS AND QUADRAECEPS (NEOTROPICAL MALLOPHAGA MISCELLANY NO. 3)

By M. A. Carriker, Jr.

Opportunity is here taken to restudy the Old World mallophagans species Acidoproctus rostratus (Rudow) and Quadraseps annulatus (Denny), with reference to certain species from Colombia, and to describe two new species from South America. Thanks are extended to Dr. G. H. E. Hopkins for his cooperation in supplying the Old World material. All measurements are in millimeters.

Genre ACIDOPROCTUS Piaget

ACIDOPROCTUS ROSTRATUS (Rudow)

Figure 44, a-c

Ornithobius rostratus Rmsow, Zeitschr. fur gesammte Naturw., vol. 27, p. 465, 1896. (Host: Chonlopecer | Alopeche | neogypticus = Dendrocygna viduata fide Hopkins.)

Dr. Hopkins, in a recent letter to me, says of this species: “The type being lost, somebody should erect neotypes. I dealt with this species in a previous paper (Ann. Mag. Nat. Hist., ser. 11, vol. 2, p. 195, 1908), and I regard Dendrocygna viduata as the type host, though that is anybody’s guess, because the type was a nymph and it would certainly have been impossible to say from what species of Dendrocygna it got onto the goose (skin f).”

If the type of A. rostratus was collected on a skin of Alopeche neogyticus, as Hopkins suggests, it must have certainly struggled there
when the bird was freshly killed, in company with the true host (Dendrocygna). Since vidusta is one of the two species of Dendrocygna found in the same geographical range with Alopochen aegyptiacus (and is the more widely distributed of the two) it seems logical that it is the true host. Even if Rudow's type had been taken from a zoo specimen the chances are that it came from D. vidusta, since that is the species most likely to have been present in the zoological garden with Alopochen.

Having recently collected specimens of Acidoproctus from Dendrocygna autumnalis discolor, I requested from Dr. Hopkins the loan of specimens of A. rostratus for comparison with them. He very kindly sent me a series of 5 males and 11 females collected in the Transvaal, asking me to designate a pair of neotypes to be deposited in the British Museum, to keep neoparatypes for myself, and to return the remainder to him.

A comparison of A. rostratus with my specimens from D. a. discolor from Colombia strengthens the contention of Dr. Hopkins regarding the true host of the former, since its affinities are clearly with my specimens from D. a. discolor rather than with A. taschenbergi Hopkins from Alopochen, with which it has been directly compared. In addition, A. rostratus, as Dr. Hopkins says is a "brown" form, while taschenbergi, moschatae, and kelloggi are pale-colored, with sharply defined dark markings.

The species described below from D. a. discolor is also a brownish form with dark markings not sharply defined or prominent. The same type of genitalia is found in the four species mentioned above, except that the endomera are strikingly different in all of them. The chaetotaxy of the genital plate in the females is also similar in the four species and seems to be characteristic of the genus. All four forms differ in the shape and proportions of the preantral area of the head, the frontal emargination, and to some extent in the proportions of the whole head. The general appearance of A. rostratus is very similar to that of A. hopkinsi, especially in the abdominal structure, but the whole insect is much larger. Piaget's figure of the female of A. bifasciatus (= rostratus) is very good (Les Pécidulines, 1880, atlas, pl. 17, fig. 5), and I have given a figure of the male of hopkinsi illustrating the dimorphic abdominal structure of the two species.

A very unusual character in both rostratus and hopkinsi is the sexual dimorphism in the size of the thoracic segments, those of the female being considerably smaller, while the abdomen is larger. In taschenbergi and kelloggi these segments are slightly larger in the female. Figures are also given of the preantral area and male genitalia of both kelloggi Carriker and taschenbergi Hopkins (fig. 45, a-d).

### Table 1. Measurements of Acidoproctus hopkinsi and A. rostratus

<table>
<thead>
<tr>
<th>Structure</th>
<th>hopkinsi Male</th>
<th>hopkinsi Female</th>
<th>rostratus Male</th>
<th>rostratus Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>Width</td>
<td>Length</td>
<td>Width</td>
<td>Length</td>
</tr>
<tr>
<td>Body</td>
<td>2.26</td>
<td>0.42</td>
<td>2.45</td>
<td>0.42</td>
</tr>
<tr>
<td>Head</td>
<td>0.96</td>
<td>0.065</td>
<td>0.96</td>
<td>0.64</td>
</tr>
<tr>
<td>Females</td>
<td>0.55</td>
<td>0.15</td>
<td>0.57</td>
<td>0.17</td>
</tr>
<tr>
<td>Prothorax</td>
<td>0.66</td>
<td>0.22</td>
<td>0.58</td>
<td>0.22</td>
</tr>
<tr>
<td>Metathorax</td>
<td>0.85</td>
<td>0.17</td>
<td>0.75</td>
<td>0.22</td>
</tr>
<tr>
<td>Abdominal</td>
<td>2.18</td>
<td>0.42</td>
<td>2.03</td>
<td>0.43</td>
</tr>
<tr>
<td>Antennae</td>
<td>0.37</td>
<td>0.068</td>
<td>0.38</td>
<td>0.063</td>
</tr>
<tr>
<td>Basal plate</td>
<td>0.72</td>
<td>0.198</td>
<td>0.62</td>
<td>0.17</td>
</tr>
<tr>
<td>Parameres</td>
<td>1.03</td>
<td>0.213</td>
<td>1.14</td>
<td>0.241</td>
</tr>
<tr>
<td>Endomes</td>
<td>0.98</td>
<td>0.055</td>
<td>1.04</td>
<td>0.027</td>
</tr>
</tbody>
</table>

Tergites I to V are divided medially in the male; the remainder are entire, while in the female all tergites from I to VII are divided. The sternites of both sexes are entire but do not seem to extend laterally to the parategals. There is a slight sexual dimorphism in the shape of the frontal emargination, that of the female being almost square, with anterior portion not constricted (fig. 44, d-f). The abdominal structure also differs in the sexes. Pleurites I to III are normal and equal in both sexes, but in the male the abdomen abruptly narrows with segment IV, then decreases gradually in width to VII, and with pleurites IV to VII of abnormal shape (fig. 44, g). In the female the abdomen increases in width gradually from I to III, then gradually narrows to VII. The pleurites are equal in structure from I to VII, but all have a peculiar enlargement at the inner anterior corner.
ending in a clear circle, which increases in size posteriorly. In the
male sternites IV to VII seem to be fused into a solid plate, as shown
in the figure, but in the female they are separated by narrow hyaline
bands, except VII and VIII, where the genital plate covers all of
VII and anterior half of VIII. The chaetotaxy of the genital plate
is similar in the four species I have seen, differing only in size, length,
and number of spines, but the shape of the plate itself differs, as
may be seen from the figures.

The type series of the species consists of four males and two females,
with one male and three females from other individuals of the same
host.

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**Figure 44.**--Acaruscostus

*a-c, *Acaricostus varanus (Ravid): *a*, front of head of male; *b*, male genitalia; *c*, genital plate of female.

*d-g, *A. hopkinsi*, new species: *d*, male; *e*, front of head of male; *f*, male genitalia; *g*, genital plate of female.

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**Genus Quadracris Clay and Meinertzhagen**

**Quadracris acuticeps** (Carriker)


(The type: *Podagor nacunda mlnor*, error; should be *Burhinus bistriatus* vocifer.)

The specimens of *Mallophaea* from which this species was described
were inadvertently given the number of *Podagor*, collected on the
same day. The error was not discovered until recently when specimens
of a *Quadracris* from *Burhinus superciularis* were being com-
pared with *Q. annulatus* from *Burhinus oedicnemus oedicnemus*.

Dr. Hopkins has kindly lent me a pair of *Q. annulatus* from the
type host, which has been compared with my series of related species
from *Burhinus bistriatus* vocifer and *B. superciularis*, with the result
that both series were found to differ from *annulatus* and inter se.

The species from *B. bistriatus* vocifer has already been described
under the name of *Multicola acuticeps* Carriker, and now becomes
*Quadracris acuticeps* (Carriker), while the specimens from *B. super-
ciularis* are described below.

The figures published for *Q. acuticeps* (Carriker) are correct in
all details except the clypeal area in the head of the female (loc. cit.,
p. 179), which (cf. fig. g) is too narrow, the specimen having been
slightly shrunk from excessive clearing. However, the enlarged
figure of the clypeal area of the male (loc. cit., p. 181) is correct,
although in many specimens the clypeal signature extends farther
beyond the frons than is shown in the figure, and the hyaline border
is wider. *Q. acuticeps* is very close to *annulatus* in size. The only
appreciable differences are: *Q. acuticeps* has the prothorax larger
(male 0.29 by 0.29 against 0.14 by 0.06) in both sexes; the head of the
female of *acuticeps* is longer, wider at temples but considerably
narrower at frons. The clypeal signature seems to differ, but this cannot
be determined with accuracy. The structure of the abdominal sclerites
in both sexes is practically the same as in *annulatus*, the sexes being
somewhat dimorphic in this respect. The pleurites are narrow, with
deeply retracting heads, the same in both sexes; in the male, tergites
I and II are separated medially, but cover the whole segment, in III
to V they are entire, and in VI to VIII are separated medially, and
with the inner portion much narrowed.

In the female, tergite I is separated medially, while II to V are
deply inlined medially on anterior margin and the remainder are
entire and cover the whole segment. The sternites in the male are
widely separated from the pleurites, while in the female they seem to
be fused with them.

The male genitalia seem to differ considerably from those of *an-
nullatus* (fig. 45, a) in the shape and structure of the parameres, al-
though the endomera and penis are almost identical. The figure given of the genitalia of *annulatus* may not be entirely accurate as to shape of parameres, since they were not clearly visible in the only male available for examination. The basal plate also differs in shape, that of *acuticeps* being slightly narrower in anterior portion, while the reverse is true of *annulatus*. Summarizing briefly the differences between *acuticeps* and *annulatus*, we have a larger prothorax in the former, a decided difference in shape of head in females, but not in the males, and lastly the male genitalia. *Q. acuticeps* should probably be reduced to a subspecies of *annulatus*.

**Table 2.—Measurements of Quadracaps annulatus and Q. acuticeps**

<table>
<thead>
<tr>
<th>Structure</th>
<th>annulatus</th>
<th>acuticeps</th>
<th>Length</th>
<th>Width</th>
<th>Length</th>
<th>Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>1.76</td>
<td>2.94</td>
<td>1.76</td>
<td>2.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head</td>
<td>1.34</td>
<td>1.92</td>
<td>1.66</td>
<td>2.40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pterothorax</td>
<td>0.84</td>
<td>1.19</td>
<td>0.87</td>
<td>1.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abdomen</td>
<td>0.35</td>
<td>0.44</td>
<td>0.35</td>
<td>0.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Penes</td>
<td>0.13</td>
<td>0.19</td>
<td>0.13</td>
<td>0.19</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**QUADRACAPS BURHINOIDES, new species**

**Figure:** 43, c, f

**Types.**—Male and female adults, from *Burhinus supercilialis*, collected by the author at Paramonga, Peru, February 16, 1932; in collection of author.

**Diagnosis.**—This species is larger than either *annulatus* or *acuticeps* and has the head of a somewhat different shape, as shown in the figure. The male genitalia resemble closely those of *acuticeps* in general shape, with the difference in size very small. In the female, abdominal tergite V is deeply incised medially, while in *acuticeps* and *annulatus* it is entire; in the male there is a slight median incision on tergite III, with I and II divided medially as in *acuticeps*. The genitalia differ from those of *acuticeps* in minor details. The basal plate is narrower basally, with sides incurved, while the lateral chitinous margins are differently shaped; the base of the parameres is rounded, not angulated as in *acuticeps*, and their shape is somewhat different along inner edge. The endomera also differ slightly in detail.

**Figure 45.—Acidopactus and Quadracaps**

a-b, *Acidopactus taschenbergi* Hopkins: a, Front of head of male; b, male genitalia. c-d, *dolgoi* Carriker: c, Front of head of male; d, male genitalia. e-f, *Quadracaps burhinioides*, new species: e, Head of female; f, male genitalia. g-h, *Q. annulatus* (Denny): g, Head of female; h, male genitalia.
The following is a list of mallophagan types described by the author prior to 1936, with proper allocation of their genera and corrections for their hosts:

**Dorocophorus cephalonus (=Ranwaduasia)**. Host: *Céloptera cafer carolis*. A straggler from some shorebird.

*Nemara tronconis var. magnaepolitana (=Rhyomomus magnaepolitana)*. Host: *Cepella diecota.*

*Nemara bicoxallata var. nigropicta (=Brulicia nigropicta)*. Host: *Pica pien kadonina.*

*Nemara lepelele (=Brulicia)*. Host: *Calclusus lepaeus lepaeus.*

*Nemara amputa (=Brulicia)*. Host: *Chondrostoma grammus grammus.*

*Nemara trimarginata (=Pemeliana)*. Host: *Cerius familiaris montana.*

Either a synonym or subspecies of *Pentacrinus palaeus*. 

*Colacophorus quadrimaculatus (=Myrisslea)*. Host: *Lophia curvirostra minor.*

*Physetosoma pictura (=Ricinus)*. Host: *Vermiforme calva calva.*

*Nitschia picturata var. nigrohirsuta (=Denysus)*. Host: *Aeronautes avallutus saxatilis.* This species was renamed (Journ. New York Ent. Soc., 1903, p. 36). *Nitschia branci* for no valid reason, so *N. branci* (1903) becomes a pure synonym of *N. picturata* (1903).

*Kasimutella helgosa (=Acidocephalus)*. Host: *Aspidea calvisublot.*

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*Dorocophorus plesiotoma undubus (=Craspedopychus undubus)*. Host: *Leucopentia scelipilata.*

*Dorocophorus transversorum (=Craspedopychus)*. Host: *Microstoma gaierillei.*

*Dorocophorus bramin (=Philoperus)*. Host: *Monaca convolv.*

*Dorocophorus unducus (=Philoperus)*. Host: *Paliokhina scelipilata angulopolla.*

*Dorocophorus cancellatus (=Australopiliprurus)*. Host: *Ramphastus scelipilata.*

**Genotype.**

*Nemara fucida epistatus (=Degerfilliana epistatus)*. Host: *Cepitalus bicolor.*

*Nemara hoffia (=Brulicia)*. Host: *Ramphastus scelipilata.*

*Nemara quadrimaculatus (=Brulicia)*. Host: *Trunusus melanochilicus crassorus.*

*Nemara tronconis (=Bianzirra)*. Host: *Arrenius bucer.*

*Nemara melanochrocos (=Brulicia)*. Host: *Pteropus bicenturis gregamorina.*

*Type host in remounting, 1949.*

*Nemara pseudophacca (=Degerfilliana)*. Host: *Pteropus epistatus, and a straggler from some hawk. The only hawk taken on the Vol Istraz was *Pteropus rufus* (wrongly identified as *B. rufus* coriaceus), from which specimens of *Degerfilliana carolinensis* were collected. *N. pseudophacca* is not at all the same species as was identified as *carolinensis,* and so the locality for the host is undoubtedly wrong. Its true host will probably not be determined.*

*Nemara brachysicurus pilipurus (=Brulicia pilipurus)*. Host: *Pilipurus candidatus.*

*Nemara costiformis (=Trigonura)*. Host: *Chrysoropon colpilatus, colpilatus.*

**Genotype.**

*Nemara colpilata (=Pemeliana)*. Host: *Turris graysi caucas.*

**SOME NEOTROPICAL BIRD LICE—CARRIERS.**

*Lipurus longipes tinamu (=Pseudolipurus tinamu)*. Host: *Tinamus major castaneiceps.*

*Lipurus postmarginatus (=Dipalipurus)*. Host: *Oriolus garrulus fraxinell.*

*Goniodes cerynean (=Philoperus)*. Host: *Oxystephanus guatayus.*

*Oxyschulaxoides (=Oxyschulaxoides)*. Host: *Tinamus major castaneiceps.*

*Kallograptis capensis (=Kallograptis)*. Host: *Tinamus major castaneiceps.*

*Goniodes minutus (=Oxytethamopterus minutus)*. Host: *Tinamus major castaneiceps.*

*Goniodes abrum (=Pteropilos)*. Host: *Tinamus major castaneiceps.*

*Laemobothrius delagrangei (=Laemobothrius)*. Host: *Sarcothrips papu.*

*Laemobothrius allopathic (=Laemobothrius)*. Host: *Buteo borasius castaneiceps.*

*Secundica (=Oxyschulaxoides)*. Host: *Buteo erithacus castaneiceps.*

*Physetosoma quaternum (=Ricinus)*. Host: *Amezilia fuscifrons scutellaris.* This type is from Amezilia, while the specimens from *Sclæphas rhamnus* are not quite the same.

*Physetosoma vestigial (=Oxytethamopterus)*. Host: *Sclæphas rhamnus.*

*Physetosoma leptospornum (=Ricinus)*. Host: *Myiobates eugenesia.*

*Laemobothrius delagrangei (=Laemobothrius)*. Host: *Sarcothrips papu.*

*Laemobothrius allopathic (=Laemobothrius)*. Host: *Buteo borasius castaneiceps.*

*Secundica (=Oxyschulaxoides)*. Host: *Buteo erithacus castaneiceps.*

*Physetosoma vestigial (=Oxytethamopterus)*. Host: *Sclæphas rhamnus.*

*Laemobothrius delagrangei (=Laemobothrius)*. Host: *Sarcothrips papu.*

*Laemobothrius allopathic (=Laemobothrius)*. Host: *Buteo borasius castaneiceps.*

*Secundica (=Oxyschulaxoides)*. Host: *Buteo erithacus castaneiceps.*

*Physetosoma vestigial (=Oxytethamopterus)*. Host: *Sclæphas rhamnus.*
Menopon thoraciicum var. fuscum (=Myrsidea fusa). Host: Rhamphococcus paserinae passerini.
Menopon difficile (=Menoncostus ?). Host: Atlipes brunne-nucha brunne-nucha. This species has very long peculiar head spines and an unusually heavy gular plate which extends beyond the occipital margin. Specimens must be cleared for further study. This may represent a new genus.
Menopon palliaria (=Myrsidea). Host: Stylidiogynus rubicollis fulvicollis.
Menopon leucocerus (=Hochkirchius). Host: Thamnophorus dolius intermedius.

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Colpocephalus spirulatum obscurum (=Actornithophilus). Host: Arenaria interpres marina. Type in the Museum of the University of Michigan.
Colpocephalus ovarius. Host: Arenaria interpres marina. Type in the Museum of the University of Michigan.
Colpocephalus subcapitulatum (=Actornithophilus). Host: Ceryle aleo. Type in the Museum of the University of Michigan.

Menopon hispa. Host: Dendrocopus piceus medius. Genus uncertain, but not a Menopon, since it has comb of spines on hind femora and abdominal sternites. I have the same genus from several South American hosts, including a woodpecker. Type in the Museum of the University of Michigan.

Nitzaehia laticlaria. Host: Riparia riparia riparia. This is possibly a Myrsidea, but without a reexamination of the type it is not possible to be certain. Type in the Museum of the University of Michigan.