

A NEW SPECIES OF STRIGIPHILUS (Phlopteridae : Mallophaga)

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Abstract: A new species of *Strigiphilus* Mjöberg from *Phodilus badius* is described and its possible affinities and those of the host are discussed. A key to the species groups in *Strigiphilus* is given, together with their distribution on the Strigiformes.

Phodilus badius (Horsefield) is placed by Peters (1940: 85) with *Tyto* in the family Tytonidae. As *Tyto* is parasitized by such a distinctive species group of *Strigiphilus* (Clay, 1966), a comparison of this with the species on *Phodilus* should be of interest. This has been made possible through the work of Professor J. T. Marshall, Mr Ben King, and Dr H. E. McClure, who have collected specimens from *Phodilus*. These prove to belong to a new species which I have much pleasure in naming after Professor Marshall. I am greatly indebted to Dr K. C. Emerson for the loan of material and for records of distribution of *Strigiphilus* species from SE Asia.

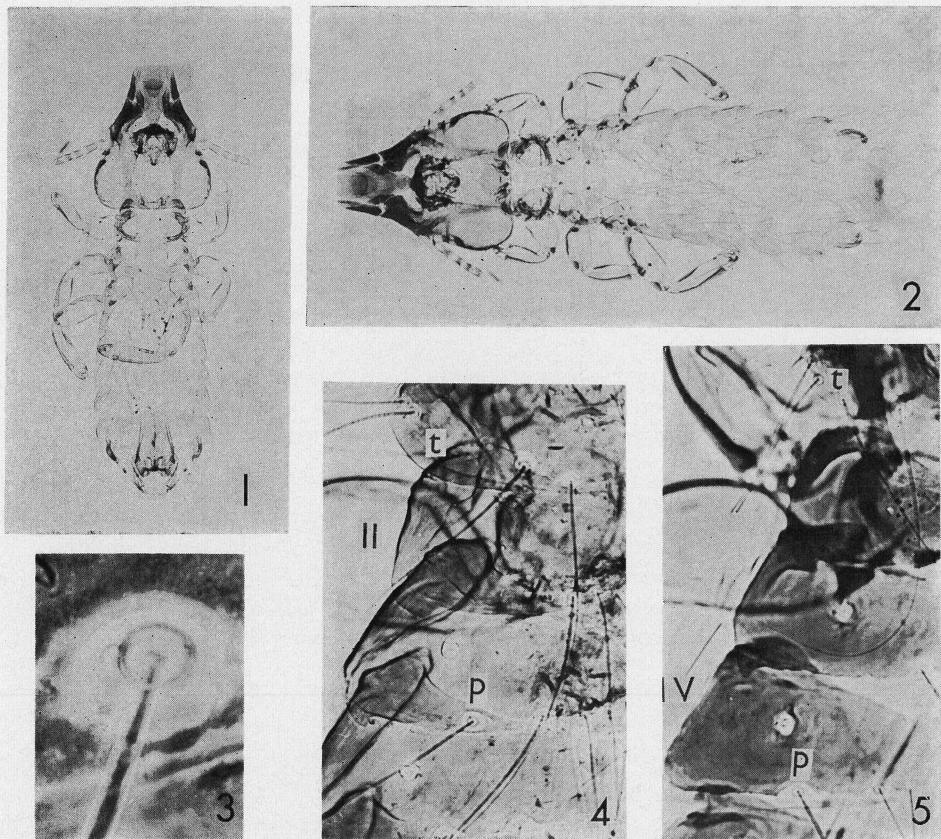
Strigiphilus marshalli Clay, n. sp. Figs. 1-2, 6-12, 18, 20.

Type host: *Phodilus badius badius* (Horsefield)

This species is distinguished from all other known species of *Strigiphilus* by the combination of the shape of the head, dorsal anterior plate and the male genitalia. It is easily distinguished from the *S. rostratus* group from *Tyto*, to which it has a superficial resemblance, by the backward prolongation of the anterior plate; other differences between this new species and those parasitic on *Tyto* are given below. The male genitalia resemble most closely those of *S. heterogenitalis*.

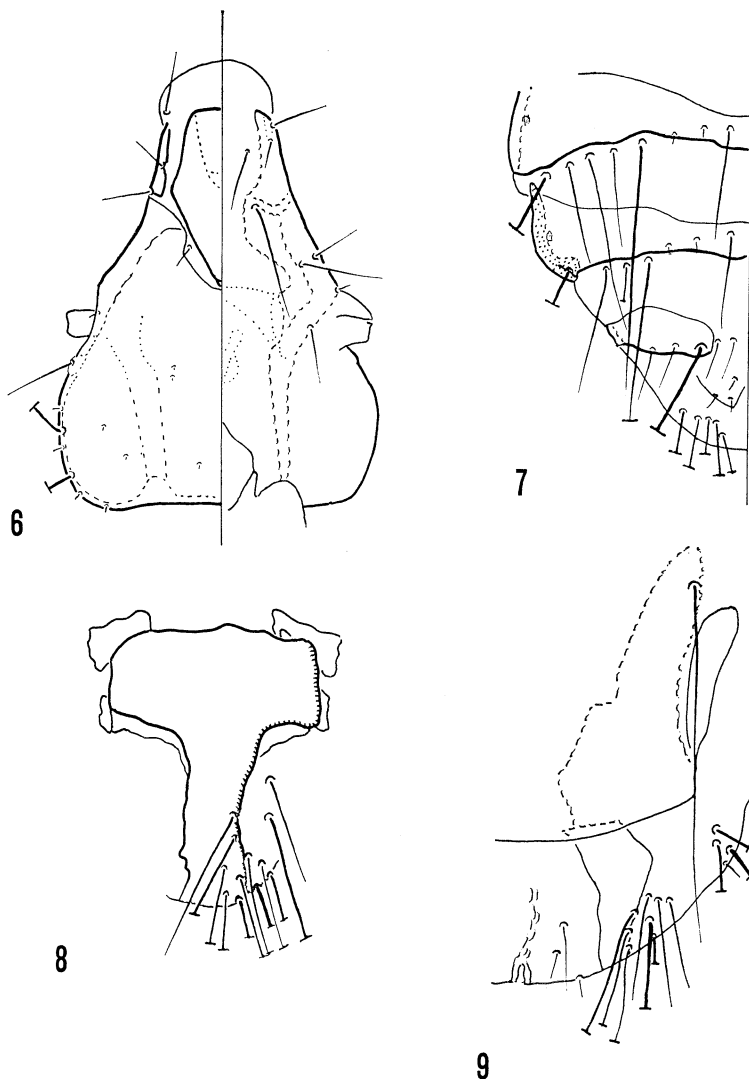
♂ and ♀. Setae of preantennal region as in fig. 6; ocular seta long; 1st and 3rd temporal setae short and spine-like, 2nd and 4th long (in some specimens there may be 2 short spine-like setae between the ocular seta and the 1st long temporal seta). Central setae of pterontal margin in 6♂♂, and 5♀♀: 4+4. Central mesosternal setae: ♂, 2-4; ♀, 3-4; central metasternal setae; ♂, 3-5; ♀, 4-6. Tergites VII-VIII of ♂ (apparent 6th and 7th) continuous across abdomen (fig. 7); in ♀ only fused IX-X are continuous. Abdomen without complicated patterns of internal pleural and tergal thickening; postero-lateral corners of tergites II-V prolonged posteriorly; pleurite VIII more highly pigmented than those of other segments. Sterna II-VI each with a small indistinct sclerite on each side; sternites of posterior segments as in figs. 8 & 9. Genitalia of ♂ as in fig. 18 and figs. 10-12.

Abdominal Chaetotaxy: 1st post-spiracular setae on tergum IV (as in fig. 5). Tergum II (apparent 1st) with 1+1 long anterior setae. Terga II-V of ♂ each with an irregular



Figs. 1-5. 1, *Strigiphilus marshalli* n. sp. male; 2, *Strigiphilus marshalli* n. sp. female; 3, *strigiphilus cursor* (Burm.). Post-spiracular seta and sensillus; 4, *Strigiphilus cursor* (Burm.). Anterior abdominal tergites (II-IV) t. pterothorax; p. 1st post-spiracular seta; 5, *Strigiphilus ceblebrachys* (Denny). Anterior abdominal tergites.

row of long stout setae, VI-VIII with 2 long central setae with 1, 2 or more short setae between these long setae and the rest of the row of long setae on each side; IX with a long stout seta with usually 2 short, fine setae on each side of it (fig. 7). Range of ♂ tergoventral setae (the number of segments on which these are countable in the available material varies): II, 8-12; III, 8-11; IV, 7-10; V, 11-12; VI, 11-14; VII, 13-16; VIII, 11-13; IX, 10; terminal, 9-10. Tergoventral setae in ♀ usually long stout and of approximately the same size. Range: II, 8-12; III, 11-12; IV, 10-13; V, 9-12; VI, 9-11; VII, 5-9; VIII, 4-8; IX, 2-3. Sternal setae long and stout; in ♂: II, 8; III, 11-13; IV, 10-15; V, 11-14; VI, 9-14; VII, 2; terminal segments, 20-24. In ♀: II, 8-14; III, 15-17; IV, 15-18; V, 15-20; VI, 13-18; VII, 2; VIII, 2-3; terminal segments as in fig. 9. Pleural setae in ♂ II, 0+0; III, 1+1; IV, 1+1; V, usually 2+2, occasionally 3 on one side; VI, 3+3; VII, 3+3; VIII, usually 2+2 occasionally 3 on one side; IX, 3+3 or 3+2. ♀: II-IV as in ♂; V, 3+3 or 3+2, 1 specimen with 3+1; VI, 4+4, 1 specimen with 3+4 and 1 with 4+1; VII, 4+4 or 4+3; VIII, 3+3 or 3+2; IX, 3+3 or 4+4. Single pleural seta on each side of III and IV usually short and spine-like but occasionally

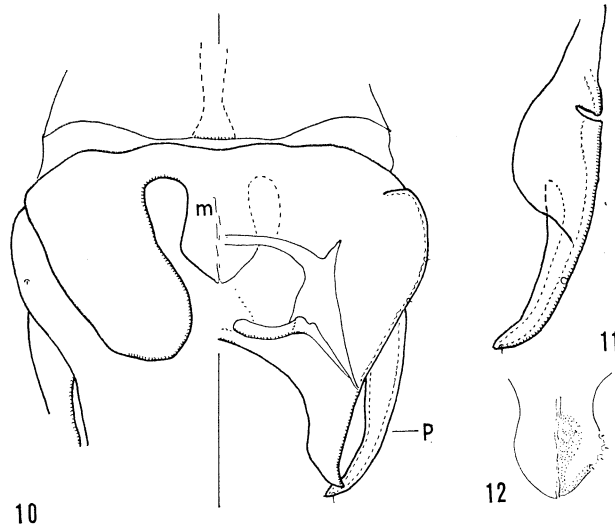


Figs. 6-9. *Strigiphilus marshalli* n. sp.: 6, male head, dorsal and ventral; 7, male posterior abdominal segments, dorsal; 8, male, subgenital plate; 9, female posterior abdominal segments, ventral.

thinner and longer; VIII, in addition to the 2 setae on each side in ♂ and 3 in the ♀, with usual bothriotrichium found on this segment. 3 pleural setae in ♂ found on each side of IX comprise 2 long and 1 shorter and finer.

MATERIAL EXAMINED: 6♂♂, 5♀♀ from *Phodilus b. badius*. MALAYA: 2♂♂, Subang, 17. VIII.1962, H. E. McClure. THAILAND: 1♂, 2♀♀, Khooluang, 6.VI.1965, J. T. Marshall; 3♂♂, 3♀♀, Nakonsitbumarat, 12.V.1956, B. King.

Holotype ♂ (USNM), collected by Professor J. T. Marshall, Khooluang, Nahornsri Ta-



Figs. 10-12. *Strigiphilus marshalli* n. sp., male genitalia: 10, distal region. p. paramere; 11, paramere; 12, details of region m. in fig. 10.

marat, Thailand, 6.VI.1965.

MEASUREMENTS (mm.)

	Male		Female	
	Length	Breadth	Length	Breadth
Head	0.60	0.43	0.71	0.52
Prothorax		0.28		0.33
Pterothorax		0.38		0.45
Abdomen	0.78	0.43	1.14	0.54
Total	1.67		2.20	

HEAD

	♂ (6)		♀ (5)	
	Range	Mean	Range	Mean
Head breadth	0.43-0.47	0.447	0.49-0.52	0.514
Head length	0.60-0.64	0.614	0.68-0.73	0.709

S. marshalli resembles the species of the *rostratus* group parasitic on *Tyto*, at least in the characters of the preantennal region. In these species this part of the head is narrow and elongate (figs. 1-2 & Clay 1966); the dorsal anterior plate in *marshalli* has the distal point slightly modified, but otherwise resembles that of the *rostratus* group in appearing to be an undifferentiated area of the preantennal region marked off by a suture (figs. 19 & 20). In all other species of *Strigiphilus* examined, this plate shows greater distal modification: in *S. heterogenitalis* (fig. 22) and *macrogenitalis* it has an elongated thickened point with a central gutter; in others the thickened point arises from the broadest part of the plate, not strongly differentiated in *S. ketupae* (fig. 21), but more so in species such as *S. cursitans* (fig. 23). Apart from the backward prolongation of the anterior plate which is slightly modified distally, *marshalli* also differs from the *rostratus* group in having no

post-spiracular seta on tergum III and in having a seta on pleurite III; the male genitalia are quite distinct and resemble closely those of *heterogenitalis*.

While comparing the new species from *Phodilus* it was found that the species of *Strigiphilus* could be separated into a number of groups based on chaetotaxy, form of the male tergites and genitalia. It can be seen from the key on p. 840 that *marshalli* agrees with the *macrogenitalis* group in the absence of a postspiracular seta on tergum III, the presence of a seta on pleurite III, the chaetotaxy of terga VII-VIII, in having some of the posterior tergites continuous across the male abdomen and in the characters of the male genitalia. The species of the *macrogenitalis* group have been taken from some of the S. E. Asian species of *Otus*, one of the S. E. Asian species of *Glaucidium*, *Uroglaux* from New Guinea and at least one species of owl in Africa, probably *Ciccaba woodfordi*, but perhaps also *Scotopelia peli*. It is not possible to assess the phylogenetic importance of the characters common to the *macrogenitalis* group, but it would seem probable that they do reflect phyletic relationships, and thus one possible explanation of the distribution of these species would be a relationship between their hosts. However, the fact that the present ranges of all the hosts of the *macrogenitalis* group, with the exception of the *Ciccaba* and *Scotopelia*, overlap would have made secondary infestation possible, not only of the parasites of *Phodilus*, but also of those of some of the other hosts. If, therefore, *Phodilus* is correctly placed in the Tytonidae, then it must be assumed that the *Strigiphilus* species on *Phodilus*, resembling in many characters *heterogenitalis* from *Otus*, is due to secondary infestation. The characters of the head and anterior plate of such a species secondarily established on *Phodilus*, might have become modified in response to a similarity of feather structure between *Tyto* and *Phodilus*, thus giving the superficial resemblance between *marshalli* and the *rostratus* group. Alternatively, if the rather unlikely assumption is made that the characters of the head are of greater phyletic importance than those of the rest of the body, then the similarities of the head of *marshalli* and *rostratus* could mean: 1), The lice and their hosts had a recent common ancestor. 2), The species parasitic on *Phodilus* could be intermediate between those on *Tyto* with the simple perhaps primitive anterior plate, and those from the Strigidae in which the anterior plate shows greater modification, and that *marshalli* was near the ancestral form which gave rise to *heterogenitalis*; from this could be deduced an intermediate position for *Phodilus* between *Tyto* and the Strigidae. The anterior plate and shape of the head might, of course, be an adaptation to some feature of the plumage common to *Tyto* and *Phodilus* which did not denote relationship of the hosts. It is obvious from this discussion that the characters of the species of *Strigiphilus* parasitic on *Phodilus* give no real indication of the phylogenetic position of its host.

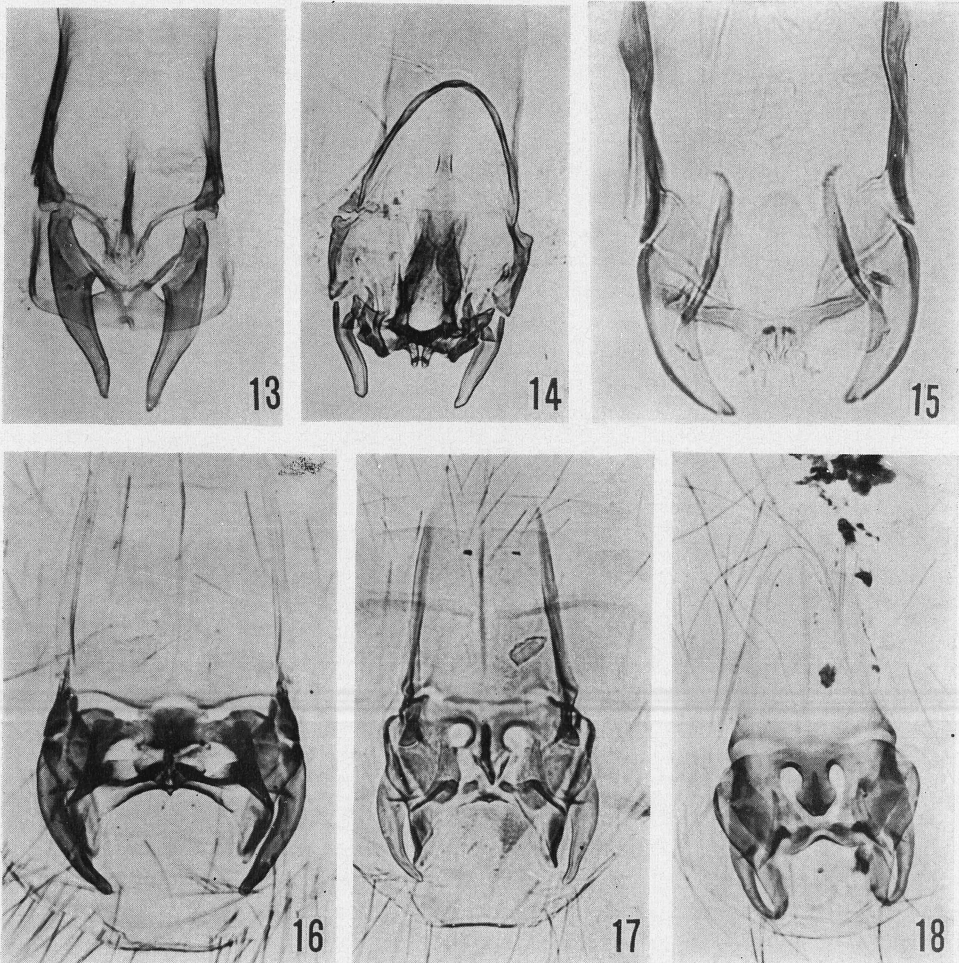
It may be interesting to see how far the distribution of the species of *Strigiphilus* follows the generally accepted arrangement of their hosts. Table II shows the owl species from which *Strigiphilus* is known and the species groups to which the parasites belong. It is possible that *crenulatus* should be included in the *cursitans* group, and that this latter group does not form a phyletic assemblage. It will be seen that species of the *cursitans* group occur on 12 of the 18 genera; on species of six of these genera, one or more additional species of *Strigiphilus* are found. It would seem that the presence or absence of a species of the *cursitans* group is not necessarily significant in considering host-parasite relations. What appears to be established populations of *cursor* have been taken from *Tyto* in the Lebanon (by Dr Robert E. Lewis) and N. America. The other species suggest distinct positions for *Tyto*, *Bubo*, *Ketupa*, *Strix* and *Asio*. The rather strange distribution of the

macrogenitalis group has been discussed above.

Apart from the possibility of contamination during collecting, the distribution of some of these species appear to be geographical and may be due to secondary infestations (Clay 1946). When more material is available from both the known hosts and from a wider range of hosts and regions, it may be possible to obtain a more satisfactory picture of the host-parasite relationships within the Strigiformes.

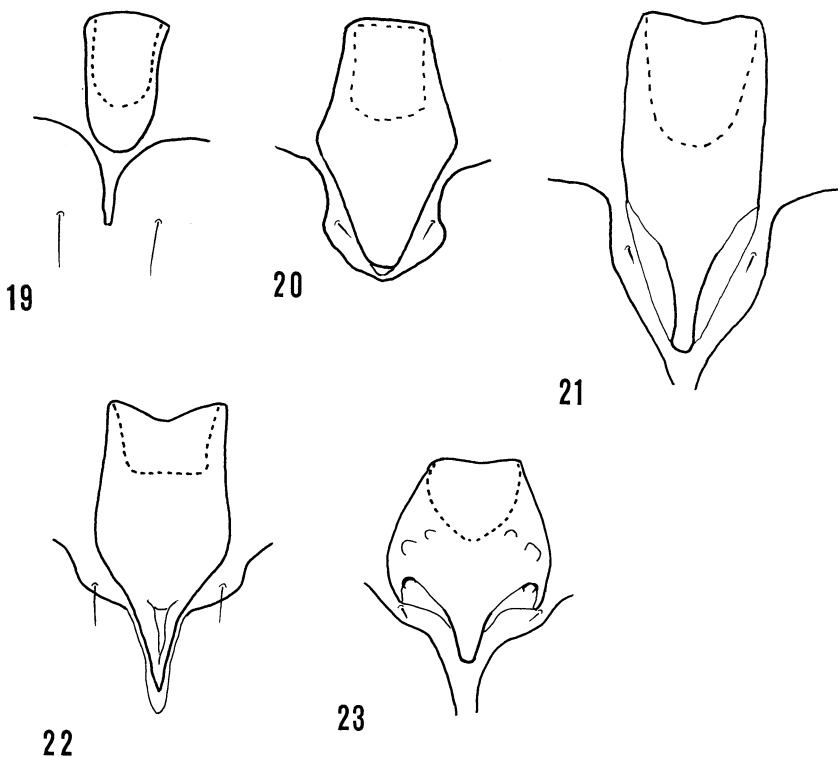
KEY TO SPECIES GROUPS OF STRIGIPHILUS

1. Post-spiracular seta (usually with apparent sensillus) on tergum III (figs. 3, 4)...2
- No post-spiracular seta on tergum III (fig. 5)..... 5
- 2 (1). No seta on pleurite III; dorsal anterior plate without posterior projection and



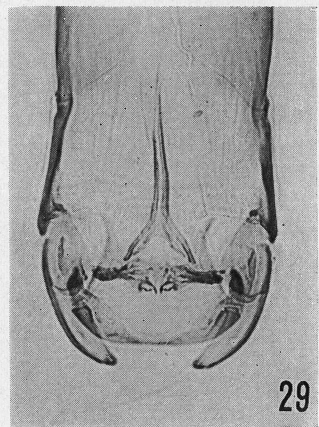
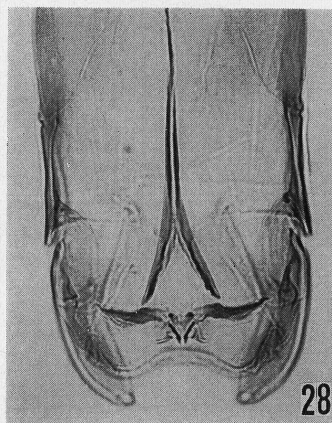
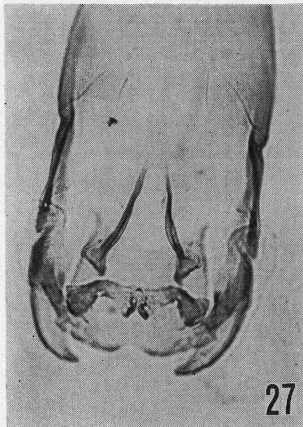
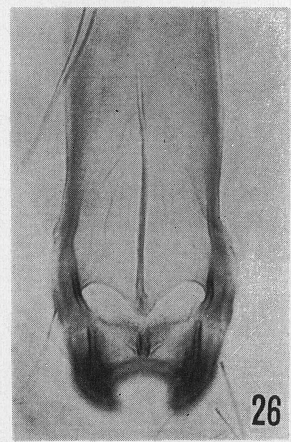
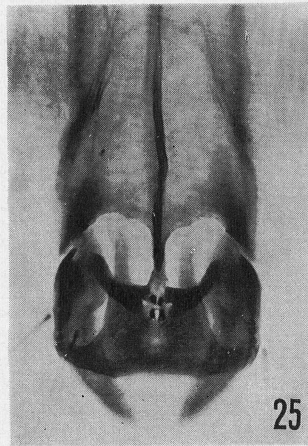
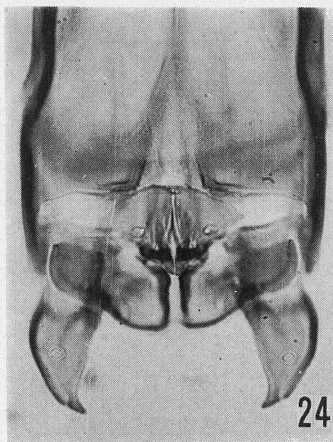
Figs. 13-18. Male genitalia: 13, *Strigiphilus rostratus* (Burm.); 14, *Strigiphilus heterocerus* (Grube); 15, *Strigiphilus cursor* (Burm.); 16, *Strigiphilus macrogenitalis* Emerson & Elbel; 17, *Strigiphilus heterogenitalis* Emerson & Elbel; 18, *Strigiphilus marshalli* n. sp.

- anterior dorsal setae well removed from dorsal suture (fig. 19); genitalia characteristic (fig. 13).....**rostratus** group
- 3 (2). Seta on pleurite III; dorsal anterior plate and setae and genitalia not as above...3
 ♂ tergites VII-VIII fragmented into 2-3 thickened areas on each side, and IX into central and lateral each side; ♀ last sternite with narrow angulated proximal strip (fig. 30); lateral pterothoracic setae X, 3-4 (fig. 31); ♂ genitalia characteristic (fig. 14)..... **heterocerus** group
- Without above combination of characters..... 4
- 4 (3). ♂ genitalia without thickened central prolongation of basal apodeme (fig. 15); ♀ tergite IX without narrow horizontal more strongly pigmented strip; usually only tergites II-III with posterolateral projections (fig. 4) **cursor**
- ♂ genitalia with distally forked central prolongation of basal apodeme (fig. 29); ♀ tergite IX with narrow horizontal more strongly pigmented strip; tergites II-IV with posterolateral projections..... **crenulatus**
- 5 (1). ♂ tergite VII continuous across segment and tergites VII-VIII with some smaller setae near center (fig. 7); basal apodeme separated from mesosome by suture and without central prolongation, "endomers" reaching to or near end of parameres (figs. 16-18). Dorsal anterior plate either with slight



Figs. 19-23. *Strigiphilus* spp. Dorsal anterior plate and suture: 19, *S. rostratus* (Burm.); 20, *S. marshalli* n. sp.; 21, *S. ketupae* Emerson & Elbel; 22, *S. heterogenitalis* Emerson & Elbel; 23, *S. cursitans* (Nitzsch)

- distal modification (fig. 20) and C.I. under 0.80, or with strongly thickened elongate point with central gutter (fig. 22) (**macrogenitalis** group) 6
 Without above combination of characters 8
 6 (5). Head not elongate, C. I. over 0.82; dorsal anterior plate with thickened elongate point with central gutter (fig. 22) 7
 Head elongate, C. I. under 0.80; dorsal anterior plate not as above (fig. 20) **marshalli**
 7 (6). 1st antennal segment enlarged in ♂ **macrogenitalis**
 1st antennal segment not enlarged in ♂ **heterogenitalis**
 8 (5). ♂♂ 9
 ♀♀ 12
 9 (8). Basal apodeme with central forked prolongation not fused to penis (fig. 27) **cursitans** group



Figs. 24-29. Male genitalia: 24, *Strigiphilus strigis* (Pontoppidan); 25, *Strigiphilus ketupae* Emerson & Elbel; 26, *Strigiphilus siamensis* Emerson & Elbel; 27, *Strigiphilus cursitans* (Nitzsch); 28, *Strigiphilus ceblebrachys* (Denny); 29, *Strigiphilus crenulatus* (Giebel).

- Basal apodeme without central forked prolongation..... 10
 10 (9). Basal apodeme without central prolongation, posterior margin indented (fig. 24)..... **strigis**
 Basal apodeme with central prolongation 11
 11 (10). Central prolongation of basal apodeme fused to penis (fig. 25)..... **ketupae**
 Central prolongation of basal plate not fused to penis (fig. 26) **siamensis**
 12 (8). Anterior plate elongate and without strongly thickened posterior point (fig. 21) **ketupae**
 Anterior plate not as above (fig. 23)..... 13
 13 (12). Ocular seta short and spine-like..... **siamensis**
 Ocular seta long 14
 14 (13). Sclerite associated with opening of spermathecal tube as in fig. 32 **strigis**
 Spermathecal sclerite not as above..... **cursitans** group

Table I. Species Groups in *Strigiphilus*

1. The <i>rostratus</i> Group	
<i>S. rostratus</i> (Burmeister 1838)	<i>Tyto alba</i>
+ <i>S. aitkeni</i> (Clay 1966)	<i>Tyto alba</i>
2. The <i>heterocerus</i> Group	
<i>S. heterocerus</i> (Grube 1851)	<i>Strix uralensis</i>
<i>S. laticephalus</i> (Uchida 1949)	<i>Strix aluco</i> & <i>S. uralensis</i>
<i>S. goniodicerus</i> Eichler 1949	<i>Bubo bubo</i>
? <i>S. portigi</i> Eichler 1952	<i>Strix aluco</i>
3. The <i>cursor</i> Group	
<i>S. cursor</i> (Burmeister 1838)	<i>Asio flammeus</i>
<i>S. barbatus</i> (Osborn 1902)	<i>Asio otus</i>
4. The <i>crenulatus</i> Group (?= <i>cursitans</i> Group)	
<i>S. crenulatus</i> (Giebel 1874)	<i>Surnia ulula</i>
5. The <i>macrogenitalis</i> Group	
+ <i>S. macrogenitalis</i> Emerson & Elbel 1957	<i>Glaucidium cuculoides</i>
+ <i>S. heterogenitalis</i> Emerson & Elbel 1957	<i>Otus bakkamoena</i>
+ <i>S. marshalli</i> n. sp.	<i>Phodilus badius</i>
6. The <i>strigis</i> Group	
+ <i>S. strigis</i> (Pontoppidan 1763)	<i>Bubo budo</i>
7. The <i>siamensis</i> Group	
+ <i>S. siamensis</i> Emerson & Elbel 1957	<i>Glaucidium brodiei</i>
8. The <i>ketupae</i> Group	
+ <i>S. ketupae</i> Emerson & Elbel 1957	<i>Ketupae zeylonensis</i>
9. The <i>cursitans</i> Group	
+ <i>S. otus</i> Emerson 1955	<i>Otus asio</i>
<i>S. tuleskovi</i> Balat 1958	<i>Otus scops</i>
+ <i>S. senegalensis</i> Tendeiro 1963	<i>Otus senegalensis</i>
<i>S. oculatus</i> (Rudow 1870)	<i>Bubo virginianus</i>
+ <i>S. acutifrons</i> Emerson 1961	<i>Bubo virginianus</i>
+ <i>S. ceblebrachys</i> (Denny 1842)	<i>Nyctea scandiaca</i>
<i>S. cursitans</i> (Nitzsch 1861)	<i>Athene noctua</i>
<i>S. bramae</i> (Qadri 1935)	<i>Athene brama</i>
<i>S. speotyti</i> (Osborn 1896)	<i>Speotyto cunicularia</i>

<i>S. virgo</i> (Giebel 1874)	<i>Ciccaba virgata</i>
<i>S. syrni</i> (Packard 1873)	<i>Strix nebulosa</i>
+ <i>S. varius</i> Carriker 1958	<i>Strix varia</i>
+ <i>S. capensis</i> Tendeiro 1963	<i>Asio capensis</i>
<i>S. pallidus</i> (Giebel 1874)	<i>Aegolius funereus</i>

Explanations to markings in Table 1:

+Holotype, Neotype or Paratype seen.

?Identification uncertain; types in existence.

No mark. Specimens seen from type host and presumed to be the species.

The species of the *cursor* group are arranged in chronological order within the host genera according to Peters, 1940.

1. The following species have been omitted from the list:

S. asionis (Eichler 1949) = *S. barbatus* (Osborn), see Emerson 1955: 145.

S. boomae Ansari 1955. A female of this species from *Otus bakkamoena* was figured in Ansari, 1959: 58. This figure and the measurements given are not those of *S. heterogenitalis* from the same host; the identification of *boomae* must await an examination of the type specimen.

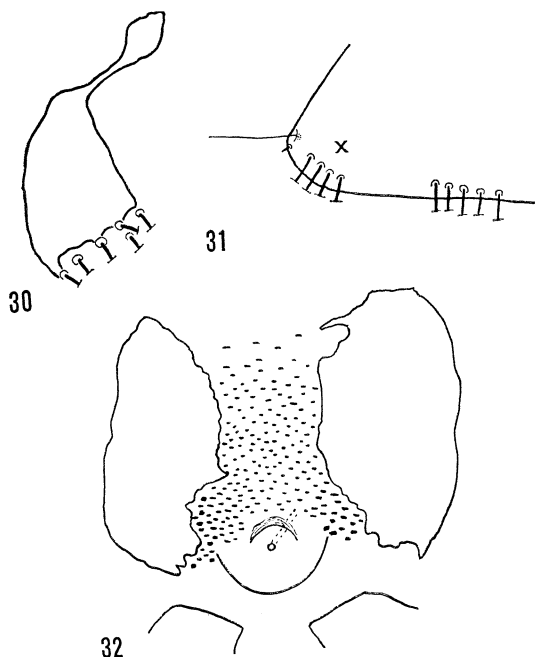


Fig. 30-32. *Strigiphilus* spp. 30-31, *S. heterocerus* (Grube 1851): 30, last abdominal sternite, female; 31, posterior margin of pterothorax, female; 32, *Strigiphilus strigis* (Pontoppidan), female internal genital sclerites.

S. clypeatus (Mjöberg 1910). Probably = *S. pallidus* (Giebel) from the same host.

S. nudipes (Piaget 1880) = *S. cursor* (Burm.). **New Synonymy.**

S. remotus (Kell. & Chapman 1899). Probably = *S. syrni* (Packard) from the same host.

S. speotyto (Eichler 1954). Unidentifiable from original description.

S. splendens (Giebel 1874). No specimens from type host and locality.

S. viridicus Carriker 1954. = *S. virgo* (Giebel). Carriker (1954: 135) considered that his specimens from *Ciccaba virgata*, the type host of *virgo*, could not be Giebel's species and named them *viridicus*. However, the description of *virgo* is sufficiently indefinite to make its application to the species of *Strigiphilus* found on *Ciccaba virgata* possible, remembering that Giebel was probably working with uncleared specimens. It seems more satisfactory to continue the use of Giebel's name, which has been listed as that of the

species from *Ciccaba virgata* since 1874, than to replace it by another name which will not necessarily be adopted by everyone.

Those names already synonymised in Hopkins & Clay, 1952, 1953 and 1955 are also omitted. No attempt has been made to check the synonymy of all the names listed and and some may prove to be synonyms.

2. *S. goniodicerus* Eichler 1949. This was a new name for *Docophorus heteroceros* Nitzsch, 1861 *nec* Grube 1851, type host: *Bubo b. bubo*. The specimens on which Nitzsch based his description were figured in Giebel, 1874, Pl. XII, figs. 1-2. The figure of the male is not that of *S. strigis* the species usually found on *Bubo bubo*. The presence of the enlarged first antennal segment, the prolongation of the anterodistal angle of the third segment as a short process and the enlarged last abdominal segment suggest that this species is similar to *heteroceros* Grube and is therefore, here included in the *heteroceros* group.

Table II. Host-Parasite list (Hosts according to Peters, 1940)

Host	<i>Strigiphilus</i> Species	Geographical Region	Species Group
TYTONIDAE			
<i>Tyto</i>	<i>rostratus</i>	P. E.	<i>rostratus</i>
	<i>aitkeni</i>	N. Nt. O. A.	<i>rostratus</i>
	<i>cursor</i>	P+. N.	<i>cursor</i>
<i>Phodilus</i>	<i>marshalli</i>	O.	<i>macrogenitalis</i>
STRIGIDAE			
<i>Otus</i>			
<i>asio</i>	<i>otus</i>	N.	<i>cursor</i>
<i>bakkamoena</i>	<i>heterogenitalis</i>	O. (6)	<i>macrogenitalis</i>
<i>leucotis</i>	—	E.	<i>cursor</i>
<i>scops</i>	<i>tuleskovi</i>	P. O.	<i>cursor</i>
	<i>heterogenitalis</i>	O. (4)	<i>macrogenitalis</i>
<i>senegalensis</i>	<i>senegalensis</i>	E.	<i>cursor</i>
<i>spilocephalus</i>	<i>heterogenitalis</i>	O. (5)	<i>macrogenitalis</i>
<i>Bubo</i>			
<i>africanus</i>	<i>strigis</i>	E.	<i>strigis</i>
<i>bubo</i>	<i>strigis</i>	P. O.	<i>strigis</i>
	<i>goniodicerus</i>	P.	<i>heteroceros</i>
<i>capensis</i>	<i>strigis</i>	E.	<i>strigis</i>
<i>coromandus</i>	—	O.	<i>cursor</i>
<i>lacteus</i>	<i>strigis</i>	E.	<i>strigis</i>
<i>sumatrana</i>	<i>ketupae</i>	O. (1)*	<i>ketupae</i>
<i>virginianus</i>	<i>acutifrons</i>	N.	<i>cursor</i>
	<i>oculatus</i>	N.	<i>cursor</i>
	<i>cursor</i>	N.	<i>cursor</i>
<i>Ketupa</i>			
<i>ketupa</i>	<i>ketupae</i>	O. (2)	<i>ketupae</i>
<i>zeylonensis</i>	<i>ketupae</i>	O. (4)	<i>ketupae</i>
	—	O.	<i>cursor</i>
<i>Scotopelia</i>			
<i>pele</i>	nr. <i>heterogenitalis</i>	E. (1)*	<i>macrogenitalis</i>

+Lebanon.

Host	<i>Strigiphilus</i> species	Geographical Region	Species Group
<i>Nytea</i>			
<i>scaniaca</i>	<i>ceblebrachys</i>	N. P.	<i>cursitans</i>
<i>Surnia</i>			
<i>ulula</i>	<i>crenulatus</i>	N. P.	<i>crenulatus</i> ? <i>cursitans</i> group
<i>Glaucidium</i>			
<i>brasilianum</i>	—	Nt.	<i>cursitans</i>
<i>brodiei</i>	{ <i>siamensis</i> <i>heterogenitalis</i>	O. (1) O. (1)*	<i>siamensis</i> <i>macrogenitalis</i>
<i>cuculoides</i>	<i>macrogenitalis</i>	O. (13)	<i>macrogenitalis</i>
<i>gnoma</i>	—	N.	<i>cursitans</i>
<i>passerinum</i>	<i>splendens</i>	P.	?
<i>perlatum</i>	—	E.	<i>cursitans</i>
<i>radiatum</i>	—	O.	<i>cursitans</i>
<i>Micrathene</i>			
<i>whitneyi</i>	—	N.	<i>cursitans</i>
<i>Uroglaux</i>			
<i>dimorpha</i>	<i>heterogenitalis</i>	A. (1)*	<i>macrogenitalis</i>
<i>Ninox</i>			
<i>novaeseelandiae</i>	—	A.	<i>cursitans</i>
<i>Athene</i>			
<i>brama</i>	<i>bramae</i>	O.	<i>cursitans</i>
<i>noctua</i>	<i>cursitans</i>	P. E.	<i>cursitans</i>
<i>Speotyto</i>			
<i>cunicularia</i>	<i>speotyti</i>	N.	<i>cursitans</i>
<i>Ciccaba</i>			
<i>virgata</i>	<i>virgo</i>	Nt.	<i>cursitans</i>
<i>woodfordii</i>	nr. <i>heterogenitalis</i>	E. (1)*	<i>macrogenitalis</i>
<i>Strix</i>			
<i>aluco</i>	{ <i>laticephalus</i> <i>heterogenitalis</i>	P. O. (1)*	<i>heterocerus</i> <i>macrogenitalis</i>
<i>butleri</i>	—	P.	<i>cursitans</i>
<i>nebulosa</i>	<i>syrnii</i>	N.	<i>cursitans</i>
<i>ocellata</i>	—	O.	<i>cursitans</i>
<i>occidentalis</i>	—	N.	<i>cursitans</i>
<i>seloputo</i>	<i>ketupae</i>	O. (3)	<i>ketupae</i>
<i>varia</i>	<i>varius</i>	N.	<i>cursitans</i>
<i>uralensis</i>	<i>heterocerus</i>	P.	<i>heterocerus</i>
<i>Asio</i>			
<i>capensis</i>	<i>capensis</i>	E.	<i>cursitans</i>
<i>flammeus</i>	<i>cursor</i>	N. P. O.	<i>cursor</i>
<i>otus</i>	<i>barbatus</i>	N. P.	<i>cursor</i>
<i>Aegolius</i>			
<i>acadicus</i>	—	N.	<i>cursitans</i>
<i>funereus</i>	<i>pallidus</i>	P.	<i>cursitans</i>

Geographical Regions: N. Nearctic; Nt. Neotropical; P. Palearctic; E. Ethiopian; O. Oriental; A. Australasian.

[For certain species the number of records is given in brackets after the geographical area. * denotes that the record needs confirmation; with the others the number of records or specimens collected make contamination unlikely].

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