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FAUNISTIC NOTES ON THE PSELAPHINE SPECIES OF THE SUPERTRIBES GONIACERITAE, PSELAPHITAE AND0CLAVIGERITAE FROM MALAYSIA AND SINGAPORE (COLEOPTERA: STAPHYLINIDAE: PSELAPHINAE)

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ABSTRACT

The pselaphine species belonging to the supertribes Goniaceritae, Pselaphitae and Clavigeritae known from Malaysia and Singapore are revised. Eighty-seven species of this group collected in 2002-2004 from the Malay Peninsula and Sarawak are listed up. A list of 145 known species of these three supertribes from Malaysia and Singapore were also presented.

ABSTRAK

Spesies pselaphine yang dikenalpasti yang berasal dari supertibus Goniaceritae, Pselaphitae dan Clavigeritae telah disemak.

Sebanyak 87 spesies kumpulan ini dari Peninsular Malaysia dan Sarawak dikumpul dari 2002-2004 telah disenaraikan. Sejumlah 145 spesies dari ketiga-tiga supertribus dari Malaysia dan Singapura telah dipersembahkan.

INTRODUCTION

In the last paper, Nomura and Idris (2003) revised the supertribe Batrisitae with records of 39 collected species (many of which were undescribed) from the Malay Peninsula and Sarawak and presented a list of 119 known species from Malaysia and Singapore. The other three supertribes of the subfamily Pselaphinae, Goniaceritae, Pselaphitae and Clavigeritae of Malaysia and Singapore is reviewed in the present paper.

These supertribes have been studied in the 19th Century by Schaufuss (1882, 1887), Reitter (1882, 1883) and Raffray (1890, 1895). After that, Bryant (1915a, b, c) described some Bornean species of the tribes Cyathigerini, Tmesiphorini, Tyrini and Clavigerini. Burckhardt (1985) revised cyathigerine species from Malaysia and Singapore, and added nine new species of the genus *Cyathiger* sensu lato (see systematic notes). Recently, Löbl discovered two surprising genera from this area, namely *Awas* Löbl, 1994 and *Sabarytus* Löbl, 2000. Nomura and Idris (2004) added a new species of *Awas* from the Malay Peninsula.

The most important discovery made in this area was the genus *Colilodion* and the tribe Colilodionini of the supertribe Clavigeritae defined by Besuchet (1991). Four new species were described from Sabah and Sumatra, and later, a new species was described by Löbl (1994a) from the Malay Peninsula. Unfortunately, this genus was not found in the present project.

In the present report, a list of the 87 collected species is presented, and the 143 known species of the three supertribes from Malaysia and Singapore are also listed. The systematic treatments of some groups are commented. It is based on the first author's examinations of the type specimens of some Malaysian and Singaporean species preserved in the Muséum National d'Histoire Naturelle, Paris (abbreviated as MNHN below) and Muséum d'Histoire Naturelle, Genève (MHNG).

MATERIALS AND METHODS

Many of the pselaphine materials used in the present study were collected by sifting leaf litter, beating foliages and from ant and termite nests. Some of the materials were collected by fogging and four different types of flight intercept traps (abbreviated as FIT hereafter). The method fogging conducted at Endau-Rompin is shown in another report (Nomura, Kojima, Yoshizawa and Idris, 2005).

The FITs used in the survey of 2004 is the following four types shown in Fig. 1. NHP-1 (Fig. 1A): hanging type for high position (5-10 m above the ground) with a diamond-shaped barrier sized 850 mm wide x 1100 mm high and a roof, all of which are made of thin plastic sheet. NG-3 and M (Fig. 1B): the same type as shown in Nomura and Idris (2003), used in the survey of 2003. NG-4 (Fig. 1C): elongate trapezoidal FIT for slope with a barrier sized 1400 mm wide x 700 mm high made by thin plastic sheet. M (Fig. 1D): the type designed by Dr. Munetoshi Maruyama.; the roof and the barrier sized 620 mm wide x 420 mm high are made of thin plastic plates, used by raising with iron poles and bearing transparent plastic receiver trays.

The collected insects were preserved in water of the receiver with a spoon of sodium benzoate powder for preservation. After sorting, they were transferred into 70% ethanol. Methods of dissections and examinations are the same as those described by Nomura and Idris (2003).

SYSTEMATIC NOTES

The higher classification system of the subfamily Pselaphinae was reconstructed by Newton and Chandler (1989). At that time, the subfamily Pselaphinae in the recent system was the family Pselaphidae and the recent supertribes were subfamilies. Newton and Thayer (1992) revised the family group names of the Staphyliniformia and gave a new name, Natypleurina for the junior homonym Tanypleurina. Newton and Thayer (1995) described a new genus *Protopselaphus* from Malaysia and established the staphylinid subfamily Protopselaphinae, and then, they ranked

down the family Pselaphidae to the subfamily Pselaphinae. Synchronously, the previous six subfamilies of Pselaphidae were also reduced to supertribes. Later, Chandler (2001) subsumed the supertribe Bythinoplectitae into Euplectitae, and synonymised many tribal and subrtribal names, for example Pselaptina to Brachyglutina.

The genus *Natypleurus* Newton et Thayer, 1992, originally erected by Raffray (1890), was described from Singapore and Penang. The tribe Tanypleurini was established by Jeannel, 1949, though the key character of this tribe was not clear. Chandler (2001) redefined the taxon as the subtribe Natypleurina. He included some Oriental genera in this subtribe, namely *Morana, Nipponobythus, Takaorites*, and so on. The genus *Bythinophanax* Reitter classified into the Proterini by Newton and Chandler (1989) is closely allied to the Japanese genus *Morana* on the basis of the first author's examination of the type specimen of the type species in MNHN. Three Malaysian genera, *Natypleurus, Nedarassus* and *Bythinophanax* are thereby included in the Natypleurina. The systematic arrangement of this group is ever problematical because the genera *Morana, Takaorites, Bythinophanax*, etc., are coincident with the tribe Brachyglutini in the key character of the abdominal segmentation as Chandler (2001) suggested. On the other hand, the genus *Sunorfa* Raffray was moved from Natypleurina to Iniocyphina by Chandler (2001).

The subtribe Pselaptina Park, 1976 including the Malaysian genus *Eupines* King, 1866 was synonymised with the Brachyglutina by Chandler (2001). He also classified the genus *Batraxis* Reitter, 1881 into this subtribe. The genus *Atenisodus* Raffray, 1904 and its allied genus *Comatopselaphus* Schaufuss, 1882 seem to be included in this subtribe after an examination of some *Atenisodus* species. Seven genera are therefore recognized from this area in the subtribe Brachyglutina, namely *Batraxis, Comatopselaphus, Atenisodus, Eupines, Ephymata, Reichenbachia* and *Rybaxis*.

The tribe Cyathigerini Schaufuss, 1872 was previously classified in the Pselaphitae according to Newton and Chandler (1989) and Newton and Thayer (1992). Chandler (2001) regarded it as a tribe of the supertribe Goniaceritae as was already pointed

out by Leleup (1974). Five genera had been known in this tribe, until all these generic names were synonymized by Burckhardt and Löbl (2002) with *Plagiophorus* Motschulsky, 1851, though, Burckhaldt (1985) regarded them as a large genus *Cyathiger sensu lato*, and described nine new species from Malaysia and Singapore. After Burckhardt and Löbl (2002), the tribe Cyathigerini is represented by a single genus *Plagiophorus*.

The tribe Tmesiphorini was defined by Jeannel (1949) on the basis of the penicillate palpal segments, the simple pubescence and the three-segmented antennal club. Chandler (2001) redefined it by the U-shaped subantennal sulcus on the gena. And he transferred the genera *Ancystrocerus* Raffray and *Ctenotillus* Raffray to Tmesiphorini from Tyrini. Hlavac (2000) described a new tmesiphorine genus *Chandleriella* for *Lasinus termitophilus* Bryant from Sarawak described as a Tyrine species. In the present authors' opinion, this genus is very close to *Pseudophanias* as shown below, though it has the tmesiphorine type tarsal claws. In the tribe Tmesiphorini, tarsal claws are paired and almost equal in size, though they are not completely symmetrical; the hind claw is located vertically at the dorsal side of the fore claw.

The Malaysian genus *Pseudophanias* Raffray, 1890 is problematical in its systematic position. It includes ten species, all distributed in Malaysia and Sumatra, and its type species is *P. malaianus* Raffray, 1890 known from Penang. Raffray (1904, 1908, 1911) classified it into the Tyrini together with the South American genus *Phalepsus* Westwood. Jeannel (1949) established the new tribe Phalepsini for *Phalepsus* and *Pseudophanias*, because they have asymmetrical tarsal claws, the hind one of which is much reduced (single claw and a parungual seta in Jeannel, 1949, p. 43). Newton and Chandler (1989) followed Jeannel's view, though, *Pseudophanias* is quite different from the genus *Phalepsus* and is considered not to belong to the same tribe after the first author's examination of some materials in Raffray's collection in MNHN.

Actually, the genus *Pseudophanias* is quite unique in the supertribe Pselaphitae in having asymmetrical claws like Euplectitae and Goniaceritae. On the other hand, it is allied to the tribe Tmesiphorini in having the U-shaped subantennal sulcus.

Chandler (2001) transferred this genus to the tribe Tmesiphorini. In the present study, Chandler's system is tentatively adopted, although the systematic position of this genus is ever problematical in view of the fact that it is also similar to the Hybocephalini in having the following three common characters and different from other tmesiphorine genera: 1) the outer tarsal claw is reduced in all legs; 2) the maxillary palpus is very small and simply shaped; 3) the male genitalia is tubular and arcuately curved inwards. The genus *Chandleriella* Hlavác shown above is closely related to *Pseudophanias* in most characters except for the tmesiphorine type tarsal claws.

The higher classification of the supertribe Clavigeritae was drastically changed by the discovery of the genus *Colilodion*. Besuchet (1991) described *Colilodion* from Borneo and Sumatra and established a new tribe Colilodionini; he synonymized fourteen known tribes with the tribe Clavigerini and only retained one known tribe Tiracerini. In the current system, the supertribe Clavigeritae is composed of these three tribes. Löbl (1994a) morphologically revised *Colilodion* (Colilodionini), and added a new species *C. wuesti* from Genting Highland, Pahang.

In the course of taxonomical study on the subfamily Pselaphinae, the Malay Peninsula and Borneo are attractive and important hot spots in their rich diversity of pselaphine taxa as shown in Nomura and Idris (2003) and the present report. Further researches should be done on the pselaphine fauna of this area.

A List of the Malaysian Pselaphine Species of the Supertribes Goniaceritae, Pselaphitae and Clavigeritae Collected from 2002-2004

Supertribe Goniaceritae
Tribe Arnylliini

1. *Awas rajah* Nomura and Idris (Fig. 2A)

Specimens examined. 2 males, Base camp, 150m alt., Endau-Rompin, by FIT, 6-9. vii. 2003, S. Nomura leg.

Remarks. The highly eccentric genus *Awas* was described by Löbl (1994b) with the type species *A. giraffa* collected from

Genting Highland, Pahang. It is known to be distributed in the Malay Peninsula and Taiwan. This recently described species is the third member of the genus.

2. *Harmophorus* sp. 1
Specimens examined. 1 male, Fraser's Hill, 1,100m alt., by beating, 5. iii. 2003, S. Nomura leg.; 7 females, Hemmant Trail (Trail 6), 1,100m alt., Fraser's Hill, by sifting leaf litter, 28. vii. 2004, S. Nomura leg.; 2 females, same data as above, but Bishop's Trail (Trail 2).
Remarks. This genus is previously called *Arnyllium* Reitter, 1884, but Löbl (1994b) synonymized it with *Harmophorus* Motschulsky, 1851. It is widely distributed in subtropical to tropical Asia and includes 11 known species and many undescribed species.

3. *H.* sp. 2
Specimens examined. 1 female, Fraser's Hill, 1,100m alt., by beating, 5. iii. 2003, S. Nomura leg.; 2 males, 7 females, Hemmant Trail (Trail 6), 1,100m alt., Fraser's Hill, by sifting leaf litter, 28. vii. 2004, S. Nomura leg. ; 7 males, 5 females, same data as above, but Bishop's Trail (Trail 2).

4. *H.* sp. 3 (Fig. 2B)
Specimen examined. 1 male, Abu Suradi Trail (Trail 5), 1,100m alt., Fraser's Hill, by FIT (NG-3), 27-30. vii. 2004, S. Nomura leg.

5. *H.* sp. 4
Specimen examined. 1 male, Base camp, 150m alt., Endau-Rompin, by FIT (NG-4), 20-24. vii. 2004, S. Nomura leg.

Tribe Brachyglutini
Subtribe Brachyglutina

6. *Rybaxis* sp.
Specimens examined. 2 males, Lambir National Park, 250m alt., by sifting leaf litter, 8. iii. 2002, S. Nomura leg.

Remarks. The distributional range of this genus is very wide, almost covering all over the world with the exception of the Neotropical and polar areas. In Asia, many species of this genus are known from the temperate zone though relatively rare in the tropical area.

7. *Trissemus* sp. 1 (Fig. 2C)
Specimen examined. 1 male, Gate, 150-200m alt., Endau-Rompin, by FIT (NG-3), 21-25. vii. 2004, S. Nomura leg.
Remarks. This genus is similar to *Rybaxis*, though separable by having the pronotum without sulcus between three basal foveae and the trifoveate elytron.

8. *Trissemus* sp. 2
Specimen examined. 1 male, Hemmant Trail (Trail 6), 1,100m alt., Fraser's Hill, by sifting leaf litter, 28. vii. 2004, S. Nomura leg.

9. *Atenisodus* sp. (Fig. 2D)
Specimens examined. 2 males, Base camp, 150m alt., Endau-Rompin, by sifting leaf litter, 8. vii. 2003, S. Nomura leg.; 1 male, 1 female, same locality as above, by sifting leaf litter, 22. vi. 2004, S. Nomura leg.; 3 males, 2 females, Gate, 150-200m alt., Endau-Rompin, by sifting leaf litter, 23. vii. 2004, S. Nomura leg.
Remarks. The genus *Atenisodus* is closely allied to *Comatopselaphus* Schaufuss in having the fourth abdominal segment and very long palpal spine. It is, however, distinguished by the small head with large eyes, the externally expanded fourth palpal segment and the truncate or subconical abdomen. It is distributed in the large area including Malaysia, southern China, Taiwan and Japan.

10. *Noduliceps latifrons* (Sharp)?
Specimen examined. 1 male, Lambir National Park, 250m alt., by sifting leaf litter, 9. iii. 2002, S. Nomura leg.
Remarks. This genus has been known only from Japan with the type species *N. latifrons* (Sharp). Mysteriously, the specimen collected from Lambir was very similar to the type species.

11. *Batraxis* sp. 1
Specimens examined. 1 male, 1 female, Lambir National Park, 250m alt., by sifting leaf litter, 10. iii. 2002, S. Nomura leg.
Remarks. The genus *Batraxis* is a very large brachyglutine genus consisting of more than 40 species distributed in the Palearctic, Oriental and Australian Regions.

12. *B.* sp. 2
Specimens examined. 1 male, Fraser's Hill, 1,100m alt., by beating, 6. iii. 2003, H. Kojima leg.; 1 male, 1 female, Pinetree Trail (Trail 8), 1,100m alt., Fraser's Hill, by sifting leaf litter, 29. vii. 2004, S. Nomura leg.

13. *B.* sp. 3
Specimen examined. 1 male, Pinetree Trail (Trail 8), 1,100m alt., Fraser's Hill, by sifting leaf litter, 29. vii. 2004, S. Nomura leg.

14. *B.* sp. 4 (Fig. 2E)
Specimens examined. 5 females, Base camp, 150m alt., Endau-Rompin, by sifting leaf litter, 8. vii. 2003, S. Nomura leg.; 11 males, 19 females, same locality as above, by sifting leaf litter, 22. vii. 2004, S. Nomura leg.; 3 males, 7 females, same locality as above, by sifting leaf litter, 24. vi. 2004, S. Nomura leg.; 1 male, 3 females, Gate, 150-200m alt., Endau-Rompin, by sifting leaf litter, 23. vii. 2004, S. Nomura leg.

15. *B.* sp. 5
Specimen examined. 1 male, 1 female, Base camp, 150m alt., Endau-Rompin, by sifting leaf litter, 22. vii. 2004, S. Nomura leg.

16. *B.* sp. 6
Specimens examined. 1 female, Base camp, 150m alt., Endau-Rompin, by sifting leaf litter, 22. vii. 2004, S. Nomura leg.; 1 female, Gate, 150-200m alt., Endau-Rompin, by sifting leaf litter, 23. vii. 2004, S. Nomura leg.

17. *B.* sp. 7

Specimens examined. 1 male, 1 female, Base camp, 150m alt., Endau-Rompin, under bark, 24. vii. 2004, S. Nomura leg.; 1 male, same locality as above, by FIT (NG-3), 20-24. vi. 2004, S. Nomura leg.; 3 males, same data as above, but by FIT (NG-4) ; 2 males, Gate, 150-200m alt., Endau-Rompin, by FIT (NG-3), 21-25. vii. 2004, S. Nomura leg.

Tribe Iniocyphini
Subtribe Natypleurina

18. *Morana?* sp. 1 (Fig. 2F)

Specimens examined. 1 female, Fraser's Hill, Pahang, by sifting leaf litter, 5. iii. 2003, S. Nomura leg.; 1 male, Hemmant Trail (Trail 6), 1,100m alt., Fraser's Hill, by sifting leaf litter, 28. vii. 2004, S. Nomura leg.; 1 female, same data as above, but Bishop's Trail (Trail 2).

Remarks. Up to the present, this genus has been known only from Japan with 11 species according to Arai (2003). It is also distributed in southern China and Indochina. The genus *Bythinophanax* Reitter described from Borneo is closely allied to *Morana* and it is unclear that they can be distinguished. The authors therefore record the present two species as *Morana?* spp.

19. *M?*. sp. 2

Specimens examined. 1 male, Base camp, 150m alt., Endau-Rompin, Pahang, by sifting leaf litter, 6. vii. 2003, S. Nomura leg.; 1 male, Gate, 150-200m alt., Endau-Rompin, by FIT (M), 21-25. vii. 2004, S. Nomura leg.

20. *Natypleurus* sp. (Fig. 2G)

Specimens examined. 1 female, Base camp, 150m alt., Endau-Rompin, by fogging, 6. vii. 2003, S. Nomura *et al*. leg.; 5 males, same locality as above, by FIT, 6-9. vii. 2003, S. Nomura leg. ; 14 males, 10 females, same locality as above, by sifting leaf litter, 22. vii. 2004, S. Nomura leg.; 1 male, 2 females, same locality as above, by sifting leaf litter, 24. vi. 2004, S. Nomura leg.; 1 female, Gate, 150-200m alt., Endau-Rompin, by sifting leaf litter, 10. vii.

2003, S. Nomura leg.; 5 males, 5 females, same locality as above, by sifting leaf litter, 23. vii. 2004, S. Nomura leg.; 1 female, Hemmant Trail (Trail 6), 1,100m alt., Fraser's Hill, by sifting leaf litter, 28. vii. 2004, S. Nomura leg.; 1 male, Abu Suradi Trail (Trail 5), 1,100m alt., Fraser's Hill, by FIT (NG-4), 27-30. vii. 2004, S. Nomura leg.

Remarks. This genus is closer in appearance to the genus *Eupines* of the subtribe Brachyglutina in the rounded, thick and shiny body than to the other genera of the subtribe Natypleurina. The collected species is very closely related to the type species *N. malaianus* (Raffray) known from Singapore and Penang, but differs in the character of the ninth to tenth antennal segments.

21. *Nedarassus* sp. 1

Specimen examined. 1 male, Lambir National Park, 250m alt., Sarawak, by sifting leaf litter, 9. iii. 2002, S. Nomura leg.

Remarks. At first sight, this genus looks like an euplectine or brachyglutine genus and is quite different from the Natypleurina., though it is closely allied to *Natypleurus* in having the same genital structure in the males. Only one species has been known from Malaysia; it is commonly collected from leaf litter and by FIT, and several species occur even at the same locality.

22. *N.* sp. 2 (Fig. 2H)

Specimens examined. 1 male, 1 female, Base camp, 150m alt., Endau-Rompin, by sifting leaf litter, 8. vii. 2003, S. Nomura leg.; 1 male, same locality as above, by sifting leaf litter, 22. vii. 2004, S. Nomura leg.; 1 female, Gate, 150-200m alt., Endau-Rompin, by sifting leaf litter, 21. vii. 2004, S. Nomura leg.; 4 males, 5 females, same locality as above, by sifting leaf litter, 23. vii. 2004, S. Nomura leg.

23. *N.* sp. 3

Specimen examined. 1 male, Base camp, 150m alt., Endau-Rompin, by fogging, 6. vii. 2003, S. Nomura *et al.* leg.

24. *N.* sp. 4
Specimens examined. 2 males, Mt. Mentigi, 1,400m alt., Cameron Highlands, Pahang, by FIT,12-16. vii. 2003, S. Nomura leg.

25. *N.* sp. 5
Specimen examined. 1 male, Hemmant Trail (Trail 6), 1,100m alt., Fraser's Hill, by sifting leaf litter, 28. vii. 2004, S. Nomura leg.

26. *N.* sp. 6
Specimens examined. 1 male, Hemmant Trail (Trail 6), 1,100m alt., Fraser's Hill, by sifting leaf litter, 28. vii. 2004, S. Nomura leg.; 1 male, Pinetree Trail (Trail 8), 1,100m alt., Fraser's Hill, by FIT (NG-3), 26-29. vii. 2004, S. Nomura leg.; 1 male, Abu Suradi Trail (Trail 5), 1,100m alt., Fraser's Hill, by FIT (NG-4), 27-30. vii. 2004, S. Nomura leg.

Tribe Proterini

27. *Mechanicus?* sp. 1
Specimens examined. 2 males, Mt. Brinchang, 2,000m alt., Cameron Highlands, by sifting leaf litter, 13. vii. 2003, S. Nomura leg.; 1 male, Pinetree Trail (Trail 8), 1,100m alt., Fraser's Hill, by FIT (NG-4), 26-29. vii. 2004, S. Nomura leg.
Remarks. This genus was classified into the Euplectini in the catalogue by Raffray (1911). It is similar to *Imtemps* Reitter known from the Philippines, though separable by the short antennal club and denticulate pronotum.

28. *M.?* sp. 2
Specimen examined. 1 female, Fraser's Hill, 1,100m alt., by sifting leaf litter, 5. iii. 2003, S. Nomura leg.

29. *M.?* sp. 3 (Fig. 2I)
Specimen examined. 1 male, Abu Suradi Trail (Trail 5), 1,100m alt., Fraser's Hill, by FIT (M), 27-30. vii. 2004, S. Nomura leg.

30. *M.?* sp. 4
Specimen examined. 1 male, Mt. Mentigi, 1,400m alt., Cameron Highlands, by FIT,12-16. vii. 2003, S. Nomura leg.

31. *M?* sp. 5
Specimen examined. 1 female, Hemmant Trail (Trail 6), 1,100m alt., Fraser's Hill, by sifting leaf litter, 28. vii. 2004, S. Nomura leg.

32. *Proterus?* sp. (Fig. 2J)
Specimens examined. 3 males, Genting Highland, 1,600m alt., by sifting leaf litter, 4. iii. 2003, S. Nomura leg.
Remarks. *Proterus*, the type genus of this tribe, is composed of only one species *P. punctatus* Raffray described from Sumatra. It is distinct in this tribe in having the large and stout body and the unclear antennal club. The undescribed species collected from Genting Highland is similar to *P. punctatus*, but differs by having the slender antenna and the bidenticulated lateral margins of the pronotum.

Tribe Cyathigerini

33. *Plagiophorus impar* Raffray (Fig. 2K)
Specimens examined. 1 male, 5 females, Gate, 150-200m alt., Endau-Rompin, by sifting leaf litter, 9. vii. 2003, S. Nomura leg. ; 1 male, same locality as above, by sifting leaf litter, 21. vii. 2004, S. Nomura leg.; 3 males, 2 females, Base camp, 150m alt., Endau-Rompin, by sifting leaf litter, 22. vii. 2004, S. Nomura leg.; 2 males, 1 female, same locality as above, by sifting leaf litter, 24. vi. 2004, S. Nomura leg
Remarks. According to Burckhardt and Löbl (2002), the old known genus *Cyathiger* King, 1865 is preoccupied by *Plagiophorus* Motschulsky, 1851. This genus is widely distributed in subtropical to tropical area of the Old World. A number of undescribed species of this genus are easily discovered in Asia as shown in the present list.

34. *P.* sp. 1
Specimens examined. 2 females, Base camp, 150m alt., Endau-Rompin, by sifting leaf litter, 24. vii. 2004, S. Nomura leg.

35. *P.* sp. 2
Specimen examined. 1 male, Base camp, 150m alt., Endau-Rompin, by FIT, 6-9. vii. 2003, S. Nomura leg.

36. *P.* sp. 3
Specimens examined. 1 male, Gate, 150-200m alt., Endau-Rompin, by sifting leaf litter, 23. vii. 2004, S. Nomura leg.; 1 male, Base camp, 150m alt., Endau-Rompin, by FIT (NG-4), 20-24. vii. 2004, S. Nomura leg.

37. *P.* sp. 4
Specimen examined. 1 male, Gate, 150-200m alt., Endau-Rompin, by sifting leaf litter, 9. vii. 2003, S. Nomura leg.

38. *P.* sp. 5
Specimen examined. 1 male, Gate, 150-200m alt., Endau-Rompin, by sifting leaf litter, 23. vii. 2004, S. Nomura leg.

39. *P.* sp. 6
Specimens examined. 1 male, Gate, 150-200m alt., Endau-Rompin, by sifting leaf litter, 23. vii. 2004, S. Nomura leg.; 2 females, same locality as above, by sifting leaf litter, 9. vii. 2003, S. Nomura leg.; 1 male, 1 female, same locality as above, by sifting leaf litter, 23. vii. 2004, S. Nomura leg.

40. *P.* sp. 7
Specimens examined. 1 female, Base camp, 150m alt., Endau-Rompin, by sifting leaf litter, 21. vii. 2004, S. Nomura leg.; 5 males, 4 females, same locality as above, by sifting leaf litter, 22. vii. 2004, S. Nomura leg.; 1 male, same locality as above, by FIT (NG-3), 20-24. vii. 2004, S. Nomura leg.; 2 males, same data as above, but by FIT (M); 1 female, Gate, 150-200m alt., Endau-

Rompin, by sifting leaf litter, 23. vii. 2004, S. Nomura leg.; 1 male, same locality as above, by FIT (NG-3), 21-25. vii. 2004, S. Nomura leg.

41. *P.* sp. 8
Specimens examined. 1 male, Base camp, 150m alt., Endau-Rompin, by sifting leaf litter, 22. vii. 2004, S. Nomura leg.; 1 female, same locality as above, by sifting leaf litter, 23. vii. 2004, S. Nomura leg.

42. *P.* sp. 9
Specimens examined. 1 female, Base camp, 150m alt., Endau-Rompin, by sifting leaf litter, 21. vii. 2004, S. Nomura leg.; 1 female, same locality as above, by sifting leaf litter, 22. vii. 2004, S. Nomura leg.

43. *P.* sp. 10
Specimen examined. 1 female, Gate, 150-200m alt., Endau-Rompin, by sifting leaf litter, 23. vii. 2004, S. Nomura leg.

44. *P.* sp. 11
Specimens examined. 1 male, Base camp, 150m alt., Endau-Rompin, by sifting leaf litter, 22. vii. 2004, S. Nomura leg.; 1 male, Gate, 150-200m alt., Endau-Rompin, by FIT (M), 21-25. vii. 2004, S. Nomura leg.; 1 female, same data as above, but by FIT (NG-3); 1 female, same data as above, but by FIT (NG-4).

45. *P.* sp. 12
Specimen examined. 1 male, Fraser's Hill, 1,100m alt., by sifting leaf litter, 7. iii. 2003, S. Nomura leg.

46. *P.* sp. 13
Specimens examined. 2 males, 3 females, Hemmant Trail (Trail 6), 1,100m, Fraser's Hill, by sifting leaf litter, 28. vii. 2004, S. Nomura leg.

47. *P.* sp. 14
Specimen examined. 1 female, Bishop's Trail (Trail 2), 1,100m alt., Fraser's Hill, by sifting leaf litter, 28. vii. 2004, S. Nomura leg.

48. *P.* sp. 15
Specimens examined. 1 female, Bishop's Trail (Trail 2), 1,100m alt., Fraser's Hill, by sifting leaf litter, 28. vii. 2004, S. Nomura leg.; 1 male, Abu Suradi Trail (Trail 5), 1,100m alt., Fraser's Hill, by FIT (NHP-1), 27-30. vii. 2004, S. Nomura leg.

49. *P.* sp. 16
Specimen examined. 1 male, Abu Suradi Trail (Trail 5), 1,100m alt., Fraser's Hill, by FIT (NG-4), 27-30. vii. 2004, S. Nomura leg.

Goniaceritae, *incertae sedis*

50. Gen. et sp. undet. (Fig. 2L)
Specimen examined. 1 female, Gate, 150-200m alt., Endau-Rompin, by sifting leaf litter, 9. vii. 2003, S. Nomura leg.
Remarks. This unknown genus is very conspicuous in the broad and stout body and very long and slender maxillary palpus. It seems to be related to the tribe Proterini or Pygoxyonini, but differs in some characters.

Supertribe Pselaphitae
Tribe Hybocephalini

1. *Apharinodes mirandus* Raffray (Fig. 3A)
Specimens examined. 1 male, 1 female, Gate, 150-200m alt., Endau-Rompin, by sifting leaf litter, 23. vii. 2004, S. Nomura leg.
Remarks. This is a representative pselaphine genus of the Oriental Region. It is characterized by the large antennal club formed only by the eleventh segment. The distributional range of this genus includes the Malay Peninsula, Borneo, Indochina, southern China and Japan.

2. *A.* sp.
Specimens examined. 1 male, Base camp, 150m alt., Endau-Rompin, by fogging, 6. vii. 2003, S. Nomura *et al.* leg.

3. *Stipesa* sp. (Fig. 3B)
Specimens examined. 1 male, Base camp, 150m alt., Endau-Rompin, by FIT (NG-4), 20-24. vii. 2004, S. Nomura leg.
Remarks. This genus was originally described from Japan in 1874, and later many species were added under the name of *Filiger* Schaufuss. Jeannel (1958) synonymized *Filiger* with *Stipesa*. Recently, Chandler (2001) described a new species of this genus also from Australia.

Tribe Tmesiphorini

4. *Pseudophanias* sp. 1 (Fig. 3C)
Specimens examined. 1 male, 3 females, Gate, 150-200m alt., Endau-Rompin, by sifting leaf litter, 9. vii. 2003, S. Nomura leg.; 1 male, 2 females, same data as above, but 10. vii. 2003; 3 males, 4 females, Base camp, 150m alt., Endau-Rompin, by sifting leaf litter, 22. vii. 2004, S. Nomura leg.; 1 male, same locality as above, by sifting leaf litter, 24. vii. 2004, S. Nomura leg.
Remarks. This genus is problematical in its systematic position as shown in the systematic notes. It has been known from Malaysia, Singapore and Sumatra; there are many undescribed species in the wide Oriental area including Japan, Taiwan, southern China, Indochina and Borneo. The first author checked the types of some Malaysian species described from Penang in MNHN, though there is no identical species with the present species 1 to 9. The type species of this genus, *P. malaianus* Raffray is closely allied to sp. 1, but is different in the more projected pronotum in the middle than in sp. 1.

5. *P.* sp. 2
Specimens examined. 1 male, Gate, 150-200m alt., Endau-Rompin, by sifting leaf litter, 9. vii. 2003, S. Nomura leg.; 1 male, Base camp, 150m alt., Endau-Rompin, by sifting leaf litter, 24. vii. 2004, S. Nomura leg.

6. *P.* sp. 3
Specimens examined. 1 female, Lambir National Park, 250m alt., Sarawak, by sifting leaf litter, 9. iii. 2002, S. Nomura leg.; 1 male, same data as above, but 10. iii. 2002.

7. *P.* sp. 4
Specimen examined. 1 male, Lambir National Park, 250m alt., Sarawak, by sifting leaf litter, 9. iii. 2002, S. Nomura leg.

8. *P.* sp. 5
Specimen examined. 1 female, Lambir National Park, 250m alt., Sarawak, by beating dead branch, 11. iii. 2002, S. Nomura leg.

9. *P.* sp. 6
Specimens examined. 1 female, Lambir National Park, 250m alt., Sarawak, by sifting leaf litter, 11. iii. 2002, S. Nomura leg.; 1 male, same data as above, but by beating dead branch.

10. *P.* sp. 7
Specimens examined. 9 males, 2 females, Fraser's Hill, 1,100m alt., by sifting leaf litter, 6. iii. 2003, S. Nomura leg.; 6 males 3 females, same data as above, but 7. iii. 2003; 1 female, Hemmant Trail (Trail 6), 1,100m alt., Fraser's Hill, by sifting leaf litter, 28. vii. 2004, S. Nomura leg.

11. *P.* sp. 8
Specimens examined. 1 male, Base camp, 150m alt., Endau-Rompin, by fogging, 6. vii. 2003, S. Nomura *et al.* leg.; 7 females, same locality as above, by sifting leaf litter, 8. vii. 2003, S. Nomura leg.; 11 males, 28 females, same locality as above, by sifting leaf litter, 22. vii. 2004, S. Nomura leg.; 3 males, 2 females, same locality as above, by sifting leaf litter, 24. vii. 2004, S. Nomura leg.; 1 male, same locality as above, by FIT (M), 20-24. vii. 2004, S. Nomura leg.; 1 male, 5 females, Gate, 150-200m alt., Endau-Rompin, by sifting leaf litter, 9. vii. 2003, S. Nomura leg.; 4 males, 5 females, same data as above, but 10. vii. 2003; 2 males, 1 female, same locality as above, by sifting leaf litter, 21. vii.

2004, S. Nomura leg.; 3 males, 9 females, same locality as above, by sifting leaf litter, 23. vii. 2004, S. Nomura leg.

12. *P.* sp. 9

Specimens examined. 1 female, Gate, 150-200m alt., Endau-Rompin, by sifting leaf litter, 9. vii. 2003, S. Nomura leg.; 1 female, Base camp, 150m alt., Endau-Rompin, by sifting leaf litter, 22. vii. 2004, S. Nomura leg.;1 male, same locality as above, by sifting leaf litter, 24. vii. 2004, S. Nomura leg.

13. *Ancystrocerus?* sp. 1

Specimen examined. 1 female, Fraser's Hill, 1,100m alt., by sifting leaf litter, 7. iii. 2003, S. Nomura leg.

Remarks. Similar genus to *Tmesiphorus*, but the maxillary palpus is slender and simple like some genera of the subtribe Tyrina. Nine species has been known from Malaysia, Singapore and Sumatra.

14. *A.?* sp. 2

Specimen examined. 1 female, Hemmant Trail (Trail 6), 1,100m alt., Fraser's Hill, by sifting leaf litter, 28. vii. 2004, S. Nomura leg.

15. *A.?* sp. 3

Specimens examined. 2 males, Base camp, 150m alt., Endau-Rompin, by sifting leaf litter, 22. vii. 2004, S. Nomura leg.

16. *A.?* sp. 4 (Fig. 3D)

Specimens examined. 1 male, Base camp, 150m alt., Endau-Rompin, by sifting leaf litter, 8. vii. 2003, S. Nomura leg.; 2 males, 2 females, same locality as above, by sifting leaf litter, 22. vii. 2004, S. Nomura leg.; 1 male, same locality as above, by sifting leaf litter, 24. vii. 2004, S. Nomura leg.; 1 female, Gate, 150-200m alt., Endau-Rompin, by sifting leaf litter, 9. vii. 2003, S. Nomura leg.; 1 male, 1 female, same locality as above, by sifting leaf litter, 23. vii. 2004, S. Nomura leg.

17. *A.?* sp. 5
Specimen examined. 1 male, Base camp, 150m alt., Endau-Rompin, by FIT, 6-9. vii. 2003, S. Nomura leg.

18. *A.?* sp. 6
Specimens examined. 1 female, Base camp, 150m alt., Endau-Rompin, by sifting leaf litter, 24. vii. 2004, S. Nomura leg.; 1 male, same locality as above, by FIT (NG-3), 2004. vii. 2004, S. Nomura leg.; 1 male, Gate, 150-200m alt., Endau-Rompin, by FIT (NG-3), 21-25. vii. 2004, S. Nomura leg.; 1 male, same data as above, but by FIT (M).

19. *A.?* sp. 7
Specimen examined. 1 male, Mt. Berembun, 1,400m alt., Cameron Highlands, by FIT,12-16. vii. 2003, S. Nomura leg.

20. *A?* sp. 8
Specimens examined. 3 females, Lambir National Park, 250m alt., Sarawak, by sifting leaf litter, 9. iii. 2002, S. Nomura leg.; 1 female, same data as above, but 10. iii. 2002.

21. *Tmesiphorus* sp. 1
Specimens examined. 1 female, Base camp, 150m alt., Endau-Rompin, by sifting leaf litter, 22. vii. 2004, S. Nomura leg.; 3 males, same locality as above, by FIT (NG-4), 2004. vii. 2004, S. Nomura leg.; 1 male, Gate, 150-200m alt., Endau-Rompin, by sifting leaf litter, 23. vii. 2004, S. Nomura leg.
Remarks. In tropical Asia, *Tmesiphorus* is a common pselaphine genus inhabiting decayed wood or under bark.

22. *T.* sp. 2
Specimens examined. 5 males, 10 females, Base camp, 150m alt., Endau-Rompin, by sifting leaf litter, 22. vii. 2004, S. Nomura leg.

23. *T.* sp. 3
Specimen examined. 1 female, Base camp, 150m alt, Endau-Rompin, under bark, 22. vii. 2004, S. Nomura leg.

24. *T.* sp. 4 (Fig. 3E)
Specimens examined. 1 female, Pinetree Trail (Trail 8), 1,100m alt., Fraser's Hill, by sifting leaf litter, 29. vii. 2004, S. Nomura leg.; 1 male, same locality as above, by FIT (NG-3), 26-29. vii. 2004, S. Nomura leg.

Tribe Ctenistini

25. *Ctenistes* sp. (Fig. 3F)
Specimen examined. 1 male, Base camp, 150m alt., Endau-Rompin, by FIT (NG-4), 20-24. vii. 2004, S. Nomura leg.
Remarks. The genus *Ctenistes* is characterized by very long and slender antennae with very large four-segmented club and the second palpal segment penicillate as in the following segments.

Tribe Tyrini
Subtribe Tyrina

26. *Labomimus heterocerus* (Raffray)
Specimen examined. 1 male, Lambir National Park, 250m alt., Sarawak, by beating, 9. iii. 2002, M. Tomokuni leg.
Remarks. This species has been known as *Pselaphodes antennatus* Bryant, 1915 described from Sarawak, though it was synonymized with *P. heterocerus* Raffray, 1882 by Hlavác (2002) and transferred to the genus *Labomimus* by Hlavác (2003). It is distributed in Borneo, Java and Sumatra.

27. *Pselaphodes* sp. 1
Specimens examined. 7 males, 3 females, Fraser's Hill, 1,100m alt., by beating, 6. iii. 2003, H. Kojima leg.; 1 female, same locality as above, by beating, 7. iii. 2003, S. Nomura leg.
Remarks. Hlavác (2002) revised the Asian genus-group of the subtribe Tyrina including *Pselaphodes*, redefining *Pselaphodes*, *Labomimus*, *Lasinus* and *Paralasinus*, and newly describing four genera, *Taiwanophodes*, *Nomuraius*, *Linan* and *Indophodes*. This genus is closely related with *Labomimus*, but is separated by the metasternum without median fovea between mesocoxae.

28. *P.* sp. 2
Specimens examined. 1 male, Base camp, 150m alt., Endau-Rompin, by fogging, 6. vii. 2003, S. Nomura *et al*. leg.; 1 female, Gate, 150-200m alt., Endau-Rompin, by beating, 9. vii. 2003, H. Kojima leg.

29. *Tyrus* sp. (Fig. 3G)
Specimens examined. 1 female, Pinetree Trail (Trail 8), 1,100m alt., Fraser's Hill, by sifting leaf litter, 29. vii. 2004, S. Nomura leg.
Remarks. This genus is common in the temperate to subtropical areas of Asia, though it is not so common in the tropical area. It is characterized by the large and flattened body and the distinctly swollen second to fourth palpal segments.

Subtribe Centrophthalmina

30. *Centrophthalmus* sp. 1 (Fig. 3H)
Specimens examined. 3 males, Base camp, 150m alt., Endau-Rompin, by sifting leaf litter, 22. vii. 2004, S. Nomura leg.
Remarks. The genus *Centrophthalmus* is similar to the genus *Enantius* in having the body densely covered with long pubescence, and the triangular head with large eyes, but is separated by the nearly ovoid third and very small fourth palpal segments. Both the genera are common in tropical Asia.

31. *C.* sp. 2
Specimen examined. 1 male, Base camp, 150m alt., Endau-Rompin, by FIT (NG-4), 20-24. vii. 2004, S. Nomura leg.

Superfamily Clavigeritae
Tribe Clavigerini

1. *Mastiger* sp. (Fig. 3I)
Specimens examined. 1 male, Base camp, 150m alt., Endau-Rompin, by fogging, 6. vii. 2003, S. Nomura *et al*. leg.; 1 male, Gate, 150-200m alt., Endau-Rompin, by FIT (NHP-1), 21-25. vii. 2004, S. Nomura leg.

Remarks. This genus is distinct in having the very short antenna (probably two-segmented). This undescribed species is collected from high position in the rainforest of Endau-Rompin by fogging and FIT (NHP-1).

2. *Pseudacerus* sp. 1 (Fig. 3J)
Specimen examined. 1 male, Mt. Berembun, 1,400m alt., Cameron Highlands, by FIT,12-16. vii. 2003, S. Nomura leg.
Remarks. This is a very characteristic clavigerine genus in having very large excavation in the dorsal side of the abdomen. Two species were collected in this project, and both the species could not be identified with only known species *P. furcatus* Raffray described from Singapore.

3. *Pseudacerus* sp. 2
Specimens examined. 2 males, 1 female, Gate, 150-200m alt., Endau-Rompin, from ant nest, 23. vii. 2004, S. Nomura leg.
Remarks. This species was collected by sifting litter of a rattan bulb in which the ants of the genera *Paratrechina* and *Pheidole* nested.

4. *Anaclasiger sinuaticollis* Raffray (Fig. 3K)
Specimen examined. 1 female, Gate, 150-200m alt., Endau-Rompin, by FIT (NG-3), 21-25. vii. 2004, S. Nomura leg.
Remarks. This species was originally described from Singapore; later Raffray (1914) recorded it from Taiwan.

5. *Disarthricerus integer* Raffray (Fig. 3L)
Specimen examined. 1 male, Base camp, 150m alt., Endau-Rompin, by FIT (NG-4), 20-24. vii. 2004, S. Nomura leg.
Remarks. In this characteristic genus, two Malaysian species have been known. This species was described from Singapore.

6. *Cerylambus?* sp.
Specimens examined. 1 male, 1 female, Gate, 150-200m alt., Endau-Rompin, from ant nest, 23. vii. 2004, S. Nomura leg.
Remarks. This undescribed species was collected together with *Pseudacerus* sp. 2 from the rattan bulb. It is similar to

Cerylambus reticulatus (Raffray) known from Penang in shape of the antenna and pronotum, but quite different in the elytra and abdomen

A List of the Species of the Supertribes Goniaceritae, Pselaphitae and Clavigeritae Known from Malaysia and Singapore

Supertribe Goniaceritae
Tribe Arnylliini

Awas giraffa Löbl, 1994 Pahang (Fraser's Hill)
A. rajah Nomura, 2004 Pahang (Endau-Rompin)
Harmophorus pectinatum (Reitter, 1883) Singapore, Borneo; Sumatra
H. ensipes (Reitter, 1883) Borneo
H. cultratum (Raffray, 1894) Singapore, Penang
H. ciliatum (Raffray, 1894) Singapore, Penang
H. parviceps (Reitter, 1883) Borneo

Tribe Brachyglutini
Subtribe Brachyglutina

**Batraxis pumilio* Raffray, 1895 Penang
B. quadrata Raffray, 1895 Penang
B. truncaticornis Raffray, 1895 Singapore
B. instabilis Raffray, 1895 Penang
B. curvispina Raffray, 1892 Singapore; Sumatra
B. variabilis Raffray, 1890 Singapore
B. elegans Raffray, 1895 Singapore
B. obliqua Raffray, 1895 Penang
B. foveata Raffray, 1895 Singapore
B. brevis Raffray, 1895 Singapore
B. gracilicornis Raffray, 1895 Singapore
**Comatopselaphus opacicollis* Schaufuss, 1882 Borneo
C. puncticollis Raffray, 1895 Penang
**Atenisodus longicornis* (Raffray, 1895) Singapore
**Eupines sphaerica* (Motschulsky, 1851) Singapore, Borneo; India, Sri Lanca, Myanmer, Sumatra, Java, Celebes, New Guinea, Japan

Eupines? atomus (Schaufuss, 1887) Borneo
Ephymata mucronata (Raffray, 1895) Singapore
Reichenbachia negligens Reitter, 1883 Borneo
R. punctithorax Reitter, 1882 Borneo
R. grabowskyi Reitter, 1882 Borneo
R. schaufussi Reitter, 1882 Singapore; Sumatra
R. invalida Reitter, 1882 Borneo
R. muscorum Raffray, 1904 Penang
R. rufa Schmidt-Göbel, 1838 Singapore; India, Sri Lanka, Thailand, Vietnam, Java, Celebes, Philippines, Syria?
R. affinissima Reitter, 1883 Borneo
R. amica Reitter, 1892 Borneo; Sumatra
R. telangensis Reitter, 1883 Borneo
R. singapuriensis Raffray, 1895 Singapore
R. tubericollis Raffray, 1891 Singapore
R. integrostriata Reitter, 1883 Borneo
R. lamellicornis Reitter, 1882 Borneo
Rybaxis nubile Reitter, 1882 Borneo
R. amica Reitter, 1883 Borneo
R. imperatrix Schaufuss, 1882 Borneo
R. sarawakensis Schaufuss, 1882, Borneo

Tribe Iniocyphini
Subtribe Iniocyphina

Sunorfa clavata (Raffray, 1895) Singapore

Subtribe Natypleurina

**Bythinophanax bicornis* Reitter, 1883 Borneo
B. exilis Reitter, 1883 Borneo
B. latebrosus Reitter, 1883 Borneo
Natypleurus malaianus (Raffray, 1890) Singapore, Penang
N. gibbicollis (Raffray, 1895) Singapore
Nedarassus punctatus Raffray, 1895 Penang

Tribe Proterini

**Bythinoderes grabowskyi* Reitter, 1883 Borneo
Mechanicus cribratus Raffray, 1893 Singapore.

Tribe Tychini

Atychodea lenticornis Reitter, 1883 Borneo
A. singularis Reitter, 1883 Borneo
A. simoniana Reitter, 1883 Borneo
A. raffrayi Reitter, 1883 Borneo

Tribe Cyathigerini

Plagiophorus schaufussi Reitter, 1883 Borneo
P. variolosus (Raffray, 1895) Penang
P. heterocerus (Raffray, 1895) Singapore (Bukit Timah), Penang, Johor (8 miles N Simpang Rengam)
P. rufus (Raffray, 1895) Singapore
P. simoni (Reitter, 1883) Borneo
P. borneensis (Reitter, 1883) Borneo
P. inexpectus (Raffray, 1895) Singapore
P. baumeisteri (Reitter, 1883) Borneo
P. viduus (Raffray, 1895) Singapore
P. cribratus (Raffray, 1895) Penang
P. impar (Raffray, 1895) Singapore (Bukit Timah), Penang
P. sericeus (Raffray, 1895) Penang
P. myrmecophilus (Bryant, 1915) Sarawak (Mt. Matang)
P. mirandus (Bryant, 1915) Sarawak (Mt. Merinjak)
P. dispar (Bryant, 1915) Sarawak (Mt. Matang)
P. elongatus (Bryant, 1915) Sarawak (Mt. Matang)
P. matangensis (Bryant, 1915) Sarawak (Mt. Matang)
P. sarawakensis (Bryant, 1915) Sarawak (Quop)
P. bulbifer (Bryant, 1915) Sarawak (Mt. Matang)
P. raffrayi (Bryant, 1915) Pahang (Cameron Highlands), Penang
P. malayanus (Bryant, 1915) Penang
P. endecamerus (Burckhardt, 1985) Perak, Kedah
P. decamerus (Burckhardt, 1985) Selangor (Gombak)
P. murphyi (Burckhardt, 1985) Singapore (Bukit Timah)
P. octomerus (Burckhardt, 1985) Perak (Keroh)
P. vicinus (Burckhardt, 1985) Negri Sembilan (Tampin 5 miles S)
P. magnicornis (Burckhardt, 1985) Johor (Mersing 7 miles N)
P. besucheti (Burckhardt, 1985) Selangor (Gombak, Kuala Kubu Baharu), Melaka (Gemas-Rampin)

P. pseudoheptamerus (Burckhardt, 1985) Singapore (Bukit Timah)
P. penangensis (Burckhardt, 1985) Selangor (Gombak), Penang (Penang Hill)

Supertribe Pselaphitae
Tribe Hybocephalini

Hybocephalodes dentiventris Reitter, 1883 Borneo
H. telangensis Reitter, 1883 Borneo
H. informis Reitter, 1883 Borneo
Pseudapharina prima (Reitter, 1883) Borneo
Apharina fuscipennis Reitter, 1883 Borneo
A. borneensis Raffray, 1896 Borneo
Apharinodes squamosa Raffray, 1890 Singapore
A. miranda Raffray, 1895 Singapore

Tribe Tmesiphorini

**Pseudophanias pilosus* Raffray, 1895 Penang
P. punctatus Raffray, 1904 Singapore
P. heterocerus Raffray, 1895 Singapore
P. malaianus Raffray, 1890 Penang
P. puberulus Raffray, 1904 Penang
P. cribricollis Raffary, 1895 Penang
Chandleriella termitophila (Bryant, 1915) Sarawak (Mt. Matang)
**Ancystrocerus pallidus* Raffray, 1895 Singapore
A. punctatus Raffray, 1895 Singapore, Penang
A. rugicollis Raffray, 1895 Singapore
A. longicornis Raffray, 1895 Penang
Tmesiphorus clavatus Raffray, 1895 Singapore
T. armatus Raffray, 1882 Singapore
T. matangensis Bryant, 1915 Sarawak (Mt. Matang)
Dacnotillus pilosus Raffray, 1895 Singapore, Penang
D. transversus Raffray, 1895 Singapore
D. tuberculatus Raffray, 1895 Penang; Sumatra
Raphitreus dentimanus Raffray, 1890 Singapore; Vietnam, Myanmar, Sri Lanka

Tribe Ctenistini

Ctenistes mitis Schaufuss, 1882 Borneo; Sumatra, Java (Batavia)

Tribe Odontalgini

Odontalgus vestitus Schaufuss, 1886 Borneo; N Sumatra

Tribe Tyrini

Subtribe Centrophthalmina

Enantius fortis Raffray, 1895 Singapore
E. rostratus Reitter, 1883 Borneo
E. singapuriensis Raffray, 1895 Singapore
Centrophthalmus divisus Reitter, 1883 Borneo
C. punctipennis punctatissimus Schaufuss, 1882 Borneo, Singapore; Celebes, Java
C. bispina Reitter, 1883 Borneo

Subtribe Tyrina

Pselaphodes villosulus Westwood, 1870 Borneo
P. clavatus Raffray, 1895 Singapore
P. foveolatus Raffray, 1882 Singapore, Penang
Labomimus heterocerus (Raffray, 1882) (=*P. antennatus* Bryant, 1915) Sarawak (Quop); Java, Sumatra
Tyrus corticalis (Raffray, 1890) Singapore
T. myrmecophilus Bryant, 1915 Sarawak (Mt. Matang)
Tyrodes clavatus Raffray, 1895 Singapore
Ryxabis anthicoides Westwood, 1870 Singapore

Tribe Arhytodini

Sabarhytus kinabalu Löbl, 2000 Sabah (Mt. Kinabalu)

Tribe Pselaphini

Pselaphus lativentris Reitter, 1882 Borneo; Java (Batavia).
P. parvipalpis Reitter, 1882 (=*P. bivestitus* Schaufuss, 1887) Borneo, Singapore; Java (Batavia)
P. calopygaeus Schaufuss, 1887 Borneo
P. unipunctatus Reitter, 1883 Borneo
P. biocellatus Reitter, 1883 Borneo
P. sexstriatus Reitter, 1883 Borneo

Supertribe Clavigeritae
Tribe Colilodionini

Colilodion wuesti Löbl, 1994 Pahang (Genting Highland)
C. incredibilis Besuchet, 1991 Sabah (Mt. Kinabalu)
C. mirus Besuchet, 1991 Sabah (Mt. Kinabalu)
C. inopinatus Besuchet, 1991 Sabah (Tamparuli-Ranau)

Tribe Clavigerini

Disarthricerus integer Raffray, 1895 Singapore
D. moultoni Bryant, 1915 Sarawak (Mt. Matang)
Articerodes borneensis Bryant, 1915 Sarawak (Mt. Matang)
Mastiger brevicornis Raffray, 1890 Singapore
Cerylambus reticulatus (Raffray, 1895) Singapore
Anaclasiger sinuaticollis Raffray, 1890 Singapore ; Taiwan
Pseudacerus furcatus Raffray, 1895 Singapore

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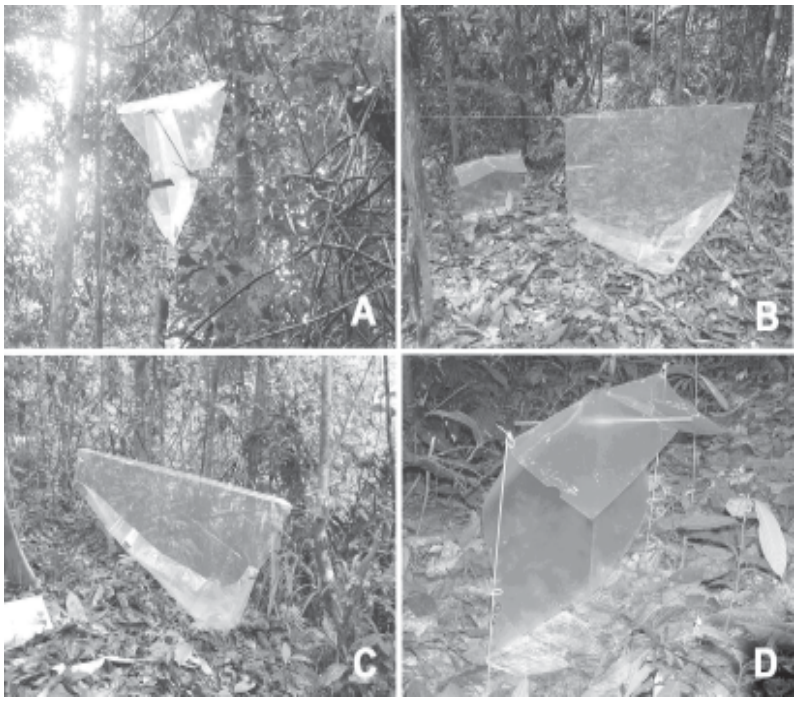

Fig. 1. Four different types of FITs used in the survey of 2004. A. Type NHP-1; B. Types NG-3 (right) and M (left); C. Type NG-4; D. Type M.

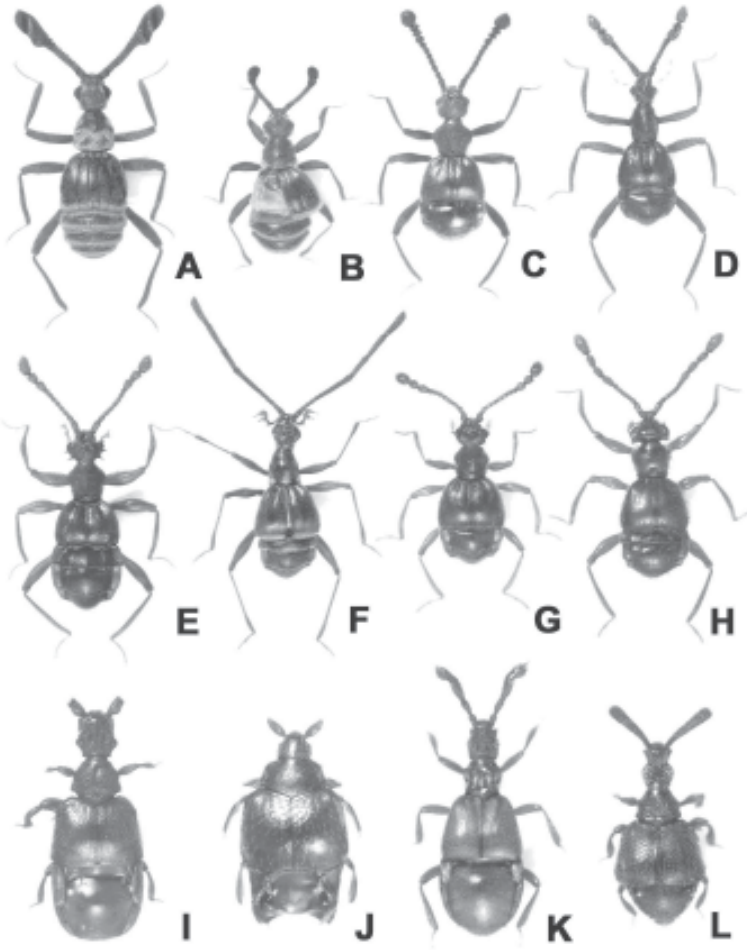

Fig. 2. Some selected species of the supertribe Goniaceritae collected from Malaysia. A. *Awas rajah* Nomura et Idris; B. *Harmophorus* sp. 3; C. *Trissemus* sp. 1; D. *Atenisodus* sp.; E. *Batraxis* sp. 4; F. *Morana?* sp. 1; G. *Natypleurus* sp.; H. *Nedarassus* sp. 2; I. *Mechanicus?* sp. 3; J. *Proterus?* sp.; K. *Plagiophorus impar* (Raffray); Goniaceritae, gen. and sp. undet.

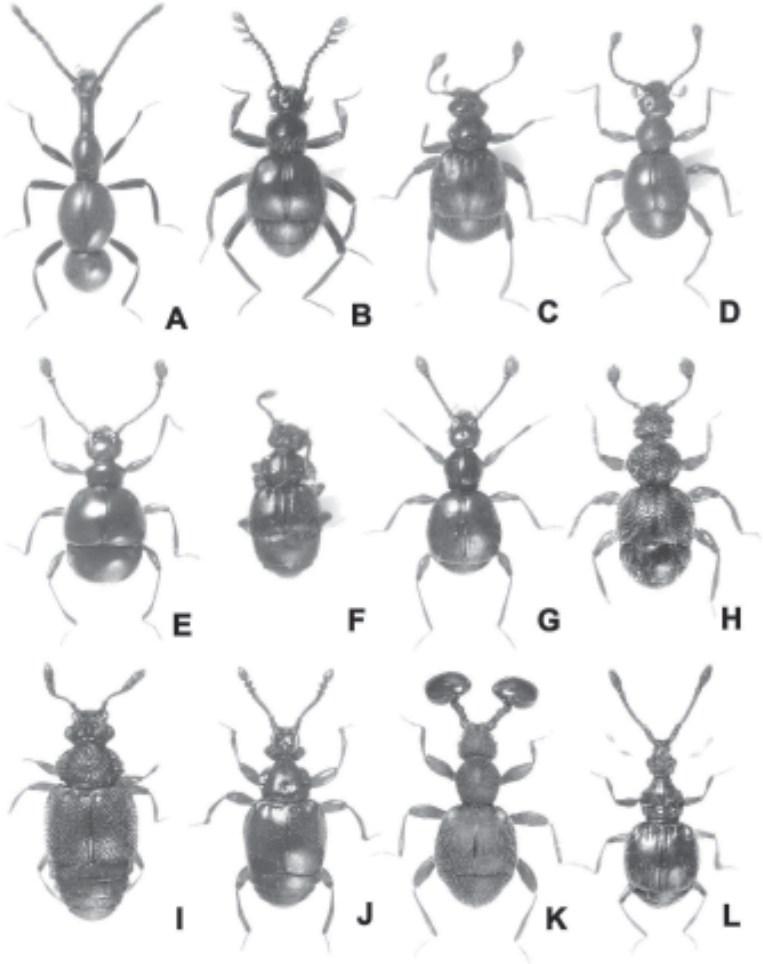

Fig. 3. Some selected species of the supertribes Pselaphitae and Clavigeritae collected from Malaysia. A. *Apharinodes mirandus* Raffray; B. *Stipesa* sp.; C. *Pseudophanias* sp. 1; D. *Ancystrocerus* sp. 4; E. *Tmesiphorus* sp. 4; F. *Ctenistes* sp.; G. *Tyrus* sp.; H. *Centrophthalmus* sp. 1; I. *Mastiger* sp.; J. *Pseudacerus* sp. 1; K. *Anaclasiger sinuaticollis* Raffary; L. *Disarticerus integer* Raffray.