

## Passalid Beetles (Coleoptera, Passalidae) Collected from Sarawak, Borneo

### I. The Subfamily Passalinae, with Description of a New *Aceraius* Species from Mt. Mulu<sup>1)</sup>

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**Abstract** Eighteen species of the subfamily Passalinae, collected by the Kyoto University Expeditions to Sarawak (1989–1991), are recorded. In addition, a new *Aceraius* species is described from Mt. Mulu under the name *Aceraius hidakai* sp. nov. This new species resembles *A. laevimargo* ZANG in having the middle-sized body (38.4–39.0 mm) and the long antennal lamellae, but can readily be distinguished from the latter by having the anterior lower tooth of the left mandible dorso-ventrally bifid at the apex.

More than three-hundred examples of the Passalinae (Coleoptera, Passalidae) were collected by one of the authors (K. ARAYA) and the other members of the Kyoto University Expeditions to Sarawak during 1989–1991 (the collection localities are shown in Fig. 1). Nineteen species, one of which was new to science, were contained in the collection. We record herewith the materials and describe a new *Aceraius* species. We refer to HINCKS and DIBB (1935; 1958) for the distribution of each species.

In the description of the new species, we adopt the terminology of GRAVELY (1914) and describe both sexes together because no sexual dimorphism is evident. The abbreviations for morphometric characters are the same as those in our previous paper (KON & JOHKI, 1992).

The present new *Aceraius* species is compared with the other seventeen species of the genus. The compared specimens of *Aceraius* species other than the nine species recorded in the present study are listed below. The acronyms for the collection of the Department of Zoology, National Science Museum (Natural History), Tokyo, that of the Muséum national d'Histoire naturelle, Paris, and that of the Department of

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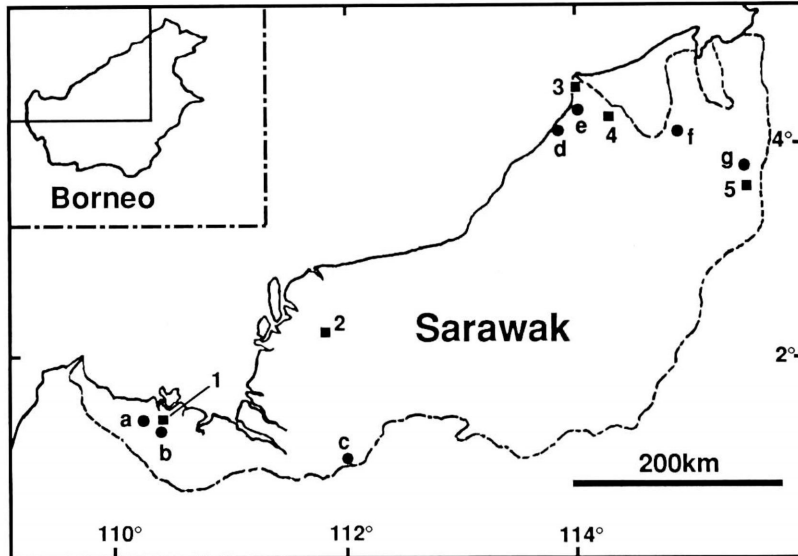


Fig. 1. Sketch map of Sarawak, Borneo. Closed squares indicate chief cities in Sarawak: 1, Kuching; 2, Sibu; 3, Miri; 4, Marudi; 5, Bareo. Closed circles indicate the collection localities: a, Mt. Serapi and Matang; b, Semangoh Forest Reserve; c, Sungai Beloh; d, Niah National Park; e, Lambir National Park; f, Mulu National Park; g, Mt. Murud.

Zoology, Kyoto University, are NSMT, MNHN and KUZ, respectively.

*A. alutaceosternus* KUWERT: 1 ex. (lectotype), Perak, Malay Peninsula (MNHN).

*A. ashidai* KON, ARAYA et JOHKI: 1 ♂ (holotype), Tanah Rata (1,500 m), Cameron Highlands, Malay Peninsula, 16–III–1992, H. ASHIDA leg. (NSMT).

*A. kinabalensis* KON et JOHKI: 1 ♂ (holotype), Mt. Kinabalu (1,500 m), Sabah, Borneo, 30–V–1976, T. MIZUNUMA leg. (NSMT).

*A. moeschleri* KUWERT: 1 ♂, Kundasang, Sabah, Borneo, 18–VII–1987, M. KON leg.; 1 ♀, ditto, 19–VII–1987, M. KON leg. (KUZ).

*A. helferi* KUWERT: 2 ♂♂, Doi Pui, Chiang Mai, Thailand, 20–VII–1984, T. ÔBUCHI leg. (KUZ).

*A. laniger* ZANG: 1 ♂, Mt. Kinabalu, Sabah, Borneo, 17–VIII–1977, M. YOSHIMURA leg. (KUZ).

*A. pilifer* (PERCHERON): 1 ♀, Kundasang, Sabah, Borneo, 12–VIII–1987, T. HIKIDA leg. (KUZ).

We refer to HINCKS (1938) for *A. parvulus* HINCKS because no specimen was available.

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## Subfamily Passalinae

*Macrolinus latipennis* (PERCHERON)

*Passalus latipennis* PERCHERON, 1841, Mag. Zool., 11, p. 8.

*Specimens examined.* 1 ex., Sungai Beloh, 9-I-1990; 1 ex., Matang, 20-XII-1990.

*Distribution.* Myanmar, Malay Peninsula, Sumatra, Java, Borneo, Philippines.

*Ophrygonius singapurae* GRAVELY

*Ophrygonius singapurae* GRAVELY, 1914, Mem. Ind. Mus., 3, p. 226.

*Specimens examined.* 1 ex., Mt. Mulu, 15-XII-1989.

*Distribution.* Laos, Malay Peninsula, Borneo.

*Ophrygonius wallacei* (KUWERT)

*Heterochilus wallacei* KUWERT, 1898, Nov. zool., 5, p. 334.

*Specimens examined.* 1 ex., Mt. Serapi, 11-XI-1990; 1 ex., ditto, 25-XI-1990; 1 ex., ditto, 12-XII-1990; 1 ex., ditto, 13-XII-1990; 1 ex., ditto, 14-XII-1990.

*Distribution.* Malay Peninsula, Sumatra, Borneo.

*Aceraius borneanus* KAUP

*Aceraius borneanus* KAUP, 1871, Berl. ent. Z., 15 (suppl.), p. 52.

*Specimens examined.* 6 exs., Mt. Mulu (100 m in alt.), 15-XII-1989; 1 ex., ditto, 16-XII-1989; 1 ex., Mt. Serapi, 11-XI-1990; 1 ex., ditto, 22-XI-1990.

*Distribution.* Malay Peninsula, Sumatra, Java, Borneo.

*Aceraius grandis* (BURMEISTER)

*Passalus grandis* BURMEISTER, 1847, Handb. Ent., 5, p. 463.

*Specimens examined.* 1 ex., Mt. Mulu (500 m in alt.), 17-XII-1989; 1 ex., ditto, 18-XII-1989; 1 ex., Mt. Serapi, 21-XII-1990.

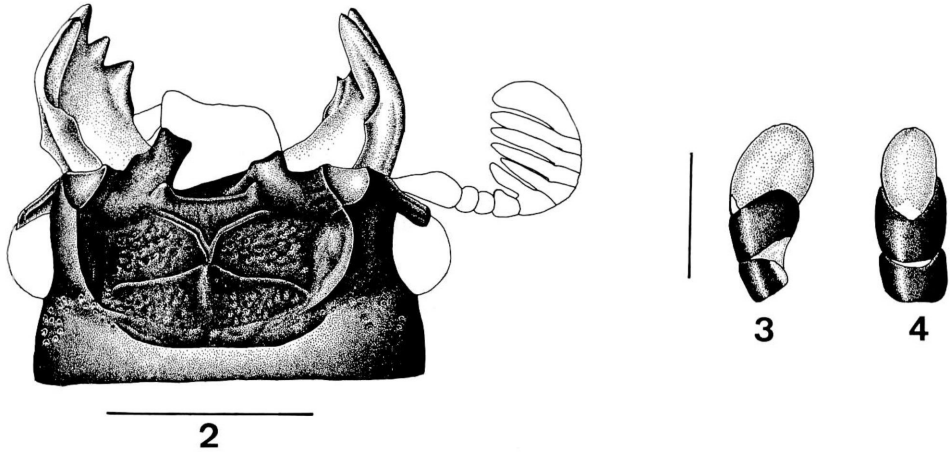
*Distribution.* E. Himalayas, Myanmar, Thailand, Cambodia, Vietnam, Formosa, Malay Peninsula, Sumatra, Java, Borneo, Philippines.

*Aceraius hidakai* sp. nov.

(Figs. 2-4)

Length from anterior margin of head to apices of elytra 38.4-39.0 mm (n=5). Body black, polished; BT/EW 0.68-0.71 (n=5).

Antenna with six long lamellae. Labrum with setiferous hair-bearing punctures,



Figs. 2-4. *Aceraius hidakai* sp. nov. (holotype); 2, head (scale: 5 mm), setae are omitted from this figure; 3-4, male genitalia (scale: 2 mm), right lateral view (3), ventral view (4).

anterior margin slightly concave, angles rounded, left angle much more prominent than the right one, left lateral margin almost straight, right one slightly convex. Upper margin of mandible without swelling behind upper tooth. Upper tooth of both mandibles simply pointed forward and slightly upward in lateral view, either truncated or weakly bifid at apex in dorsal view; upper tooth of left mandible much higher than in the right one; lowest terminal tooth of right mandible represented by a small denticle; upper portion of anterior lower tooth of right mandible represented by a low trapezoid, anterior angle acute, posterior angle rounded, upper side concave; lower portion of anterior lower tooth of right mandible represented by a small denticle, located more posteriorly than anterior angle of upper portion; anterior lower tooth of left mandible much broader than left lowest terminal tooth, bifid dorso-ventrally at apex, with horizontal groove on posterior margin. Anterior angle of head obtusely angular, not prominent forward. Canthus with distinct ridge parallel to anterior margin. Left outer tubercle larger than the right one, truncated and weakly bifid at distal end, outer margin with obtusely angular swelling at base, inner margin either straight or slightly convex; right outer tubercle truncated at distal end, outer angle pointed slightly upward and forward, more prominent than inner angle; upper surface of both outer tubercles rough; LOTW/LOTL 0.46-0.54 ( $n=5$ ); ROTL/LOTL 0.67-0.77 ( $n=5$ ). Inner tubercle large, pointed forward and upward; DIT/DAS 0.30-0.35 ( $n=5$ ). Ridge between inner tubercles distinct, almost straight, without distinct posterior groove; frontal ridge accompanying distinct groove anteriorly; supraorbital and supraoccipital ridges separated by setiferous hair-bearing punctures; parietal ridge not swelling upward in distal portion. Areas between frontal and parietal ridges, behind parietal ridge and behind eye with setiferous hair-bearing punctures; frontal area impunctate, hairless, rough, weakly rugose. Mentum with setiferous hair-bearing

punctures in lateral portion, slightly prominent forward at middle of anterior margin, weakly sunken on each side of middle prominence.

Pronotum polished, with setiferous hair-bearing punctures in lateral scar and near both anterior and lateral margins; intercoxal process of prosternum with long hairs in posterior portion. Mesosternum hairless, frosted in posterior portion, with distinct scar; mesothoracic episternum frosted and impunctate in posterior portion, with large punctures in both anterior and dorsal portions. Ridge separating intermediate and lateral areas of metasternum distinct along whole length; lateral area and anterior intermediate area densely punctured and hairy; posterior intermediate area punctured and hairy near posterior margin, with irregular dents along posterior margin of central area; central area impunctate and hairless.

Tenth rib of elytra hairy in anterior portion close to shoulder, impunctate and hairless in posterior portion; ninth densely punctured and hairy in anterior half, more sparsely in posterior half; eighth impunctate and hairless along whole length; seventh very sparsely punctured.

Second abdominal sternite hairy along middle transverse ridge; third to sixth abdominal sternites hairless.

Upper and lateral margin of distal end of fifth tarsus rounded in all legs.

*Type series.* Holotype: 1 ♂, Mt. Mulu, 500 m in altitude, Sarawak, Borneo, 17–XII–1989, K. ARAYA leg. Paratypes: 2 ♂♂, 2 ♀♀, same data as for the holotype. The holotype and 1 paratype (♀) are deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo, 1 paratype (♂) in the collection of the Muséum national d'Histoire naturelle, Paris, 1 paratype (♂) in the collection of the Institute de Ecologia, México, and 1 paratype (♀) in the collection of the Forest Department, Sarawak, Malaysia.

*Etymology.* This species is named in honor of Prof. T. HIDAOKA, Kyoto University, who gave us the opportunity of performing the researches on the Bornean passalid beetles.

*Notes.* *Aceraius hidakai* sp. nov. differs from *A. grandis*, *A. illegalis*, *A. laevicollis* and *A. oculidens* in having the anterior angle of head not prominent forward, from *A. kinabalensis*, *A. kuwerti*, *A. moeschleri* and *A. tricornis* in having the tenth rib of elytra hairy in the anterior portion, from *A. alutaceosternus*, *A. borneanus* and *A. helferi* in having the mandible without swelling on the upper margin behind the upper tooth, from *A. laniger* in having the fifth tarsus of middle and hind legs rounded on the upper and lateral margins of the distal end, from *A. lamellatus* in having the hairless mesosternum, from *A. pilifer* and *A. parvulus* in having the much larger body (38.4–39.0 mm) and the long antennal lamellae, from *A. ashidai* in having the parietal ridge not swelling upward in the distal portion and from *A. laevimargo* in having the anterior lower tooth of the left mandible dorso-ventrally bifid at the apex.

*Aceraius illegalis* KUWERT

*Aceraius illegalis* KUWERT, 1891, Dt. ent. Z., 1891, p. 163.

*Specimen examined.* 1 ex., Mt. Serapi, 20-I-1990.

*Distribution.* Malay Peninsula, Borneo.

*Aceraius kuwerti* ZANG

*Aceraius kuwerti* ZANG, 1903, Insekten-Borse., 20, p. 339.

*Specimens examined.* 4 exs., Bareo, 12-I-1991; 8 exs., Mt. Murud, 15-I-1991; 22 exs., ditto, 16-I-1991; 3 exs., ditto, 19-I-1991; 10 exs., ditto, 20-I-1991.

*Distribution.* Borneo.

*Aceraius laevicollis* (ILLIGER)

*Passalus laevicollis* ILLIGER, 1800, in WIEDEMANN, Archiv Zool., 1, p. 103.

*Specimens examined.* 6 exs., Mt. Mulu (100 m in alt.), 14-XII-1989; 12 exs., ditto, 15-XII-1989; 2 exs., ditto, 16-XII-1989; 7 exs., ditto, 27-XII-1989; 1 ex., Mt. Serapi, 13-XI-1990; 1 ex., ditto, 13-XII-1990; 1 ex., ditto, 20-XII-1990; 1 ex., ditto, 27-XII-1990; 1 ex., Matang, 20-XII-1990; 7 exs., Niah National Park, 27-XII-1990; 12 exs., Mt. Murud, 15-I-1991; 14 exs., ditto, 16-I-1991; 2 exs., ditto, 20-I-1991; 3 exs., Bareo, 12-I-1991; 12 exs., ditto, 24-I-1991.

*Distribution.* Malay Peninsula, Sumatra, Java, Borneo, Philippines, ?Sulawesi.

*Aceraius laevimargo* ZANG

*Aceraius laevimargo* ZANG, 1905, Dt. ent. Z., 1905, p. 244.

*Specimens examined.* 4 exs., Mt. Murud, 20-I-1991.

*Distribution.* Malay Peninsula, Sumatra, Borneo.

*Aceraius lamellatus* GRAVELY

*Aceraius lamellatus* GRAVELY, 1918, Mem. Ind. Mus., 3, p. 89.

*Specimens examined.* 3 exs., Mt. Serapi, 12-XI-1990; 1 ex., ditto, 13-XI-1990; 1 ex., ditto, 17-XI-1990; 1 ex., ditto, 18-XI-1990; 1 ex., ditto, 20-XI-1990; 1 ex., ditto, 21-XI-1990; 1 ex., ditto, 25-XI-1990; 1 ex., ditto, 14-XII-1990; 1 ex., ditto, 15-XII-1990.

*Distribution.* Malay Peninsula, Borneo, Sulawesi.

*Aceraius oculidens* ZANG

*Aceraius oculidens* ZANG, 1905, Dt. ent. Z., 1905, p. 190.

*Specimens examined.* 1 ex., Mt. Mulu, 17-XII-1989; 4 exs., Mt. Murud, 19-I-1991.

*Distribution.* Malay Peninsula, Sumatra, Borneo.

*Aceraius tricornis* ZANG

*Aceraius tricornis* ZANG, 1903, Insekten-Borse., **20**, p. 339.

*Specimen examined.* 1 ex., Mt. Murud, 16-I-1991.

*Distribution.* Borneo.

*Pelopides monticulosus* (SMITH)

*Passalus monticulosus* SMITH, 1852, Nomencl. Coleopt. Ins. Coll. Brit. Mus., **6**, p. 6.

*Specimens examined.* 5 exs., Bareo, 12-I-1991; 1 ex., ditto, 19-I-1991; 1 ex., ditto, 24-I-1991; 18 exs., Mt. Murud, 15-I-1991; 14 exs., ditto, 16-I-1991; 2 exs., ditto, 20-I-1991; 2 exs., ditto, 23-I-1991; 1 ex., ditto, 24-I-1991.

*Distribution.* Thailand, Malay Peninsula, Sumatra, Borneo.

*Leptaulax bicolor* (FABRICIUS)

*Passalus bicolor* FABRICIUS, 1801, Syst. Eleuth., **2**, p. 256.

*Specimens examined.* 1 ex., Mt. Mulu, 12-XII-1989; 1 ex., Mt. Serapi, 12-XI-1990; 1 ex., ditto, 25-XI-1990; 1 ex., ditto, 11-XII-1990; 8 exs., Matang, 20-XII-1990; 3 exs., Niah National Park, 24-XII-1990; 1 ex., Bareo, 13-I-1991; 1 ex., ditto, 25-I-1991; 50 exs., Mt. Murud, 15-I-1991; 59 exs., ditto, 16-I-1991; 2 exs., ditto, 19-I-1991; 1 ex., ditto, 20-I-1991; 3 exs., ditto, 21-I-1991; 3 exs., ditto, 23-I-1991.

*Distribution.* India, Sri Lanka, E. Himalayas, Myanmar, Thailand, Vietnam, Cambodia, Formosa, Malay Peninsula, Sumatra, Java, Borneo, Philippines, Sulawesi, Moluccas, New Guinea, Australia.

*Leptaulax cyclotaenius* KUWERT

*Leptaulax cyclotaenius* KUWERT, 1891, Dt. ent. Z., **1891**, p. 188.

*Specimens examined.* 1 ex., Mt. Mulu (100 m in alt.), 16-XII-1989; 1 ex., ditto, 17-XII-1989; 1 ex., ditto (600 m in alt.), 21-XII-1989; 2 exs., ditto (200 m in alt.), 23-XII-1989; 1 ex., Mt. Serapi, 17-XI-1990.

*Distribution.* E. Himalayas, Myanmar, Thailand, Vietnam, Cambodia, Malay Peninsula, Sumatra, Borneo, Sulawesi.

*Leptaulax dentatus* (FABRICIUS)

*Passalus dentatus* FABRICIUS, 1792, Ent. Syst., 1(2), p. 241.

*Specimens examined.* 1 ex., Mt. Mulu, 26-XII-1989; 1 ex., ditto, 27-XII-1989; 1 ex., Mt. Serapi, 12-XI-1990; 1 ex., ditto, 29-XII-1990; 1 ex., ditto, 21-XII-1990.

*Distribution.* India, E. Himalayas, Myanmar, Thailand, Vietnam, Cambodia, China, Formosa, Malay Peninsula, Sumatra, Java, Borneo, Philippines, Sulawesi, Lesser Sundas, Moluccas, New Guinea, Australia.

*Leptaulax humerosus* KUWERT

*Leptaulax humerosus* KUWERT, 1891, Dt. ent. Z., 1891, p. 189.

*Specimens examined.* 1 ex., Mt. Serapi, 17–XI–1990; 1 ex., ditto, 22–XI–1990; 1 ex., ditto, 9–XII–1990; 1 ex., ditto, 24–XII–1990.

*Distribution.* Malay Peninsula, Sumatra, Java, Borneo.

*Leptaulax planus* (ILLIGER)

*Passalus planus* ILLIGER, 1800, in WIEDEMANN, Archiv Zool., 1, p. 104.

*Specimens examined.* 1 ex., Marudi, 12–XII–1989; 1 ex., Mt. Mulu (100 m in alt.), 28–XII–1989.

*Distribution.* Myanmar, Thailand, Malay Peninsula, Sumatra, Java, Borneo, Sulawesi.

要 約

近 雅博・荒谷邦雄・常喜 豊：ボルネオ，サラワク州で採集されたクロツヤムシ。I. クロツヤムシ亜科，およびムル山よりえられたオオクロツヤムシ属の1新種。——ボルネオのサラワク州への京都大学の学術調査(1989–1991)において採集された，クロツヤムシ亜科のクロツヤムシ18種を記録した。それに加えて，オオクロツヤムシ属の1新種，*Aceraius hidakai* sp. nov. をムル山より記載した。この種は，中くらいの体長(38.4–39.0 mm)と長い触角の lamellae をもつ点において *A. laevimargo* ZANG に似ているが，左の大顎の anterior lower tooth の先端が上下に二叉状となる点において容易に区別できる。

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