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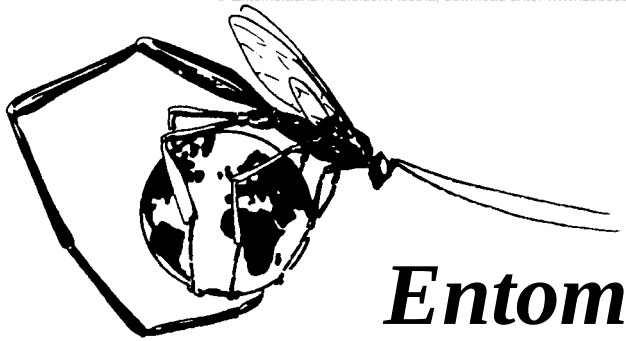

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The genus *Platydracus* Thomson in Borneo (Staphylinidae, Staphylininae)

Guillaume de Rougemont

Abstract

Six new species of *Platydracus*, *P. borneensis* n. sp., *P. donnyi* n. sp., *P. oblongopunctatus* n. sp., *P. rufulus* n.sp., *P. sladeae* n.sp., and *P. villanuevai* n.sp. are described. A key to the nine species of *Platydracus* and the single species of *Saniderus* Fauvel now known from the island is given. The habitus and aedoeagus of all species of *Platydracus* are illustrated by photographs.

Zusammenfassung

Sechs neue *Platydracus*-Arten, *P. borneensis* n. sp., *P. donnyi* n. sp., *P. oblongopunctatus* n. sp., *P. rufulus* n.sp., *P. sladeae* n.sp., und *P. villanuevai* n.sp. werden beschrieben. Ein Bestimmungsschlüssel zu den neun *Platydracus*-Arten und der einzigen von Borneo bekannten *Saniderus*-Art wird erstellt. Habitus und Aedeagus aller *Platydracus*-Arten werden durch Fotos dargestellt.

Introduction

The first species of *Platydracus*, (*P. hewitti* Bnh.) recorded from Borneo was described one hundred years ago; two more (*P. aeneipennis* Cam. and *P. aeneoacreus* Cam.) were

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described sixteen years later, since when no new species have been recorded. Recent collections of Coleoptera from Borneo, in particular a very large body of material from the Danum valley in Sabah housed in the Oxford University Museum of Natural History, have revealed many individuals and species of several genera of the "*Staphylinus* complex", in particular in the genera *Platydracus* and *Naddia*, increasing the number of species of *Platydracus* known from Borneo from 3 to 9 and of *Naddia* from 2 to15 (Rougemont in prep.)

Platydracus is a large genus: Herman lists 178 described species in his 2000 catalogue, but it is certain that many of the species still included in *Staphylinus* will later prove to belong to *Platydracus*, and many undescribed species exist in collections. Since no revisions or keys of the oriental *Platydracus* (except that for the "*Staphylinus*" of India in Cameron, 1931) of the genus have been published, it may seem unwise to describe new species from the region in isolation; however the fauna of Borneo appears to be largely self-contained, and all the species listed below are probably endemic to the island.

The paramere of the aedoeagus probably bears eight terminal setae in all species, but these are often difficult to see, so that they may appear to be four, six, or of indeterminate number.

Material and methods

The present study is based essentially on material in the Oxford University Museum of Natural History. Most of the *Platydracus* obtained were caught in flight interception traps or in pitfall traps baited with dung, fish or fungi. A few of the specimens studied here were obtained by the author in the Danum valley in 2007 and on earlier trips to the Mt. Kinabalu national park area and to Sarawak, and other exx. were provided by the Natural History Museum, London, which has hitherto unrecorded material collected in Gunung Mulu national park, Sarawak in 1978 and in central Kalimantan in 2001, and by the natural history museums in Vienna and Geneva. As more and more tubes of unmounted material from the Danum valley became available for study after completion of the first draft of this manuscript I ceased to mount specimens of the commoner species and have left them preserved in alcohol.

I have checked determinations of the Bornean species by comparison with types of species described from Borneo, Java and the Philippines by Cameron housed in the Natural History Museum, London. I have not seen some of the species described by Bernhauer, and have had to rely on the original published descriptions. The general appearance of species, depending largely on intricate patterns of different colours and the length and density of pubescence, which have always been difficult to describe in words, is best illustrated by photographs.

The photographs of whole insects and of the aedoeagi were made in the laboratory of the Oxford University Museum of Natural History using a Leica DFC 490 digital camera linked to a Leica M165C microscope and Helicon Focus version 5.3.11 software producing composite stacked focus images. Descriptions and measurements were made using a VMZ 1x-4x stereo microscope with an eye-piece micrometer; the latter are given in millimetres. Measurements of the head are made at its widest point but do not include the eyes;

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measurement of the length of head are made from the front of clypeus to the middle of base.
The sole purpose of this paper is to make the new species known and to enable their identification.

Abbreviations used on data labels or in the text are as follows:

B.R.L.	=	Borneo Rainforest Lodge, Danum Valley, Sabah
f.i.t.	=	flight interception trap
p.t.	=	pitfall trap
MHNG	=	Natural History Museum, Geneva
NHML	=	Natural History Museum, London
OUMNH	=	Oxford University Museum of Natural History
RCL	=	Rougemont collection

The following key includes two species that might be mistaken for *Platydracus* but that belong to other genera: one belonging to an undescribed genus, the other the single species of *Saniderus* Fauvel known from Borneo.

Key to the species of *Platydracus* species of Borneo

1 (2) Third segment of labial palpi asymmetrically dilated, truncate, securiform; large puncture bearing temporal seta situated closer to eye than to posterior margin of head; body entirely black, shiny, elytra and abdominal tergites devoid of any patches of golden or silvery pubescence; antennae and legs black . . . . . undescribed genus

2 (1) Third segment of labial palpi sub-cylindrical or fusiform (in one case (*P. donnyi* n.sp.) inflated but not noticeably asymmetrical); large puncture bearing temporal seta situatedcloser to posterior margin of head than to eye; if body entirely black, elytra with coloured pubescence at least in parts, and abdominal tergites with at least some brassy or silvery pubescence; femora at least in parts yellow or testaceous (*Platydracus* and *Saniderus*) 3

3 (18) Head and pronotum more or less homogeneously punctate, the puncturation either rugose, sub-rugose or sparser, but in that case the interstices not or rarely and only in parts as wide as the diameter of punctures; in some cases there may be traces of an impunctate mid-longitudinal line on the pronotum, or this may be entire in some species or individuals; disc of head never broadly impunctate; pronotum never with clearly defined, discrete, densely punctate and entirely impunctate areas 4

4 (7) Pronotum black, devoid of reddish or testaceous patches or metallic reflex; antennae, including basal segments, entirely black 5

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5 (6) All femora yellow, albeit usually narrowly infuscate at base; antennae entirely black; elytra entirely covered in dense, short brassy pubescence except on areas where it may have been rubbed off, giving the elytra an overall greenish-bronze or brassy appearance; abdominal tergites III-VII with lateral patches of long silvery pubescence.Habitus: fig. 1; aedoeagus: Figs. 1 a, b . . . . *P. aeneipennis* (Cam.)

6 (5) Profemora fuscous, mesofemora fuscous, narrowly yellow or merely paler at distal end, metafemora with distal half to two-thirds testaceous; elytra black to fuscous, more or less brownish at humeral angles and near lateral declivity, the surface covered in long black pubescence interspersed with very sparse, short brassy pubescence so that the overall appearance is fuscous, except for a small patch at middle of posterior margin, and a larger patch in postero-lateral area of longer brassy pubescence; abdominal tergites 4-6 with small patches of sparse, short brassy pubescence. Habitus: fig.2; aedoeagus: Figs. 2 a, b . . . . . *P. sladeae* n.sp.

7 (4) Pronotum dark brown, brown, or reddish, or with reddish or testaceous areas, or with a brassy metallic reflex 8

8 (9) Very large species (ca. 30 mm); head and pronotum rufo-testaceous with more or less extensive darker patches; elytra rufo-testaceous, abdomen brown, tergites III-VII each with a pair of round black marks composed of a dense patch of recumbent short black pubescence, these marks ringed by a fine fringe of short golden pubescence; Habitus: fig.3; aedoeagus: Figs 3 a, b . . . . . *P. borneensis* n. sp.

9 (8) Smaller species (12-15 mm); colouration otherwise 10

10 (17) Puncturation of head and pronotum rugose or sub-rugose; first antennomere testaceous, contrasting with dark antennomeres II-XI or at least III-XI 11

11 (14) Pronotum clearly bicolorous, dark with a brassy metallic reflex, narrowly or more broadly and irregularly rufo-testaceous near lateral margins; abdominal tergites clearly bimaculate, tergites III-VI testaceous with a pair of black fasciae increasing in size distally on each tergite, partially or completely merging on tergite VI; tergite VII entirely black except narrowly near anterior margin 12

12 (13) Eyes small, in dorsal view, about 1/3rd longer than temples; head bicolorous, dark with a brassy reflex on disc and occipital area, rufo-testaceous on frons and by inner margins of eyes; sides of pronotum more, sometimes very broadly reddish. Habitus: fig.4; aedoeagus: figs 4 a, b . . . . . *P. villanuevai n.sp*

13 (12) Eyes large, in dorsal view 2 ½ - 3 times as long as temples;head entirely dark with a brassy reflex, only the clypeusand post-antennal tubercles rufo-testaceous; sides of pronotum more narrowly reddish. Habitus: fig. 5; aedoeagus: figs. 5 a, b . . . . . *P. aeneoacreus* (Cam.)

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14 (11) Pronotum unicolorous, or with indistinct mottling; abdominal tergites less clearly bi-maculate, the ground colour either dark brown, or only tergites III-V rufo-testaceous, with tergite 6 black except for anterior margin 15

15 (16) Head and pronotum brown with a faint brassy tinge and with slightly paler areas; abdominal tergites dark brown and consequently less distinctly bi-maculate. Habitus: fig. 6; aedoeagus: figs 6 a. b. . . . . *P. hewitti* (Bnh.)

16 (15) Head rufous with post-ocular area infuscate; pronotum paler than head, uniformly orangey-red; abdominal tergites III-V rufo-testaceous, the black bi-maculate marks consequently more distinct, tergite VI black with only the anterior margin rufo-testaceous. Habitus: fig 7; aedoeagus: figs 7 a, b . . . . . *P. rufulus* n.sp.

17 (10) Puncturation of head and pronotum sparser, the interstices flat and very shiny, with a strong brassy reflex; punctures of head round, punctures of pronotum smaller, round in anterior 1/3rd, elongate in posterior 2/3rds; first antennomere dark like the following nine. Habitus: fig. 8; aedeagus: figs 8 a, b . . . . . *P. oblongopunctatus* n.sp.

18 (3) Head and pronotum not homogenously punctate, leavingDiscrete impunctate areas* on pronotum, or punctures small, irregular and very widely spaced on pronotum; elytra rufous 19

19 (20) Head brassy-metallic, more sparsely punctate on disc, but without a clearly delimited impunctate area; pronotum black with a blue/purple metallic reflex, the base narrowly rufous; puncturation of pronotum much finer, sparse and irregular at sides, the mid-longitudinal area broadly impunctate, but this area not clearly, symmetrically demarcated from lateral sculpture; impunctate areas of fore-body shiny, devoid of microreticulation and minute punctures. Habitus: fig. 9; aedoeagus: figs 9 a, b . . . . . *P. donnyi* n.sp

20 (19) Head black, with a large totally impunctate area on disc; pronotum rufous, the anterior border infuscate; pronotum coarsely and densely punctate with 3 clearly delimited broad, longitudinal entirely impunctate areas; impunctate areas micro-reticulate and micro-punctate. Habitus: (Rougemont 000, figs 1, 2; aedoeagus figs.11, 12) . . . . . *Saniderus manni* Rgmt.

* These “impunctate” areas do bear irregularly scattered micro-punctures as well as micro-reticulation in the genus *Saniderus*.

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List of material studied and descriptions

(species are presented in the order in which they appear in the key)

Platydracus aeneipennis (CAMERON)

Staphylinus aeneipennis CAMERON 1930: 164.
Platydracus aeneipennis HAMMOND 1984: 195.
Platydracus aeneipennis HERMAN 2001: 3441.

Type: SARAWAK, Mt. Matang (in Natural History Museum, London)
Additional material: two exx. belonging to this species in the NHML bear type labels, but the names were not published:
"Holotype" (♂): "*Staphylinus borneensis*" Bernhauer: Borneo, Pengoran, Doherty.
"Holotype" (abdomen detached): "*Staphylinus pengoranensis*" Bernhauer: Pengoran, S.E. Borneo, 1904-150.
I have affixed determination labels reading "*Platydracus aeneipennis* Cam. det. G. de Rougemont 2009" to both specimens.
More than a thousand exx. from the Danum Valley were collected by Mann, Slade and Villanueva in 2004 and 2005 and by the author in 2007, in flight interception traps and in dung- and fish baited pitfall traps. This species is by far the commonest large staphylinine beetle in Borneo; it would be otiose to list the data on labels. I have seen specimens from all four States of the island, from South, Central and East Kalimantan, from the 1st, 2nd and 4th divisions of Sarawak, from Brunei, and from western, eastern and southern Sabah.

Length: 12-15 mm. Description (of a male from Danum valley): length: 12-15 mm. Measurements: length: 14 mm; length of head: 1.8; breadth of head: 1.9; length of antenna: 2.9; length of eye: 0.8 (much longer than temples); length of pronotum: 2.9; breadth of pronotum: 2.3; length of elytron: 2.5; breadth of elytra: 3.0. Habitus: Fig. 1.
Head and pronotum black, shiny; antennae including first segments, entirely black; elytra black, but entirely covered by a mixture of short black erect pubescence and much longer, dense recumbent brassy pubescence, so the elytra look brassy or bronze; abdomen black, sternites 3-7 each with a small triangular patch of silvery pubescence at middle of base, and scattered sparse silvery pubescence at sides; palpi brown, the apices of terminal maxillary palpomeres paler; antennae black; all femora yellow, very narrowly infuscate at bases; tibia and tarsi black. Puncturation of head and pronotum very coarse, the punctures of head round, umbilicate, the diameter of larger punctures about equal to that of broadest point of terminal maxillary palpomere, the puncturation close, sub-rugose in parts, but all punctures clearly separated by narrow, sharp shiny interstices; head most often with a small mid-longitudinal impunctate area the length of 2-4 missing punctures at centre of vertex. Puncturation of pronotum slightly finer and denser than that of head, leaving a small mid-longitudinal impunctate near base the length of 4-6 missing punctures, and in some individuals a trace of a narrow impunctate mid-longitudinal line in anterior ¼. Puncturation of abdomen shallow, on either side of the small triangular patch of silvery pubescence at the middle of base of tergites 3-6 with an indistinct patch of dense short black pubescence.

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Male: abdominal sternite 8 with a small emargination; aedeagus (figs. 1 a, b) with the ventral plate of the median lobe prolonged anteriorly into a narrow process, the paramere large, broad, truncate and asymmetrical in ventral view.

P. aeneipennis Cam., through its combination of coarsely punctuate, shiny black head and pronotum, apparently bronze elytra and yellow femora, cannot be confused with any other Bornean species; the yellow femora in particular make it very easy to pick out when sorting large quantities of material. This species is most abundant in primary forest, but also occurs in degraded forest and in heaps of cut vegetation in plantations, etc. It is particularly common in dung.

***Platydracus sladeae* n. sp.**

♂ Holotype: SABAH, Danum Valley, B.R.I., f.i.t, 14-16.II.2007, G. de Rougemont; 1 ♀ paratype: Ibid. (holotype in RCL, paratype in OUMNH).

This species belongs to what appears to be a complex of species of similar appearance and colour pattern that currently stand over the label *P. maculipennis* Kraatz in some museum collections. *S. maculipennis* was described and recorded by Cameron (1932) from the Himalayan foothills of India, but I have seen at least two distinct forms from that area. One undescribed species occurs in SE Asia; it is very common in Hong Kong, and I have also taken it in Yunnan and in north Thailand. It is with this form that the new species will be compared.

Description of holotype: length: 14 mm; length of head: 1.6; breadth of head: 2.0; diameter of eye: 1.0 (about 2 ½ times the length of temples); length of antenna: 2.9; length of pronotum: 2.5; breadth of pronotum: 2.3; length of elytron: 2.7; breadth of elytra: 2.9. Habitus: fig. 2.
Entire body black, the humeral angles and deflexed margins of elytra slightly paler, dark brown to fuscous; pubescence and setae of head and pronotum black intermixed in parts with sparse, irregular, very short semi-erect brassy pubescence; elytra with the same type of pubescence but in addition with a patch of recumbent brassy/coppery pubescence near posterior margin but not reaching suture, and another larger patch of such pubescence occupying the postero-lateral angles; abdominal tergites 3-6 with a diffuse patch of brassy pubescence on either side near anterior border, and some sparse scattered short brassy pubescence on rest of tergites; tergites 7-8 with only such sparse scattered brassy pubescence, without the denser patches near anterior border; labrum and palpi brown, the apices of both labial and maxillary palpi paler; antennae, including basal segments black, only the base of second segment narrowly reddish; legs black, the distal 1/3 of mesofemora dark testaceous, the entire metafemora pale testaceous. The overall appearance of the body apart from the patches of coppery pubescence at apices of elytra is thus fuscous/black.
Puncturation of head and pronotum moderately coarse, rugose, the head devoid of any impunctate area, the pronotum with a faint thin trace of an impunctate mid-longitudial line extending most of the length of pronotum, this line expanded into a broader shiny callus

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near base. Puncturation of abdominal tergites fairly close but superficial and confused. Habitus: fig. 2.
Male: 8th tergite with a semicircular emargination occupying the entire breadth of posterior margin; aedoeagus: figs. 2 a, b, the paramere small, about 1/5th the length of median lobe, in ventral view broad at base and narrowed to an obtuse point; in lateral view very slender, adpressed to ventral sclerite of median lobe.

P. sladae n. sp. most closely resembles the form of the maculipennis complex from south China and Thailand mentioned above and referred to in Rougemont 2001 as "*Platydracus maculipennis* Kraatz?". It differs from this undescribed SE Asian form (compared with an ex. from Hong Kong) in its slightly coarser puncturation of the fore-body, but principally in the shape of the paramere of the aedoeagus, which is much broader, more truncate apically, and distinctly longer than the median lobe.

Derivation of specific name: this new species is named in honour of Dr. Eleanor Slade, who collected much of the material studied in this paper.

Platydracus borneensis n. sp.

♂ Holotype: MALAYSIA, Sabah, Lahad Datu, Ulu Segama For. Res., Danum Valley Forest Centre, 04°57.9'N 117°48.1'E, 200 m alt.xi.2005 1° Forest, FIT, coll. Mann, Slade & Villanueva, OUMNH-2006-051; 11 Paratypes: ibid.; 2 paratypes, ibid, but "Flight Interception Trap, lowland mixed Dipterocarp frst, West Trail area, frst. interior"; 1 Paratype: ibid, but "450 m alt., 08-17.xi.2005, 1° Forest"; 2 paratypes: ibid. but "baited PF" (holotype and 10 paratypes in OUMNH; 6 paratypes in RCL). 1 Paratype: MALAYSIA, Sabah, ca. 25 km S Sapulut, Batu Punggul env., primary forest intersept (sic.) trap, 23.5.2001, J. F. Kocian leg. (in NHMW); 2 paratypes: SARAWAK, 4th Division, Gunong Mulu N.P. Pitfall trap, fish bait, MD forest, 100-500 m (in NHML); 3 Paratypes: BRUNEI: Kuala Belalong, FSC, Baited trap, VI.1992, N. Mawdsley (in NHML).

Additional material: 2 exx.: MALAYSIA, Sabah, Lahad Datu, Ulu Segama For. Rs., Coupe 81 logging area, N04°58.660 e117°53.410, 21-23.III.2005 FIT, 2° Forest, coll. E. Slade & J. Villanueva; 2 exx.: MALAYSIA, Borneo, Sabah, Ulu Segama For. Res.; Danum Valley Conservation area, 8.III.2005, F.I. Trap, Primary forest, W from ca. N04°57.93 E117°41.15, Plot 2, Leg. E. Slade & J. Villanueva; 13 exx.: MALAYSIA, Sabah, Lahad Datu, Ulu Segama For. Res., Danum Valley Forest Centre, N04°57.9' E117°53.48.1' 450m, 20-29.xi.2005, 1° forest, coll. Mann, Slade & Villanueva, OUMNH 2006-05, Lowland mixed Dipterocarp forest, West trail area, 1° forest. (all in OUMNH); 2 exx.: MALAYSIA, Sandakan Div., Maliau Basin Conservation Area, Trail to OG2, N4º44.738' E116º58.187', 28-29.3.2011, 282 m amsl, coll. Mann, human faeces baited PF, Old growth forest, OUMNH-2011-043; 1 ex: MALAYSIA, Sabah, Tawau 4.64N 118.53E, 25-31.x.2012, 50m alt., coll. C.L. Gray, OUMNH 2013-456, Riparian forest, strip in oil palm. (in OUMNH); 5 exx.: MALAYSIA, Sabah, Tawau, SAFE project area 4.73705N 116.9583E, 377 m, 22.iv.2011, Primmary forest, coll. C. Gray, 25g Human faeces PF trap 48 hours, Ref: Maliau 1 0m. OUMNH-212-036.

Had one or two of the specimens studied above come from mainland Asia I would have supposed these specimens to belong to the range of variability of *P. maculicollis* Fv. which is variable and which it resembles very closely. However the Bornean population is clearly allopatric, and the large amount of material available shows some consistent differences

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from all those I have seen from the continent, so I have no hesitation in describing it as a new species. *P. maculicollis* occurs from Nepal and NE India through eastern Burma to north Thailand.

Length: 24-32 mm. Description of holotype: measurements: length: 29 mm; length of head: 3.8; breadth of head 5.3; length of eye: 1.9 (about equal to tempora); length of antenna: 4.5; length of pronotum: 5.4; breadth of pronotum: 5.3; length of elytron: 6.0; breadth of elytra: 6.8. Habitus: fig. 3.
Head and neck rufo-testaceous, with a small median blackish mark at base of occipital area extending to anterior half of neck, this mark sometimes divided in two; ventral surface of head and neck black; pronotum largely rufo-testacesous, with a broad median blackish mark and another broad blackish mark on either side extending to lateral margins; these three blackish maculae are sometimes joined and merge at about the middle of pronotum; scutellum black, velvety; elytra rufo-testaceous, usually with a sinuate blackish mark on either side of suture, extending the entire length of elytra and often with one or two small blackish spots on deflexed sides of elytra; a;; these blackish marks on elytra may be very faint or wanting completely in some individuals; abdominal tergites 3-7 dark brown, their anterior and posterior margins and paratergites paler, reddish-brown; tergites 3-7 each with a pair of very conspicuous round black velvety marks ringed with a fringe of short golden-brassy pubescence about 0.8 mm in diameter; posterior margin of tergite 7 and posterior half of tergite 8 paler, reddish-brown; mandibles black; palpi and first two antennomeres reddish brown, the remaining antennal segments of antennae darker, brown. Coxae black, femora and tibia entirely testaceous, the tarsi darker, reddish-brown.
Puncturation of head not very coarse, homogeneous and very close but not rugose, not leaving any impunctate area anywhere on head; frons with a pair of black setae near anterior margin, 3 or 4 black setae on sides besides the large temporal seta, a pair of closely set setae behind antennal tubercles, a couple of setae near inner margins of eyes, and about half a dozen black setae on disc behind eyes and in occipital area, the rest of head clothed in very long pale, semi-erect pale pubescence. Puncturation of pronotum similar in size and density to that of head and neck, but leaving a very narrow impunctate line that extends from anterior margin to near base, where it broadens to form a shiny callus; sides of pronotum with numerous mixed black and pale setae, the disc with very long semi-erect pale pubescence like that of head. Sides and disc of elytra clothed in a mixture of black setae and more abundant long pale pubescence, this becoming very dense near postero-lateral angles. Abdominal tergites 3-6 with, in addition to the round black spots described above, with about 6-10 black coarse black setae on sides, those and remaining tergites with fairy dense short brassy pubescence, the sculpture coreaceous, with fine shallow punctures.
Male: sternite 8 with a very small median emargination; aedoeagus: fig. 3 a, b; the paramere very long for a *Platydracus*, well over ½ the length of median lobe, in lateral view broad, truncate with apex slightly indented, clearly bearing eight long setae.

The size (about twice that of all other species) and colour pattern alone make this species unmistakable among the Bornean fauna. *P. borneensis* n. sp. is very similar to *P. maculicollis* Fv. from which it differs consistently by the following markings, although these are variable in both species (see description of *P. maculicollis* in Cameron, 1932, p.

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200): head with only a single blackish mark near base; pronotum with only three extensive blackish markings; elytra with two or at most six blackish marks as described above; most noticeably the abdominal tergites are paler in the new species, making the round black spots ringed with a golden brassy fringe much more conspicuous. The aedoeagi of the two species are similar, but in *P. maculicollis* the apex of the ventral plate of the median lobe is evenly rounded, whereas it is flattened, almost truncate in the Bornean species (fig. 3 a).

Platydracus villanuevai n. sp.

♂ Holotype: MALAYSIA, Sabah, Lahad Datu, Ulu Segama For. Res., Danum Valley Forest Centre, 04°57.9'N 117°48.1'E, 200 m alt., XI.2005 1° Forest, FIT, coll. Mann, Slade & Villanueva, OUMNH-2006-051 7 paratypes: Ibid. (holotype and 6 paratypes in OUMNH, 1 paratype in RCL); 1 Paratype.: MALAYSIA, Sabah, Lahad Datu, Ulu Segama Forest Reserve, Danum Valley conservation area, 4.IV.2005, F.I.Trap, Primary forest, ca. N04º57.93 E117 º48.15 Plot 4, Leg. E. Slade & J. Villanueva; 1 paratype: MALAYSIA, Sabah, Lahad Datu, Ulu Segama Forest Res., Malua 2, 05°05,731'N 117º37.606'E, 24.X1.2005, human faeces baited PT #07, High intensity logged dipterocarp forest, Yayasan Sabah Logging Concession, coll. Mann, Slade & Villanueva, OUMNH-2006-05; 1 paratype: MALAYSIA, Sabah, Lahad Datu, Ulu Segama For. Res. Danum Valley Forest Centre, 04º 57.9'N 117 º48.1'E, 200 m alt., 01.xi.2005, 1º Forest FIT, coll. Mann, Slade & Villanueva, Flight interception trap, Lowland mixed Dipterocarp frst, Nature trail area frst interior, OUMNH-2006-051; 2 paratypes: MALAYSIA, Borneo, Sabah, Ulu Segama Forest Reserve, Danum Valley Conservarion Area, ca. 10 Km from Danum Valley F.C., Secondary selectively logged forest, 17.III.2004, F.I. Trap, Coupe 81, Plot 3, ca. N04º58.66 E117 º37.53.41, Leg. E. Slade & J. Villanueva; 2 paratypes: MALAYSIA, Sabah, Ulu Segama For. Res., Danum Valley F.C., 04 º57.9'N 117 º48.1'E, 200 m alt, 01-02.xi.2005, 1 º Forest, coll. Mann, Slade & Villanueva, fish carrion baited PF Trap, diurnal period, lowland mixed Dipterocarp forest, Nature Trail area, OUMNH-2006-051; 2 paratypes: MALAYSIA, Sabah, Lahad Datu, Ulu Segama For. Res. Danum Valley F.C., 04˚57.9'N 117˚48.1'E, 200 m alt 21.xi.2005, Mann, Slade & Villanueva, Flight Interception Trap, Lowland, mixed Dipterocarp Forest, West Trail area, OUMNH-2006-051 (8 paratypes in OUMNH, 1 paratype in RCL); 2 ♀♀ paratypes DANUM Valley, B.R.L., f.i.t, 14-16.II.2007, G. de Rougemont leg. (in RCL).

Additional material: 3 exx.: SARAWAK, Mt. Trus Madi 1800 ft. 18-28.VIII.1977, M. E. Bacchus; 11 exx.: SARAWAK, Gn. Mulu N.P.; 3 exx.: SABAH, 250 ft., 30 ml. S. Sandakan-Keningau rd., 19-10.1977, M.E. Bacchus (all in NHML); 1 ex: Malaysia, Sabah, Tawau, 11-17.x.2012, 4.66N117.6E, 100m Alt, Coll. C.L.Gray, SAFE project area, F.I.T Riparian forest, strip in oil palm, OUMNH -213-056 (in OUMNH); 1 ex: MALAYSIA, Sabah, Tawau 4.64N 118.53E, 25-31.x.2012, 50m alt., coll C.L. Gray, OUMNH 2013-456, Riparian forest, strip in oil palm. (in OUMNH);1 ex.: BRUNEI, Rampayoh river, Upper waterfall, 1-4.III.1982, M.C. Day; 1 ex.: BRUNEI, Kuala Belalong FSC, Dipterocarp forest, BM(NH) 1991-173, Ground FIT4, 270m alt. 17-XI.91 N. Mawdsley NM226 (both in NHML); 2 ♀♀: SABAH, Poring Hot Springs, 500 m, 8.V.1987, Burkhardt – Löbl (in MHNG); 1 ♀ SABAH: Maliau basin (in OUMNH); 1 ex.: MALAYSIA, Sandakan Div., Maliau Basin Conservation Area, Trail to OG2, N4º44.738' E116º58.187', 28-29.3.2011, 282 m amsl, coll. Mann, human faeces baited PF, Old growth forest, OUMNH-2011-043; 1 ex.: MALAYSIA, Sabah, Lahad Datu, Ulu Segama Frst, Res., Danum Valley FC, 0º57.9'N 117 º 48.1'E, coll. Mann & Slade, human faeces baited PF, (trap 09), Lowland mixed Dipterocarp forest, OUMNH 2006-051. (in Oxford University Museum of Natural History).

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Length: 12-17.5 mm. Description of holotype: length: 17 mm; length of head: 2.2; breadth of head: 2.6; diameter of eye: 1.2; length of temple: 0.8; length of antenna: 3.3; length of pronotum: 3.0; breadth of pronotum: 2.7; length of elytron: 3.4; breadth of elytra: 3.5. Habitus: fig. 4.

Head reddish-brown on frons and inner sides of eyes, the basal half blackish, the blackish area invading centre of vertex more or less extensively in different individuals; head with a few black setae on sides and fine short brassy pubescence on disc. Pronotum blackish, shiny in a broad part of centre along its whole length and with a blackish spot on either side near anterior margin; sides broadly testaceous, this pale area usually extending from lateral margins to about half way to mid-longitudinal axis, sometimes reduced in width anteriorly; pubescence of pronotum short, sparse, bright brassy, similar to that of head; sides of pronotum with 4-5 long black setae. Scutellum velvety black. Abdominal tergites and paratergites 3-6 testaceouseacj with a pair of elongate, posteriorly slightly divergent velvety black marks quite close to mid-longitudinal axis, these marks becoming progressively larger on each tergite; tergite 7 with base narrowly testaceous, the rest black; tergite 8 entirely black, the translucent posterior margin narrowly rufescent; apart from the pairs of black marks described above, the tergites are clothed in irregular short brassy pubescence like that of fore-body. Palpi testaceous, the terminal segments darker. First two antennomeres testaceous, the following fuscous. Legs entirely testaceous.

Puncturation of head moderate, finer on frons than posteriorly, where the sculpture becomes sub-rugose and the punctures umbilicate. Puncturation of pronotum similar to that of basal area of head, leaving a very fine, short shiny trace of an impunctate mid-longitudinal line near anterior border, and a much broader shiny elongate callus near base. Puncturation of elytra fine and indistinct. Sculpture of tergites coriaceous, the punctures indistinct.

Male: abdominal sternite 8 with a small emargination about as wide at base as its depth; aedoeagus: figs 4 a, b, the paramere slender in lateral view, about ¼ the length of median lobe, and curving away from median lobe; in ventral view very broad, apically rounded.

Variation: as can be seen from the measurements given above, this species varies considerably in body size and to a relative extent at darker and lighter areas on the fore-body.

Because of a similar colour pattern (but see differences in key and in descriptions above and below) this species might be mistaken for *P. aeneaoacreus* Cam. were it not for the much smaller eyes which are only about 1/3rd longer than temples, whereas they are, or nearly, 3 times as long as temples in *P. aeneoacreus*. It is also on average a larger insect than *P. aeneoacreus* (see measured proportions of each species).

Platydracus aeneoacreus (CAMERON)

Staphylinus aeneoacreus CAMERON 1930: 164.
Platydracus aeneoacreus HAMMOND 1984: 195.
Platydracus aeneoacreus HERMAN 2001: 3441.

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Type: (NHML round label with red border): Type / N. BORNEO / NR. SANDAKAN / Staphylinus aeneoacreus Cam. Type / M. Cameron Bequest BM 1955-244 / HOLOTYPE Staphylinus aeneoacreus Cameron, 1930 det. R.G. Booth 2010 (in Natural History Museum, London).
Additional material: 1 ♂: MALAYSIA, Sabah, Lahad Datu, Ulu Segama For. Res., Danum Valley Forest Centre, 04°57.9'N 117°48.1'E, 200 m alt.xi.2005 1° Forest, FIT, coll. Mann, Slade & Villanueva, OUMNH-2006-051. 4 ♀♀: Ibid.; 1♀: MALAYSIA, Sabah, Lahad Datu Ulu Segama fr. Res., Malua 1 logging area N 05°7319' E117° 19-21.xi.2005, baited PF 2° forest, Coll. Mann, Slade & Villanueva; 1 ex.: MALAYSIA, Sabah, Lahad Datu, Ulu Segama For. Res., Danum Valley F.C. 04°57.9'N 117°48.1'E 200m alt, 01.xi.2005, 1° Forest, coll. Mann, Slade & Villanueva, human faeces baited PT trap, Diel activity exp. T-07 09.30 hrs, Lowland mixed Dipterocarp Frst, Nature Trail area, OUMNH-2006-051 (all in OUMNH, except 2 exx. in RCL); 3 exx.: MALAYSIA, Sabah, Lahad Datu, Ulu Segama Frst, Res., Danum Valley FC, 0º57.9'N 117 º 48.1'E, coll. Mann & Slade, human faeces baited PF, (trap 09) Lowland mixed Dipterocarp forest, OUMNH 2006-051. (in OUMNH).

Length: 9.5-13 mm. Description (of a male from Danum valley): length: 13 mm; length of head: 1.4; breadth of head: 1.8; length of eye: 10; length of temples: 3.0; length of antenna: 2.8; length of pronotum: 2.4; breadth of pronotum: 2.3; length of elytron: 2.6; breadth of elytra: 2.8. Habitus: fig. 5.
Head black with a strong metallic brassy reflex, the clypeus narrowly and the antennal tubercles reddish; pale pubescence very sparse and indistinct on head except along posterior margin; head with a pair of short black setae on anterior border of frons, and another behind antennal tubercles; one or two others on sides of head besides long temporal setae. Pronotum brassy like the head, the deflexed sides more or less broadly, and sometimes anterior margin narrowly pale reddish brown; pronotum clothed in long semi-recumbent pale pubescence and four long dark setae on each side. Scutellum velvety black. Abdominal tergites 3-6 and paratergites testaceous; tergites 3-7 each with a broad longitudinal dark brown to black mark on either side of the mid-line occupying the whole length of tergite; ground colour of tergites 7-8 dark brown or blackish except for apex of tergite 8 narrowly rufescent; tergites entirely clothed in long pale recumbent pubescence, this pubescence paler, denser and shorter along the mid-line and in patches on the anterior parts of sides, forming a distinct pattern; all tergites with usually a single long black seta on sides of paratergites (often broken off) and odd shorter black setae on sides of tergites (also often broken off). Palpi, first two antennomeres and sometimes base of third testaceous, the remaining antennal segments fuscous; legs testaceous.
Puncturation of head moderately coarse, close, sub-rugose, but the interstices nowhere forming confluent rugae. Puncturation of pronotum similar in coarseness and density to that of head, leaving a short trace of an impunctate mid-longitudinal line near base no longer than 2/7ths the length of pronotum. Puncturation of abdominal tergites very fine and indistinct.
Male: Abdominal sternite 8 with an apical emargination broader than its depth; aedeagus: figs 5 a, b, the ventral sclerite of the median lobe suddenly narrowed into a long median process (cf. *P. aeneipennis*), the paramere about ¼ the length of median lobe, in ventral view broad, slightly asymmetrical, apically sub-truncate.
For comparison with *P. villanuevai* n.sp. see key and descriptions above. The aedoeagi of the two species are very different.

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Platydracus hewitti (BERNHAUER)

Staphylinus hewitti BERNHAUER 1914: 100.
Platydracus hewitti HAMMOND 1984: 195.
Platydracus hewitti HERMAN 2001: 3455.

Type: Kuching / Nov. 5 (?) 1906 / 0/1 Sarawak lg Hewitt / Hewitti Brh Typus/ Collection / FMNH-INS 0000 063445 (in Field Museum of Natural History, Chicago).
Material studied: 2 exx.: SABAH: Kinabalu N.P., 8.VII.1982, G. de Rougemont (in RCL); 10 exx.: SABAH, Danum Valley, B.R.I., f.i.t., 14-16.II.2007, G. de Rougemont (in RCL); 18 exx.: MALAYSIA, Sabah, Lahad Datu, Ulu Segama For. Res., Danum Valley Forest Centre, 04°57.9'N 117°48.1'E, 200 m alt.xi.2005 1° Forest, FIT, coll. Mann, Slade & Villanueva, OUMNH-2006-051; 1 ex.: Ibid, but "baited pitfall trap"; 1 ex.: MALAYSIA, Sabah, Ulu Segama Forest Reserve, Danum Valley Conserv. area, Plot 5, 4.iv.2005, FIT, DVFC grid N5W2.5-W12.5, Leg. E. Slade & J. Villanueva. E.M. Slade colln., OXFORD MUS. NAT. HIST. (OUMNH) 2005-062; 1 ex.: MALAYSIA, Sabah, Ulu Segama Forest Res., Coupe 81, Logging area 0158.660'N 11753.410'E, Coll. E. Slade & J. Villanueva, Flight Interception Trap, Selectively logged dipterocarp forest, Yayasan Sabah Logging Concession, OUMNH-2005-062; 37 exx.: MALAYSIA, Borneo, Sabah, Ulu Segama Conservation area 10 Km from Danum Valley F.C., Selectively logged forest, FI Trap Coupe 81, Plot 3, ca. N04°58.66 E117°53.41 Leg. E Slade & J. Villanueva, OUMNH-2006-05, Lowland mixed Dipterocarp for., West Trail area, FI Trap (all in OUMNH). (There are other exx. from the Danum valley collected by Slade & Villanueva in 2004 in the OUMNH not listed here); 1 ex.: MALAYSIA, Sabah, Sandakan Div., Maliau Basin Conservation Area, N 4º44.531' E116º58.367', 26-27.iii.2011, 229m amsl, coll. D.J. Mann; 2 exx: MALAYSIA, Sabah, Maliau Basin Conservation Area, Nature Trail, N4˚44.609' E116˚58.416', 23-24.iii.2011, 220m amsl, coll. Mann, Flight Interception Trap, DJM Ref: B04 FIT, Old growth forest,OUMNH 2011-043 (in OUMNH); 5 exx: SABAH, Sandakan, Sepilok (P.F.), March 97, A.Y.Chung, FIT 7/2/2; 1 ex: Southern Sabah, Maliau Basin, coll. by A.J. Davis (all in NHML); 1 ♀: SABAH, Poring Hot Springs, 500 m, 8.V.1987, Burkhardt – Löbl (in MHNG); 3 exx.: Malaysia, Sabah, Tawau, 11-17.x.2012, 4.66N117.6E, 100m Alt, Coll. C.L.Gray, SAFE project area, F.I.T Riparian forest, strip in oil palm, OUMNH -213-056 (n OUMNH); 4 exx: SARAWAK, 4th Division, Gn. Mulu N.P., P.M. Hammond & J. Marshall, BM 1978-49 (in Natural; History Museum, London).

Determination of this new material, based on Bernhauer's description, is confirmed by a photograph of the syntype of *S. hewitti* in the Field Museum of Natural History, Chicago, bearing the label quoted above.

Length: 12-14 mm. Description (of a male from Danum valley): length: 13 mm; length of head: 1.6; breadth of head: 2.0; length of eye: 1.0; length of temple: 0.4; length of antenna: 2.4; length of pronotum: 2.8; breadth of pronotum: 2.3; length of elytron: 2.7; breadth of elytra: 2.7. Habitus: fig. 6.
Hear dark brown with a faint brassy reflex, the clypeus narrowly rufescent; disc and especially occipital area with some short, sparse, erect brassy pubescence. Pronotum same colour as head, the brassy pubescence denser and much longer, recumbent. Scutellum velvety black. Elytra a slightly paler brown than rest of fore-body, and with some indistinct darker mottling, the whole surface clothed in long brassy recumbent pubescence.

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Abdominal tergites dark brown with a distinct brassy reflex and clothed, especially anteriorly, in sparse, very short erect brassy pubescence; tergites 3 and 4 with a pair of longitudinal darker marks close to the miid-longitudinal axis, these marks expanding to coalesce on tergites 5-7 into a single large central mark, but none of these marks very evident because of the dark ground colour of tergites. Palpi dark brown, Antennae dark brow to fuscous, the first antennomere reddish brown and the terminal two segments pale. Legs entirely testaceous.
Clypeus with a pair of lateral setae, and another pair on sides of head just in front of eyes, and several more of varying length on temples in addition to the large temporal seta; puncturation of head fairly fine, sub-rugose. Puncturation of pronotum similar to that of head, the sides bearing several long black setae. Puncturation of elytra finer and shallower than that of head and pronotum, the sides bearing half a dozen black setae. Postero-lateral margins of tergites and paratergites with a few dark setae, the puncturation fairly sparse.
Male: strnite 8 unmodified; aedoeagus: figs 6 a, b, ventral sclerite of median lobe narrowed into a salient median process, as in *P. aeneipennis* and P. *aeneoacreus*, the paramere very small, about 1/10th the length of median lobe, in ventral view asymmetrically truncate.

Bernhauer understandably compared his new species with *P. indicus* (Kr.) which is widely distributed on the Indian subcontinent and Ceylon and the most similar species that I have seen, but *P. hewitti* is a rather smaller insect, more brightly coloured, and with a quite different aedoeagus.
P. hewitti is unlikely to be confused with any other Bornean species except possibly *P. rufulus* n. sp., but see differences in key and descriptions above and below.

Platydracus rufulus n. sp.

♂ Holotype: MALAYSIA, Sabah, Lahad Datu, Ulu Segama For. Res., Danum Valleey F.C., 04°57.9'N 117°48.1'E, 200 m alt. 03-13.xi.2005, 1° Forest. Lowland mixed Dipterocarp Frst., West trail N5, OUMNH-2006-051; 1 ♀ paratype: MALAYSIA, Sabah, Lahad Datu, Ulu Segama For. Res., Danum Valley Forest Centre, 04°57.9'N 117°48.1'E, 200 m alt.xi.2005 1° Forest, FIT, coll. Mann, Slade & Villanueva, OUMNH-2006-051 (in OUMNH); 1 ♀ paratype: MALAYSIA, Borneo, Sabah, Ulu Segama Forest Reserve, Yayasan Sabah logging concession, ca. 6 km from Danum Valley F.C., Secondary selectively logged forest, 13.iv.2004, F.I.Trap coupe 88, Plot 1 ca. N04°59.74 E117°50.1', Leg.E. Slade + J. Villanueva. OUMNH-2005-062 (holotype & 1 paratype in OUMNH, 1 paratype in RCL).

Description of holotype: length: 12 mm; length of head: 1.5; breadth of head: 1.85; length of eye: 8; length of temples: 3.5; length of antenna: 2.4; length of pronotum: 2.3; breadth of pronotum: 2.3; length of elytron: 2,4; breadth of elytra: 2.7. Habitus: fig. 7.
Head reddish-brown, the temples infuscate, the surface bearing sparse, short erect brassy pubescence as well as dark setae. Pronotum uniformly rufo-testaceous, distinctly paler than head, the surface clothed in longer, recumbent brassy pubescence in addition to lateral setae. Scutellum velvety black. Elytra rufo-testaceous like pronotum, but with some very indistinct darker mottling, the surface with denser, recumbent brassy pubescence. Abdominal tergites 3-5 testaceous with a pair of longitudinal blackish marks on either side

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of mid-line; tergites 6-8 blackish with rufo-testaceous anterior margins, clothed in similar but much sparser brassy pubescence as elytra in addition to numerous black setae. Palpi dark testaceous. Antennae with first two segments reddish, the following segments infuscate, the two terminal segments pale brown. Legs entirely testaceous..
Puncturation of head moderately coarse, sub-rugose, not leaving any impunctate areas; the temples bear a number of black setae of varying length in addition to the long temporal seta. Puncturation of pronotum similar to that of head, without any trace of an impunctate mid-longitudinal line, the sides bearing 5-6 black setae of varying length. Puncturation of abdominal tergites fairly dense but shallow, each tergite bearing a few irregularly scattered black setae and denser clusters of black setae on paratergites.
Male: sternite 8 with a semi-circular emargination occupying nearly the whole breadth of posterior margin; aedeagus: figs. 7 a, b. The basal bulb of the median lobe in the only available male is shrivelled, deformed in ventral view; the ventral sclerite shorter than dorsal part of median lobe. Paramere small, not visible in lateral view.

For comparison with other Bornean species see key and description of *P. hewitti*, above.

***Platydracus oblongopunctatus* n. sp.**

♂ Holotype: SABAH, Danum Valley, B.R.L., f.i.t., 14-16.II.2007, G. de Rougemont; 1 ♀ paratype: ibid. (holotype and paratype in RCL); 2 paratypes: MALAYSIA, Sabah, Lahad Datu, Ulu Segama For. Res., Danum Valley Forest Centre, 04°57.9'N 117°48.1'E, 200 m alt.xi.2005 1° Forest, FIT, coll. Mann, Slade & Villanueva, OUMNH-2006-051; 1 paratype: MALAYSIA, Sabah, Lahad Datu, Ulu Segama Forest Reserve, Malua 2 logging area, 05 º05.731'N 117 º37.606'E, 250M ALT, COLL. Mann, Slade & Villanueva, cattle dung baited PF no.1, High intensity logged dipterocarp Forest, OUMNH-2006-051; 1 paratype: MALAYSIA, Borneo, Sabah, Ulu Segama Forest Reserve, Danum Valley Conservation Area, Borneo Rainforest Lodge, Plot 2, 8.iv.2004, Flight interception trap, ca. N05 º02.682' E117 º45.553', Leg. E. Slade & J. Villanueva, Primary Forest; 1 paratype: MALAYSIA, Sabah, Ulu Segama For. Res., Danum Valley F.C., 04 º57.930'N 117 º41.1149'E, 12.iii.2005, FIT, 1 º Forest, coll. E. Slade & J. Villanueva, Flight interception trap, Dipterocarp Forest, DVFC grid N5 W255.W12.5 Plot 5, 1250m, OUMNH-2005-062; 1 paratype: MALAYSIA, Sabah, Lahad Datu, Ulu Segama For. Res., Malua 1 Log area, 05˚05.644'N 117˚40.759'E, iii.2005, FIT, 2˚ Forest, coll. E. Slade & J. Villanueva, Flight Interception Trap, High intensity logged dipterocarp forest, Yayasan Sabah Logging Conc., Malua-Bilong boundary, OUMNH-2005-063 (6 paratypes in OUMNH); 1 paratype: SARAWAK, 4th Division, Gn. Mulu N.P., pitfall trap fish bait, Alluv. Forest ca. 100 m. (in NHML).
Additional material: 1 ex: MALAYSIA, Sabah, Sandakan Div., Maliau Basin Conservation Area, Nature Trail N4 º44.609' E116 º58.416', 23.iii.2011, 220m amsl, coll. Mann.

Length:10-12 mm. Description of holotype: length: 11 mm; length of head: 1.35; breadth of head: 1.5; length of eye: 0.8; length of temples; 0.25; length of antenna: 2.2; length of pronotum: 1.8; breadth of pronotum: 1.8; length of elytron: 2.0; breadth of elytra: 2.2. Habitus: fig. 8.
Head and pronotum with a glossy metallic brassy reflex. Pubescence of the head and pronotum, pale, sparse and fairly long. Scutelllum velvety black. Elytra rufo-testaceous, clothed in dense mostly recumbent brassy pubescence apart from on several dark marks,

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typically one small fuscous mark on either side of and behind scutellum, another small mark at sutural angles, and a characteristic chevron-shaped mark extending forwards from middle of posterior border and then back towards the deflexed side of elytron almost to apico-lateral angle. Abdominal tergites 3-4 reddish brown with a pair of broad longitudinal black marks on either side of mid-line; on tergite 5 the marks fuse into a single broad mark leaving only the sides narrowly reddish; tergites 6-8 almost entirely dark, with only the antero-lateral corners and paratergites dark reddish; there is a small triangular fairly dense patch of brassy pubescence at the centre of anterior border of each tergite indicating the point of fusion of the original paired marks, and sparse scattered fairly long brassy pubescence on lateral parts of tergites and paratergites; tergites 9 and 10 pale testaceous. Antennae, including first two segments entirely fuscous except for the terminal segment which is paler. Palpi dark, almost black, the terminal segments paler. Legs entirely dark testceous except for darker spines.

Puncturation of head sparse, composed of large umbilicate punctures, the interstices flat and very shiny, on most of disc about 1/4th the width of diameter of punctures, on vertex leaving an impunctate area the size of several punctures; head with a pair of short dark setae on anterior margin, another shorter pair just behind antennal tubercles, another longer pair on inner margins of eyes, and a few short setae on temples in addition to long temporal seta. Sculpture of pronotum similar to that of head on anterior half, the punctures round like those of head, but becoming elongate and sparser in posterior half, and leaving a narrow impunctate mid-longitudinal line which is narrower and sometimes completely interrupted at centre, but always clearly visible anteriorly and posteriorly; sides of pronotum with four long dark setae, and a cluster of setae on posterior margin near postero-lateral angles. Puncturation of tergites fine, dense and confused; paratergites each bearing a number of long black lateral setae (often broken off).

Male: sternite 8 with a fairly large emargination, slightly broader than its depth.

Aedoeagus: figs: 8 a, b. the ventral sclerite of the median lobe asymmetrical (although not as much as appears superficially in fig, 8a: the rectilinear extension (on right side of photograph) is part of the (deformed?) dorsal part of the median lobe: the true contour of the ventral sclerite passes beneath the outer margin of the paramere); paramere asymmetrical broadened towards apex, sub-securiform.

The only other oriental *Platydracus* that I know of with similar sparse puncturation of the fore-body is *P. sparsus* Cam., described from a single ex. from Darjeeling, but which I have also seen from Thailand (in NHML and CRL). *P. oblongopunctatus* n. sp. differs (from an ex of *P. sparsus* from Thailand) in that it is a smaller insect, the pronotum has a very strong brassy reflex (black in *S. sparsus*), the punctures of the pronotum are elongate (round and more irregularly and sparsely spaced in *P. sparsus*), anad the femora are reddish, concolorous with tibia, whereas they are dark in *P. sparsus*; the fasciae of pale pubescence are also very evident, but almost absent in *P. sparsus*.

P. oblongopunctatus n. sp. cannot be confused with any other Bornean species.

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Platydracus donnyi n. sp.

♂ Holotype: SABAH, Danum Valley, B.R.I., f.i.t, 14-16.II.2007, G. de Rougemont (in RCL); 1 ♀ paratype: BRUNEI, E 115 7'N 4 34', Kuala Belalong FSC, Dipterocarp forest, BM(NH) 1991-173, Ground Malaise 21, 870 m alt, 7.II.92, N. Mawdsley NM304 (in NHML); 1 ♂ & 1 ♀ paratypes: INDONESIA, Borneo, Kalimantan Tengah, Busang/Rekut confl. 0˚03'S 113˚°59'E Flight Intercept FIT 2, Brendell/Mendel, August 2001, 'Barito Ulu 2001' BMNH(E) 2001-191. (in NHML).

This species is in several respects atypical of *Platydracus*, including the relatively small eyes and pronotum, the fine sparse, irregular puncturation of head and pronotum, and the inflated last segment of the labial palpi. However it cannot at present be attributed to any other known genus, so is provisionally described as *Platydracus*.

Description of holotype: length: 15 mm; length of head: 1.7; breadth of head: 2.1; length of eye: 6; length of temples: 7.5; length of antenna: 2.4; length of pronotum: 2.2; breadth of pronotum: 1.9; length of elytron: 2,8; breadth of elytra: 2.9. Habitus: fig. 9.
Head transverse, the eyes relatively small, not much longer than temples, the surface black with a strong brassy reflex; pale pubescence almost absent from vertex, but dense on temples where it projects forwards. Pronotum small, narrower than head, black with a purplish-blue reflex, the posterior margin reddish, this reddish part narrow on sides but projecting forwards to almost 2/5ths the length of pronotum in middle; pale pubescence wanting on disc, but the sides with numerous dark setae. Scutellum rufo-testaceous, concolorous with elytra, closely and finely punctuate. Elytra rufo-testaceous, faily densely clothed in long pale pubescence in addition to long lateral setae. Abdominal tergites 3-4 rufo-testaceous, bearing sparser but fairly long brassy pubescence; tergite 5 black with narrowly reddish anterior margin; tergites 6-8 entirely black, also with sparse long pale pubescence; anterior half of tergite 7 with a very dense fascia of brassy pubescence radiating out from centre of anterior border; tergites 9-10 dark testaceous. Palpi testaceous. Antennae entirely fuscous, including first two and terminal segments. Legs testaceous, the tarsi somewhat infuscate.
Puncturation of head very sparse and irregular, on vertex the interstices much wider than the relatively small punctures, the puncturation of sides denser but still sparse, leaving a small impunctate area just behind eyes. Labrum bilobed but entire; terminal segment of maxillary palpi as in other *Platydracus*, long and fusiform, the third joint of labial palpi inflated. Puncturation of pronotum even sparser than that of head, and very irregular, the interstices everywhere much wider than the diameter of small umbilicate punctures, the sculpture leaving a broad irregular impunctate area along entire mid-line and other impunctate areas on either side; sides of pronotum each with 4-5 long dark setae and at least a dozen smaller dark setae along sides of anterior border and lateral margins. Puncturation of elytra close and shallow, the sides each with 5-6 long dark setae in addition to long pale pubescence. Puncturation of abdominal tergites rather sparse, the surface shiny; sides of paratergites, especially paratergites 6-8 with numerous black setae of varying length in addition to long pale pubescence.
Male: sternite 8 with a moderately broad and deep emargination. Aedoeagus: figs 9 a, b, the ventral sclerite of the median lobe evenly rounded in ventral view; paramere moderately

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small, about 1/6th the length of median lobe, in ventral view broad at base and narrowed to sub-parallel sided apical portion with sub-truncate tip.

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Author's address:

Guillaume de Rougemont
Honorary Research Associate, Oxford University Museum of Natural History
c/o Hope Entomological Collections
Oxford University Museum of Natural History
Parks Road, Oxford OX1 3PW
England
E-mail: gderougemont@hotmail.co.uk

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Figs 1-5: (**1**) *P. aenaepennis* Cam., ex. from Danum valley (**2**) *P. sladeae* n. sp., Holotype (**3**) *P. borneensis* n. sp., Paratype from Danum valley (**4**) *P. villanuevai* n. sp., Holotype (**5**) *P. aeneoacreus* Cam., male from Danum valley. Scale bars = 10 mm.

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Figs 6-9: (**6**) *P. hewitti* Bnh., male from Danum valley (**7**) *P. rufulus* n. sp. Holotype (**8**) *P. oblongopunctatus* n. sp., Paratype from Danum valley (**9**) *P. donnyi* n. sp., Holotype. Scale bars = 10 mm.

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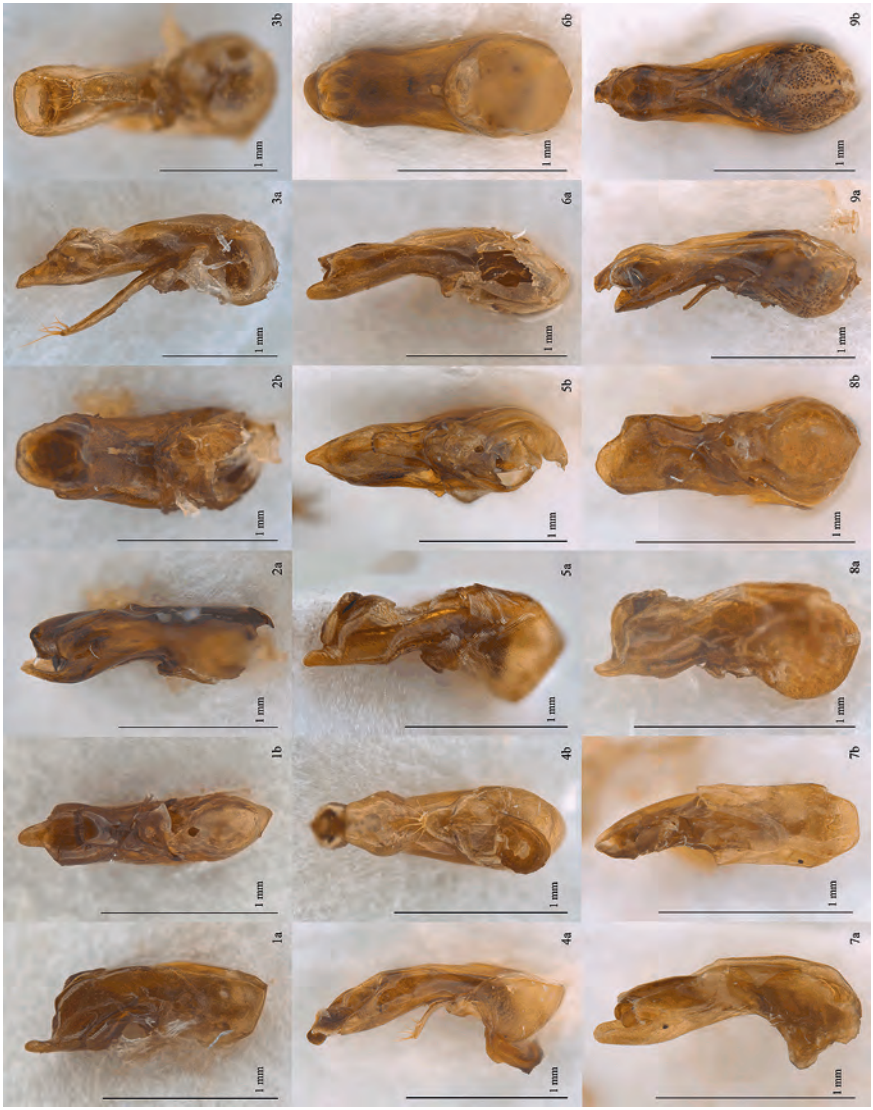

Figs 1a-9b: Aedoeagus in lateral (a) and ventral (b) views. (**1 a, b**) *P. aeneipennis* Cam. from Danum valley (**2 a, b**) *P. sladeae* n. sp. Holotype (**3 a, b**) *P. borneensis* n. sp. Holotype (**4 a, b**) *P. villanuevai* n. sp. Paratype from Danum valley (**5 a, b**) *P. aeneoacreus* Cam. from Danum valley (**6 a, b**) *P. hewitti* Bnh. from Danum valley (**7 a, b**) *P. rufulus* n. sp. Holotype (**8 a, b**) *P. oblongopunctatus* n. sp. Paratype from Danum valley (**9 a, b**) *P. donnyi* n. sp. Holotype. Scale bars = 1 mm.

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Buchbesprechung

BEUTEL R.G., FRIEDRICH F., GE S.-Q. & X.-K. YANG: **Insect Morphology and Phylogeny.** A textbook for students of entomology. - De Gruyter, Berlin/Boston, 2014. 516 S.

Dieses moderne Textbuch zu Strukturen und Phylogenie der Insekten ist in zwei wesentliche Teile gegliedert: Der erste Teil gibt einen Einstieg und Überblick in die allgemeine Insektenmorphologie, beginnend mit Cuticula und Epidermis, und nachfolgend mit den Tagmata Kopf, Brust und Hinterleib. Es folgen Kapitel über das Nervensystem, die Photorezeptororgane, das Tracheen- und Kreislaufsystem, den Verdauungstrakt, Exkretionsorgane, endokrine Organe und Hormonsystem sowie den Fettkörper. Ein kurzer Abschnitt widmet sich der Reproduktion, Entwicklung und Entwicklungsstadien. Daran schließt sich ein umfangreiches Glossar (mit gleicher Gliederung bzw. Unterteilung) an. Kapitel 4 geht kurz auf traditionelle und moderne Techniken (Fixierung, Dissektion, Mazeration, SEM, TEM, Histologie) bis hin zur Computertomographie und 3D-Rekonstruktion ein. Das 5. Kapitel behandelt die Grundprinzipien zur phylogenetischen Rekonstruktion (basierend auf Morphologie).

Im umfangreichen zweiten Teil werden die Ordnungen der Insekten vorgestellt, von den Collembola bis zu den Diptera. Sehr übersichtlich sind hier die jeweiligen Autapomorphien dieser Ordnungen aufgelistet und man findet die wichtigsten Angaben zur Morphologie der Entwicklungsstadien, Informationen zur Biologie, Fossilnachweise und ökonomische Bedeutung. Das Literaturverzeichnis separiert zwischen Textbüchern und zusammenfassenden Werken, Übersichtsartikel, Kladistik-Software und die einzelnen Fach-Referenzen. Das Buch ist sehr gut mit Zeichnungen, Fotos (selten farbig) und einigen Stammbäumen illustriert.

Zur Zeit sicher das aktuellste, fundierteste Nachschlagewerk und damit eine überaus empfehlenswerte Darstellung zu dieser Thematik.

R. Gerstmeier

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Redaktion: Erich DILLER, ZSM, Münchhausenstraße 21, 81247 München;
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Fritz GUSENLEITNER, Lungitzerstr. 51, 4222 St. Georgen/Gusen, Austria;
Wolfgang SPEIDEL, MWM, Tengstraße 33, 80796 München;
Thomas WITT, Tengstraße 33, 80796 München.

Adresse: Entomofauna, Redaktion und Schriftentausch c/o Museum Witt, Tengstr. 33, 80796 München, Deutschland, E-Mail: thomas@witt-thomas.com; Entomofauna, Redaktion c/o Fritz Gusenleitner, Lungitzerstr. 51, 4222 St. Georgen/Gusen, Austria, E-Mail: f.gusenleitner@landesmuseum.at

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