

OLD WORLD RHIPIDANDRUS LECONTE:  
SYNONYMIES, FAUNISTICS, IDENTIFICATION  
KEY AND DESCRIPTION OF TWO NEW  
SPECIES FROM AUSTRALIA (COLEOPTERA:  
TENEBRIONIDAE)

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The Old World species of *Rhipidandrus* are reviewed. *R. caesus* sp. n. and *R. crowsoni* sp. n. are described from Australia. New synonymies (junior synonym first): *R. cioides clypeatus* KASZAB, 1955 = *R. cioides* KASZAB, 1955; *R. similis* KASZAB, 1955 = *R. crenipennis* (MOTSCHULSKY, 1858); *R. zaitzevi* KOMPANTZEVA et MERKL, 1992 = *R. crenipennis* MOTSCHULSKY, 1858; *R. dybasi* KULZER, 1957 = *R. speculifrons* (GEBIEN, 1922); *R. sodalis* KULZER, 1957 = *R. speculifrons* (GEBIEN, 1922); *R. scolytoides* CHUJO, 1985 = *R. speculifrons* (GEBIEN, 1922); *Bolitopertha novemcostata* GEBIEN, 1910 = *R. borbonicus* (FAIRMARE, 1880). A key for the identification of the Old World species is given.

Key words: taxonomy, Coleoptera, Tenebrionidae, *Rhipidandrus*, Old World.

The genus *Rhipidandrus* LECONTE, 1862 is a member of the tenebrionine tribe Bolitophagini. Its systematic position is discussed in detail by KOMPANTSEVA (1995). Based on characters of the recently described larva of *R. crenipennis* (MOTSCHULSKY, 1858) as well as on adult features, this genus is closely related to the Palearctic *Eledona* LATREILLE, 1796, the Palearctic *Eledonoprius* REITTER, 1911 and the African *Bolitolaemus* GEBIEN, 1920. The separation of *Rhipidandrus* in a distinct subtribe Rhipidandrina by WATT (1974) and DOYEN *et al.* (1989) seems unjustifiable (KOMPANTSEVA 1995).

The first Old World species belonging here, *Xyloborus crenipennis*, was described from "Birma" by MOTSCHULSKY (1858) who placed it in the "Bostrichi" (= Scolytidae). Later, FAIRMARE (1880) described *Bolitophagus borbonicus* (Tenebrionidae) from Réunion. WATERHOUSE (1894) described *Cherostus* in the "Cioidae" (= Ciidae) with two species, *simpsoni* from Australia and *walkeri* from Damma Island of the Moluccas. GEBIEN (1910) erected the tenebrionid genus

\* The different spellings "KOMPANTSEVA" and "KOMPANTZEVA" have been alternatively used in the literature (e.g. KOMPANTSEVA 1995, KOMPANTZEVA & MERKL 1992). The junior author prefers "ts" but in the present paper "tz" is retained because it is so written in all type labels (O. MERKL).

*Bolitopertha* for *B. novemcostata* from Tanganyika. GEBIEN (1939) synonymized *Bolitopertha* and *Cherostus* with the New World tenebrionid genus of *Rhipidandrus*.

Further species have been added by CHUJO (1985), GEBIEN (1914, 1922), KASZAB (1955a, b), KOMPANTZEVA & MERKL (1992), KULZER (1957) and VINSON (1950). KASZAB (1955a) and KULZER (1957) provided keys to the non-African Old World species.

The present paper is devoted to the re-examination of the Old World species of *Rhipidandrus* and contains distributional data and a key to the species. *R. simpsoni* (WATERHOUSE, 1894) and *R. walkeri* (WATERHOUSE, 1894) are frequently collected and well-defined species with clear-cut features so no effort was made to obtain their types for study. The other species are, however, quite uniform in most respects, although the sexes differ in some external features (see below). In some cases females and males were described as different species. Examination of the types resulted in the synonymization of several names. The type of *R. madagascariensis* (LACORDAIRE, 1866) has not been seen by the authors. A specimen determined as *R. madagascariensis* by Z. KASZAB and deposited in the HNHN belongs to a species of Ciidae.

Because of the great deal of uniformity in the adult features, and in order to avoid redundancy, the old species are not re-described in detail. The authors believe the identification key is detailed enough and includes all diagnostic characters.

## MATERIAL AND PRESENTATION OF DATA

The following acronyms are used in the text for indicating depositories of the investigated specimens. The names of individuals responsible for loans of material follow the names of institution: ANIC – Australian National Insect Collection, Canberra, Australia. Dr. J. F. LAWRENCE; BMNH – The Natural History Museum, formerly British Museum (Natural History), London, United Kingdom. Miss JANE BEARD; BREM – Private collection of Dr. H. J. BREMER, Heidelberg, Germany; ELKU – Entomological Laboratory, Kyushu University, Fukuoka, Japan. Mr. T. UENO; FREY – Frey Collection, Tutzing bei München, Germany. Dr. G. SCHERER; HNHN – Hungarian Natural History Museum, Budapest, Hungary. Dr. O. MERKL; MASU – Private collection of Dr. K. MASUMOTO, Yokohama, Japan; MHNP – Muséum National d'Histoire Naturelle, Paris, France. Dr. C. GIRARD; SIEE – A. N. Severtsov Institute of Ecology and Evolution, Moscow, Russia. Dr. T. KOMPANTZEVA; SHIB – Private collection of Mr. T. SHIBATA, Osaka, Japan; SMNS – Staatliches Museum für Naturkunde Stuttgart. Dr. W. SCHAWALLER; ZETT – Private collection of Dr. H. ZETTEL, Wien, Austria; ZMUM – Zoological Museum of the Moscow State University, Moscow, Russia. Dr. N. NIKITSKY; ZSM – Zoologische Staatssammlung, München, Germany. Dr. G. SCHERER; UENO – Private collection of Mr. TERUHISA UENO, Fukuoka, Japan.

The text of the consecutive labels of the available type specimens are cited verbatim, every label being numbered from the uppermost to the lowest. Data of non-type specimens are given as follows: locality (as written on the labels), method of collecting (if presented on the label), date of collecting, name of collector(s), number of specimens and depository (in parentheses).

Body length was measured from the anterior margin of pronotum to the apex of the elytra.

Scanning electron micrographs were made by S-2360N Hitachi SEM in natural scanning mode with Robinson backscatter detector.

## Rhipidandrus LECONTE, 1862

*Xyloborus* MOTSCHULSKY, 1858: 64 (nomen nudum).

*Rhipidandrus* LECONTE, 1862: 236. Type species: *Xyletinus flabellicornis* STURM, 1826, by original monotypy.

*Bolitopertha* GEBIEN, 1910: 379. Type species: *Bolitopertha novemcostata* GEBIEN, 1910, by original monotypy.

*Cherostus* WATERHOUSE, 1894: 68. Type species: *Cherostus walkeri* WATERHOUSE, 1894, herewith designated.

Description – Body subcylindrical, parallel-sided, strongly convex above. Colour dark reddish-brown to blackish-brown. Surface with rough sculpturing, often covered with greyish exudate. Punctures of head and pronotum in fact polygonal (tetragonal to hexagonal!) impressions separated by narrow, ridged interspaces. Apical part of antennae and legs finely pubescent.

Head subglobular, coarsely and densely punctate; ocular ridge feebly convex and short; eyes relatively large, oblique-oval in dorsal view, rounded oval in lateral view; labrum relatively small, trapezoidal, inclined anteriorly, anterior margin slightly concave, with distinct transverse ridge mediobasally. Antennae 11-segmented, with 5 to 7-segmented club; segments 5 to 10 gradually dilated internally; segment 11 elliptic; mandibles asymmetrical, wedge-shaped, with broad base, with two apical teeth, well-developed ridged mola and membranous prosthema; apical teeth of left mandible with distinctly serrulated cutting edges; terminal segment of maxillary palpi longitudinal, weakly compressed at sides; labium with ligula; apical segment of labial palpi oblong-oval; mentum subtrapezoidal, with mid-longitudinal carina; ventral surface of head scarcely and deeply punctate; antennal grooves well-developed; gula triangular, strongly narrowed anteriorly, slightly convex, shining.

Pronotum transverse, widest at base, strongly arched above; sides weakly rounded, with narrow margins visible for entire length from above; anterior angles obtuse, posterior angles almost rectangular; prosternum narrow, short, coarsely punctate, carinate mid-longitudinally; prosternal process strongly arched between coxae, flattened and abrupt at apex; propleura convex, finely punctate.

Scutellum triangular, moderately convex, coarsely punctate.

Elytra strongly convex, subparallel, lateral margins very narrow, invisible from above except anterior end; disc moderately convex, steeply sloping laterally and posteriorly; humerus rounded, feebly produced; surface with 10 striae; interstriae strongly carinate; 10th carina usually present; epipleura moderately wide, gradually tapering toward elytral apex, finely rugulose.

Ventral surface glabrous, sparsely punctate; mesosternum with deep, broadly rounded excavation mediobasally; intercoxal process very narrow; mesocoxal cavities large, oblique oval; mesotrochantins exposed; metasternum moderately convex, with distinct mid-longitudinal groove and deep excavation mediobasally; metacoxal cavities large, transverse; ventrites slightly convex; last visible ventrite with denser punctation and with shallow groove along apical margin.

Fore femora thick, vested with pale, short setae, with shallow, bluntly bordered groove on upper surface; middle and hind femora longer; fore tibiae dilated apically, apical margin serrate and moderately bent outwards, produced in a short tooth at external angle; inner angle with a longer and thicker lower spur and a very short and thinner upper one; lateral margin carinate and serrate; middle and hind tibiae more slender and longer; tarsal formula seemingly 4–4–4, but in reality 5–5–4, since basal segment of fore and middle tarsi weakly sclerotized and withdrawn into special tibial excavation, so indistinctly visible in dorsal view; segments 2–4 (visible 1–3) equal in length, last segment as long as 2–4 combined.

Sexual dimorphism – External apical angle of middle and hind tibiae with spine-like process in females (Fig. 13), while with only small denticles in males (Fig. 14). Except for *R. walkeri* (Fig. 1), sculpture of frons and clypeus more or less different between female and male of all species where both sexes are known. Females usually with impunctate or sparsely punctate areas (Figs 8,

11, 18), while the frons of males is uniformly punctate in most cases (Figs 9, 12, 19). In *R. crenipennis* and *R. caesus*, both females and males have a similar impunctate frontal spot, which more expanded in females (Figs 5–6, 16). *R. crowsoni* with a different type of dimorphism in sculpture of clypeus (see Figs 22–23 for description and key).

The aedeagus minute and lightly sclerotized (Figs 28–29), therefore of no use in separation of species. Ovipositor unsclerotized (TSCHINKEL & DOYEN 1980).

## KEY TO THE OLD WORLD SPECIES OF *RHIPIDANDRUS* (except *R. nudus*)

- 1 Frons deeply impressed; clypeus impunctate; frontal impression and anterior third of clypeus with dense, erect, golden pubescence (Fig. 1). Cranial surface similar in both sexes. Pronotum in lateral portions with punctures tending to be longitudinal. Elytral striae with short transverse, oblique or irregular ridges, often reduced to tubercles; 10th carina well-developed and long, reaching posterior two-third of elytral length (Fig. 2). Length 3.2–4.1 mm. Australia, New Guinea, Moluccas  
*R. walkeri* (WATERHOUSE, 1894)
- Frons not impressed; frons and clypeus glabrous 2
- 2 Larger (above 4.5 mm). 10th elytral carina long, reaching posterior 1/3 of elytral length; elytral striae with a network of longitudinal and transverse ridges. Pronotum in lateral portions with punctures tending to be longitudinal (Fig. 4). Male: frons coarsely and densely punctate; clypeus finely granulate-punctate; frontoclypeal suture distinct (Fig. 3). Female unknown. Length 4.6–4.8 mm. Melanesia (Fiji and Samoa)  
*R. cioides* KASZAB, 1955
- Smaller (under 4.5 mm). 10th elytral carina shorter or completely obsolete 3
- 3 Elytral striae divided into more or less regular quadrangles by transverse ridges connecting adjacent carinae (Figs 7, 10, 15). Pronotum in lateral portions with punctures not differing from those of middle 4
- Elytral striae with reticulated sculpture (Figs 17, 20, 25) 6
- 4 Female and male with more or less similar cranial surface (Figs 5–6). Frons with ovoid, longitudinal, shiny, impunctate spot (more expanded in females); clypeus shining but sparsely punctate; frontoclypeal suture vague

but distinct. 10th elytral carina absent (Fig. 7). Length 2.7–3.2 mm. Indo-Malayan Region (Vietnam, Indonesia, Philippines)

*R. crenipennis* (MOTSCHULSKY, 1858)

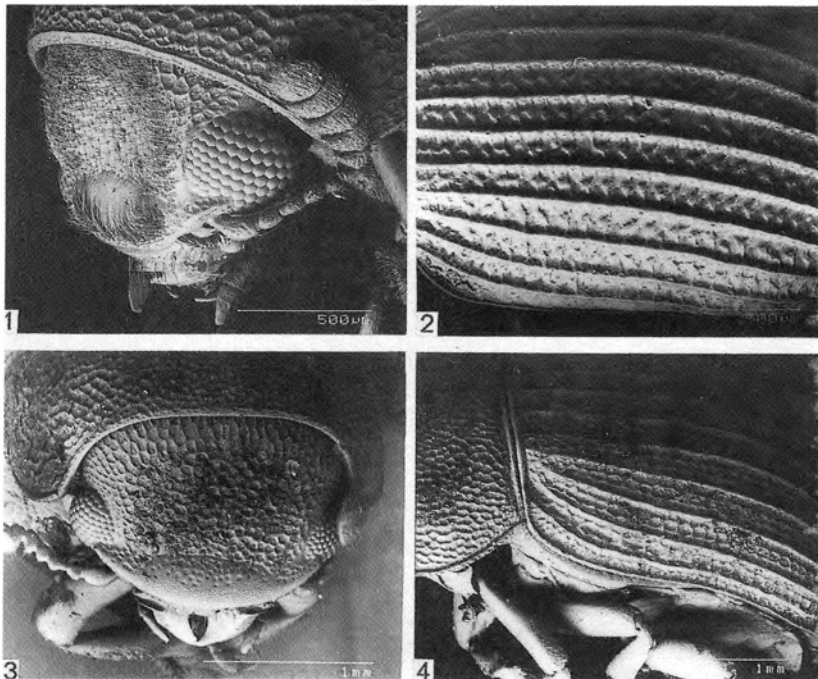
- Female and male with different cranial surface. Male with cranial surface always dull, coarsely and uniformly punctate (Figs 9, 12). 10th elytral carina almost always present (Figs 10, 15) 5

- 5 Smaller (under 3 mm). Female: cranium with glistening, impunctate frontoclypeal area; frontoclypeal suture completely obsolete (Fig. 8). Male: frontoclypeal suture vaguely indicated (Fig. 9). Length 2.3–2.9 mm. Seychelles, Indo-Malayan Region to Ryukyus, Micronesia and Australia

*R. speculifrons* (GEBIEN, 1922)

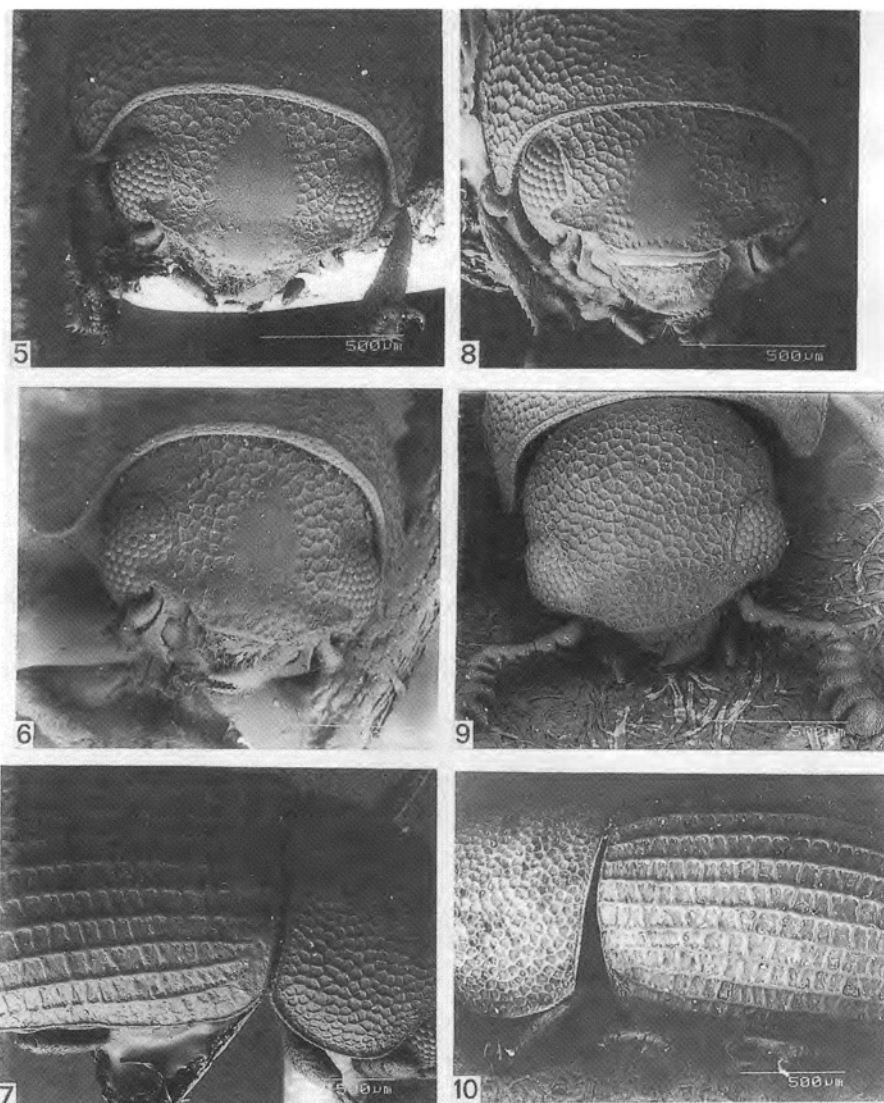
Larger (above 3 mm). Female: frons with poorly limited, shining area with small, sparse punctures; clypeus shining, with sparse punctures; frontoclypeal suture distinct (Fig 11). Male: frontoclypeal suture distinct (Fig. 12). Length 3.4–4.0 mm. East and South Africa, Madagascar, Mascarenhas

*R. borbonicus* (FAIRMARE, 1880)



**Figs 1–4.** 1–2 = *Rhipidandrus walkeri* (WATERHOUSE): 1 = head, 2 = left elytron, lateral view; 3–4 = *R. cioides* KASZAB: 3 = head of male, 4 = pronotum and left elytron, lateral view

- 6 Pronotum in lateral portions with punctures not differing from those of middle. Elytral striae with oblique and transverse wrinkles (Fig. 17). Female and male with more or less similar cranial surface; frons with ovoid, transverse, shiny, impunctate spot (more expanded in females); clypeus shining, impunctate; frontoclypeal suture deeply impressed (Fig 16). Length 3.1–3.4 mm. Australia ***R. caesus* sp. n.**



**Figs 5–10.** 5–7 = *Rhipidandrus crenipennis* (MOTSCHULSKY): 5 = head of female, 6 = head of male, 7 = right elytron and pronotum, lateral view; 8–10 = *R. speculifrons* (GEBIEN): 8 = head of female, 9 = head of male, 10 = pronotum and left elytron, lateral view

- Pronotum in lateral portions with punctures tending to be longitudinal. Elytral striae with wrinkles forming a row of polygonal cells (Figs 20, 25). Female and male with different cranial surface 7
- 7 Female: frons with an ill-defined impunctate area; clypeus without crenulate ridge (Fig. 18). Male: frons coarsely and uniformly punctate; clypeus without tubercles (Fig. 19). Length 3.0–4.0 mm. Australia, Solomon Islands  
*R. simpsoni* (WATERHOUSE, 1894)
- Female: clypeus with finely crenulate transverse ridge (Fig. 22). Male: clypeus with a pair of sharp tubercles (Fig. 23). Punctuation of frons similar in both sexes. Length 2.9–3.8 mm. Australia

***R. crowsoni* sp. n.**

*Rhipidandrus borbonicus* (FAIRMARE, 1880)  
(Figs 11–15)

*Bolitophagus borbonicus* FAIRMARE, 1880: 293.

*Bolitopertha novemcostata* GEBIEN, 1910: 380, **syn. n.**

*Cherostus fungivorus* VINSON, 1950: 144. Synonymized by VINSON (1953: 145).

*Rhipidandrus borbonicus*: VINSON 1953: 145.

*Rhipidandrus novemcostatus*: GEBIEN 1939: 522.

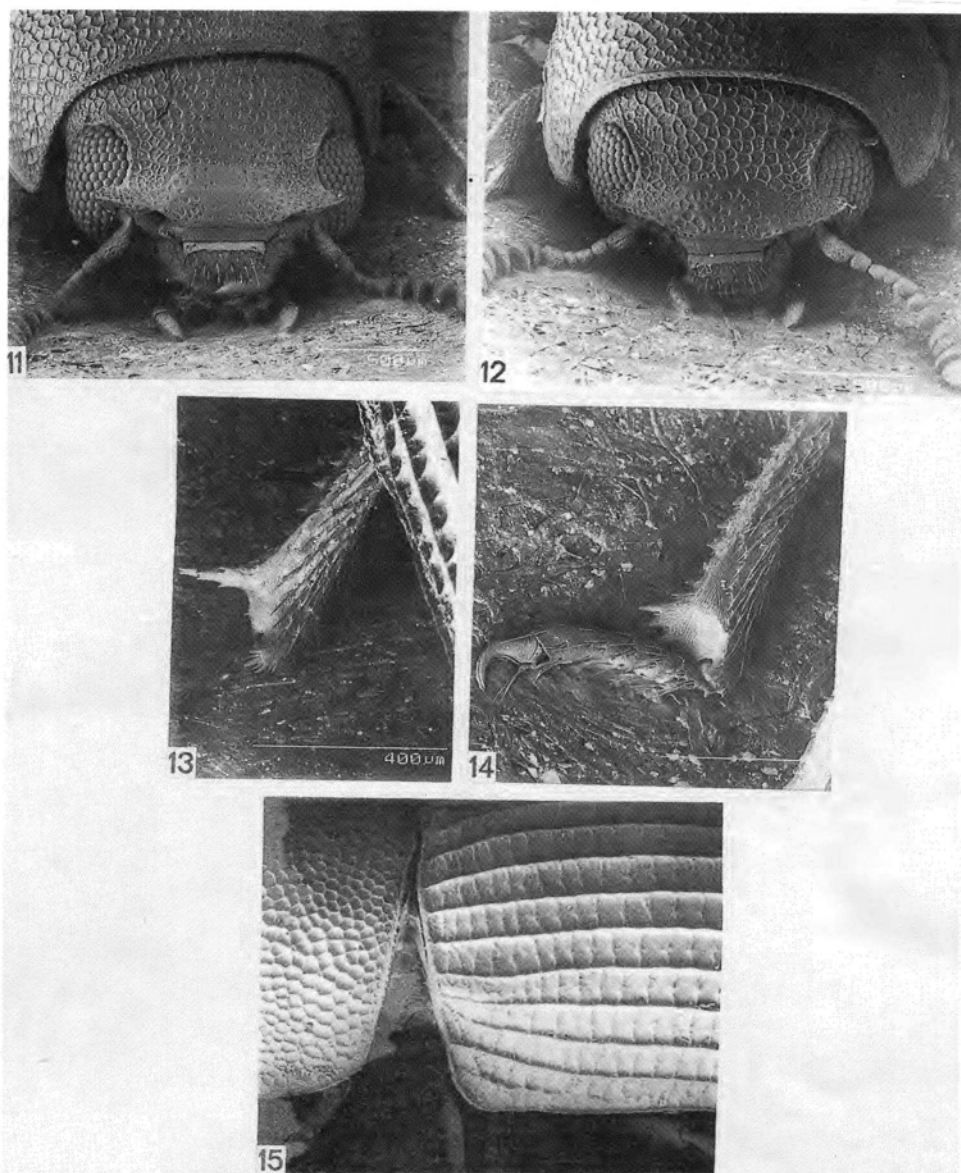
*Rhipidandrus novemcostatus*: KASZAB 1971: 227.

Type material examined – *Bolitophagus borbonicus* – A female specimen which is mounted on a card along with a male is herewith designated as lectotype (MHNP). The specimen glued distal to the pin is the female lectotype, while the proximal specimen is a male paralectotype. Their labels are the following: 1. “MUSEUM PARIS La Réunion (Coll. Ch. Coquerel) COLL. L. FAIRMAIRE 1906” [printed and handwritten on light blue paper]; 2. “TYPE” [printed with red on white paper]; 3. “*Bolitophag. borbonicus* Fairm. I. Bourbon” [handwritten on white paper]; 4. “Lectotypus ♀ *Bolitophagus borbonicus* Fairmare, 1880 des. Merkl & Kompantzeva, 1995 (distal to pin)” [printed and handwritten on red paper]; 5. “Paralectotypus ♂ *Bolitophagus borbonicus* Fairmare, 1880 des. Merkl & Kompantzeva, 1995 (proximal to pin)” [printed and handwritten on yellow paper]; 6 “*Rhipidandrus borbonicus* (FRM.) det. O. Merkl, 1995 [handwritten and printed on white paper].

*Bolitopertha novemcostata* – One female syntype (HNHM) was available for study. Its labels are as follows: 1. ♂ [printed on white paper with black frame; the specimen is, in fact, a female!]; 2. “Dar es Sal. 20.II.1903. (Eichelbaum).” [handwritten on pink paper]; 3. “*Bolitopertha 9–costata* x. Geb.” [handwritten on white paper]; 4. “Sammlung H. Gebien” [printed on white paper]; 5. “Syntypus 1909 *Bolitopertha 9–costata* Gebien” [handwritten and printed on white paper with red frame]; 6. “*Rhipidandrus borbonicus* (FRM.) ♀ det. O. Merkl, 1995 [handwritten and printed on white paper].

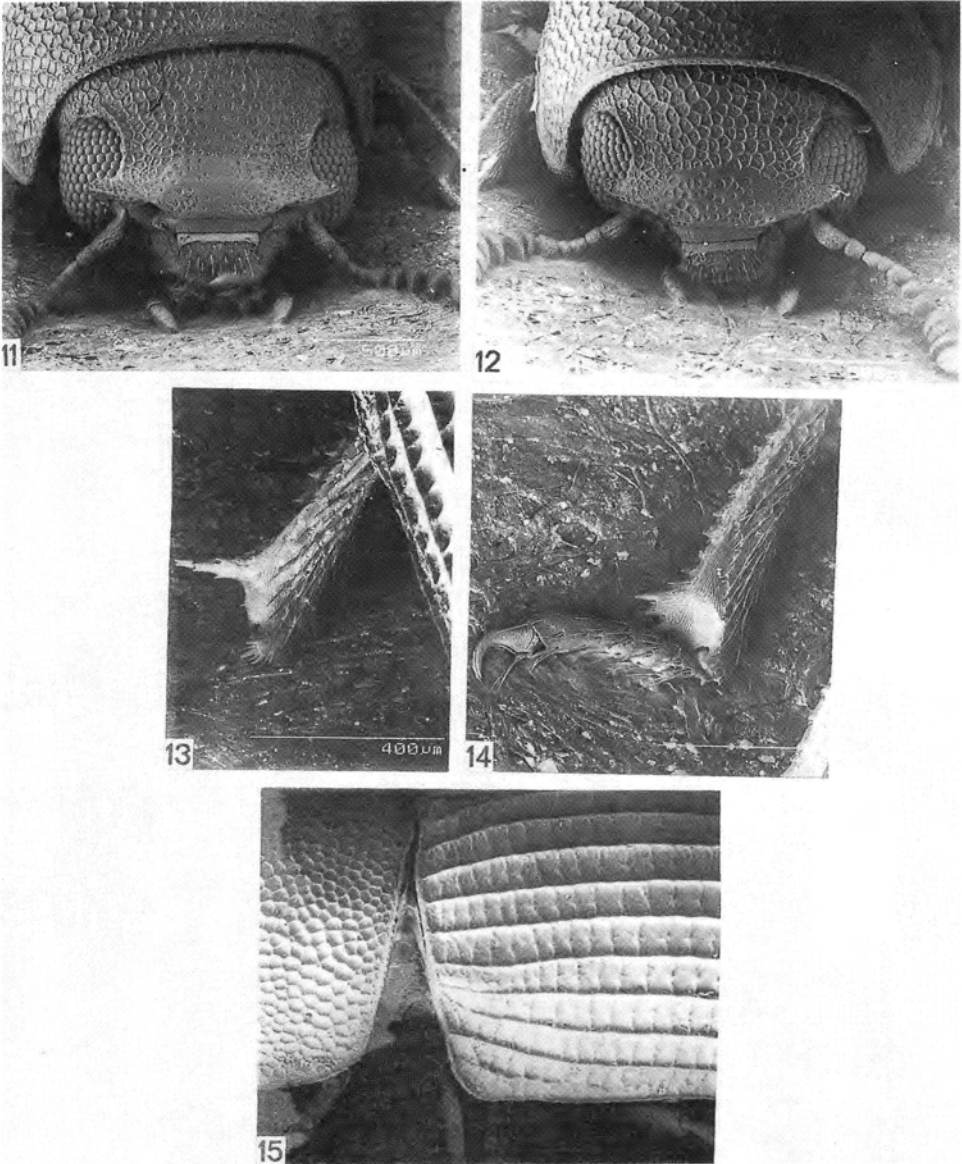
*Cherostus fungivorus* – Seven specimens considered to be syntypes (BMNH) were examined. One card-mounted female specimen tagged with type labels is herewith designated as lectotype. Its labels are the following: 1. “♂ ” [printed; the specimen is, in fact, a female!]; 2. “SYN-TYPE” [printed on circular, white paper with blue border]; 3. “Type” [printed on circular, white paper with red border]; 4. “MAURITIUS Moka 6.i.1948 J. Vinson” [printed on white paper;

6., i. and 48 are handwritten]; 5. "TYPE" [handwritten on red paper]; 6. "ex fungus" [handwritten on white paper]; 7. "Brit. Mus. 1951 231" [printed and handwritten on white paper]; 8. "Cherostus fungivorus Vinson det. J. VINSON 1950" [handwritten and printed on white paper]; 9. "Lectotypus ♀ Cherostus fungivorus Vinson, 1950 des. Merkl & Kompantzeva, 1995" [printed and handwritten on red paper]; 10. "Rhipidandrus borbonicus (FRM.) det. O. Merkl, 1995" [handwritten and printed on white paper].



**Figs 11–15.** *Rhipidandrus borbonicus* (FAIRMARE): 11 = head of female, 12 = head of male, 13 = middle tibia of female, 14 = middle tibia of male, 15 = pronotum and left elytron, lateral view

6., i. and 48 are handwritten]; 5. "TYPE" [handwritten on red paper]; 6. "ex fungus" [handwritten on white paper]; 7. "Brit. Mus. 1951 231" [printed and handwritten on white paper]; 8. "Cherostus fungivorus Vinson det. J. VINSON 1950" [handwritten and printed on white paper]; 9. "Lectotypus ♀ Cherostus fungivorus Vinson, 1950 des. Merkl & Kompantzeva, 1995" [printed and handwritten on red paper]; 10. "Rhipidandrus borbonicus (FRM.) det. O. Merkl, 1995" [handwritten and printed on white paper].



**Figs 11–15.** *Rhipidandrus borbonicus* (FAIRMARE): 11 = head of female, 12 = head of male, 13 = middle tibia of female, 14 = middle tibia of male, 15 = pronotum and left elytron, lateral view

The six paralectotypes are also card-mounted. Three cards each have a common pin. Their labels are as follows: 1. "MAURITIUS Moka 19 J. Vinson" [printed on white paper; this is the same label as the fourth label of the lectotype but the handwritten 6., i. and 48 are missing]; 2. "Brit. Mus. 1972-220" [printed and handwritten on white paper]; 3. "PARALECTOTYPUS ♂ [or] ♀ *Cherostus fungivorus* Vinson, 1950 des. Merkl & Kompantzeva, 1995" [printed on yellow paper with the sex-mark handwritten]; 4. "Rhipidandrus borbonicus (FRM.) det. O. Merkl, 1995" [handwritten and printed on white paper].

Both pins are tagged with three paralectotype labels indicating the sex; their sequence is equivalent to that of the specimens on the pins.

While the specimen designated as lectotype was received by the BMNH in 1951, the other six specimens came to the BMNH in 1972 from Mauritius (JANE BEAR, pers. comm.). However, the quality of the cards, the pins and the locality labels are the same. Therefore it seems undoubted that all specimens are from VINSON's original series: "Moka, 6.i.1948, several examples found breeding in fungi; other examples were previously collected in the same material" (VINSON 1950).

Non-type material examined – Madagascar: no closer locality, 1906, FERRIER DE LA BATHIE (1, MHNP). – Mascarenhas: La Réunion, 1906, CH. COQUEREL (1, MHNP); I. Bourbon, no other data (2, MHNP). – South Africa: Natal, no closer locality, Dr. MARTIN (4, HNHM). – Tanzania: Usa River, 3900 feet, light trap, 15.XI.–31.XII.1965, Dr. J. SZUNYOGHY (4, HNHM); same, 1.XII.1965–31.I.1966 (1, HNHM); same, at light, 1965 (1, HNHM); Morogoro, Uluguru Mts., IV.1991, E. RAUTENSTRAUCH (1, BREM); Ngare Sero, prope Usa River, 1200 m. in trockenem Baumschwamm, 24–31.III.1981, H. J. BREMER (38, BREM; 2, HNHM; 1, UENO); Zanzibar, no other data (1, HNHM).

Distribution – Madagascar, Mascarenhas (Mauritius and Réunion), Tanzania, South Africa.

Remarks – The synonymy of *Bolitopertha novemcostata* is obvious. In all probability, VINSON had not seen GEBIEN's type or any other specimen identified as *Bolitopertha novemcostata* but apparently presumed that his species described from the Mascarene Islands had a much wider distribution (VINSON 1953): "Il est de plus probable que cette espèce n'est pas propre aux îles Mascareignes: dans la collection du British Museum se trouvent cinq exemplaires non déterminés provenant de l'Afrique du Sud qui sont apparemment identiques."

Dissection of the genitalia of several specimens made it clear that both GEBIEN (1910) and VINSON (1950) had inverted the sexes. The long apical spine of the middle and hind tibiae is a feature characteristic for the female and not for the male as the above authors stated.

### **Rhipidandrus caesus** sp. n.

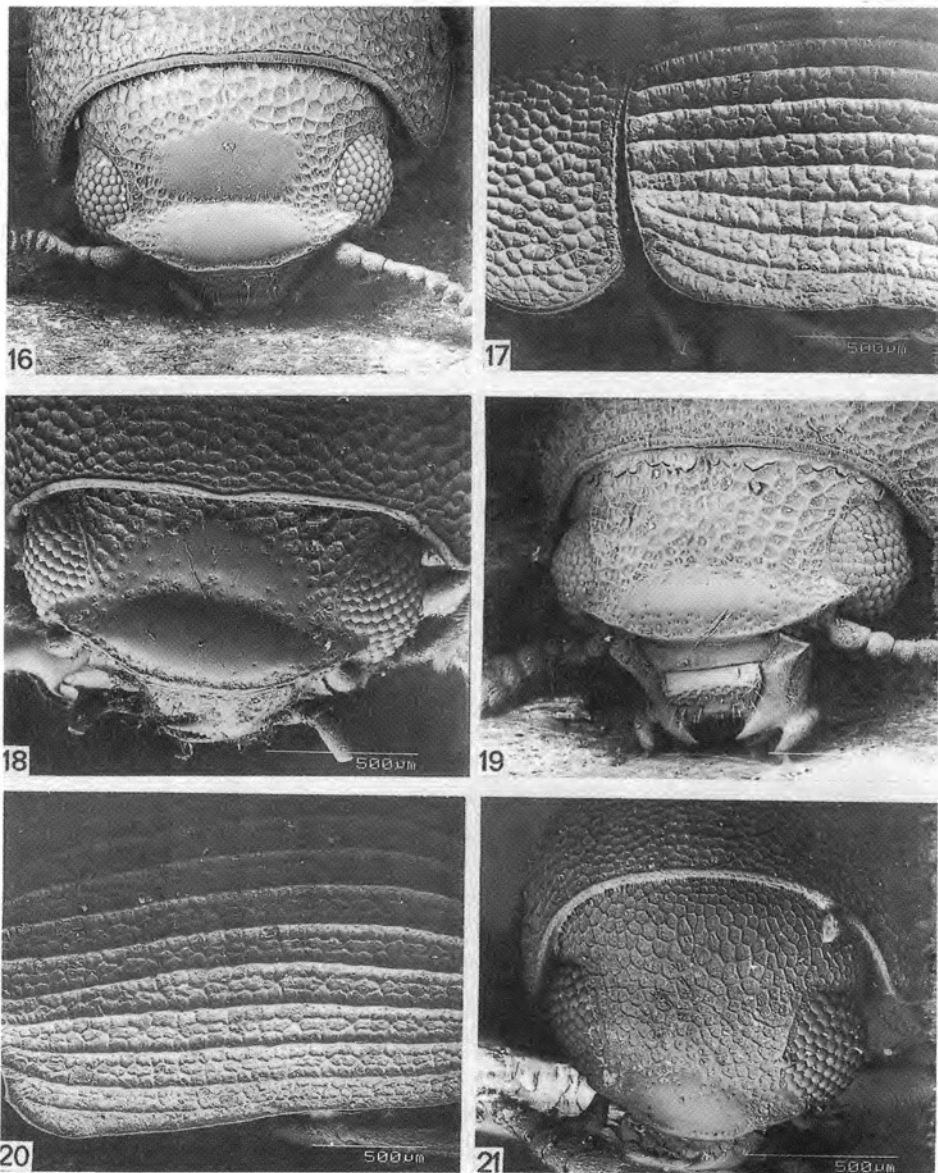
(Figs 16–17)

Description – Colour reddish-brown; legs, antennae and maxillary palpi somewhat paler. Length 3.1–3.4 mm.

Female. Frons more than three times wider than eye diameter, with a transverse, shiny, impunctate spot; clypeus convex, shining, impunctate; frontoclypeal suture deeply impressed; vertex coarsely punctate (Fig. 16). Antennae with 5-segmented club; segments 1 to 4 subconical, 5 to 6 slightly, 7 to 10 strongly dilated internally, depressed, densely setulose apically; segment 11 rounded; segment length ratios as follows: 3:1.25:1.2:1.05:1.0:1.1:1.0:1.05:1.1:1.4:2.7.

Pronotum about 1.4 times wider than long, disc moderately convex, coarsely punctate; punctation uniform mesally and laterally (Fig. 17).

Elytra about 1.3 times as long as wide and 2.1 times as long as pronotum; striae deeply impressed, with a zigzagged sculpturing formed by oblique wrinkles and blunt tubercles (Fig. 17); 1st carina reaching elytral apex and connected with lateral margin; carinae 3, 5, 7 and 9 ending just be-



**Figs 16–21.** 16–17 = *Rhipidandrus caesus* sp. n.: 16 = head of female, 17 = pronotum and left elytron, lateral view; 18–20 = *R. simpsoni* (WATERHOUSE): 18 = head of female, 19 = head of male, 20 = left elytron, lateral view; 21 = *R. nudus* (GEBIEN): head of male

fore apex, carinae 2, 4, 6 and 8 ending before apical 1/6; 10th carina weak but present, reaching 1/3 of elytral length.

Male. Clypeus and frons similar to those of male but impunctate frontal spot somewhat smaller. Aedeagus with apicale of tegmen shorter than basale, apical part of apicale distinctly divided.

Type material – Holotype, female (ANIC), labelled as follows: 1. “12.23S 132.56E 7 km NW. by N. of Cahills Crossing, East Alligator River, N.T. 27.v.73, E. G. Matthews” [printed on white paper]; 2. “in bracket fungi” [printed on white paper]; 3. “Larva in spirit collection” 4. “Holotypus ♀ *Rhipidandrus caesus* Merkl & Kompantzeva, 1996” [printed and handwritten on red paper].

Paratypes: Australia (Northern Territory): labelled as the holotype (1 ♂, 3 ♀ ♀, ANIC; 1 ♀, HNHM). – All paratypes are tagged with the following label: “PARATYPUS ♂ [or] ♀ *Rhipidandrus caesus* Merkl & Kompantzeva, 1996” [printed on yellow paper with the sex-mark handwritten].

Remarks. – *R. caesus* vaguely resembles *R. simpsoni*. The lateral punctures of the pronotum (Fig. 17) do not tend to be longitudinal as in *R. simpsoni* and the sculpture of the elytral interstriae is also different. The frontal spot of female *R. caesus* is completely impunctate (Fig. 16) while that of *R. simpsoni* has a few scattered punctures (Fig. 18).

The specific epithet comes from the Latin adjective *caesus* (= cut), in reference to the deeply impressed frontoclypeal suture, which sharply divides the glossy, impunctate area of the head.

### *Rhipidandrus cioides* KASZAB, 1955

(Figs 3–4)

*Rhipidandrus cioides* KASZAB, 1955a: 460.

*Rhipidandrus cioides clypeatus* KASZAB, 1955b: 655, **syn. n.**

Type material examined – *Rhipidandrus cioides* – Three male paratypes (HNHM), one card-mounted and two paper-pointed, were examined. They are labelled as follows: 1. “Thawathi, Ovalau, Fiji VII–16–38” [printed and handwritten on white paper]; 2. “Dead shelf fungi 800” [printed and handwritten on white paper]; 3. “EC Zimmermann Collector” [printed on white paper]; 4. “Paratypus 1952 *Rhipidandrus cioides* Kaszab” [handwritten and printed on white paper with red frame].

*Rhipidandrus cioides clypeatus* – Three male paratypes (HNHM), one card-mounted and two paper-pointed, were examined. The card-mounted specimen is labelled as follows: 1. “Afiamalu Upolu, Samoa VII–2–40” [printed and handwritten on white paper]; 2. “2200 feet” [printed on white paper]; 3. “Dead shelf fungi” [printed on white paper]; 4. “EC Zimmermann Collector” [printed on white paper]; 5. “Paratypus 1953 *Rhipidandrus cioides clypeatus* Kaszab” [handwritten and printed on white paper with red frame].

The paper-pointed specimens are labelled as above except the first label which has “VI–30–40” instead of “VII–2–40”.

Non-type material examined – None.

Distribution – Melanesia (Fiji and Samoa).

Remarks – *R. cioides* is the largest among all described congeners. Although the female is unknown, the sheer size and the elytral sculpture make this species unmistakable. *R. cioides clypeatus*, described from Samoa, does not appear to be distinct from the Fiji specimens. The features thought to be distinguishing by KASZAB (1955b) are a matter of degree.

*Rhipidandrus crenipennis* (MOTSCHULSKY, 1858)  
(Figs 5–7)

*Xyloborus crenipennis* MOTSCHULSKY, 1858: 64.

*Rhipidandrus crenipennis*: GEBIEN 1939: 522.

*Rhipidandrus similis* KASZAB, 1955a: 462, **syn. n.**

*Rhipidandrus zaitzevi* KOMPANTZEVA et MERKL, 1992: 89, **syn. n.**

*Rhipidandrus crenipennis*: KOMPANTSEVA 1995: 55. [Description of larva.]

Type material examined – *Xyloborus crenipennis* – The type series (ZMUM) consists of five specimens (syntypes) glued to one common card with the following labels: 1. “*Xyloborus crenipennis* Motsch Ind. or.” [handwritten on yellow paper]; 2. “*Rhipidandrus crenipennis* (Mots.) Dr. Z. Kaszab det., 1979” [handwritten and printed on white paper].

*Rhipidandrus similis* – The holotype (HNHM) is a card-mounted female specimen labelled as follows: 1. “Philippinen Limay, Luzon” [handwritten on white paper]; 2. “Holotypus 1955 *Rhipidandrus similis* Kaszab” [handwritten and printed on white paper with red frame]; 3. “*Rhipidandrus crenipennis* (Motschulsky, 1858) ♀ det. O. Merkl, 1994” [printed on white paper].

The three examined paratypes of *R. similis* belong to *R. speculifrons*. See their data under that species.

*Rhipidandrus zaitzevi* – The holotype (HNHM) is a male specimen mounted on a paper point and labelled as follows: 1. “VIETNAM, Gia Lai-Con tum province, Buon Loi, 20.VII.1983, leg. J. Zaitzev” [printed on white paper]; 2. “Holotypus ♂ *Rhipidandrus zaitzevi* Kompantzeva & Merkl, 1992” [printed and handwritten on red paper]; 3. “*Rhipidandrus crenipennis* (Motschulsky, 1858) det. O. Merkl, 1994” [printed on white paper].

A total of 23 paratypes (3 ♂♂, 3 ♀♀, HNHM; 9 ♂♂, 8 ♀♀, SIEE) of *R. zaitzevi* are labelled as the holotype except the second label which is as follows: “PARATYPUS ♂ [or] ♀ *Rhipidandrus zaitzevi* Kompantzeva & Merkl, 1992” [printed on yellow paper with the sex-mark handwritten].

Non-type material examined – Indonesia: Lombok, Sembalun Lawang, Mt. Rinjani, 1700 m, 6–8. II. 1994, BOLM (17, SMNS; 5, HNHM); South Sumatra, Benakat, 2–13.IX.1994, H. MAKTHARA (17, MASU; 6, HNHM). – Philippines: Luzon, Limay, X.1914, G. BOETTCHER (1, FREY, identified as *R. similis* by H. KULZER in 1954).

Distribution – Vietnam, Indonesia, Philippines.

Remarks – *R. crenipennis* is distinguished from *R. speculifrons* by the absence of the 10th elytral carina (Fig. 7) and the shining but sparsely punctate clypeus (Figs 5–6). Both males and females have a shining impunctate area on the frons which is finely separated from the clypeus by the frontoclypeal suture. This area is more expanded in the females.

The average size of *R. crenipennis* is larger than that of *R. speculifrons*. This is especially apparent in a series of *Rhipidandrus* specimens collected at Benakat, South Sumatra, which consisted of both species.

The synonymy of *R. similis* is obvious and the same holds for the recently described *zaitzevi*. It needs to be said in the present authors' excuse, that they had no possibility to examine the type of *R. crenipennis* while describing *zaitzevi*. The type material of *R. crenipennis* is now available and it is clear that all specimens of *R. zaitzevi* are conspecific with *R. crenipennis*.

### ***Rhipidandrus crowsoni* sp. n.**

(Figs 22–29)

*Rhipidandrus* sp.: KOMPANTSEVA 1995: 57.

Description – Colour reddish-brown to blackish-brown; legs, antennae and maxillary palpi slightly lighter; pronotal disc sometimes red (teneral specimens?). Length 2.9–3.8 mm.

Female. Frons flattened anteriorly, more than three times wider than diameter of eye; clypeus moderately convex and reflexed, weakly punctate, with a crenulate transverse carina mesally (Fig. 22); frontoclypeal suture distinct; vertex strongly convex, coarsely punctate; antennae with 5-segmented club; segments 1 to 4 subcylindrical, 5 and 6 slightly, 7 to 10 strongly dilated internally, depressed, densely setulose apically; segment 11 elliptic; segment length ratios as follows: 1.9:1.3:1.1:1.0:1.0:1.0:1.4:1.5:1.6:1.65:2.6.

Pronotum about 1.45 times wider than long, disc moderately convex, coarsely punctate at middle, lateral punctures tending to be longitudinal, punctural interspaces forming longitudinal and oblique wrinkles laterally (Fig. 25).

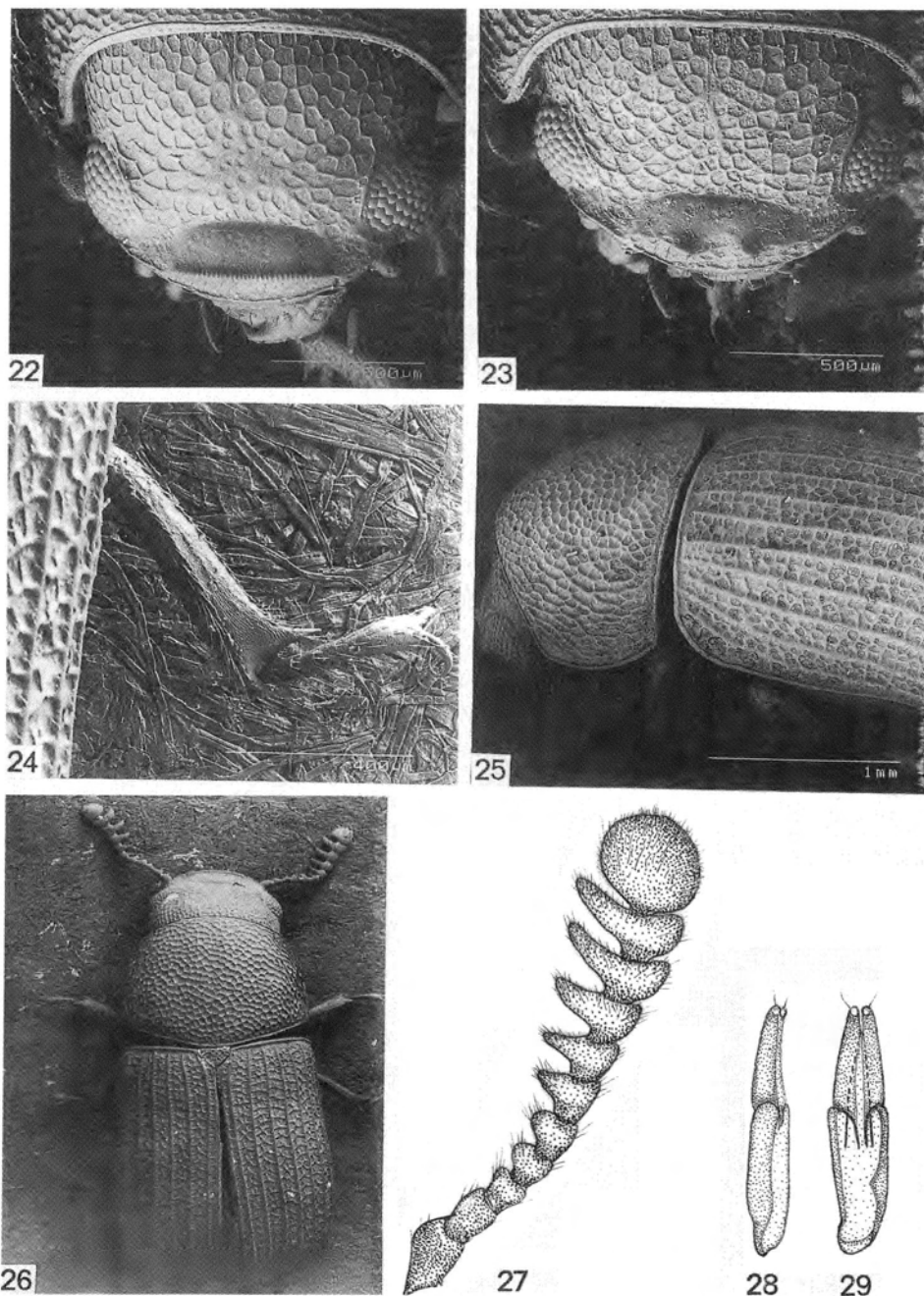
Elytra about 1.2 times as long as wide and 1.9 times as long as pronotum; striae deeply impressed, with transverse and oblique by raised wrinkles forming a mesh-like sculpture which includes a row of polygonal cells in every stria (Fig. 25); 1st carina reaching elytral apex and connected with lateral margin; carinae 3, 5, 7 and 9 ending just before apex, carinae 2, 4, 6 and 8 ending before apical 1/6; 10th carina present, reaching half of elytral length. Middle tibia: Fig. 24.

Male. Clypeus with a pair of short, blunt tubercles mesally (Fig. 23). Antenna: Fig. 27. Aedeagus (Figs 28–29) with apicale of tegmen shorter than basale, apical part of apicale distinctly divided.

Type material – Holotype, female (ANIC), labelled as follows: 1. "Mossman Gorge, N. Q. 200', rainforest, In bracket fungi, 28.x.1966, E. Britton" [printed on white paper]; 2. "Holotypus ♀ *Rhipidandrus crowsoni* Merkl & Kompantzeva, 1996" [printed and handwritten on red paper].

Paratypes: Australia (Queensland): labelled as the holotype (1 ♂, 4 ♀ ♀, ANIC; 1 ♂, 1 ♀, BMNH; 1 ♂, 1 ♀, HNHM); same, in fungi (2 ♂ ♂, 2 ♀ ♀, ANIC; 1 ♂, 1 ♀, HNHM; 1 ♂, 1 ♀, SIEE; 1 ♀, SMNS); Cape Tribulation, 200 m, 14.VII.1982, S. & J. PECK SBP7, J.F. LAWRENCE Lot 82–35, *Nigroporus* (2 ♂ ♂, 2 ♀ ♀, ANIC; 1 ♂, SMNS); Cooloola N.P., Camp Milo, 16.X.1978, D. RENTZ, J. F. LAWRENCE Lot 78–19, *Ganoderma* (2 ♂ ♂, ANIC); Julatten, 18–22.VIII.1982, J.F. LAWRENCE, J. F. LAWRENCE Lot 82–11, *Ganoderma lucidum* gp. (1 ♀, ANIC); Lake Barrine, 750 m, 29.VII.1982, S. & J. PECK, J. F. LAWRENCE Lot 82–50, unidentified fungus (3 ♂ ♂, 3 ♀ ♀, ANIC; 1 ♂, 1 ♀, BREM); 15.47S 145.17E, Moses Ck., 4 km NbyE Mt. Finnigan, 14–16.X.1980, ex ethanol, J. C. CARDALE (1 ♂, ANIC); Mossman Gorge N.P., 6 km SW of Mossman, 50 m, 11.VII.1982, S. & J. PECK SBP6, J.F. LAWRENCE Lot 82–28, *Nigroporus* (2 ♂ ♂, 3 ♀ ♀, ANIC; 1 ♂, 1 ♀, HNHM); 17.14S 145.46E, Mulgrave R. Rd., 9 km WNW Bellenden Ker, 140 m, 2.IV.1984, A. CALDER & T. WEIR (1 ♂, ANIC); New England N.P., 1500 m, 26.VIII.1982, S. & J. PECK, J.F. LAWRENCE Lot

**Figs 22–29.** *Rhipidandrus crowsoni* sp. n.: 22 = head of female, 23 = head of male, 24 = middle tibia of female, 25 = pronotum and left elytron, lateral view, 26 = habitus of female, 27 = right antenna of male, 28 = aedeagus, lateral view, 29 = aedeagus, ventral view



82–77, unidentified Polyporales (2 ♂♂, ANIC); 1 mi. E of Palmerston, under bark, 6.XI.1966, E. BRITTON (1 ♂, 6 ♀♀, ANIC; 1 ♀, HNHM); Paluma, 6–7.X.1978, D.W. Frith, J. F. LAWRENCE Lot 78–193, *Fomitopsis dochmia* (2 ♂♂, 1 ♀, ANIC); same, 6–7.XI.1978 (3 ♂♂, 1 ♀, ANIC); same, 11–12.XII.1978, J. F. LAWRENCE Lot 78–201 (1 ♀, ANIC); 25.57S 153.06E, nr Poona Lake, Cooloola N.P., 18.IV.1982, A. CALDER, J. F. LAWRENCE Lot 82–2, *Nigroporus vinosus* (1 ♂, 2 ♀♀, ANIC; 1 ♂, 1 ♀, HNHM); Tamborine Mts., 16.VIII.1986, R. A. CROWSON (1 ♂, 1 ♀, ANIC; 1 ♂, 1 ♀, HNHM; 2 ♂♂, 2 ♀♀, SIEE); Topaz N.P., SE of Malanda, 720 m, rainforest, log and leaf litter, 28.VII.1982, S. & J. PECK SBP93 (1 ♀, ANIC). – Australia (New South Wales): Barrington Tops, Mt. Allyn–Burruga Tr., 1000 m, 16–17.VI.1978, log litter and fungi, S. & J. PECK (1 ♂, ANIC); Brindle Ck., 800 m N of Kyogle, 21.VI.1978, S. & J. PECK, J. F. LAWRENCE Lot 78–141, *Ganoderma* (2 ♂♂, 1 ♀, ANIC); same, 8 m N of Kyogle, 20–21.VI.1978, *Ganoderma applanatum* (1 ♂, 1 ♀, ANIC); Brindle Ck., 800 m nr Kyogle, Wiangarie S.F., 20.VI.1978, S. & J. PECK, J. F. LAWRENCE Lot 78–141, *Ganoderma applanatum* (3 ♂♂, 1 ♀, ANIC); Bruxner Park, 200 m, Coffs Harbour, 9.VII.1978, ex leaf log litter, S. & J. PECK (2 ♂♂, ANIC). – All paratypes are tagged with the following label: “PARATYPUS ♂ [or] ♀ *Rhipidandrus crowsoni* Merkl & Kompantzeva, 1996” [printed on yellow paper with the sex-mark handwritten].

Non-paratype specimens – Australia (Queensland): Boar Pkt. Rd. 4 m N Gillies Highway, fungus, 28.XI.1969, J. G. BROOKS (6 and 8 specimens glued on two common cards, respectively, ANIC); Little Mulgrave Valley, 9.X.1969, J. G. BROOKS (6 specimens glued on a common card, ANIC); Little Mulgrave Valley, 5 m NW Gillies Highway, from fungus, 9.X.1969, J. G. BROOKS (7 specimens glued on a common card, ANIC); East Palmerston, 600', in fungus, 6.XI.1966, J. G. BROOKS (6 specimens glued on a common card, ANIC); Ravenshoe, IV.1948, J. G. BROOKS (5 specimens glued on a common card, ANIC). – Australia (New South Wales): Brindle Ck., 8 m N of Kyogle, 20–21.VI.1978, S. & J. PECK, J. F. LAWRENCE Lot 78–141, *Ganoderma applanatum* (7 specimens in a plastic vial, ANIC).

Remarks – *R. crowsoni* is close to *R. simpsoni* in the reticulated elytral striate and the longitudinally wrinkled lateral portion of pronotum. However, it differs from all described congeners in the unique sculptural elements of the clypeus (Figs 22–23).

The species is dedicated to Dr. ROY A. CROWSON, one of the most outstanding figures of present-day coleopterology, who called the attention of one of the authors (T. K.) to this species.

### *Rhipidandrus nudus* (GEBIEN, 1914) (Fig. 21)

*Cherostus nudus* GEBIEN, 1914: 14.

*Rhipidandrus nudus*: GEBIEN 1939: 522.

Type material examined – *Cherostus nudus* – The “type” and five “cotypes” were available for study. All are males, with the following labels:

The “type” (FREY), mounted on a translucent plastic point: 1. “Banguey b. Borneo” [handwritten on white paper]; 2. “Type! No. 273” [printed and handwritten on red paper]; 3. “*Cherostus nudus* x Geb” [handwritten on white paper]; 4. “Sammlung H. Gebien” [printed on white paper].

Of four “cotypes”, three are mounted on translucent plastic points (FREY), one card-mounted (HNHM): 1. “Banguey b. Borneo” [handwritten on white paper]; 2. “Cotype! No. 273” [printed and handwritten on red paper]; 3. “*Cherostus nudus* x Geb” [handwritten on white paper]; 4. “Sammlung H. Gebien” [printed on white paper].

The fifth “cotype” belongs to *R. speculifrons*. See its data under that species.

Remarks – The status of *R. nudus* is problematic. Apart from one of the secondary types ("cotypes"), which clearly belongs to *R. speculifrons*, the remaining specimens have elytral striae divided into quadrangles by transverse ridges (as in *R. speculifrons* and *R. crenipennis*); no 10th elytral carina (as in *R. crenipennis*); no glossy area on frons, clypeus is shining and impunctate, and the frontoclypeal suture is distinct (Fig. 21). This surface type of frontoclypeal area is unlike *R. crenipennis* (Figs 5–6) and *R. speculifrons* (Figs 8–9). Unfortunately, all the types are males and, because the females are usually crucial for separation of the species of this genus, *R. nudus* cannot be identified and keyed correctly. An adequate resolution should be postponed until females associated to males similar to the primary type of *R. nudus* become available.

*Rhipidandrus simpsoni* (WATERHOUSE, 1894)  
(Figs 18–20)

*Cherostus Simpsoni* WATERHOUSE, 1894: 69.

*Rhipidandrus Simpsoni*: GEBIEN 1939: 522.

*Rhipidandrus simpsoni*: KASZAB 1955a: 461.

Type material examined – None.

Non-type material examined – Australia (Queensland): 13.44S 143.20E, 11 km WbyN of Bald Hill, McIlwraith Range, search party campsite, 520 m, 27.VI.–12.VII.1989, T. A. WEIR, J. F. LAWRENCE Lot –, *Ganoderma lucidum* (1, ANIC); Cairns, IX.1950, G. BROOKS (1, ANIC); 16.55S 145.46E, Cairns, 19 km up Whitfield Ra. Rd., 390 m, 16.II.1971, J. G. & J. A. G. BROOKS (1, ANIC); Cooloolo N.P., Camp Milo, 16.X.1978, D. RENTZ, J. F. LAWRENCE Lot 78–191, *Ganoderma* (2, ANIC; 1, HNHM); Edge Hill, Cairns, 8.X.1966, J. G. BROOKS (12, ANIC; 1, HNHM); Ewan Rd., c. 8 km W of Paluma, at light, 8–18.I.1974, J. G. BROOKS (7, ANIC; 1, HNHM); Ewan Rd., 3 km W. of Paluma, 2980', fungus, 11.I.1974 (8, ANIC); same, surface at night (1, ANIC); same, 13.45S 143.22E, 500 m, mango tree site, J. F. LAWRENCE Lot –, *Ganoderma lucidum* (1, ANIC); Kuranda, XI.1946, J. G. BROOKS Bequest, 1976 (2, ANIC); same, VII.1949, J. G. BROOKS Bequest, 1976 (3, ANIC); same, HACKER, no other data (3, BREM); 17.17S 145.38E, nr. Lake Eacham, Atherton Tableland, 7.XII.1985, J. BALDERSON (1, ANIC); 28.24S 153.08E, Lamington N.P., O'Reillys, 2–4.III.1980, J. F. LAWRENCE, J. F. LAWRENCE Lot 80–30 *Ganoderma* (3, ANIC; 3, HNHM); Mareeba, 19–25.XII.1961, H. DEMARZ (1, HNHM); Mt. Spec, XI.1973, G. BROOKS (1, ANIC); Paluma, 6–7.XI.1978, D. FRITH, J. F. LAWRENCE Lot 78–192, *Ganoderma applanatum* (3, ANIC); same, 31.XII.1979, J. F. LAWRENCE Lot 79–47, *Ganoderma lucidum* gp. (4, ANIC; 1, HNHM); same, 11.VII.1980, J. F. LAWRENCE Lot 80–52 *Stereum fasciatum* (1, ANIC); W. slope of Seymour Ra., Dinner Ck. Rd., nr. Innisfail, rainforest, under bark, 3.XI.1966, E. BRITTON (2, ANIC); Wallaman Falls, 1.X.1967, G. BROOKS (3, ANIC); Whitfield Rg. Rd., c. 486 m, 3.II.1970, at light, J.G. & J.A.G. Brooks (1, ANIC); Wiangaree S. F., NSW Isaksson Ridge, 1050 m, window trap 592, 29.II.–3.III.1980, A. NEWTON & M. THAYER (1, ANIC). – Australia (New South Wales): Eungai, in fungus on log, XI.1933, J. ARMSTRONG (2, ANIC); Mackswille, XII.1992, WACHTEL (3, BREM; 1, HNHM). – Solomon Is.: Shortland I., IV.1966, F. PARKER (1, ANIC).

Distribution – Australia (Queensland, New South Wales), Solomon Islands.

Remarks. – The extent of the impunctate frontal area of the female is variable. In some specimens this area is vague and quite similar to that in the male.

*Rhipidandrus speculifrons* (GEBIEN, 1922)  
(Figs 8–10)

*Cherostus speculifrons* GEBIEN, 1922: 288.

*Rhipidandrus speculifrons*: GEBIEN 1939: 522.

*Rhipidandrus dybasi* KULZER, 1957: 204, **syn. n.**

*Rhipidandrus sodalis* KULZER, 1957: 206, **syn. n.**

*Rhipidandrus similis*: KASZAB 1979: 76. [Misidentification of *R. speculifrons* GEBIEN.]

*Rhipidandrus crenipennis*: KASZAB 1979: 77. [Misidentification of *R. speculifrons* GEBIEN.]

*Rhipidandrus scolytoides* CHUJO, 1985: 62, **syn. n.**

Type material examined – *Cherostus speculifrons* – Six syntype specimens (5, FREY; 1, HNHN), all females and card-mounted, were examined. Their labels are as follows: 1. “Long Isl. 12–22.7.08” [printed on bluish paper]; 2. “Mahe 1908–09 Seychell. Exp” [printed on bluish paper]; 3. “Cotype! No. 1100” [printed and handwritten on red paper]; 4. “*Cherostus speculifrons* x Geb.” [handwritten on white paper]; 5. “*Rhipidandrus speculifrons* (Gebien, 1922) ♀ det. O. Merkl, 1995” [printed on white paper].

*Rhipidandrus scolytoides* – The holotype (ELKU) is a male specimen mounted on a paper point with the following labels: 1. “Urauchi Iriomote Loo-Choo 23.VII.1963 Y. HAMA” [handwritten and printed on white paper]; 2. “SHIBATA Collection” [printed on green paper]; 3. “Collection of Ent. Lab. Ehime Univ.” [printed on light blue paper]; 4. “Holotype ♂ *Rhipidandrus scolytoides* M. T. Chûjô, 1985” [printed and handwritten on red paper]; 5. “Type No. 2531 Kyushu Univ.” [printed and handwritten on red paper]; 6. “*Rhipidandrus speculifrons* (Gebien, 1922) ♂ det. O. Merkl, 1995” [printed on white paper].

A female paratype (SHIB) mounted on a paper point was also available, which is labelled as follows: 1. “Urauchi Iriomote Loo-Choo 23.VII.1963 Y. HAMA” [handwritten and printed on white paper]; 2. “SHIBATA Collection” [printed on green paper]; 3. “Paratype ♀ *Rhipidandrus scolytoides* M. T. Chûjô, 1985” [printed and handwritten on blue paper]; 4. “*Rhipidandrus speculifrons* (Gebien, 1922) ♀ det. O. Merkl, 1995” [printed on white paper].

*Rhipidandrus sodalis* – Three paratypes (FREY), all males and mounted on paper points, were examined. The labels of two specimens are the following: 1. “Guam I., Marianas Fadang 31 May 1945” [printed on white paper]; 2. “Col. & pres. by Henry S. Dybas Lot 2129a” [printed and handwritten on white paper]; 3. “ex Polypore fungus” [printed on white paper]; 4. “PARATYPUS *Rhipidandrus sodalis* nov. det. H. Kulzer 1955” [printed with red and handwritten with black on white paper]; 5. “*Rhipidandrus speculifrons* (Gebien, 1922) ♂ det. O. Merkl, 1995” [printed on white paper].

The labels of the third specimen are the same with the exception of “Lot 2130a” instead of “Lot 2129a” on the second label.

*Rhipidandrus dybasi* – Six paratypes, all females and mounted on paper points, were available for study. Their labels are as follows:

First specimen (FREY): 1. “Colonía, PONAPE I. 23 Feb. 1948 nr. sea level” [printed on white paper]; 2. “in polypore fungus” [printed on white paper]; 3. “Pacific Sci. Board Ent. Surv. of Micronesia, H. S. Dybas leg.” [printed on white paper]; 4. “PARATYPUS *Rhipidandrus dybasi* nov. det. H. Kulzer 1955” [printed with red and handwritten with black on white paper]; 5. “*Rhipidandrus speculifrons* (Gebien, 1922) ♀ det. O. Merkl, 1995” [printed on white paper].

Second specimen (FREY): 1. “Guam I., Marianas Fadang 31 May 1945” [printed on white paper]; 2. “Col. & pres. by Henry S. Dybas Lot 2129a” [printed and handwritten on white paper];

3. "ex Polypore fungus" [printed on white paper]; 4. "PARATYPUS *Rhipidandrus dybasi* nov. det. H. Kulzer 1955" [printed with red and handwritten with black on white paper]; 5. "*Rhipidandrus speculifrons* (Gebien, 1922) ♀ det. O. Merkl, 1995" [printed on white paper].

Third, fourth and fifth specimens, with paper points on a common pin (FREY): 1. "Saipan I., Marianas Mt. Tagpochau, 1 mi. NNE of summit 22:XII:44" [printed on white paper]; 2. "Col. & pres. by Henry S. Dybas Lot 291" [printed and handwritten on white paper]; 3. "*Rhipidandrus speculifrons* (Gebien, 1922) ♀ det. O. Merkl, 1995" [printed on white paper].

Sixth specimen (HNHM): 1. "Ulimang, BABELTHUAP I. Palau Islands 13 Dec. 1947" [printed on white paper]; 2. "in polypore fungus" [printed on white paper]; 3. "Pacific Sci. Board Ent. Surv. of Micronesia, H. S. Dybas leg." [printed on white paper]; 4. "Paratypus 1957 *Rhipidandrus Dybasi* Kulzer" [handwritten and printed on white paper with red frame]; 5. "*Rhipidandrus speculifrons* (Gebien, 1922) ♀ det. O. Merkl, 1995" [printed on white paper].

*Rhipidandrus similis* – Three paratypes, all card-mounted females, belong to *R. speculifrons* (the holotype belongs to *R. crenipennis*, see above). Their labels are as follows:

First specimen (HNHM): 1. "Philippinen Binaluan" [handwritten on white paper]; 2. "Paratypus 1955 *Rhipidandrus similis* Kaszab" [handwritten and printed on white paper with red frame]; 3. "crenipennis Mots. det. Kaszab" [handwritten and printed on white paper]; 4. "*Rhipidandrus speculifrons* (Gebien, 1922) ♀ det. O. Merkl, 1995" [printed on white paper].

Second specimen (HNHM): 1. "Ceylon" [handwritten on white paper]; 2. "Paratypus 1955 *Rhipidandrus similis* Kaszab" [handwritten and printed on white paper with red frame]; 3. "crenipennis Mots. det. Kaszab" [handwritten and printed on white paper]; 4. "*Rhipidandrus speculifrons* (Gebien, 1922) ♀ det. O. Merkl, 1995" [printed on white paper].

Third specimen (FREY): 1. "Banguay b. Borneo" [handwritten on white paper]; 2. "Paratypus 1955 *Rhipidandrus similis* Kaszab" [handwritten and printed on white paper with red frame]; 3. "*Rhipidandrus speculifrons* (Gebien, 1922) ♀ det. O. Merkl, 1995" [printed on white paper].

*Cherostus nudus* – One of the five "cotypes" studied, mounted on a translucent plastic point (FREY) belongs to *R. speculifrons*. It is labelled as follows: 1. "Kuching Jan. 1906 TM" [printed and handwritten on white paper]; 2. "6" [handwritten on white paper]; 3. "Cotype! No. 273" [printed and handwritten on red paper]; 4. "*Cherostus nudus* x Geb" [handwritten on white paper]; 5. "*Rhipidandrus crenipennis* Motsch. ? det. H. Kulzer 1954" [handwritten and printed on white paper]; 6. "*Rhipidandrus speculifrons* (Gebien, 1922) ♂ det. O. Merkl, 1995" [printed on white paper].

Non-type material examined – Australia (Queensland): 15.41S 145.12E Annan R., 3 km WbyS of Black Mt., 27.IX.1980, T. WEIR (1, ANIC; 2, HNHM); same, J. F. LAWRENCE Lot 80–67 *Ganoderma* sp. (4, ANIC); 16.03S to 16.05S 145.28E, Cape Tribulation Area, ex *Ganoderma lucidum*, 1–11.V.1992, J. F. LAWRENCE (7, ANIC, identified by *R. similis* by J. F. LAWRENCE); Claudie R., nr. Iron Rg., 19–25.VI.1978, J. F. LAWRENCE, J. F. LAWRENCE Lot 78–87, *Ganoderma lucidum* gp. (1, ANIC); Kuranda, Hacker, no other data (1, BREM). – Papua New Guinea: Boze, Binaturi R., 15.V.1969, FRED PARKER, J. F. LAWRENCE Lot 2735, *Ganoderma* sp. (2, ANIC). – Indonesia: South Sumatra, Benakat, 2–13.IX.1994, H. MAKIHARA (50, MASU; 14, HNHM); Sulawesi S. O., ins. Buton, Wakarumba, 3–7.II.1994, M. STRBA & I. JENIS (1, BREM). – Sri Lanka: 'Ceylon', no other data (1, HNHM, identified as *R. crenipennis* by Z. KASZAB); 'Ceylan', NIETNER (1, BREM; 1, ZSM, identified as *R. similis* by H. J. BREMER, 1989); 'Ceylan', Peradenia, no other data (1, HNHM, identified as *R. similis* by Z. KASZAB in 1979 and as *R. crenipennis* by Z. KASZAB in a later date); Western Province, Gampaha B. Gard., 19.VI.1985, OLE MEHL (1, HNHM, identified as *R. crenipennis* by Z. KASZAB). – Malaysia: Johor, Endau riv., Selendang env., 29.IV–6.V.1993, I. JENIS & M. STRBA (4, BREM; 1, HNHM); Pahang, Pulau Tioman, 2 km S Kampung Juara, secondary growth, from logs & bracket fungi, 15.III.1995, No. 29, O. MERKL (4, HNHM); Selangor, Kuala Selangor, 19.III.1975, J. FLEAGLE, J. F. LAWRENCE Lot 3944, *Coriolopsis badia* (2, ANIC). – Vietnam: mountains SW Kui-chau, 200 m, 11.IV.1963, KABAKOV (1, HNHM). – Micronesia: Guam I., Fadang, beating vegetation, 31.V.1945, H. S. DYBAS (1, FREY, identified as *R. crenipennis* by H. KULZER in 1954); Guam I., Talofoto, headwaters plateau, on *Areca* palm, 17.VI.1936, R. L. USINGER (1, FREY); Palau Is., Babelthuap I., Ulimang, in dead stem of large leaf vine, 16.XII.1947, H. S. DYBAS (1, HNHM, identified as *R. dybasi* by Z. KASZAB); Palau Is., Koror, 15–

25.V.1948, K. L. MAEHLER (1, FREY, identified as *R. crenipennis* by H. KULZER in 1954). – Philippines: Bataan, Olongapo, Subic Base, Riding Stable, 2.XII.1993, H. ZETTEL (1, ZETT); S. Theodoro, n. Mindoro I., VON PILZEN, no other data (2, FREY, identified as *R. similis* by H. KULZER in 1954). – Seychelles: Long I., Mahe, 12–22.VII.1908, Seychelles Expedition (1, HNHM, 3, ZSM, identified as *R. speculifrons* by H. GEBIEN in 1922; these specimens are obviously from the same series as the types and have the same labels except the third, red type label).

Distribution – Seychelles, Sri Lanka, Thailand, Malaysia (Peninsular Malaysia and Sarawak in Borneo), Vietnam, Japan (Ryukyu Is), Indonesia (Sumatra, Sulawesi), Micronesia (Guam I., Mariana I., Palau I., Ponape I.), Philippines, Papua New Guinea, Australia (Queensland).

Remarks – *R. speculifrons* differs from *R. crenipennis* in the cranial surface. The cranium (including frons and clypeus) of males is coarsely and uniformly punctate (Fig. 9) while females have a common fronto-clypeal area which is glistering and completely impunctate (Fig. 8). The frontoclypeal suture is completely obsolete on females. A distinct (albeit short) 10th carina is almost always present on the elytra (Fig. 10). However, the difference between *R. speculifrons* and *R. crenipennis* in the presence or absence of the 10th carina is not clear-cut. Although all studied specimens of *R. crenipennis* have no 10th carina, the only *R. speculifrons* specimen from Vietnam also lacks this carina. Therefore, in separation of *R. speculifrons* and *R. crenipennis* the cranial surface is considered to be the most decisive feature.

The synonymy of *R. dybasi* and *R. scolytoides* is obvious. However, the three paratypes of *R. sodalis* differ from all other examined specimens in the surface of the head. Based on the absence of long apical spine on the tibiae and the presence of the 10th carina of the elytra, they are males of *R. speculifrons*, but their clypeus is weakly shining and the coarse punctures typical for male *R. speculifrons* are obsolete. Cranial surface of *Rhipidandrus* must be subject to wear, because these beetles are internal feeders of hard fungal sporocarps. According to the labels, the second paratype of *R. dybasi* is from the same series as the three dubious males and this specimen is a female *R. speculifrons* without any doubt. We believe, therefore, that paratypes of *R. dybasi* are specimens of *R. speculifrons* with abraded clypeus.

Although CHUJO's *R. scolytoides* was proved to be synonymous with *R. speculifrons*, he was the first to recognize that the specimens with uniformly punctate head and those with the glossy area are conspecific and represent different sexes of the same species (CHUJO 1985).

*R. speculifrons* was described from the Seychelles but its known range extends from the Ryukyus and Micronesia to the north and across the Indo-Australian Realm as far south as Queensland. The occurrence on the Seychelles seems to be isolated but beetles of Oriental origin have long been known in the islands of the western Indian Ocean, including Madagascar. In CROWSON's (1981: 623) categories of distributional pattern, *Rhipidandrus* may fall into the fourth category, i.e. larvae and adults are associated with dead wood and able to survive

for a long time in sea-drifted logs, so they can spread across wide habitat gaps. This may explain the occurrence of *R. speculifrons* in such remote islands as Seychelles, Ryukyu or various parts of Micronesia.

*Rhipidandrus walkeri* (WATERHOUSE, 1894)  
(Figs 1–2)

*Cherostus Walkeri* WATERHOUSE, 1894: 69.

*Rhipidandrus Walkeri*: GEBIEN 1939: 522.

*Rhipidandrus walkeri*: KASZAB 1955a: 461.

Type material examined – None.

Non-type material examined – Australia (Queensland): 13.44S 143.20E, 11 km WbyN of Bald Hill, McIlwraith Range, search party campsite, 520 m, 27.VI.–12.VII.1989, T. A. WEIR, J. F. LAWRENCE Lot –, *Ganoderma lucidum* (18, ANIC; 4, HNHM); same, surface at night (2, ANIC); same, 13.45S 143.22E, 500 m, mango tree site, J. F. LAWRENCE Lot –, *Ganoderma lucidum* (3, ANIC); Caen district, Cape York, HACKER, no other data (2, BREM); 16.03S to 16.05S 145.28E, Cape Tribulation area, ex *Ganoderma lucidum*, 1–11.V.1992, J. F. LAWRENCE (5, ANIC; 1, HNHM); Cairns, 9150 [?], G. BROOKS (3, ANIC); Cairns, VI.1946, J. G. BROOKS Bequest, 1976 (2, ANIC); Claudie R., nr. Iron Rg., 19–25.VI.1978, J. F. LAWRENCE, J. F. LAWRENCE Lot 78–69, *Ganoderma applanatum* (7, ANIC; 1, HNHM); same, J. F. LAWRENCE Lot 78–99, *Ganoderma applanatum* (5, ANIC; 1, HNHM); same, J. F. LAWRENCE Lot 78–71, *Ganoderma* sp. (1, ANIC); Edge Hill, Cairns, 8.X.1966, J. G. BROOKS (1, ANIC); 12.44S 143.14E, 3 km ENE of Mt. Tozer, 28.VI.–4.VII.1986, T. WEIR & A. CALDER, J. F. LAWRENCE Lot 86–4, *Ganoderma lucidum* gp. (2, ANIC); same, J. F. LAWRENCE Lot 86–5, *Ganoderma applanatum* (1, ANIC); W. slope of Seymour Ra., Dinner Ck. Rd., nr. Innisfail, rainforest, under bark, 3.XI.1966, E. BRITTON (2, ANIC; 1, HNHM). – Papua New Guinea: Prov. Morobe, Umg. Lae, 11.III.1979, W. G. ULLRICH (11, BREM; 2, HNHM). – Indonesia: Ins. Kei, no other data (3, HNHM).

Distribution – Australia (Queensland), Papua New Guinea, Indonesia (Moluccas: Dammar Island and Kei Island).

Remarks – The frontal concavity vested with golden pubescence is distinctive for this species and makes it unmistakable.

\* \* \*

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