A NEW *DIAPERIS* FROM BRAZIL, WITH NOTES ON OTHER SPECIES AND GENERIC RELATIONSHIPS (COLEOPTERA: TENEBRIONIDAE: DIAPERINAE)

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**ABSTRACT**

*Diaperis bifida*, a new species from Mato Grosso, Brazil, is described. The genus *Allophasia*, which contained two South American species, is reduced to a synonym of *Diaperis* as a result of the study conducted to determine the generic placement of the new species.

This study is the result of an examination of a single series of specimens sent to the senior author by William L. Overal, Museu Paraense Emilio Goeldi, Belém, Pará, Brazil. Initially they were presumed to be a new species of *Diaperis* but, in considering other possibilities, it was decided that they might belong to the genus *Allophasia*.

A thorough search of the extensive collections of the British Museum (Natural History) (BMNH), London, and a similar search by the senior author in the Muséum National d’Histoire Naturelle (MNHN), Paris; the United States National Museum of Natural History (USNM), Washington, D.C.; the American Museum of Natural History (AMNH), New York and the Ohio State University Collection (OSUC), Columbus, revealed practically no recently collected material or specimens not already mentioned in the literature of the enigmatic genus *Allophasia*. However, even with such a meager assemblage of specimens, we are able to suggest some changes in concepts at the generic level which support recent investigations in higher classification of the Tenebrionidae (Doyen 1972; Watt 1974; Doyen and Lawrence 1979; Tschinkel and Doyen 1980).

The genus *Allophasia* was erected by Francis Pascoe (1871:351) to receive his new species *A. fryi* (ibid. 352; plate XIV, fig. 11) (Fig. 1). Pascoe compared his new genus with *Diaperis* and *Neomida (=Arrhenoplita, =Oplolcephala)* separating it from both by its more finely facetted eyes and additionally from *Diaperis* by the elevated bluntly toothlike clypeus of the male. The type series of *A. fryi* was found “in the hollow of a bamboo” (Fry’s MS register gives “inside Taguara assi” [?]) in Espirito Santo, Brazil (Descourtils) and acquired by Mr. Fry who presented a pair to Pascoe. TYPES. 1 ♂, BMNH, here designated lectotype; ‘Espirito Santo [handwritten on an oval pink label]/Pascoe Coll. 93-60 [printed BMNH registration label]/Aprolepsis Fryi Pasc. type δ [in Pascoe’s hand]/Type [red and white BMNH type disc].’ Paralectotypes: BMNH: 1 ♀, same data as lectotype but bearing the first two labels only; 1 ♂, ‘6447 [Fry coll register no.]/Descourtils/Espirito Santo/Fry Coll. 1905. 100. [printed BMNH

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registration label],' attached also is a genitalia prep. by C.A.T. in a plastic vial; 2 ð, labels 2, 3 and 4 only as on preceding specimen; 1 ñ, ditto, genitalia prep. by C.A.T. on card rectangle; 1 ð, ditto labels 2 and 3 only as above plus, 'Allophasia Fryi ð Pascoe type [in Bates' hand]/F. Bates. 81-19 [printed BMNH registration label]/Allophasia Fryi Pascoe BMNH [in Triplehorn's hand]/Nagy drawing.' This is the specimen here figured. Other material: 1 ð, 2 ñ, '83-29' [BMNH registration “Pres. by R. McLachlan”], two of these have an additional locality label 'Brazil.' There is no evidence that these three specimens are part of the type series.

*Allophasia marseuli* Bates (1873:237) (Fig. 3) is the only other species presently in the genus. It was described from a unique male with no locality data. Holotype: BMNH; 'Allophasia Marseuli ð type. F. Bates [in Bates' hand]/F. Bates. 81-19/Type H.T. [red and white BMNH type disc].' The label cited with the description (p. 238), "Neomida foveicollis, Buquet," is no longer attached to the specimen, possibly removed by Bates when adding his own. There are three other specimens under this name in the BMNH: 1 ñ, 'America borealis/Neomida foveicollis (sec Doue coll.)/Halophasia marseulii, F. Bates (sec Bates)/Nagy drawing'; 1 ñ, '45226 [Fry coll register no. "from Janson"]/Equador/Fry Coll. 1905. 100. Nagy drawing,' attached also is a genitalia prep. by C.A.T. in a plastic vial. These two examples are here illustrated as a composite figure; 1 ñ, '71. 6 [Janson ex. Bakewell]/Allophasia marseuli Bates BMNH [in Triplehorn's hand].'

*Diaperis* (type-species: *Chrysomela boleti* Linnaeus, 1758) is a well-known and widespread genus of less than a dozen species. The senior author (Triplehorn 1965) has characterized the genus for the four species which occur in America north of Mexico. The characters used seem to hold true for the five species known from the Old World. All are of at least moderate size and are yellowish to reddish in elytral ground color with distinct patterns of black bands and spots. Only the neotropical species, *D. coccinea* Laporte de Castelnau (1840:222), is unicolorous. Only four examples of this species are known to us: 1 ñ, BMNH, 'Brit. Guiana. A. W. Bartlett. 1909-3./44/Nagy drawing,' (Fig. 4); 1 ñ, BMNH, 'No. 3201 Bartica Br. G./1924.253 [BMNH Accessions entry reads "2 Coleoptera Brit. Guiana Prof. R. Thaxter Hosts of Laboulbeniaceae"]/Allophasia sp. n. det K. G. Blair.;' 1 ñ, OSUC, Brazil Acc. No. 2966/July/Diaperis coccinea Lap. Det. Triplehorn '57; 1 ñ, MNHN, Marco da legua (Para) Gounelle 3. 1895 (MNHN); 1 ñ, Kartabo, Bartica District, British Guiana 16-VIII-1922 (AMNH).

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The species of *Allophasia* and *Diaperis* have similar fascies and this correspondence in external features is strongly reflected in both the male and female genitalia. The aedeagi are of the same general pattern in both genera (Figs. 6, 7, 8; also see Triplehorn 1965, plate 1, figs. 2, 3, 7, 8). The *Allophasia* ovipositor is virtually identical to that of *Diaperis rufiges* Horn (Triplehorn 1965, plate 1, fig. 6), *D. boleti* (L.) (Tschinkel and Doyen 1980, fig. 30) and *D. bifida* sp. nov. (Fig. 5). Since, as Tschinkel and Doyen point out, the *Diaperis* ovipositor is highly specialized and as far as is known unique, it is evident that *Allophasia* and *Diaperis* are phylogenetically very close.

There are five characters which are presumed to separate *Allophasia* from *Diaperis*: 1, the eyes of *Allophasia* species are relatively smaller and are com-

3 Figures 1–4 were drawn by John Nagy; 5–8 by Adam Rubinstein.
posed of finer facets; 2. segments 4–10 of the antennal club are much more transverse in *Allophasia*; 3. the remarkable sexual dimorphism of the anterior pronotal margin of *Allophasia* which, in the male, bears a pair of 'horns' in front of a median depression; 4. the blunt toothlike elevation of the male *Allophasia* clypeus; 5. the elytra of *Allophasia* lack the well-defined callosity near the middle of the basal half which is listed as a generic character of *Diaperis* (Triplehorn 1965). The distinguishing characters of *Allophasia* enumerated here also apply to the two South American diaperine species, *Diaperis bifida* sp. nov. and *D. coccinea*.

Except for the elytral callosity all the characters listed above are comparative. The anterior pronotal margin shows no sexual dimorphism in most species of *Diaperis*, although in the common and widespread *D. maculata* Olivier of eastern North America, the males have two slightly projecting lobes situated at the middle of the anterior pronotal margin as well as two tubercles on the clypeus. The males of both *Allophasia* species and the two neotropical *Diaperis* share further well-defined resemblances, characters which also serve to separate all four from the holarctic species assigned to *Diaperis*. They have enlarged genae, the margins of which are swollen and turned upwards. Also the outside edges of the foretibiae are flatly expanded and bear a closely packed row of teeth or large stout setae.

However, *D. coccinea* (Fig. 4) appears to form a link between the two groups. The anterior margin of the male pronotum is much more feebly bilobed than the other three South American species, being no more developed than in males of *D. maculata*. The pronotal depression, typical of the other neotropical species but absent in the holarctic species, is only just perceptible and the clypeus exhibits only a slightly raised, cushion-like development of the disc.

Although the four South American species undoubtedly form a closely related, morphologically distinct group we feel that there is no real justification for their retention in a separate genus. To regard them as a species group within a single genus seems to us more to reflect their present status. Therefore *Diaperis* Müller 1764 = *Allophasia* Pascoe 1871, syn. nov.

It is of interest to note here that the large, otherwise distinctive Japanese species *Diaperis niponensis* Lewis has in the male, a small, slightly bilobed anteromedian pronotal prominence, very similar to that of both *D. maculata* and *D. coccinea*. On the other hand, also in the male, the edges of the genae are large and turned upward, one of the features distinguishing the erstwhile *Allophasia*. Both sexes of *D. niponensis* have a larger raised, cushion-like enlargement of the clypeal disc than *D. coccinea*.

*Diaperis bifida* Triplehorn and Brendell, sp. n.

(Fig. 2)

**MALE.** Length 5.3 mm, width 3.5 mm. Body broadly oval, strongly convex; head, pronotum, basal third of elytra, ventral surface and mouthparts reddish brown, apical two thirds of elytra black, shiny. Head broadly excavate between eyes, minutely transversely wrinkled with a few coarse punctures laterally; genae strongly convex above antennal insertions; clypeus well defined, with prominent elevated tubercle apically; antennae with basal 3 segments concolorous with dorsum, apical 8 segments fuscous, basal segment stout, second short and more slender, third obconical, segments 4–10 strongly transverse, apical segment broadly rounded, apical 8 segments forming distinct, loose club; eyes reniform with dorsal lobe narrow and straplike, ventral lobe globose; maxillary palpus narrowly elongate oval. Pronotum transverse (length 0.7 × width), apical margin bisinuate and prominently bifid medially with distinct shallow depression.
immediately behind bifurcation, basal margin broadly rounded, slightly produced oppo-
site scutellum; apical angles obtusely rounded, basal angles obtuse, lateral margins
moderately arcuate with prominent but narrow bead; surface finely and sparsely punctate.
Elytra with interneurs finely and not closely punctate, not in grooves; intervals flat, finely,
irregularly and sparsely punctate. Ventral surface coarsely but very sparsely punctured,
hyponera finely longitudinally wrinkled; prosternal process deflexed between procoxae;
tibiae with outer margins carinate and strongly denticulate.

**FEMALE.** Length 5.6 mm, width 3.6 mm. Similar to male except frons convex, sparsely
but distinctly punctured, shiny; genae much less convex above antennal insertions, thick-
er; clypeus simply convex, coarsely and densely punctured, not tuberculate; pronotum
with apical margin simply and broadly bisinuate, without trace of bifurcation and flat
but not depressed behind.

**TYPE MATERIAL.** Holotype ♂. 'Brazil, M T [Mato Grosso], Chapada dos
Guimerães, 22.i.1961, J. & B. Bechyne. Allotype ♀ and paratypes, 6 ♂♂, 13 ♀♀,
same data as holotype.

Holotype, allotype and paratypes in Museu Paraense Emilio Goeldi, Belém,
Pará, Brazil. Paratypes also in BMNH, London; OSUC, Columbus; and USNM,
Washington, D.C.

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**Coleoptera Magnifica**

A bottle-green beetle alit on my chair,
With shimmery-glimmery panoply rare—
Unscheduled stop in its fanciful flight;
An emerald eyeful—evanescent delight.
Rosemarie Williamson