NEW RECORDS OF PHILONTHINI FROM THE
CIRCUM-CARIBBEAN REGION
(COLEOPTERA: STAPHYLINIDAE)

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ABSTRACT

The only species of *Gabronthus* previously reported from the New World was *G. thermarum* (Aubé). Re-examination of specimens on which Circum-
Caribbean records were based, together with additional specimens, showed that 2 *Gabronthus* species actually occur there. *Gabronthus thermarum* occurs in Florida (U.S.A.), Jamaica, Puerto Rico, Antigua, St. Kitts, Guadeloupe, and Costa Rica. *Gabronthus mgogoricus* Tottenham, previously reported only from Africa, occurs in Florida, Jamaica, Haiti, Puerto Rico, and U.S. Virgin Islands, and seems to be the more abundant of the 2 species, at
least in Florida and possibly throughout the Greater Antilles. *Hesperus baltimorenensis* (Gravenhorst), *H. apicalis* (Say), and *Laetulonthus laetulus* (Say) are newly reported from Florida. The following new records are reported for *Philonthus* species: *P. discoides* (Gravenhorst) from Costa Rica, *P. lomatus* Ericson from Haiti, *P. ventralis* (Gravenhorst) from Haiti, Costa Rica, and Florida. Diagnostic features are given of the adult head of the 2 *Gabronthus* species and of the aedeagus of all 8 species.
Typically, *H. apicalis* adults have dark elytra, but in southeastern Florida there exist adults with red elytra as in *H. baltimorenensis*.

Spread of the 4 Old World species (*G. mgogoricus*, *G. thermarum*, *P. discoides*, *P. ventralis*) probably is due to human agency in providing transport and/or in rearing animals (cows, horses, goats, etc.) whose dung seems to be a preferred habitat. In contrast, *H. baltimorenensis*, *H. apicalis* and *L. laetulus* are likely to become rarer by human destruction of the moist, hardwood forest in eastern North America where they exist.

RESUMEN

La difusión de las 4 especies del Viejo Mundo (G. mygogoricus, G. thermarum, P. discoideus, y P. ventralis) probablemente se debe a agencias humanas que los han proveído transporte y/o crias de animales (vacas, caballos, chivos, etc.) cuyo estiércol parece ser una habitación preferida. En contraste, Hesperus baltimorenensis, H. apicilis, y L. laetulus probablemente se harán mas escasos debido a la destrucción de los bosques húmedos de madera brava en el este de Norte America, donde existen.

Some species of the genus Philonthus Stephens have received attention in the ecological and economic literature because of the large size and abundance of individuals, as well as the predatory habits of adults and larvae. Although the species of the western Palearctic region are now reasonably well known taxonomically, this is not yet true of the species of the remainder of the world. Many hundreds of species have been attributed to the genus in the 150 years since its original description, so the task of a world-wide revision will be onerous.

In the Palearctic region, Coiffait (1974) has included genera such as Erichsonius Fauvel, Gabrionis Stephens, Spatulonthus Tottenham, Hesperus Fauvel, Neobismius Ganglbauer, and Cafium Stephens together with Philonthus in the tribe Philonthini, to be differentiated from the tribes Quedini and Staphylinini, all within the subfamily Staphylininae. Elsewhere, the difference between Philonthini and Staphylinini is at least blurred by characteristics of numerous other genera not considered by Coiffait (1974). Similarly, the generic limits of Philonthus are obscured in regions except for the Palearctic, by existence of Philonthus-like species, some of which have been assigned to genera whose limits are no better defined than are those of Philonthus. It is clear that a worldwide revision of Philonthus would demand extensive examination of genera related to Philonthus in order to establish generic limits. Some groups of species might be segregated from Philonthus as distinct genera, whereas some existing generic names might be relegated to synonymy under Philonthus.

Knowledge of Philonthus and related genera cannot reasonably be suspended until a worldwide revision is completed. Ecological and economic studies require identification of specimens collected. The rational approach to this puzzle is to avoid (or at least minimize) changes in nomenclature at the generic level, but to augment existing species descriptions with illustrations and distributional records. This paper was conceived as a response to requests to identify Philonthus-like specimens collected in Florida. The specimens were of an Old World species not heretofore recorded from the New World. They belonged to Gabronthus Tottenham, which had been segregated from Philonthus as a distinct genus. The opportunity was then taken to augment distributional records for Philonthus and related genera (Hesperus, Laetulonthus) from the Circum-Caribbean region (the West Indian Islands and Central America, the countries of South America bordering the Caribbean Sea, eastern Mexico, and the U.S.A. states bordering the Gulf of Mexico).

MATERIALS AND METHODS

Specimens for identification were provided by W. H. Whitcomb, G. D. Propp, and M. C. Thomas (Gainesville, FL), R. W. Lundgren (Normal, IL)
(RWLC), and R. E. Woodruff (Florida State Collection of Arthropods: FSCA). These were compared with the specimens in my collection (JHFC) and with specimens from the United States National Museum (USNM). The literature was searched for further information, and correspondence was initiated with L. H. Herman (New York) and P. M. Hammond (London). Dissections and drawings were made under a stereoscopic dissecting microscope with a linear scale in one eyepiece.

_Gabronthus_ Tottenham

_Gabronthus thermarum_ (Aubé)

Synonymy, distribution, and description were given by Blackwelder (1943). The species is reported from Europe, Africa, the West Indies and, according to Horn (1884) and Ulke (1902), from the United States. However, Tottenham (1955) recognized that many species have been confused under this name, and some distribution records of _G. thermarum_ may prove to be erroneous. Examination of specimens from the Circum-Caribbean region demonstrated that 2 species of _Gabronthus_ occur there, and of these _G. thermarum_ adults may be distinguished by the head (Fig. 1a) and aedeagus (Fig. 2a).

Distribution of _G. thermarum_ in the Circum-Caribbean region must now be re-evaluated. Some of the specimens used by Blackwelder (1943) in recording distribution of this species are located in USNM and have been re-examined; slightly more than half were not of _G. thermarum_. Collection records for _G. thermarum_ are as follows: JAMAICA, St. Catherine Parish, Worthy Park, 13-V-1969, u.v. light trap, R. E. Woodruff (1 ♂, 1 ♀: FSCA), 10-V-1969, u.v. light trap, R. E. Woodruff (1 ♀: FSCA); PUERTO RICO, Mayagüez District, Guánica, 10-XII-1935, H. L. Dozier (1 ♀: USNM), Boquerón, 16-XI-1935, H. L. Dozier (2 ♂: USNM); ANTIGUA, St. John.

Fig. 1. Heads of adult _Gabronthus_. 1a: _G. thermarum_ in which the eye is relatively small and its posterior margin is well anterior of the arrowed puncture, 1b: _G. mgogoricus_ in which the head is relatively broader posteriorly, the eye is larger and extends posteriorly to the level of the arrowed puncture.

Gabronthus mgogoricus Tottenham

Tottenham (1955) described this species from eastern and southern Africa. Hereafter, its occurrence in the New World has not been recognized. Adults are distinguished from those of G. thermarum by the head (Fig. 1b) and aedeagus (Fig. 2b).

Fig. 2. Aedeagi of adults, 2a: Gabronthus thermarum, 2b: G. mgogoricus, 2c: Hesperus baltimoresiensis (lateral), 2d: H. apicalis (lateral), 2e: Laetulonthus lactulus, 2f: paramere of L. lactulus showing peg setae on side adpressed to median lobe, 2g: Philonthus discoideus, 2h: apex of one of the branches of the paramere of P. discoideus showing peg setae on side adpressed to median lobe, 2i: P. lomatus, 2j: P. ventralis. Scale line = 0.5 mm.

_Hesperus_ Fauvel

_Hesperus baltimorensis_ (Gravenhorst)

Moore (1958) stated that this species has been recorded from the “middle and southern states” of the U.S.A. and Indiana, and that he had seen specimens from New York, Alabama, and Missouri. The species has not been reported from Florida and the following record therefore is new. U.S.A., Florida, Liberty Co., Torreya State Park, 26-III-1983, M. C. Thomas (2 ♂♂: JHFC). The aedeagus is illustrated in Fig. 2c. A redescriptions was given by Moore (1958).

_Hesperus apicalis_ (Say)

Moore (1958) reported examining specimen from Ohio, Missouri, and Alabama, and stated that the species was elsewhere recorded from “Canada to Georgia” and from Indiana. The following records are new for Florida. U.S.A., Florida, Leon Co., Tall Timbers Research Station, 1-VII-1978, in old tire, oak-beech-magnolia hammock, W. E. Bradshaw (2 ♂ ♀, 1 ♀: JHFC); Liberty Co., Torreya State Park, 14-X-1978, at fermenting sap under bark of oak, M. C. Thomas (1 ♀: JHFC); Indian River Co., Fellsmere, mosquito suction trap, W. L. Bidlingmayer, 16-17-VII-1975 (1 ♂), 16-21-VII-1975 (1), 21-VII-1975 (1 ♀), 27-III-2-IV-1976 (1), 16-20-V-1976 (1), 12-XI-1976 (2 ♀ ♀: JHFC). The aedeagus is illustrated in Fig. 2d. A redescriptions was given by Moore (1958), who noted that the adult head is more densely punctate and the antennae less robust than in _H. baltimorensis_.

Moore (1958) and Scheerpeltz (1971) claimed that the red elytra of _H. baltimorensis_ adults contrast with the black elytra of _H. apicalis_ adults. Whereas the northern Florida specimens of _H. apicalis_ have black elytra, those from Indian River Co. have red elytra and, on the basis of color alone, could be misidentified as _H. baltimorensis_.

Laetulonthus Moore and Legner

Laetulonthus laetulus (Say)

Synonymy, distribution, and description were given by Moore and Legner (1973). As the only member of the genus, this species is stated to occur from Canada to Georgia and westwards to Texas. The paederoid coloration of adults distinguishes them from adults of most related genera and species in North America. However, adults of certain Central American genera and species of similar coloration and structure have not yet been compared; it is here that relatives should be sought.

The following collection records establish _L. laetulus_ as occurring in
Florida. U.S.A., Florida, Columbia and Baker County boundary, junction of highway 90, 29-XI-1976, u.v. light trap, C. Ross (1 ♂ : ESCA); Liberty Co., Torreya State Park, 14-X-1978, at fermenting sap under bark of oak, M. C. Thomas (1 ♂ : JHFC). The aedeagus of the male from Liberty Co. is illustrated in Fig. 2e, and its paramere showing the arrangement of peg setae in Fig. 2f.

**Philonthus Stephens**

**Philonthus discoides** (Gravenhorst)

Synonymy, distribution, and description were given by Blackwelder (1943). The species has a wide distribution in the Old World and is known from several West Indian Islands and various parts of the U.S.A., including Texas. It has been confused in the literature with *P. rectangulus* Sharp which is reported from both North America (Tottenham 1935, Hatch 1957) and South America (Coiffait and Saiz 1968), but not from Central America or the West Indies. It is reported to have a close relative in Chile, *P. emmelinae* Coiffait and Saiz (1968), whose description was based on one specimen only, with very little difference from typical specimens of *P. discoides*.

Adults of *P. discoides* differ from those of *P. rectangulus* only by the following external characteristics. Article I of the metatarsus is not longer than article V (cf. distinctly longer). The anterior transverse suture of the basal abdominal tergite is straight (cf. bisinuate, with median, posteriorly-directed point). The elytra are brown with yellowish margin and suture (cf. entirely blackish brown with bronze reflection). The aedeagus is illustrated in Fig. 2g; each branch of the furcate paramere bears a row of 3 peg setae near the apex (Fig. 2h) (cf. 7 or 8 peg setae arranged as an inverted V).

The following record of *P. discoides* extends the known distribution southwards: Costa Rica, Guanacaste, El Viejo, 21-27-VII-1979, u.v. light trap, J. H. Frank (1 ♂ , 5 ♀ : JHFC). These specimens appear typical of the species. A male specimen from Jamaica (JHFC) is stypical only in having 4 peg setae near the apex of each branch of the aedeagal paramere.

**Philonthus lomatus** Erichson

This species is widely distributed in North America according to Horn (1884) who redescribed it and occurs in Florida (confirmed by specimens examined: JHFC) and other southern parts of the U.S.A. The aedeagus was illustrated by Hatch (1957) and Smetana (1965), and is shown in Fig. 2i.

The following record appears to be the first for the West Indies: Haiti, Departement de l'Ouest, Keucovich, ca. 1400 m, 18-XI-1970, under stone by river, J. H. Frank (3 ♂ , 1 ♀ : JHFC).

**Philonthus ventralis** (Gravenhorst)

Synonymy, distribution, and description were given by Blackwelder (1943). The species has a wide distribution in the Old World, and is known from various parts of the U.S.A., including Texas, various West Indian Islands, and French Guyana. Blackwelder (1949) admitted difficulty in dis-
tistinguishing adults from those of *P. discoideus*, but the aedeagi of males are distinctive (Fig. 2) cf. Fig. 2g).


**DISCUSSION**

It is unfortunate that until recent decades authors of taxonomic treatises on Staphylinidae usually failed to record habitats in which specimens were collected. Blackwelder (1943) set a standard for recording such information which now proves informative for species occurring in the West Indies. Little published information is available for *Philonthus* and related genera occurring only in North America, so the habitat data given in the text of this paper are supplemented below by data from specimen labels in my collection (JHFC).

It appears that *Hesperus baltimoresiensis*, *H. apicialis*, and *Laetulonthus laetulus* are found in moist, eastern, hardwood forests, and are associated there with wet leaf litter and fermenting sap. Adults are capable of flight. Evidently northern species, their range has extended southwards into Florida insofar as suitable habitat is available, i.e., principally in northern Florida. With deforestation in eastern North America (Anderson 1982), these 3 species are likely to become rarer.

In contrast, *Philonthus lomatus* is found in more open habitats, but apparently is restricted to wet, riparian sites where it is associated with decaying plant materials. Adults are capable of flight. Its distribution is much wider than that of the *Hesperus* and *Laetulonthus* species mentioned above, because of its less restrictive habitat.

In further contrast, *G. thermarum*, *G. mgogoricus*, *Philonthus ventralis*, and *P. discoideus* have been found in quite arid habitats. All are Old World species known from Africa, Europe (except *G. mgogoricus*), and Asia (except *G. mgogoricus* and *G. thermarum*), and have been introduced into the New World. Adults of all are capable of flight. However, within their habitat, they exist in moist microhabitats, sometimes composed of carrion or decaying plant materials, but especially of dung. All of Blackwelder's (1943) collection records from West Indian microhabitats for *P. discoideus* were from dung, as were most of those for *P. ventralis* and 'P. thermarum' (= *G. thermarum* + *G. mgogoricus*). We may speculate that the present distribution of these species in the New World is due to human agency in providing transport to the New World and/or in providing a plentiful supply of microhabitats (animal dung) by rearing cattle, horses, donkeys, sheep and goats, none of which is native to the Circum-Caribbean region.

**ACKNOWLEDGMENTS**

I thank D. R. Whitehead (Washington, D.C.) for arranging a loan of West Indian specimens of *Gabronthus* from USNM, M. C. Thomas (Gainesville), P. M. Choate (Gainesville), W. E. Bradshaw (Eugene) and W. L.
Bidlingmayer (Vero Beach) for giving me specimens they had collected in Florida. P. M. Hammond (London) kindly confirmed the identity of New World G. mgogoricus by comparison with African specimens in the British Museum (Natural History). L. H. Herman (New York) admitted lack of New World Gabrenthus specimens in the collection of the American Museum of Natural History. A. Smetana (Ottawa) and R. E. Woodruff (Gainesville) reviewed the manuscript and suggested improvements. J. R. Rey (Vero Beach) translated the abstract into Spanish. The author is a Research Associate of the Florida State Collection of Arthropods, Gainesville, Florida. University of Florida Institute of Food and Agricultural Sciences, Journal Series No. 4749.

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