HETEROTA PLUMBEA AND *COENONICA PUNCTICOLLIS* IN FLORIDA (COLEOPTERA: STAPHYLINIDAE)

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ABSTRACT

The marine littoral staphylinid *Heterota plumbea* (Waterhouse), previously known only from western Europe and the Canary Islands, is reported from Jamaica, Quintana Roo (Mexico), and Florida (USA). The subcorticolous staphylinid *Coenonica puncticollis* Kraatz is reported for the first time from Jamaica, and Florida (USA), and seems to have a cosmotropical distribution. The 6 other known species of *Heterota* and 63 of *Coenonica* are limited in distribution to the Old World. Adults of *H. plumbea* and *C. puncticollis* are described and illustrated. *Coenonica cameroni* Frank and Thomas is a new name for *C. granulipennis* Cameron, 1948, a homonym of *C. granulipennis* Cameron, 1939.

RESUMEN

El estafilino del litoral marino *Heterota plumbea* (Waterhouse), conocido solamente de Europa occidental y las Islas Canarias, se reporta aquí de Jamaica, Quintana Roo (México), y La Florida (EUA). El estafilino subcortícolo *Coenonica puncticollis* Kraatz, se reporta por primera vez de Jamaica, y la Florida (EUA), y parece tener una distribución cosmotropical. Las otras 6 especies de *Heterota* y las 63 de *Coenonica* están limitadas en distribución al Viejo Mundo. Se describen e ilustran los adultos de *H. plumbea* y *C. puncticollis*. *Coenonica cameroni* Frank y Thomas es un nuevo nombre para *C. granulipennis* Cameron, 1958, el cual es un homónimo de *C. granulipennis* Cameron, 1939.

Only a small minority of the Staphylinidae occurring in Florida have been the subjects of modern revisions with keys and illustrations. Consequently, adults of most species recorded from Florida are not easily identifiable from the literature, or are identifiable only with uncertainty. Presence of a considerable number of unrecorded species compounds the difficulty of identification.

This paper was conceived to record and allow the identification of adults of 2 genera of Bolitocharini (sensu Seevers 1978), each of which has a single species occurring in Florida. The 2 genera and 2 species were described from the Old World, and neither has been reported previously from North America.

Heterota Mulsant and Rey, 1873

This genus is separated from other western European genera in a key by Lohse (1974: 33-4) and traces to *Leptusa* in a key to North American

genera by Seevers (1978: 39-60). The relationship to *Leptusa* seems quite close. The long, convoluted spermatheca [cf. the much simpler form in *Leptusa*, e.g. Pace (1982; Fig. 9, 17)] appears to be a generic characteristic. The dense, fine vestiture of setae, probably an adaptation to the marine littoral habitat, may also serve to distinguish specimens of these 2 genera, and was so used by Lohse (1974). A relationship of *Heterota* to *Halmaeusa* also may be suggested; the latter has 4 species restricted to subantarctic islands in the southwestern Pacific and south Atlantic, has a spermatheca of similar form to that of *Leptusa* (Steel 1964), and occurs sometimes on the sea shore. Many of the species of *Leptusa* have adults with small eyes and reduced elytra, perhaps in adaptation to a subterranean existence (Lohse 1974).

A list of the 7 described *Heterota* species with known distribution and literature references is available from the senior author upon request. All 7 are restricted to the marine littoral habitat. Six of them occur in portions of an area bounded to the east by Singapore and to the west by Madagascar, the Red Sea and eastern Mediterranean. A key to the adults of the 3 Indian Ocean species was given by Jarrige (1973). The 7th species, *H. plumbea* (Waterhouse, 1858: 6074), is the genotype and is known from the Atlantic, North Sea, and Mediterranean coasts of Europe, and the Canary Islands.

Heterota plumbea (Waterhouse)
(Fig. 1)

Length 2.5-3.2 mm. Parallel, moderately slender, moderately convex. Pubescence fine, dense, pale. Entire body finely, rugosely sculptate between fine punctures, thus appearing matte. Pubescence in combination with body color giving a bluish gray, leaden color. Head black; pronotum pitchy; elytra dark reddish brown to pitchy, but elytral epipleura paler reddish brown anteriorly; abdominal terga pitchy, in some specimens with rufescent posterior margin; legs rusty red, the tarsi paler; antennae rusty red, infuscate apically; maxillary palpi rusty red, the penultimate article infuscate, the apical article pale.

Head slightly broader than long; eyes moderate in size, about same length as tempora, protruding; head without fovea, its vertex with larger punctures than elsewhere on body. Labium, ligula and palpi as in Fig. 2A. Antenna with articles I-III elongate, IV-X showing progression from feebly elongate to feebly transverse. Prothorax broader than head, 1.4 X broader than long, lateral margins feebly curved so that maximal width is just anterior to mid length; hind angles obtuse; dorsally with broad, shallow basal impression; punctation finer than that of head. Elytra jointly 1.4 X broader than prothorax, 1.2 X broader than long. Mesocoxae not widely separated, mesosternal process long and acute, metasternal process short and rounded (Fig. 2B). Protibia 2 X longer than protarsus; mesotibia 2 X longer than mesotarsus; metatibia 1.5 X longer than metatarsus; last article of protarsus about as long as the 3 preceding articles combined; last article of meso- and metatarsus about as long as their 2 preceding articles combined; article I of metatarsus about as long as articles II and III combined. Abdomen parallel-sided; tergites III-V each with deep, transverse, basal impression; tergite VIII of male broadly, shallowly emarginate (Fig. 2C); tergite VIII of female almost truncate, only slightly rounded (Fig. 2D). Aedeagus and spermatheca as in Fig. 2E, F respectively.

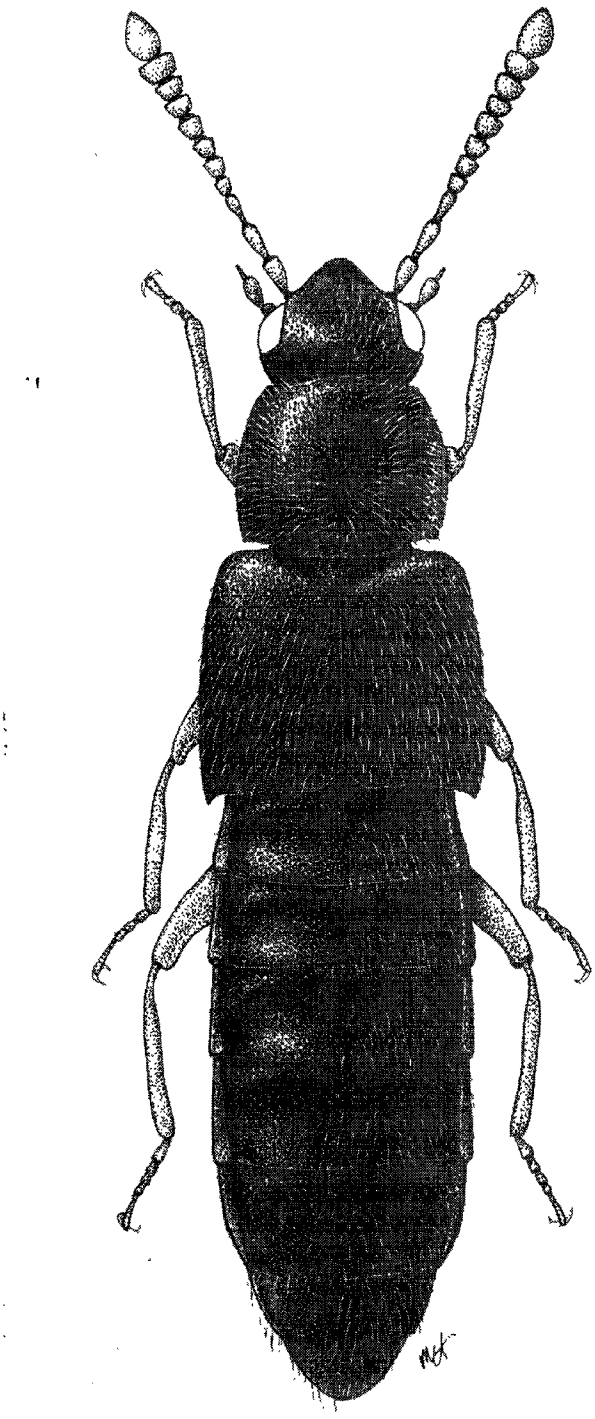

Fig. 1. Habitus of adult *Heterota plumbea*. Length 2.5-3.2 mm.

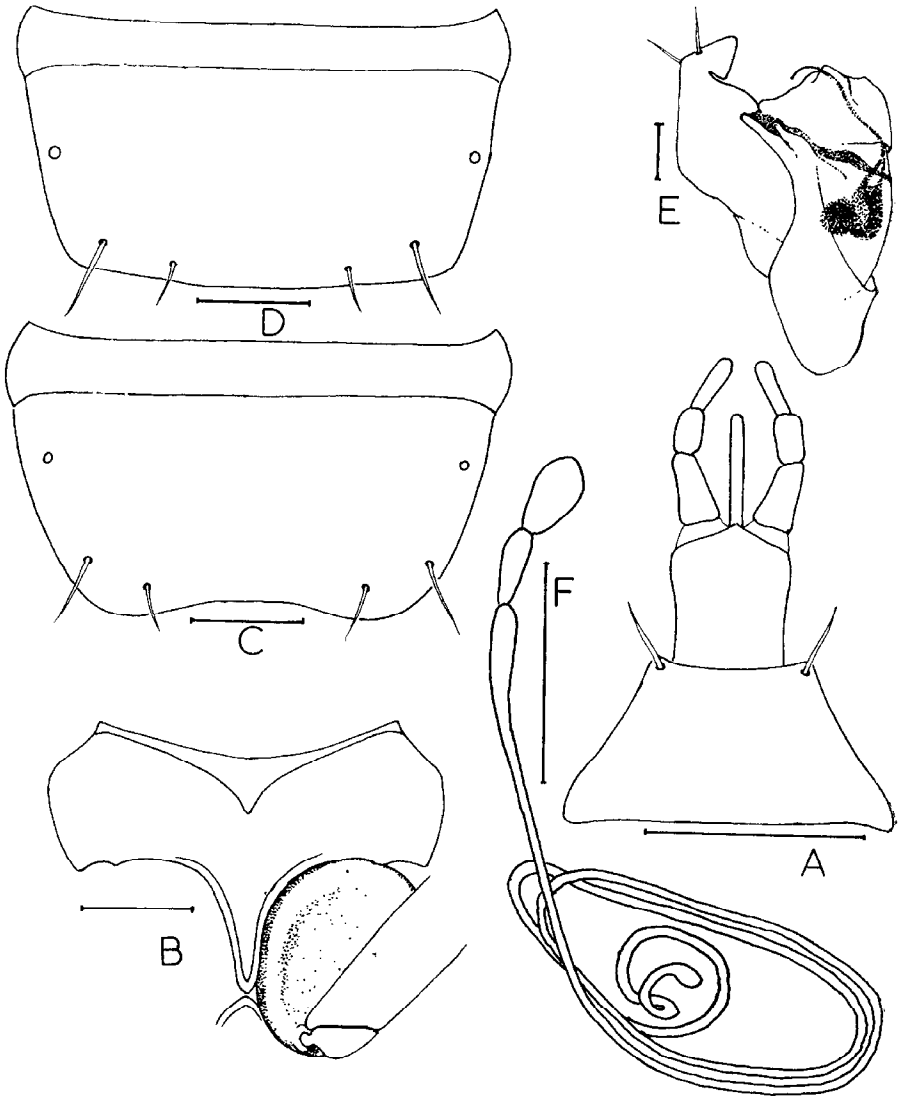

Fig. 2. Structures of *Heterota plumbea*: a) labium, b) mesosternum, c) tergite VIII of male, d) tergite VIII of female, e) lateral view of aedeagus, one paramere removed, f) spermatheca. Scale line = 0.125 mm.

SPECIMENS EXAMINED: JAMAICA, Manchester Parish, 2 mi. E. of Alligator Pond, 2-II-1969, J. H. Frank (1), Clarendon Parish, Portland Ridge, 20-VIII-1969, u.v. light trap, R. E. Woodruff (1); MEXICO, Quintana Roo, Punta Bete, 28-VII-1982, in seaweed on sea beach, J. H. Frank (4); USA, Florida, Monroe Co., Matecumbe Key, 7-I-1973, in seaweed on sea beach, J. H. Frank (4), Little Duck Key, 1-V-1974, on sea beach, J. H. Frank (2), Summerland Key, 1-V-1974, funnel extract of seaweed from sea beach, J. H. Frank (2); Dade Co., Cape Florida, 18-IV-1983, in seaweed on sea beach, J. H. Frank (2); Wakulla Co., St. Mark's National Wildlife Refuge, 3-III-1976, by sweeping *Spartina alterniflora* Loisl., E. D. McCoy and J. R. Rey

(1). The foregoing specimens are all in the collection of J. H. Frank. Additionally, 3 specimens from Seaton, Devon, England, are from the Canadian National Collection.

REMARKS: The specimen from Wakulla Co., Florida, was identified tentatively during the preparation of a manuscript by McCoy and Rey (1981) on the Coleoptera of a salt marsh. Study of additional material and comparison with European specimens later confirmed the tentative identification. Although these are the only records reported for *H. plumbea* in the New World, it is likely to have a wide distribution in the Caribbean region and perhaps elsewhere on the Atlantic coasts of the Americas. Because the other species are centered in the Indian Ocean, there are 2 possible routes for *H. plumbea* to have achieved its present distribution; because of apparent absence of *Heterota* species on the Pacific coasts of the Americas, and because of the presence of *H. plumbea* in the Canary Islands, an east to west dispersal via the Atlantic islands seems the more probable. There is no good reason to suspect that commerce played a role in dispersal. The immature stages and ecological role have not been reported.

Coenonica Kraatz, 1857

This genus traces to *Euryusa* in a key to western Palearctic genera by Lohse (1974: 33-4), but differs from that genus as defined by Fenyes (1920) by the deeply bifid ligula (cf. undivided) and by the 2-segmented labial palpus (cf. 3-segmented). It traces to *Placusa* in a key to North American genera by Seevers (1978: 39-60), but differs from that genus as defined by Fenyes (1918) by the deeply divided ligula (cf. short, broad, and undivided) and by article I of the posterior tarsus being only slightly longer than article II (cf. longer than II and III combined).

A list of the 64 described *Coenonica* species with known distribution and literature references is available from the senior author upon request. Sixty-three of them occur in portions of the area bounded to the east by the Marquesas Islands and Tahiti, and to the west by the Ivory Coast. *Coenonica cameroni* Frank & Thomas is here proposed as a NOMEN NOVUM for *C. granulipennis* Cameron (1948: 234) [not Cameron (1939: 158)] from the Ivory Coast. Cameron (1939) provided a key to 18 Indian (including Ceylonese and Burmese) species and defined their habitat as "sappy bark, decaying fruit, etc.". Sawada (1980) redescribed the holotype male of *C. vulnerata* Bernhauer, the female of which is yet unknown. The 64th species, *C. puncticollis* Kraatz (1857: 46), is the genotype and has an especially wide distribution. Its range in the Old World tropics includes Tahiti, Philippines, Indonesia, New Guinea, Thailand, Burma, India, Ceylon, Seychelles Islands, Mauritius, Madagascar, East Africa, and Egypt. Its range elsewhere is discussed under REMARKS.

Coenonica puncticollis Kraatz
(Fig. 3)

Length 2.8-3.2 mm. Broad, depressed. Pubescence sparse, integument smooth and shining, without evident microsculpture between punctures. Head black; pronotum and abdomen dark reddish brown, the latter with disc of tergites VI-VII infuscate. Antennae, mouthparts and legs pale reddish

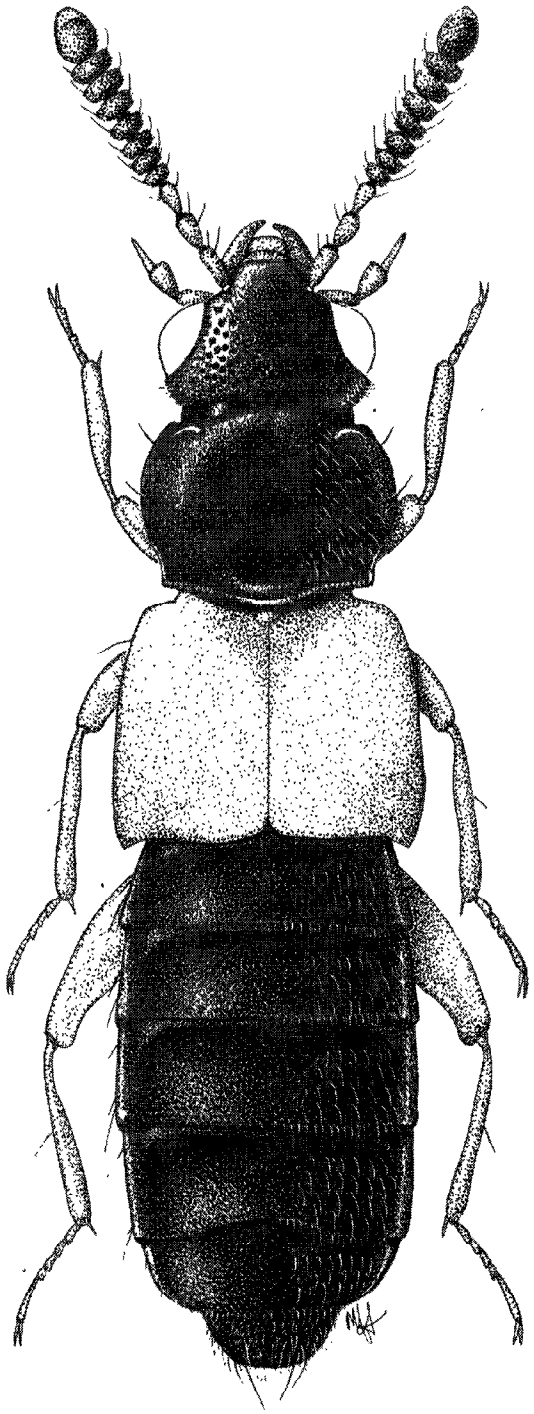

Fig. 3. Habitus of adult *Coenonica puncticollis*. Length 2.8-3.2 mm.

brown, but antennal articles IV-XI of all specimens pitchy, mouthparts and legs of some specimens infuscate.

Head transverse; eyes large and prominent; frons with shallow fovea; head closely punctate with large, umbilicate punctures, but obsolescently so on frons. Labium, ligula and palpi as in Fig. 4A. Antenna with articles I-III elongate, III longer than II, IV quadrate, V-X transverse. Prothorax broader than head, 1.5 X broader than long; sides broadly rounded, retracted posteriorly to the obtuse (in some specimens slightly toothed) hind angles; margined laterally and posteriorly by a beaded line; disc with a large, U-shaped depression posteriorly; punctation not so coarse as that of head, but denser on disc and about as sparse laterally. Elytra jointly 1.2 X

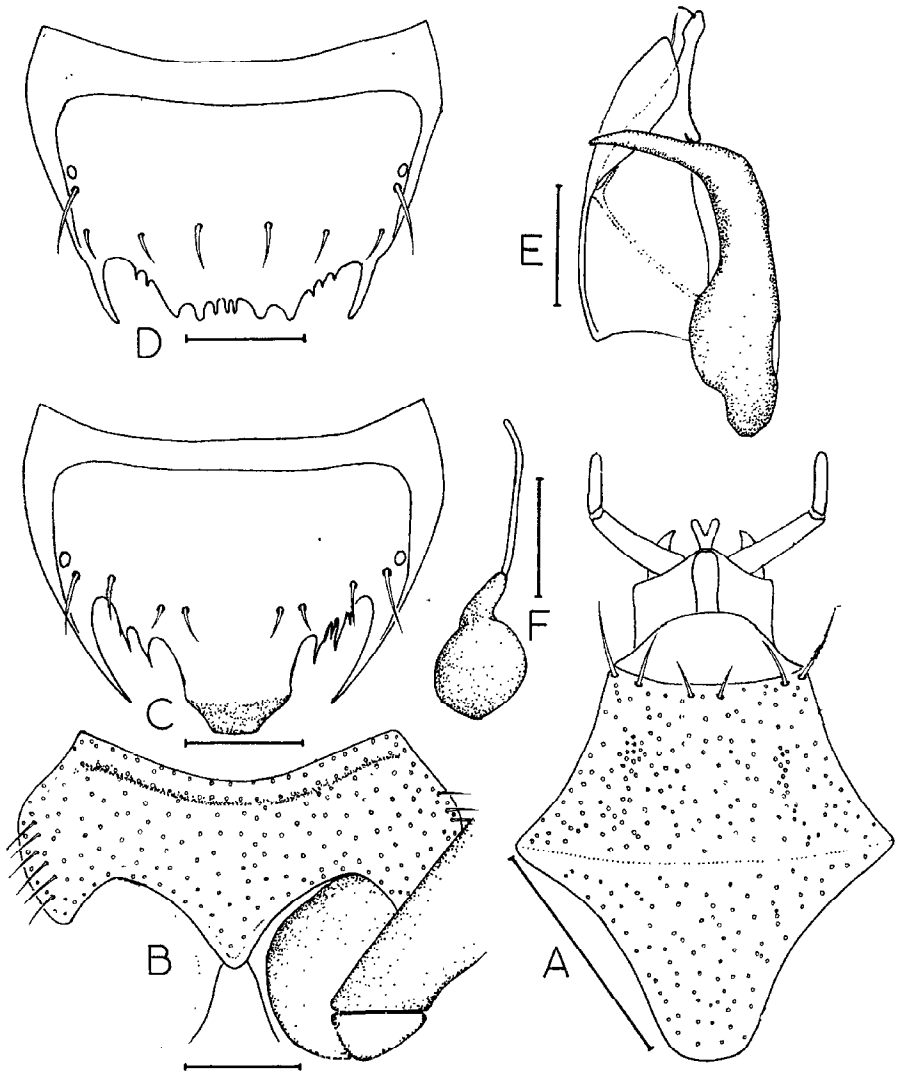

Fig. 4. Structures of *Coenonica puncticollis*: a) labium, b) mesosternum, c) tergite VIII of male, d) tergite VIII of female, e) lateral view of aedeagus, one paramere removed, f) spermatheca. Scale line = 0.125 mm.

broader than prothorax, 1.3 X broader than long. Mesocoxae broadly separated, mesosternal and metasternal intercoxal processes obtuse (Fig. 4B). Protibia 2.5 X longer than protarsus; mesotibia 2 X longer than mesotarsus; metatibia 1.25 X longer than metatarsus; last article of each tarsus about as long as the 3 preceding; article I of metatarsus scarcely longer than article II. Abdomen parallel-sided; finely, sparsely punctate; tergites III-V each with deep, transverse, basal impression; tergite VIII of male with 2 long, lateral spines enclosing a broad lobe with downturned apex and with irregular, short flanking spines (Fig. 4C); tergite VIII of female with 2 moderately long lateral spines enclosing a generally asymmetrical, posteriorly produced row of about 2 pairs of blunter spines and about 4 pairs of more acute spines (Fig. 4D). Aedeagus and spermatheca as in Fig. 4E, F respectively.

SPECIMENS EXAMINED: JAMAICA, St. Catherine Parish, Caymanas Estate, 27-VIII-1969, u.v. light trap, J. H. Frank (1), Hellshire Hills, Lancewood Valley, 31-VIII-1-IX-1970, u.v. light trap, J. H. Frank (2), Worthy Park, 9-17-V-1969, u.v. light trap, R. E. Woodruff (24); Manchester Parish, Mandeville, 22-24-V-1970, u.v. light trap. J. H. Frank (1); Trelawny Parish, near Tyre, 26-VIII-1969, u.v. light trap, J. H. Frank (1), 30-XII-1971, in wood chips, J. H. Frank (1); Portland Parish, Fair Prospect, 24-IV-1972, u.v. suction trap, K. Heinze (1); St. Thomas Parish, Golden Grove, 9-10-IX-1969, u.v. light trap, J. H. Frank (4); USA, Florida, St. Lucie Co., Port St. Lucie, 12-XII-1980, under bark of fallen pines, J. H. Frank (18); Dade Co., Goulds, 19-IV-1983, under bark of various bulldozed hardwood trees, J. H. Frank and M. C. Thomas (5). All specimens are in the collection of J. H. Frank.

REMARKS: This is the most widely distributed *Coenonica* species and the only one recorded from the New World. It was reported from Guadeloupe, St. Vincent, Grenada, Dominican Republic, Brazil, and Guyana by Fauvel (1904), and again from Grenada and St. Vincent by Blackwelder (1943). Although Sharp (1869) included it in a revision of some British Aleocharinae, the origin of the single specimen he examined was unknown to him and he thought it probably was exotic; the species does not seem to have become established in Britain. Lohse (1978) reported it from the port of Hamburg (Germany), an indication of its introduction by commerce, and from Italy, and noted an earlier record from France. It is unclear how large a role was played by commerce in the present cosmotropical distribution.

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