A REMARKABLE NEW SPECIES OF *CYCLORHIPIDION* HAGEDORN, AND NEW RECORDS OF BARK AND AMBROSIA BEETLES FROM GABON (COLEOPTERA: CURCULIONIDAE, SCOLYTINAE AND PLATYPODINAE)

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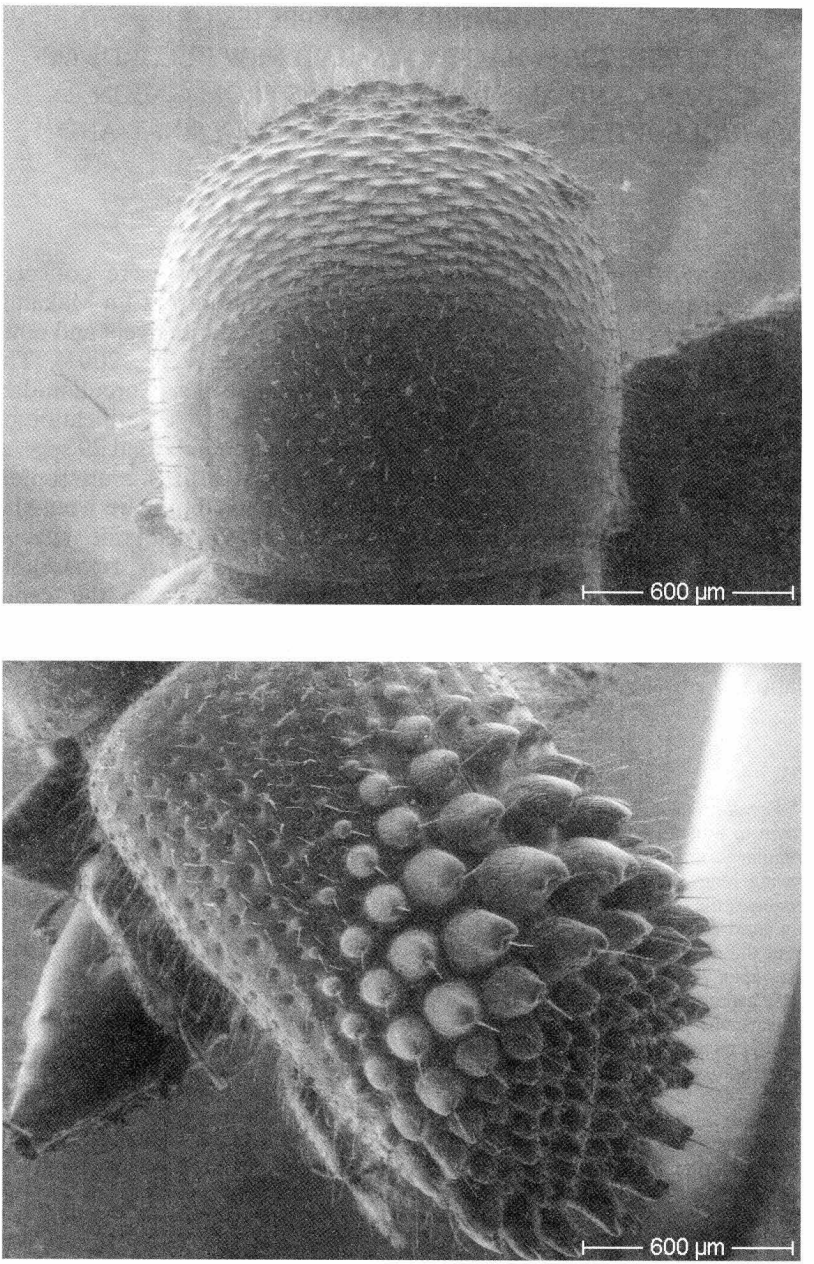
From mid-January to mid-March, 1999, arthropods were collected from the canopy and understorey of a lowland rainforest at La Makandé in Gabon, both during the day and at night, using flight intercept and other types of trap operated from a canopy raft (Basset *et al.*, 2001). The collections included about 250 bark and ambrosia beetles (Curculionidae: Scolytinae and Platypodinae), which were sent to me for identification by Dr H-P. Aberlenc. They included 7 species of Platypodinae and 29 species of Scolytinae. By far the most abundant species was the circumtropical scolytine *Xyleborus affinis* Eichhoff (140 specimens), but there were also 38 specimens of *Xyleborinus exiguus* (Walker), a scolytine species previously recorded only from the Oriental region. A remarkably sculptured new species of xyleborine ambrosia beetle in the genus *Cyclorhipidion* Hagedorn (Scolytinae) is described below (from 10 specimens), and fourteen species are recorded for the first time from Gabon.

Cyclorhipidion nodosum sp. n.
(Figs 1–2)

Female: 3.3–3.4mm long, 2.35–2.45 times longer than wide, head and thorax light brown to brown, the elytra darker tending towards pitchy. Frons convex, weakly shining, irregularly, minutely granulate, the granules more closely placed towards the epistoma, bearing long, erect hairs on the frons, a dense fringe of ventrally-directed hairs on the epistoma; the upper part of the frons with a weak median tubercle, which may be extended as a short carina. Pronotum (fig. 1) 1.05–1.10 times wider than long, the summit situated about the middle, the sides weakly curved in the basal half, widest about one-third from base, apex broadly rounded, anterior slope steeply convex, densely covered with rather small asperities, decreasing in size towards summit, disc shining, fairly densely finely punctate, the punctures and asperities with rather long fine hairs. Scutellum subtriangular, shining, slightly raised. Elytra (fig. 2) 1.45–1.55 times longer than wide, 1.55–1.60 times longer and slightly narrower than the pronotum, sides subparallel in the basal third, then very slightly tapering towards the broadly rounded apex; disc shining basally, a shallow transverse impression extending across interstriae 1–3 after the basal third; declivity beginning in apical third, steep, weakly convex, the apex with a series of large, truncate teeth in continuation of interstriae 1, 3, 5, 7. Striae on basal part of disc not impressed, with large, shallow punctures, separated by about their own diameter, each with a long erect hair; interstriae wider than striae, more irregularly, very finely punctured, the punctures with short, semi-erect hairs; in posterior part of disc, striae obscured by rows of very large, closely placed interstrial tubercles on interstriae 1, and 3–6, increasing in size posteriorly, the largest on interstriae 1 and 3 at the upper margin of the declivity, each tubercle with a long, erect hair arising from its posterior side below the apex; interstriae 2 present only on basal third of disc, with a single small tubercle, obsolete on posterior two-thirds of disc.



Figs 1–2. — *Cyclorhipidion nodosum* sp. n.: 1, pronotum, dorsal view; 2, elytra, dorsolateral view.

Declivity with regularly arranged, closely placed, rounded tubercles on interstriae 1–6, each tubercle with a short, erect hair, striae not distinct and lacking punctures. Protibiae with 8–9 socketed teeth, mid- and hind-tibiae with 9–10 teeth.

Holotype (♀). GABON: Forêt des Abeilles, La Makande, 11.54E, 00.40S, Miss. Radeau des Cimes, Site A, FIT II-Down, Sample I-4, Canopy, Night, 28.i.1999, RDC 156 (*H-P. Aberlenc et al.*). In Natural History Museum, London.

Paratypes (9♀♀). Same data as holotype except: FIT III-Down, Sample I-2, RDC 169, 170 (2 in Natural History Museum, London); FIT III-Down, Sample I-8, Day, RDC 200; Sample I-16, 29.i.1999, RDC 209; FIT III-Down, Sample I-62, 31.i.1999, RDC 82 (3 in Muséum National d'Histoire Naturelle, Paris); Sample I-70, Day, 31.i.1999, RDC 99 (1 in Staatliches Musem für Naturkunde, Stuttgart); Sample I-16, 29.i.1999, RDC 211; FIT III-Down, Sample I-14, 29.i.1999, RDC 161; FIT III-Down, Sample I-26, 30.i.1999, RDC 94 (3 in R.A. Beaver's collection).

The species belongs in a group of species related to *Cyclorhipidion crucifer* (Hagedorn). Other species included in this species-group are *C. callosum* (Schedl), *C. cruciforme* (Schedl), *C. crucipenne* (Schedl), *C. neocrucifer* (Schedl), *C. pelliculosum* (Hagedorn), *C. quasimodo* (Browne), and *C. sulcipenne* (Eggers). The group is confined to the Afrotropical region. The species are relatively large (3.5–6.5mm long), and characterised by the presence of a transverse impression or saddle on the disc of the elytra. *C. nodosum* is easily distinguished from all the other species by the extraordinary development of the elytral tubercles.

NEW RECORDS

The following species are recorded for the first time from Gabon. All were collected from: Forêt des Abeilles, La Makandé, 11.54°E, 00.40°S, Mission Radeau des Cimes [canopy raft], by H-P. Aberlenc *et al.* All specimens were collected in flight intercept traps. In the records that follow, only the additional information on the labels is noted. The sample numbers are given in the form (I-xxx). It is noted whether the species was collected in the canopy (at 35–47m, depending on the site) and/or in the understorey, and whether at night and/or during the day. Further information regarding collection methods is given by Basset *et al.* (2001). Where there are multiple specimens of a species, the information has been conflated in order to save space. Full details are available from the author if required. Features of interest of the species are given after the records. Further references to the species considered can be found in the catalog of Wood & Bright (1992), and its supplements (Bright & Skidmore, 1997, 2002).

Platypodinae:

Cylindropalpus pumilio (Schedl) (1♂). Site D, I-130, canopy, day, 6.iii.1999.
Doliopygus propinquus Schedl (1♂). Site A, I-16, canopy, night, 29.i.1999.
Triozastus pilosulus (Schedl) (1♂). Site D, I-136, canopy, 7.iii.1999.

The three species of Platypodinae are West African in distribution, largely confined to the tropical forests in the region from Guinea to Angola, although *C. pumilio* has also been recorded from Zambia (Beaver & Löyttyniemi, 1985). Browne (1980) records the interception of *D. propinquus* in timber (*Copaifera* sp.) imported to Japan from Gabon, but the record above is the first definitely from the country.

Scolytinae:

Coptoborus usagaricus (Eggers) (5♀ ♀). Sites A, C, D, I-4, I-46, I-90, I-102, I-126, canopy/ understorey, night, 28.i., 3.ii., 23.ii., 24.ii., 5.iii.1999.

Ctonoxylon auratum Hagedorn (3 specimens). Site C, I-172, I-174, canopy/understorey, 25.ii.1999.

Ctonoxylon pygmaeum Eggers (2 specimens). Site C, I-114, understorey, 25.ii.1999.

Cyclorhipidion callosum (Schedl) (1♀). Site A, I-34, canopy, day, 30.i.1999.

Eccoptopterus spinosus (Olivier) (1♀). Site C, I-112, canopy, night, 25.ii.1999.

Phrixosoma major (Eggers) (1 specimen). Site A, I-22, canopy, day, 29.i.1999.

Polygraphus coronatus Eggers (1♀). Site C, I-98, canopy, night, 24.ii.1999.

Premnobius orientalis Eggers (8♀ ♀). Sites A, B, C, D, I-2, I-56, I-100, I-102, I-116, I-119, I-156, canopy/ understorey, night, day, 28.i., 29.i., 4.ii., 16.ii., 24.ii., 5.iii.1999.

Xyleborinus exiguus (Walker) (38♀ ♀). Sites A, B, C, D, I-32, I-37, I-38, I-40, I-44, I-45, I-49, I-70, I-73, I-74, I-86, I-96, I-97, I-112, I-116, I-140, I-153, I-156, canopy/ understorey, night/day, 30.i., 31.i., 2.ii., 3.ii., 4.ii., 5.ii., 8.ii., 16.ii., 23.ii., 25.ii., 5.iii., 8.iii.1999.

Xylosandrus crassiusculus (Motschulsky) (3♀ ♀). Sites A, C, D, I-6, I-86, I-149, understorey, night/day, 28.i., 23.ii., 8.iii.1999.

Xylosandrus morigerus (Blandford) (1♀). Site B, I-38, canopy, day, 2.ii.1999.

Several morphological forms, originally described as species, later reduced to subspecies by Schedl (1963b), and then synonymised under the name *Coptoborus usagaricus* (Eggers) by Wood (1989), require further study. The East African and West African specimens that I have examined are clearly distinct, and appear to deserve specific rank. *C. usagaricus* is a polyphagous ambrosia beetle.

The species of *Ctonoxylon* are bark beetles, which according to Schedl (1977) are often associated with laticiferous trees. *C. auratum* is a West African species recorded previously from Cameroon and the Congo. *C. pygmaeum* was previously known only from Cameroon.

Cyclorhipidion callosum was known only from the Congo, where Schedl (1963b) found this large species of ambrosia beetle (6mm long) attacking small branches (2–2.5cm diameter) of *Dacryodes pubescens* (Burseraceae).

Eccoptopterus spinosus is a somewhat variable, polyphagous ambrosia beetle found throughout the Afrotropical region, and also through the Oriental and Australasian regions to the Pacific islands (Samoa). Related species are all Oriental in distribution, and it seems likely that *E. spinosus* was carried to Africa, and nearby island groups such as the Seychelles, Mauritius and Réunion in early trading ships, several hundred years ago.

Phrixosoma major is a representative of a genus confined to the Afrotropical and Neotropical regions, which presumably originated in

Gondwanaland before Africa and South America separated in the Cretaceous period. The species, so far as is known, are all monogamous bark beetles which normally attack trees in the family Guttiferae (Wood, 1986). *P. major* is a West African species known previously from Angola and the Congo.

Polygraphus coronatus is a bark beetle that has been recorded from both West and East Africa. Almost all host records are from trees of the family Meliaceae (Schedl, 1963a, Roberts, 1969). Schedl (1963a) briefly describes the gallery system of *P. coronatus* under its synonym, *P. granulifer* Eggers.

Premnobius orientalis is a member of a fairly small genus (about 25 species) which occurs primarily in the Afrotropical region. Two species, which also occur in the Neotropical region, are presumed to have been introduced there (Wood, 1986), as is a third species found only in that region (Wood & Bright, 1992). Although usually included in the tribe Xyleborini (e.g. Wood, 1986; Wood & Bright, 1992), Browne (1961), in a detailed review of the genus, suggested that it might either belong in the tribe Trypodendrini, or represent a separate tribe. Nobuchi (1969), based on studies of the proventriculus, placed it in a new tribe, Premnobiini. Recent molecular studies (Normark *et al.*, 1999) indicate that the genus is distinct from the Xyleborini, and represents a separate origin of the sib-mating and ambrosia fungus-feeding habits. The genus is probably best placed in its own tribe, as Nobuchi (1969) suggested. *P. orientalis* has been recorded only from Tanzania. No hosts are known.

Xyleborinus exiguus has not been recorded previously from the African continent. It is an Oriental species with a distribution extending from Sri Lanka through Southeast Asia and Indonesia to Sulawesi. Most specimens recorded from island groups further to the East belong to the closely related species, *X. perexiguus* (Schedl), although there may be some overlap in distribution in the region of Papua New Guinea. It is likely that the species has been recently introduced to West Africa. It is a polyphagous ambrosia beetle.

Both *Xylosandrus crassiusculus* and *X. morigerus* are polyphagous ambrosia beetles of economic importance because they sometimes attack the twigs and small branches of apparently healthy trees. Both are presumed to be of Oriental origin, but have been transported through commerce to many parts of the tropics. *X. crassiusculus* has been recorded from East and West Africa under the names *Xyleborus mascarenus* Hagedorn, *Xyleborus semigranosus* Blandford, and *Xyleborus semiopacus* Eichhoff. In Africa, attacks on living trees and transplants by *X. crassiusculus* have been noted by Browne (1963) and Roberts (1969). On the African continent, *X. morigerus* has previously been recorded only from Kenya, where it was intercepted in orchids in quarantine (Schedl, 1963; LePelley, 1968). Wood & Bright (1992) include 'Zaire' in the distribution. I have found no published records from the Congo Democratic Republic, although it may have been introduced there. Beaver

(2005a, b) reviews the distribution, biology and economic importance of the two species.

ACKNOWLEDGEMENTS

I am most grateful to Henri-Pierre Aberlenc (CIRAD, Montpellier, France) for the opportunity to examine these specimens. My thanks are due to Michael Rössel (IWZ Materialwissenschaften, Halle, Germany) for the photographs taken using an Environmental Scanning Electron Microscope, and to Heiko Gebhardt (University of Tübingen, Tübingen, Germany) for kindly arranging this.

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January 15*th*, 2004.