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Discovery of a subfossil termite of the genus *Coptotermes* in French Guiana (Isoptera, Rhinotermitidae, Coptotermitinae)

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A subfossil *Coptotermes* sp. is described on the basis of the soldier and worker castes, from copal of French Guiana. It is closely related to the recent species *C. testaceus* and *C. crassus*, still unknown from French Guiana.

Key words: Isoptera, Rhinotermitidae, *Coptotermes*, subfossil, copal, French Guiana.

INTRODUCTION

Despite recent progresses (Ensaf et al. 2001a,b, 2002a,b; Ensaf & Nel 2002), the termite fauna of French Guiana is still rather poorly known. Several taxa present in relatively close countries (Brazil, Venezuela, etc.) are still not recorded from this country (Araujo 1977; Constantino 1998). This is the case for the two species *Coptotermes testaceus* (Linnaeus, 1758) and *Coptotermes crassus* Snyder, 1922. Thus, the present record of a subfossil *Coptotermes* sp., in a copal from French Guiana, which is closely related to these two extant species, is of great interest for the Holocene and modern distribution of these termites.

DESCRIPTION

Family Rhinotermitidae
Subfamily Coptotermitinae
Coptotermes sp.
(Fig. 1)

Material.

Specimen MNHN-LP-R.11186, five soldiers and more than thirty workers included in the same piece of copal, coll. R. Garrouste, Laboratoire de Paléontologie, Muséum national d'Histoire naturelle, Paris, France.

Age and outcrop

In a mass of copal from cavities of a dead tree, maybe *Hymenea courbaril* Linnaeus, the wood having disappeared, close to a forest site of gold washing, near river Approuague, 'commune' of Régina, Bélizon area, French Guiana.

Description

Soldier (Fig. 1). Head yellow, oval, with sparsely scattered erect bristles, gland opening large, on front near base of clypeus; labrum with rounded sides, clearly pointed, widest near its base, with two long hairs on tip; gula or postmentum 0.86 mm long, maximal width 0.34 mm, minimal width 0.22 mm; mandible brown, long, pointed, ends curved, inner edges smooth, except near base; antennae yellow to yellow brown, with 15 segments; first antennomere longer than others, second nearly as long as third and a little longer or hardly equal to fourth, fifth to ninth equal, 15th

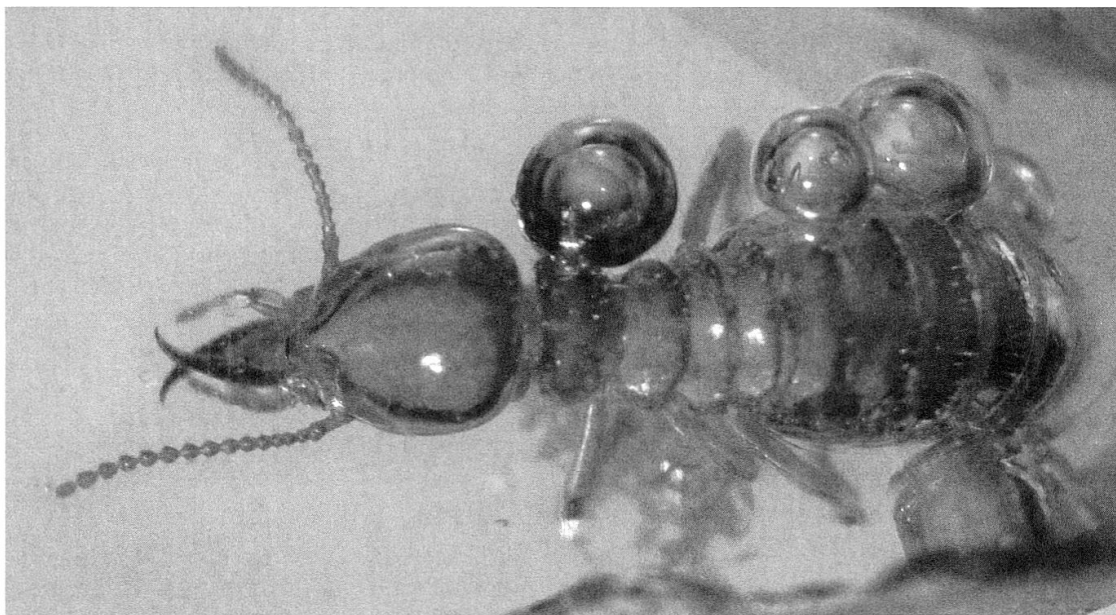


Fig. 1. *Coptotermes* sp., specimen MNHN-LP-R.11186, soldier, photography from above.

slightly longer than segments 2–13; pronotum yellow to yellow brown, anterior margin emarginated, posterior margin slightly emarginated, many long and short bristles on margin and some on pronotum, sides converging toward the rear, angles rounded, abdominal tergites yellow to brownish yellow with long and short bristles, sternites yellow, with short and long bristles on hind margin; legs yellow, with many hairs and bristles. Dimensions: entire soldier 6.00 mm long; head from posterior part to gland opening 1.45 mm long; head 1.25 mm wide; length of gland opening from above 0.20 mm; radius of gland opening 0.25 mm long; labium 0.75 mm long; mandible 0.95 mm long; pronotum 0.55 mm long, 0.85 mm wide; antennae 1.70 mm long; hind tibia 1.1 mm long.

Worker. Head yellow, nearly quadrate, with sides converging toward front and slightly convex in profile, sparsely scattered erect bristles on front; postclypeus elevate, with hairs; mandibles yellow brown; pronotum yellow, with raised anterior margin and several minute and 6–12 longer hairs, many hairs on top and posterior part, sides converging posteriorly, angles rounded; antennae yellow, with 15 segments; first antennomere longer than others, second a little longer than third or hardly equal, third, fourth and fifth equal, sixth to 12th equal, 15th slightly longer than segments 2–12 and bowling-shaped; abdominal tergites and sternites yellow with short and long hairs; legs yellow, with hairs and bristles. Dimensions: entire worker 5.65 mm long; head from posterior part to mandible 1.60 mm long; head 1.30 mm

wide; pronotum maximum 1.10 mm and minimum 0.65 mm wide, 0.45 mm long; antennae 1.50 mm long; hind tibia 0.70 mm long.

DISCUSSION

Our fossil soldiers differ from those of the introduced species *Coptotermes formosanus* Shiraki, 1909 as follows: third antennomere as long as second, instead of being half as long; head longer (2.45 mm instead of 2.16 mm) and broader (1.25 mm wide instead of 1.09 mm) (Oshima 1914: 559–560). The workers of *C. formosanus* are smaller and have 14 antennomeres, instead of 15 in our fossils. Our fossil soldiers differ from those of the introduced species *Coptotermes havilandi* Holmgren, 1911 as follows: antenna with 15 articles, instead of 14; pilosity of head capsule denser; mandibles slightly longer (0.95 mm long instead of 0.75–0.85 mm); pronotum slightly larger and broader. Our fossil soldiers differ from those of *Coptotermes niger* Snyder, 1922 as follows: antenna with 15 articles, instead of 14; postmentum broader (minimal width > half of maximal width); head longer (2.45 mm long instead of 2.0–2.1 mm). The soldier of *Coptotermes marabitanas* Hagen, 1858 has also 14 antennomeres. That of *Coptotermes crassus* has 15 antennomeres and nearly the same dimensions of head and body as our fossil. The only weak difference is as follows: third antennomere as long as second and fourth. The soldier of *Coptotermes testaceus* has 15–16 antennomeres and nearly the same dimensions of head and body as in our fossil. It is not possible to correctly separate our fossil from *C. testaceus* and *C. crassus*.

Only *C. marabitanas* is known from French Guiana (Ensaf et al. 2002b). The present discovery suggests the presence at least in a relatively recent past of another species more closely related to *C. testaceus* and *C. crassus*.

Further investigations are needed to increase our knowledge of the fossil condition and taphonomy of these inclusions. This copal piece is the first known for French Guiana.

RÉSUMÉ

Un *Coptotermes* subfossile, inclus dans du copal récent de la Guyane française, est décrit sur la base de soldats et d'ouvriers. Les formes actuelles les plus proches de ce termite sont *C. testaceus* and *C. crassus*, non encore signalées de la Guyane française.

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