First record of *Diversitermes diversimiles* (Silvestri, 1901) from French Guiana (Isoptera: Termitidae, Nasutitermitinae)

Alireza ENSAF [1], Jean-Marie BETSCH [2] & André NEL * [1]

(1) Entomologie, Muséum national d'Histoire naturelle,
45 rue Buffon, F-75005 Paris.
(2) I.E.G.B., Muséum national d'Histoire naturelle,
36 rue Geoffroy Saint- Hilaire, F-75005 Paris.

Abstract – Previously known from Brazil, North Argentina, Paraguay, and Bolivia, *Diversitermes diversimiles* (Silvestri, 1901) is cited for the first time from French Guiana, on the basis of the soldier and worker castes. The digestive tube of its worker is photographied for the first time.

Résumé – **Première mention de *Diversitermes diversimiles* (Silvestri, 1901) en Guyane française (Isoptera: Termitidae, Nasutitermitinae)**. – Auparavant connu du Brésil, du Nord de l'Argentine, du Paraguya et de la Bolivie, *Diversitermes diversimiles* (Silvestri, 1901) est cité pour la première fois de la Guyane Française, sur la base des soldats et ouvriers. Le tube digestif de son ouvrier est photographié pour la première fois.

Three species are currently included in the Neotropical nasutitermitine genus *Diversitermes*, namely: *D. aporeticus* Mathews, 1977 from Brazilian Amazonia, *D. castaniceps* (Holmgren, 1910) from Southern Brazil, Bolivia and Paraguay, and *D. diversimiles* (Silvestri, 1901) from Brazil, North Argentina, Paraguay, and Bolivia (Mathews 1977; Constantino 1998). We describe new material from the French Guiana that we provisionally attribute to *Diversitermes diversimiles*. It is the first records of this genus in this country.

Diversitermes diversimiles (Silvestri, 1901) (figs. 1-11)

Material examined –One soldier and one worker mounted in Canada balsam; 10 other soldiers and 10 workers, deposited in the Laboratoire d'Entomologie, Muséum National d'Histoire Naturelle, collected in the same nest by J.-M. Betsch, 13.11.1999. Locality: Site 'Guy Pt-St.114, Petit Saut, St. Eugène region, very old evergreen dense equatorial forest, in the litter, extracted from a Berlese trap, 13.11.1999, Northern part of French Guiana.

* Corresponding author. E-mail : anel@mnhn.fr, ensaf@mnhn.fr, iegb@mnhn.fr
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Description – Soldier (figs. 1-5). (1) head yellow, darker at margins, oval with definite constriction in plan and slightly broader behind constriction, with some hairs; (2) nasus yellow and darker than head, almost cylindrical and slender, shorter than width of head, with 4 long hairs and several small hairs at tip; (3) mandible blades reduced to long sharp points; (4) antennae about same color as head, with 13 segments; third antennomere longer than second and fourth, second and fourth slightly of same length, sixth and seventh antennomeres about same length; first longer than others; (5) pronotum of same color as head, with a raised and emarginated anterior margin, and a row of short setae but no long setae on anterior margin; (6) abdominal tergites and sternites of about same color as head, with some long hairs; (7) legs yellow, slender, with a row of hairs on inner margin of tibiae and femora; (8) dimensions: length of entire soldier, 3.2 mm; length of head with nasus, 1.25 mm, head, 0.7 mm wide; nasus, 0.50 mm long; pronotum, 0.25 mm long; antennae, 1.2 mm long; hind tibia, 0.65 mm long.

Worker (figs. 6-11). Mandibles. Apical and first marginal teeth of both mandibles sharp and strong; second marginal tooth of right mandible slightly deflected downward, molar plate of right mandible with about 10 ridges. Digestive tube as in figures 8-11.

Discussion –We attribute this termite to the genus *Diversitermes* on the basis of the following soldier char-

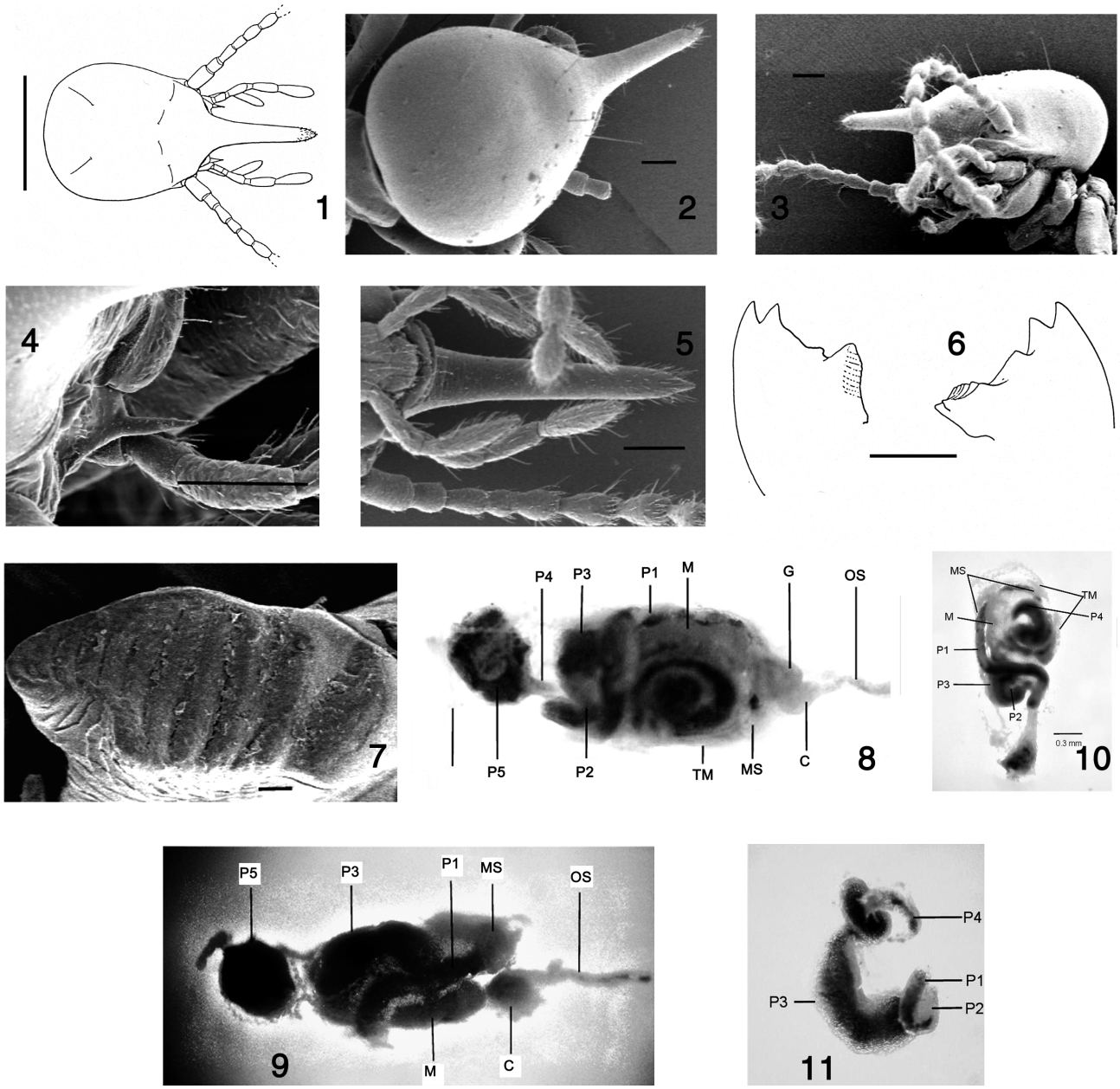

Figure 1-11
Diversitermes diversimiles. – 1, Soldier, drawing of head from above (scale bar = 0.5 mm). – 2, Soldier, electron scanning photograph of head from above (scale bar = 100 µm). – 3, Soldier, electron scanning of head, lateral view (scale bar = 100 µm). – 4, Soldier, electron scanning photograph of a mandible (scale bar = 100 µm). – 5, Soldier, electron scanning photograph of *nasus* from below (scale bar = 100 µm). – 6, Worker, mandibles (scale bar = 0.2 mm). – 7, Worker, molar plate of right mandible (scale bar represents 100 µm). – 8, Worker, digestive tube, dorsal view. C, crop; G, gizzard; M, mesenteron; MS, mixed segment; TM, malpighian tubules; P1 to P5, proctodeum; P1, 1st proctodeal segment; P2, enteric valve; P3, paunch; P4, colon; P5, rectum (scale bar represents 0.3 mm). – 9, worker, digestive tube, ventral view. OS, oesophagus; other legends and scale as in fig. 8. – 10, Worker, digestive tube, dorsal view with gizzard and part of mesenteron removed for better view of mixed segment, legend and scale as in fig. 8. – 11, Worker, digestive tube, proctodeum, legends and scale as in fig. 8.

acters, after the key of Mill (1983): long nasus, ending as a fine point at the end of a cylinder, shorter than width of head (figs. 1-2, 5), head very faintly constricted and slightly broader behind constriction (fig. 3), broad subrectangular in plan, mandible blades vestigial but with definite points (fig. 4). The dimensions of the soldier fit into those of the intermediate soldiers of *Diversitermes*. The digestive tube of worker is nearly identical of that of *Diversitermes diversimiles*, especially in the proctodeum, as figured by Fontes (1987 : 206-218), except for the mixed segment that seems to be longer (see figs. 8-11).

We compare our soldiers to the major, intermediate and minor soldiers of the three described species of *Diversitermes*.

– Our soldiers differ from those of *D. aporeticus* as follows: 13 antennal segments, instead of 14 in both minor and intermediate soldiers of *D. aporeticus*; absence of long setae on pronotum, instead of 4 long setae on pronotum of minor soldier of *D. aporeticus*; third antennal segment longer than second and fourth, instead of being shorter in *D. aporeticus*; hind tibia shorter than in *D. aporeticus* (0.65 mm long instead of 1.19 mm).

Nota : Mathews (1977) gave two names to this species: *D. aporeticus* in the text but *D. dubius* in the corresponding figures. Constantino & Cancello (1999) indicated that *D. dubius* is a *nomen nudum*.

– Our soldiers share with the major soldiers of *D. castaniceps* the presence of 13 antennal segments but their dimensions are distinctly smaller and correspond better to those of the intermediate soldiers of *D. castaniceps*. Hovewer the intermediate and minor soldiers of *D. castaniceps* have 12-segmented antennae (Holmgren 1910).

– Mathews (1977) indicated that *D. diversimiles* and *D. castaniceps* 'may prove to be synonymous' and that the situation between the two species is rather confusing (Silvestri 1901, 1903). Our soldiers are distinctly smaller than the major soldiers of *D. diversimiles*. Also their hind tibiae are shorter than those of the intermediate soldiers of *D. diversimiles* (0.65 mm long instead of 0.94 mm). Our soldiers have a head broader than those of the minor soldiers of *D. diversimiles* (0.7 mm wide instead of 0.54 mm). Nevertheless, the number of antennal segments and their relative sizes are very similar in our material and in the material described by Mathews (1977).

In conclusion, we provisionally attribute this termite material to *D. diversimiles*. Only a close comparison and exam of all the available material shall allow solving the taxonomic problem of the definition and relationships between *D. diversimiles* and *D. castaniceps*.

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