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## First record of *Embiratermes ignotus* Constantino 1991 (Termitidae: Syntermitinae) in Colombia

### Primer registro de *Embiratermes ignotus* Constantino 1991 (Termitidae: Syntermitinae) en Colombia

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Termites are a diverse group of macro fauna closely related with nutrient cycling in ecosystems (Eggleton *et al.* 1996, Lavelle *et al.* 1997). In the Neotropical region, six families (5 living and 1 fossil) of termites had been identified (Constantino 2017, Rocha *et al.* 2017). From them, Rhinotermitidae, Kalotermitidae, and Termitidae had been reported in Colombia. Termitidae is the most diverse termite family reported in Colombia (Gutiérrez *et al.* 2004, Vargas-Niño *et al.* 2005, Abadía and Arcila 2009, Pinzón *et al.* 2012). Termitidae has eight subfamilies. One of them, the subfamily Syntermitinae is restricted to the Neotropics (Engel *et al.* 2009, Krishna *et al.* 2013), and includes 18 genera and 101 species (Rocha *et al.* 2017). One of the genus, *Embiratermes*, was described after the reclassification of 11 species of the genus *Armitermes* (Fontes 1985), but a deep review of the genus *Embiratermes* is still needed (Rocha *et al.* 2012, Rocha *et al.* 2017). At present, the genus *Embiratermes* includes 14 species (Krishna *et al.* 2013), one of them is *Embiratermes ignotus*.

*Embiratermes ignotus* was described by Constantino (1991) and found in the Amazonas state of Brazil. This record has been unique for this species, until this paper. Here we report for the first time *E. ignotus* in Colombia. Additional information regarding some morphological characters of species and its ecology are provided.

*Embiratermes ignotus* Constantino 1991  
(Figs 1-3)

**Diagnosis: Soldier.** Head capsule almost rectangular, with rounded sides. Nasus shorter than mandibles, with small bristles in the apex and large bristles in the base. In lateral view nasus is parallel to the mandibles. Antennae with 13 segments, with many bristles. Head capsule with sparse long setae, margin of the base of the head with 2 - 4 visible long setae in dorsal view. Mandibles robust, very dark in the apex and clear in the base, a marginal triangular tooth near the base, dorsally left tooth more prominent than the right. Head capsule light yellow and nasus much darker. Margin of pronotum whit long setae. Tibia with density of short bristles in the base and in the tarsus, and long setae in the front margin.

**Comparisons:** The species *E. ignotus* is the smallest of the genus. The other two small species that might be misidentified with *E. ignotus* are *E. snyderi* and *E. parvirostris*. *E. ignotus* can be differentiated from *E. snyderi* by the size and the angle of the nasus. *E. snyderi*

has the nasus directed upwards and the base of the nasus is more distant from the margin of the head capsule than in *E. ignotus*. Distinguishing *E. parvirostris* from *E. ignotus* is more difficult. The nasus of *E. parvirostris* is smaller than in *E. ignotus* and is directed upwards; and does not possess the long mushrooms in the margins of the head capsule that are evident in *E. ignotus*. The size of these two species is around 1.30 mm, but the nasus of *E. ignotus* is approximately 0.15 mm longer than *E. parvirostris*. Both species had very few records and are restricted to the Amazon basin. In Constantino (1992) illustrations of the worker mandibles of *E. parvirostris*, the teeth are not as prominent compared to those of *E. ignotus* (Constantino 1991), however, in fig. 3 it can be observed that the mandibles of *E. ignotus* collected in Colombia with the apical and M1 teeth are much more prominent looking more like *E. parvirostris*.

**Material examined: A,** *Embiratermes ignotus*. COLOMBIA, AMAZONAS, Leticia, Reserva Natural Cerva Viva Km 10.8 vía Tarapacá, 04°07'14.7"S, 69°56'40.9"W, 95 m elev., Soil, Secondary rain forest, TSBF, 13 June 2017, 1 soldier, 1 worker, Instituto Amazónico de Investigaciones Científicas SINCHI [CATAC-0918; CATAC-0961]. Determined by Daniel Castro. **B,** *Embiratermes ignotus*. COLOMBIA, AMAZONAS, Leticia, Reserva Natural Tanimboca Km 11 vía Tarapacá, 04°07'15.4"S, 69°57'19.7"W, 89 m elev., Soil, Secondary rain forest, TSBF, 23 June 2017, 7 soldiers, 16 workers, Instituto Amazónico de Investigaciones Científicas SINCHI [CATAC-1348]. Determined by Daniel Castro. **C,** *Embiratermes ignotus*. COLOMBIA, AMAZONAS, Leticia, Km 22, 04°02'45.7"S, 69°59'26.8"W, 75 m elev., Soil, Secondary rain forest, TSBF, 24 June 2017, 2 soldiers, 8 workers, Instituto Amazónico de Investigaciones Científicas SINCHI [CATAC-1348]. Determined by Daniel Castro.

*Embiratermes ignotus* was found in soil samples collected from a secondary forest in the south of the Colombian Amazon. Collecting followed the TSBF (Tropical Soil Biology and Fertility) method (Anderson and Ingram 1993). All colonies were found at a depth of 0 - 10 cm and only one worker was collected at a depth of 10 - 20 cm. The species *Neocapritermes talpa*, *Nasutitermes* sp. and an Apicotermitinae were found in the soil samples where *E. ignotus* was found. Colonies of *E. ignotus* are small with a maximum of 23 individuals per sample (Include reference here).

The morphology of the worker mandibles of *E. ignotus* (Figure 3) is termed “intermediate / geophagous morphology” species (Rocha *et al.* 2017), *E. ignotus* feeds on humidified resources, so that their habitat can be restricted to the soil and epigeous termite mounds. Apparently, *E. ignotus* is associated with conserved forests. The type species was found in a primary forest, and the present records the species is found in a mature secondary forest.

Termites have been poorly sampled in Colombia and even more in the Colombian Amazon when compared with Brazilian Amazon (Constantino & Canello 1992) and other countries and regions around the world (Krishna *et al.* 2013, Constantino 2017). Due to the low knowledge of this group of organisms in a diverse country as it is Colombia, a harder sampling effort is recommended.

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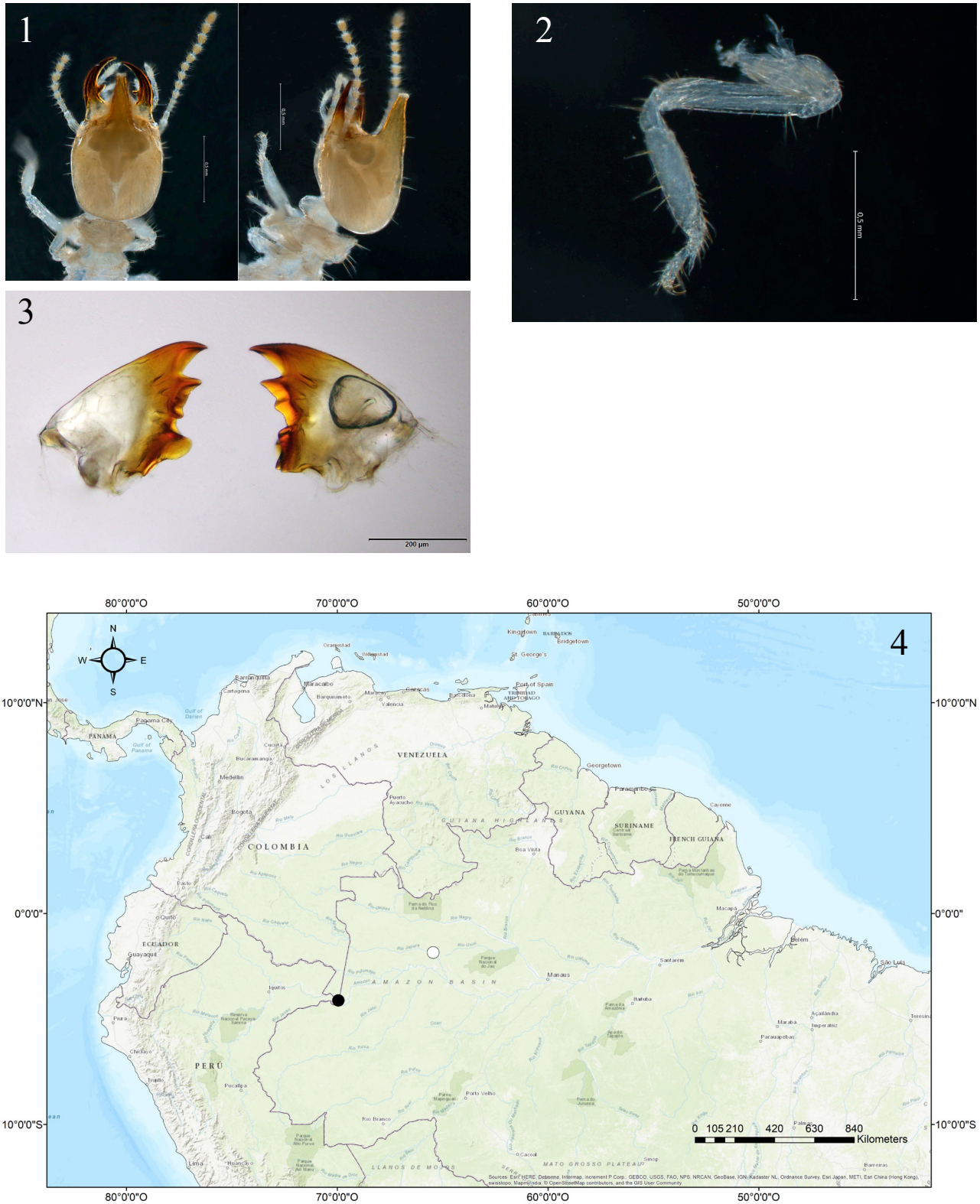


Figure 1. Dorsal view and side view of head of soldier of *Embiratermes ignotus*. Scale bar = 0.5 mm. Figure 2. Foretibia of *Embiratermes ignotus* Constantino 1991. Figure 3. Worker mandibles. Figure 4. Locations where *E. ignotus* has been reported. White point: Constantino (1991) report. Black point present record.