*Zootaxa* 3946 (4): 591–594
www.mapress.com/zootaxa/


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ISSN 1175-5326 (print edition)
**ZOOTAXA**
ISSN 1175-5334 (online edition)

http://dx.doi.org/10.11646/zootaxa.3946.4.9
http://zoobank.org/urn:lsid:zoobank.org:pub:788E9090-1BF3-4246-8BD4-9645506CE4CD

# Redescription and reclassification of the African termite, *Forficulitermes planifrons* (Isoptera, Termitidae, Termitinae)

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*Forficulitermes planifrons* is a monotypic genus and species described by Emerson (1960) from three soldiers and a single worker. All known occurrences of *Forficulitermes* (Emerson 1960, Wango & Josens 2011, this study) originate from equatorial middle Africa. Emerson (1960) compared soldiers of *Forficulitermes* with *Basidentitermes, Proboscitermes, Orthotermes, Profastigitermes,* and *Fastigitermes*, (the latter all in the Cubitermitinae) with respect to the general shape of the labrum, but found no similarities among these genera with respect to either the former's mandibles or the undulating profile surrounding its fontanelle. The only worker morphology noted for *F. planifrons* by Emerson (1960) was a pair of worn mandibles. Based largely on the enteric valve armature, we herein redescribe *F. planifrons* and assign this genus to the subfamily Termitinae.

Workers and a soldier of *F. planifrons* were photographed as multi-layer montages using a Leica M205C stereomicroscope controlled by Leica Application Suite version 3 software. Preserved specimens were taken from 85% ethanol and suspended in a pool of Purell® Hand Sanitizer to position the specimens over a transparent Petri dish background. The enteric valve and mandible photographs (Figs. 2 left, and 4) were taken from slide mounts using a Leica CTR 5500 compound microscope with phase-contrast optics and the same montage software. Terminology of the worker gut follows that of Sands (1998) and Noirot (2001).

## *Forficulitermes* Emerson 1960

Type-species: *Forficulitermes planifrons* Emerson 1960

Imago unknown.

Soldier (Fig. 1). Detailed description and measurements given by Emerson (1960). Very small; body white, lacking organic particles in entire gut tube (Uys 2002).

Worker (Fig. 2). Head pale, postclypeus moderately inflated above head profile; antennae with 13 articles. Very small; mean head width 0.57 mm (0.54–0.61), mean pronotum width 0.34 mm (0.32-0.37). Mandibles with pronounced and thin apical teeth; molar plates large, projecting; with deeply concave molar surfaces. Left mandible without second marginal tooth, having been absorbed by the cutting edge of the first and third marginals. Right mandible with prominent first marginal tooth; second marginal much shorter than first; posterior margin of second, gradually sloping to anterior surface of molar prominence.

Mesenteron (M) loop complete, mixed segment very short, not obvious. Both pairs of Malpighian tubules united at a common base. First proctodeal segment (P1) short and narrow; connects to a shallow lobe of P3 via a narrow P2; Enteric valve entirely within P2; armature thin; composed of three larger pads with wider anterior lobe composed of reticulations and posterior lobe composed of about fifty tiny, short, and backward-facing thorns resting on ovoid bases. Three smaller pads lacking reticulations interspersed between larger pads. P3 large and dumbbell-shaped owing to its median constriction by M and P4; P3 lacking blind diverticulum. P3 cuticular lining covered with hundreds of ca. 15µm-long triangulate paddles, each with 4-15 teeth along their exposed edges; P3 ending with narrow tube recurving to posterior and lacking paddles. P4 very long, connecting with posterior loop of P3 at a slightly constricted isthmus; from there, P4 runs to very large and bulbous P5.

**Material examined.** Cameroon: Ebogo village (3.3862, 11.6817; 666 m elev.), 0.5 km from Nyong River, 24 km southeast of Mbalmayo, 12DEC11, col. J. Křeček, UF collection no. AFR1664 and AFR1665; each with soldiers and workers; ex: nest of unknown termite species.

*Accepted by R. Constantino: 16 Mar. 2015; published: 13 Apr. 2015*

*Forficulitermes planifrons* is an unusually rare species which inhabits termite mounds of other species in both open and forested areas. Emerson (1960) collected a lone *F. planifrons* sample from a *Trinervitermes* mound during a three-month expedition to the Belgian Congo (-5.5, +13.9, now The Democratic Republic of Congo). Wango & Josens (2011) reported a single sample of *Forficulitermes* (probably *F. planifrons*) during a survey of 515 *Cubitermes* mounds in the Central African Republic (+5.2, -17.7). Our collection of *F. planifrons* was taken from a single unidentified termite mound measuring ca. 1-m diam. and 0.5 m high during an expedition that yielded over 900 colony samples. Our two samples were extracted from a mound (original builder unknown) which also contained the following 14 co-inhabiting genera: *Afrosubulitermes, Basidentitermes, Euchilotermes, Jugositermes, Microcerotermes, Microtermes, Mimeutermes, Orthotermes, Pericapritermes, Postsubulitermes, Promirotermes, Sphaerotermes, Tuberculitermes*, and at least one soldierless genus (Apicotermitinae).

Sands (1998) described the worker caste of nearly all soil-borne termite genera from Africa and included photographs or detailed drawings of their enteric valves, including 25 genera in the "*Cubitermes* group" of Noirot (2001). This group was further confirmed to be monophyletic by Inward *et al.* (2007) and was formalized as a subfamily of the Termitidae by Engel *et al.* (2009) who elevated Cubitermitinae from tribe status (Weidner 1961). *Forficulitermes* was not redescribed in Sands' 1998 treatise, presumably because only a lone worker (Emerson 1960) was available for study. Oddly, Sands (1998) did not even mention *Forficulitermes*, possibly having confused it with *Furculitermes* Emerson. *Forficulitermes* must now be removed from the current list of 26 cubitermitine genera as given in Krishna *et al.* (2013).

## Acknowledgements

We are grateful to the Ministry of Forestry of Cameroon (Republique du Cameroun, Ministere des Forets et de la Faune, Secretariat General, Direction de la Faune et des Aires Protegees) for research permit no. 2307/PRBS/MINFOF/SG/DFAP/SDVEF/SC, 22 March 2012. We are also grateful for field collaboration with Jan Šobotník and Og DeSouza during this expedition.

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