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## First Record of *Coptotermes gestroi* (Isoptera: Rhinotermitidae) from Taiwan 【Scientific note】

### 臺灣產家白蟻屬（等翅目：鼻白蟻科）一新紀錄種【科學短訊】

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### Abstract

*Coptotermes gestroi* is recorded from Taiwan for the first time. Soldier and worker castes are described and illustrated.

### 摘要

本文描述臺灣產家白蟻屬一新紀錄種：*Coptotermes gestroi* 格斯特家白蟻，包括兵蟻及工蟻階級的描述。文中並輔以圖繪。

**Key words:** Isoptera, Rhinotermitidae, *Coptotermes*, new record, Taiwan

**關鍵詞:** 等翅目、鼻白蟻科、家白蟻屬、新紀錄、臺灣

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# First Record of *Coptotermes gestroi* (Isoptera: Rhinotermitidae) from Taiwan

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## ABSTRACT

*Coptotermes gestroi* is recorded from Taiwan for the first time. Soldier and worker castes are described and illustrated.

**Key words:** Isoptera, Rhinotermitidae, *Coptotermes*, new record, Taiwan

## Introduction

The fauna of Taiwanese termites was investigated actively before 1914 (Oshima, 1909, 1911, 1912, 1914). Chung and Chen (1994) summarized and revised the list of Taiwanese termites providing brief comments and a key to the species. At that time, only 16 species from 12 genera belonging to four families has been recorded. Of these species, *Coptotermes* is the most important genus of the Rhinotermitidae. Only one species, *C. formosanus* Shiraki, was recorded in Taiwan. This termite is one of the most serious pests attacking all kinds of wood both natural and structural; it also penetrates concrete, lead sheathes of cables, and plastics (Huang *et al.*, 2000). In recent field collections of *C. formosanus*, we found some specimens which can be identified as a close species, *C. gestroi* (Wasmann), which is new to Taiwan. This brings the total to two species of this genus known to be distributed in Taiwan.

Specimens were collected from logs,

stumps, or dead trees; the collection sites were in central and southern Taiwan. The termite specimens were stored and preserved in 75% alcohol. Dissection and measurements were made in 75% alcohol using a stereoscopic microscope at magnifications of between 20x and 80x. All specimens were deposited in the collection of the Department of Biology, Tunghai University.

## Descriptions

*Coptotermes gestroi* (Wasmann, 1896)

*Termes gestroi* Wasmann, 1896, Ann. Mus. Civ. Stor. Nat. Genova, ser. 2, 16: 628. (soldier)

*Coptotermes gestroi*: Holmgern, 1911, K. Svenska Vetensk. Handl., 46(6): 73. (soldier)

*Coptotermes gestroi*: Ahmad, 1965, Bull. Am. Mus. Nat. Hist. 131: 22-23. (soldier)

*Coptotermes gestroi*: Huang *et al.*, 2000. Fauna Sinica Insecta 17: 317-318. (soldier)

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**Soldier:** Head reddish yellow; labrum light brownish yellow; mandibles reddish brown; antennae light brown; pronotum light brownish yellow, lighter than head; legs and abdomen pale.

Head with a few scattered bristles; tip of labrum with 2 bristles; postmentum with a pair of bristles at anterior margin, followed by another pair; pronotum sparsely hairy, with a few short and long bristles peripherally; fontanelle with 1 bristle on each side; no bristles between fontanelle and antennal socket.

Head elongately oval, distinctly longer than broad; widest in middle. Fontanelle broadly oval; approaching circular shape. Labrum narrowly pointed, longer than broad; tip hyaline, narrow, short. Mandibles moderately curved apically. Postmentum long, 2.5 times as long as broad at widest point, 1.5 times as broad anteriorly as posteriorly; waist midway between posterior margin and widest point. Antennae with 14-15 segments, 2nd longer than 3rd, 4th and 3rd subequal. Some specimens with 3rd segment shortest, 1/2 as long as segment 4. Pronotum slightly more than twice as broad as long; anterior margin distinctly emarginated; posterior margin depressed in middle; lateral margins broadly rounded.

**Measurements.** (see Table 1).

**Worker:** Head yellow-white to yellow; antennae, pronotum, legs and abdominal tergites pale yellow.

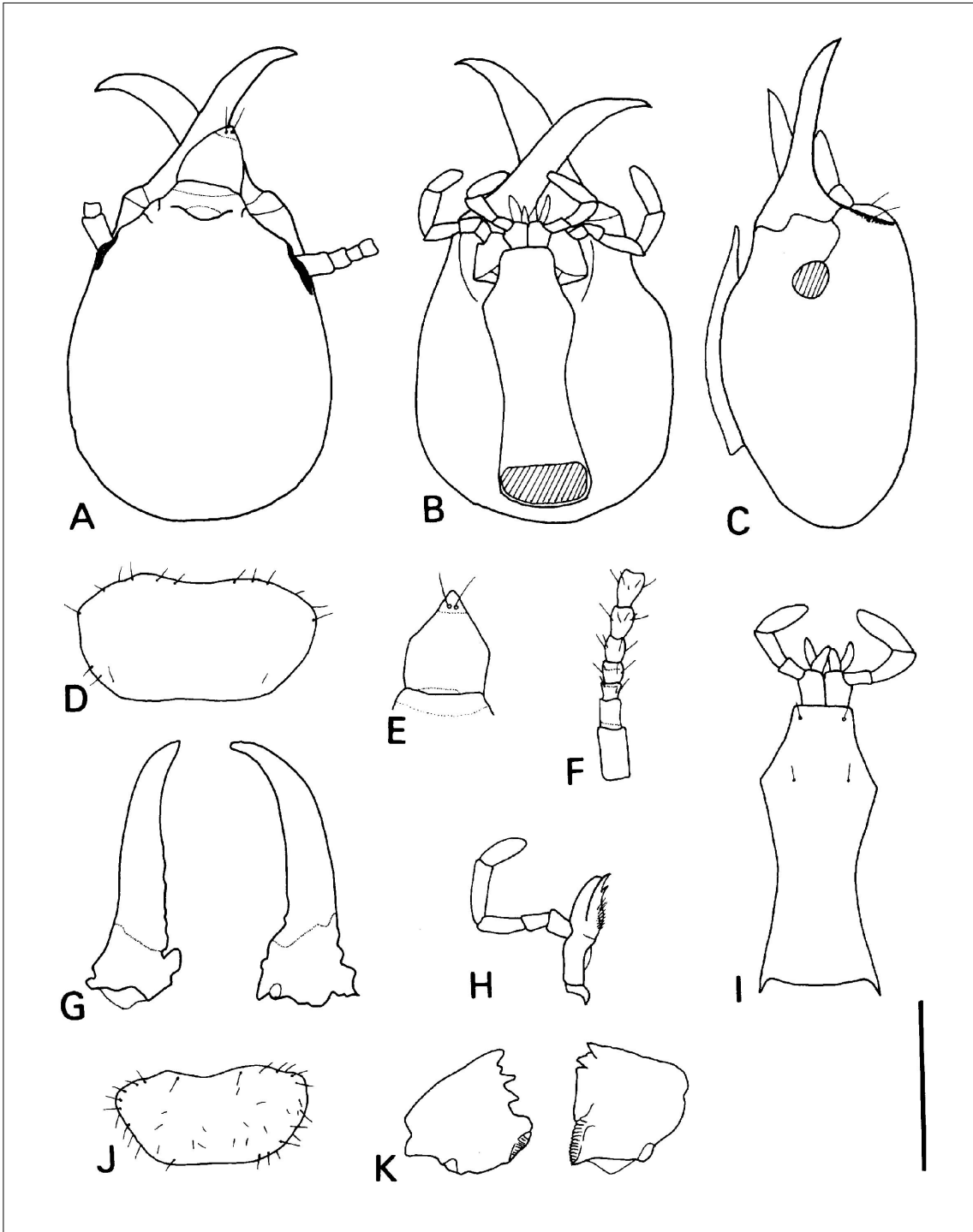
Head circular, oval, parallel-sided, round behind, setae numerous but not dense, randomly scattered; epicranial suture absent. Compound eyes and ocelli absent. Postclypeus with posterior margin markedly bowed, distinct with suture, clearly inflated; labrum profile weakly curved, somewhat inflated in middle, margin sclerotization shaded. Antennae with 14 segments. Pronotum in side view shallowly convex but with front margin raised in a rim. Tarsal arolium absent. Abdominal cerci with 2 segments, outer more than twice length of inner, abdominal styli present on 9th sternite, smaller than cerci.

Left mandible, apical tooth clearly much longer and more prominent than 1st marginal, 1st marginal tooth approximately equilateral; 2nd marginal tooth fully developed and distinct from 1st and 3rd, both edges longer than those of 1st; 3rd marginal fully developed, hind edges separated from molar prominence by a distinct gap; 4th marginal tooth in front view clearly visible in gap between

表一 10 隻兵蟻的測量值(mm)

Table 1. Measurements of 10 soldiers (mm)

	Range	Mean
Length of head with mandibles	2.05-2.15	2.110
Length of head without mandibles	1.30-1.50	1.415
Maximum width of head	1.10-1.15	1.120
Maximum height of head	0.80-0.90	0.860
Length of left mandible	0.90-1.05	0.955
Length of labrum	0.30-0.35	0.330
Maximum width of labrum	0.20-0.30	0.280
Length of postmentum	0.90-1.00	0.940
Maximum width of postmentum	0.35-0.40	0.395
Length of pronotum	0.40-0.45	0.430
Width of pronotum	0.80-0.85	0.835



圖一 格斯特家白蟻。A-I 兵蟻, A, 頭部, 背面; B, 頭部, 腹面; C, 頭部, 側面; D, 前胸背板; E, 上唇; F, 觸角; G, 大顎; H, 小顎; I, 下唇。J-K 工蟻, J, 前胸背板; K, 大顎。比例尺: 0.5 mm.

3rd marginal and molar prominence, proximal end hidden behind molar prominence; molar prominence broadly rounded in outline, proximal marginal weakly indented. Right mandible, 1st marginal tooth with anterior edges bearing a small subsidiary tooth at base; 2nd marginal tooth fully developed and separate from 1st, exposed posterior edge longer than that of 1st, more or less straight; notch at proximal end of right molar plate absent, molar ridges prominent.

**Materials examined:** TAICHUNG: Tunghai Univ., 10 workers, 10 soldiers, 11-X-1999, 28-III-2002, C. C. Tsai. PINTUNG: Kenting, 10 workers, 10 soldiers, 5-IX-2000, C. C. Tsai. TAINAN: Nanhwa, 10 workers, 10 soldiers, 21-IV-2001, C. C. Tsai.

**Distribution:** Taiwan (new record), China, Malaya, Myanmar (Burma), Thailand, and India.

**Discussion:** This species was described from Burma in 1896 (Snyder, 1949). It is closely related to *C. formosanus*, but the fontanelle is broadly oval, approaching a circular shape with one bristle on both sides; and the head is smaller, with the widest part situated more posteriorly. The labrum is narrowly pointed, and longer than broad; the tip is hyaline, narrow, and short, and the labrum has two bristles on the tip.

The biology of this species is unknown. The specimens recorded from the Tunghai University campus were captured in the wooden parts of buildings and stumps, while those from Kenting and Nanhwa were found in dead tree trunks.

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# 臺灣產家白蟻屬（等翅目：鼻白蟻科）一新紀錄種

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## 摘 要

本文描述臺灣產家白蟻屬一新紀錄種：*Coptotermes gestroi* 格斯特家白蟻，包括兵蟻及工蟻階級的描述。文中並輔以圖繪。

**關鍵詞：**等翅目、鼻白蟻科、家白蟻屬、新紀錄、臺灣