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Two New Species of *Coptotermes* Wasmann from Malaya (Isoptera, Rhinotermitidae, Coptotermitinae)

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The present study is based on specimens in the collection of the American Museum of Natural History in the custody of Dr. Alfred E. Emerson and specimens sent to me by Mr. W. Victor Harris of the British Museum (Natural History). The holotype soldier, morphotype worker, and paratypes are deposited in the collection of the American Museum of Natural History. Paratypes are also deposited in the British Museum (Natural History), London, and in the entomological collection of the Forest Research Institute, Dehradun, Uttar Pradesh, India.

I am greatly indebted to Dr. Alfred E. Emerson for kindly placing the material at my disposal, for confirming the identifications, and for giving valuable suggestions during the preparation of this paper. My thanks are also due to Mr. W. Victor Harris for sending me specimens and to Prof. C. L. Lindroth for sending me cotypes of *Coptotermes kalshoveni* Kemner and *Coptotermes minutissimus* Kemner from Kemner's collection now in his custody.²

Coptotermes sepangensis, new species

IMAGO: Unknown.

SOLDIER (FIG. 1): Head brown, frontal gland area lighter; mandibles

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² I have designated holotype for *Coptotermes kalshoveni* Kemner and *Coptotermes minutissimus* Kemner which are deposited in Kemner's collection at the Zoological Institution, Lund University, Lund, Sweden.

rusty brown; labrum brownish, paler than head; pronotum abdomen and legs yellowish brown; antennae yellowish. Head with few, scattered, erect bristles; two bristles on each side of the fontanelle; pronotum with short, seta-like bristles and with about eight to 10 long bristles at the anterior margin; posterior, lateral margins, and the disc with a few long

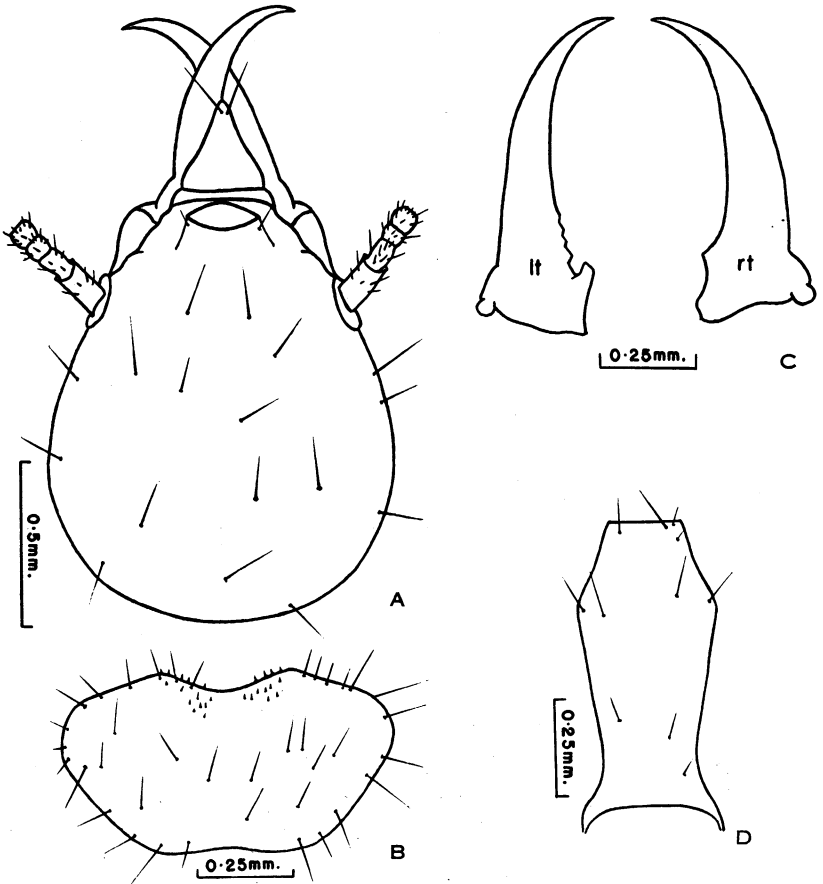


FIG. 1. *Coptotermes sepangensis*, new species, soldier. A. Dorsal view of head. B. Pronotum. C. Mandibles (lt, left; rt, right). D. Postmentum.

bristles; abdomen heavily pilose; tergites with scattered bristles, some arranged in a fairly regular hind row. Head markedly longer than broad, pear-shaped; posterior broad, the lateral margins rounded; anterior portion narrow, the sides slightly concave; posterior margin round; top fairly flat in profile and front sloping downward to fontanelle; chitinous

circular fontanelle opening anteriorly. Labrum subtriangular, reaching up to half of the length of the mandibles; apex hyaline, pointed, and with two bristles. Mandibles long, saber-shaped, and much curved inward at the apex; inner edge of the right mandible smooth, but in the left mandible the distal half smooth, proximal half with a large basal tooth and four crenulations, fourth largest, the other three very small. Antenna pilose, 13- to 14-jointed, first and second joint cylindrical; second slightly longer than third, fourth smaller than second and third. Postmentum strongly constricted in the middle. Pronotum narrower than head, broader than long; anterior margin projecting in front, with a deep indentation in the middle; posterior margin with a shallow notch in the middle. Tibial spurs 3:2:2.

COMPARISONS: Distinct from all oriental species in its small head length and much incurved mandibles. It is very close to *Coptotermes bentongensis*, new species, from Malaya and distinguishable from it by its long, broad, and thick head, wider pronotum, longer incurved mandibles, and longer postmentum. It differs from *Coptotermes amboinensis* Kemner, Amboina (Papuan region), in its broader pronotum, notched posterior margin of pronotum, longer antenna, and its longer and more constricted postmentum.

TYPE LOCALITY AND DISTRIBUTION: Sepang, Malaya (type locality), soldiers (holotype and paratypes), workers (morphotype), collected by G. H. Corbett, March 14, 1930. Inflorescence of *Cocos nucifera*.

TABLE 1
MEASUREMENT (IN MILLIMETERS) OF NINE SOLDIERS OF
Coptotermes sepangensis, NEW SPECIES

	Range	Mean	Holotype
Length of head to lateral base of mandible	1.13-1.16	1.14	1.16
Maximum width of head	0.98-1.01	0.99	1.01
Height of head	0.75-0.79	0.75	0.79
Occiput-fontanelle distance	1.16-1.20	1.17	1.20
Maximum length of left mandible	0.65-0.68	0.68	0.68
Length (median) of postmentum	0.68-0.75	0.70	0.75
Maximum width of postmentum	0.33-0.38	0.34	0.38
Minimum width of postmentum	0.18-0.23	0.23	0.23
Maximum width of pronotum	0.71-0.75	0.72	0.75
Maximum length of pronotum	0.38-0.41	0.38	0.38
Median length of pronotum	0.36-0.37	0.36	0.36

Tanjong, Mas Estate, Sepang, Malaya, soldiers (paratypes), workers, collected by G. H. Corbett, March 14, 1930.

Port Dickson, Malaya, soldiers (paratypes), November 13, 1930, Entomology Division, Agriculture Department.

***Coptotermes bentongensis*, new species**

IMAGO: Unknown.

SOLDIER (FIG. 2): Head brownish (holotype yellow); mandibles rusty brown; labrum yellowish brown; pronotum, abdomen, and legs light brown, with yellowish tinge. Head with sparsely scattered bristles; pronotum with erect bristles along its anterior, lateral, and posterior margins and on the disc; abdomen densely hairy, with a marginal hind row of bristles. Head oval, long, and narrow, head shape very similar to that of *Coptotermes sepangensis*, new species, but smaller, less broad and thick.

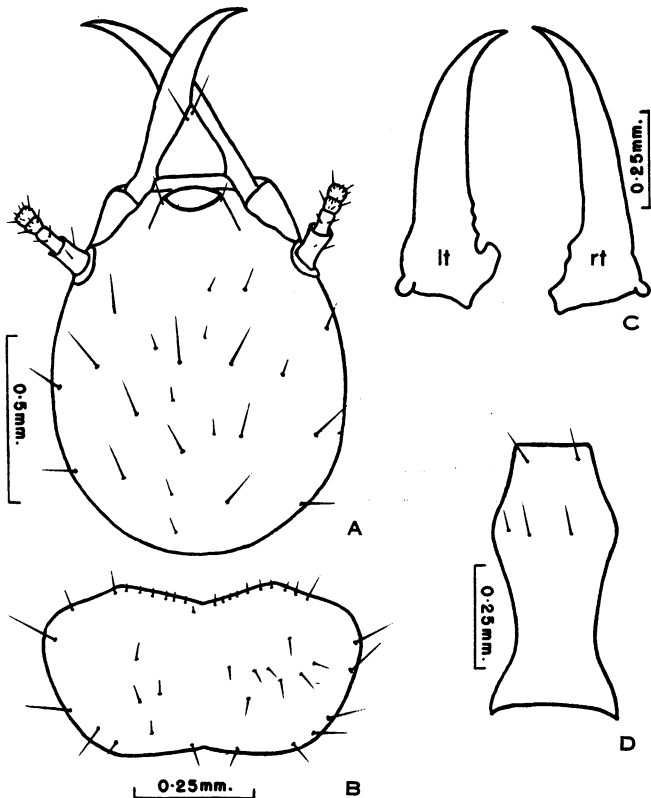


FIG. 2. *Coptotermes bentongensis*, new species, soldier. A. Dorsal view of head. B. Pronotum. C. Mandibles (lt, left; rt, right). D. Postmentum.

Mandibles short, apex bent inward. Antennae 13-jointed; second segment longer than third; third a little shorter than or equal to fourth. Postmentum short, strongly constricted in the middle. Pronotum flat, narrower than head, markedly wider than long; anterior margin convex, slightly raised with median incision; the lateral sides slope down rather straight to rounded and slightly emarginate posterior margin.

COMPARISONS: Small species very close to *Coptotermes sepangensis*, new species, and *Coptotermes kalshoveni* Kemner from Java. It differs from *Coptotermes sepangensis*, new species, in its shorter head length, narrower breadth, shorter mandible length, and smaller pronotum. It is distinguishable from *Coptotermes kalshoveni* in the longer and narrower shape of the head, in the fact that the mandibles are more incurved and the postmentum is strongly contracted in the middle.

TYPE LOCALITY: Bentong, Malaya, soldier (holotype and paratype), December 21, 1934, collected by G. H. Corbett.

TABLE 2
MEASUREMENT (IN MILLIMETERS) OF FOUR SOLDIERS OF
Coptotermes bentongensis, NEW SPECIES

	Range	Mean	Holotype
Length of head to lateral base of mandibles	1.05-1.08	1.06	1.05
Maximum width of head	0.90-0.93	0.91	0.90
Height of head	0.68-0.71	0.69	0.68
Occiput-fontanelle distance	1.05-1.12	1.08	1.08
Maximum length of left mandible	0.60	0.60	0.60
Length (median) of postmentum	0.60-0.67	0.61	0.60
Maximum width of postmentum	0.33	0.33	0.33
Minimum width of postmentum	0.18-0.22	0.19	0.18
Maximum width of pronotum	0.60-0.67	0.62	0.63
Maximum length of pronotum	0.34-0.37	0.35	0.34
Median length of pronotum	0.32-0.34	0.33	0.32

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