

A FURTHER CONTRIBUTION TO THE STUDY OF TERMITE FAUNA OF ANDAMAN AND NICOBAR ISLANDS

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(With 4 Text-figures)

INTRODUCTION

Roonwal and Bose (1970) made an extensive study of the termite fauna of Andaman and Nicobar Islands. They gave a history of the study of the termites of these islands and recorded 17 species and discussed their zoogeography. Since the publication of their work, a fairly good collection got accumulated again through further surveys of these islands, many of which were not surveyed earlier, including Great Nicobar. These recent collections form a further contribution to the study of termite fauna of this part of the Orient. Herein 16 species are recorded, 14 of which are same as reported earlier and two are new records including a species, *Nasutitermes triloki*, which is new to science. As such 19 species are now known from these islands. The soldier of *Neotermes andamanensis* Snyder has been described here for the first time and so also the imago of *Odontotermes latigula* Snyder.

The keys for identification and the synonymies, measurements, etc. of the species are not included in this paper for they have already been given in the previous publication (Roonwal & Bose, 1970). Where required comparisons have been given.

Abbreviations : coll., collected by ; ex., from or out of ; Im., imago ; Pw., pseudoworker ; Reg. No., Z. S. I. registration number ; S., soldier ; W., worker ; Z. S. I., Zoological Survey of India.

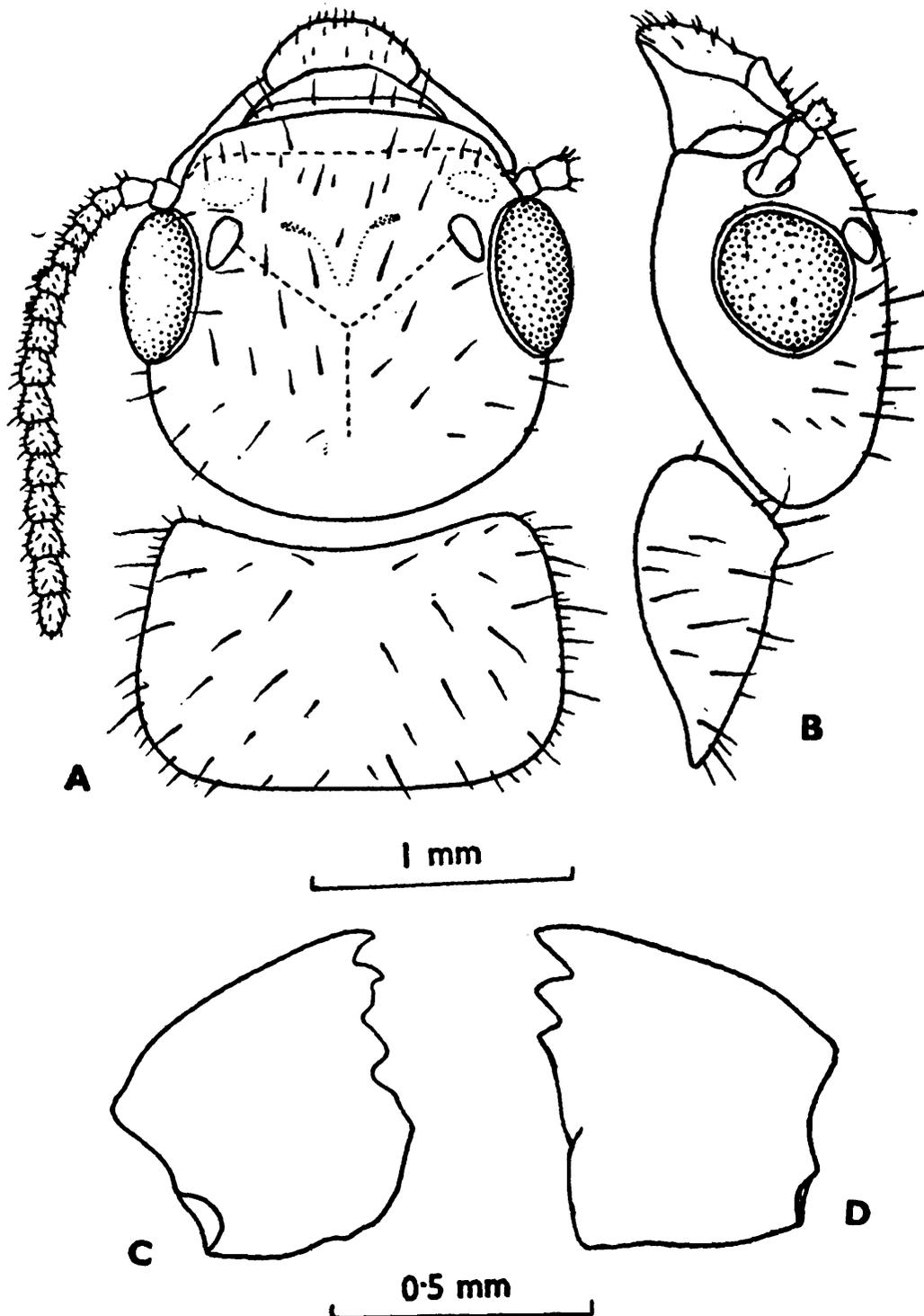
SYSTEMATIC ACCOUNT

Family KALOTERMITIDAE

1. *Neotermes andamanensis* Snyder

Snyder (1933) described the species, *Neotermes andamanensis* from a dealate adult, from North Andamans. His description was rather brief. The holotype (dealate ♀) is deposited in the British Museum Natural History, London and the morphotype (apterous ♀) deposited in the Forest Research Institute, Dehra Dun (India) is not traceable (Roonwal and Bose, 1970). No other material of this

species is available in any other museum. Recently the author came across a fairly good collection (3 vials, one from Maya Bunder, North Andamans and two from Humphrygunj, South Andamans; all coll. G. K. Srivastava, March, 1975) of this species, containing associated imagos, soldiers and pseudoworkers. The inadequately known imago is redescribed and the hitherto unknown soldier and pseudoworker castes are described here for the first time, from this material.



Text-fig. 1. *Neotermes andamanensis* Snyder: Imago: A, head and pronotum, in dorsal view; B, head and pronotum, in side view; C and D, left and right mandibles.

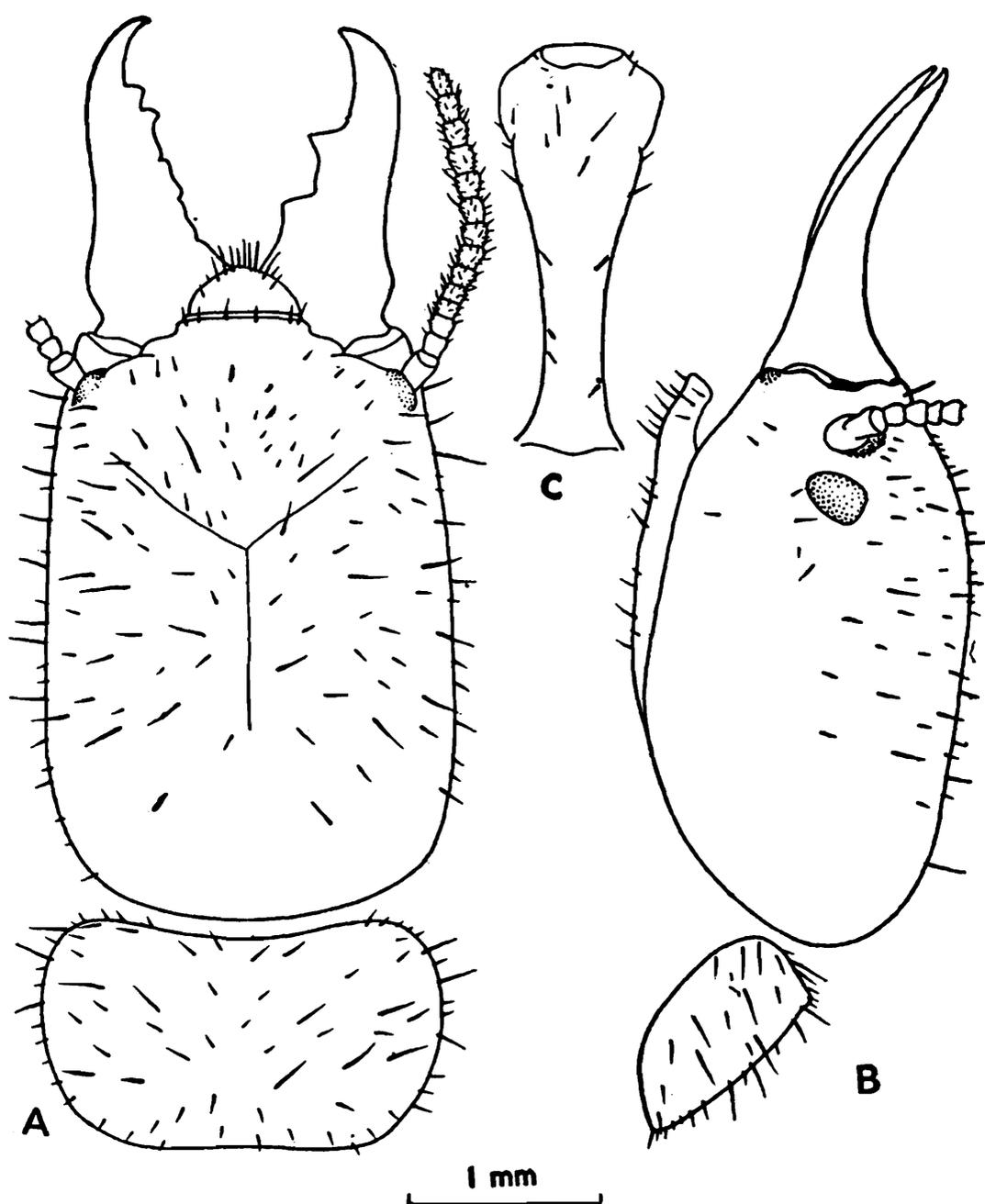
1. *IMAGO* (Text-fig. 1 ; Table 1) : Head capsule reddish brown ; antennae and labrum pale brown ; pronotum yellowish brown, somewhat darker posteriorly ; abdominal tergites paler than head-capsule ; sternites pale yellowish, distal 3-4 pale yellowish brown ; legs golden yellow ; wings pale brown ; all veins except cubitus, brown. Head and body fairly hairy.

TABLE 1.—Measurements (in mm) of imago of *Neotermes andamanensis* Snyder

Body parts	Range (5 exs)
1. Total body-length with wings (excluding antennae), <i>c</i>	14.10-14.60 (3 exs)
2. Total body-length without wings (excluding antennae), <i>c</i>	7.40- 7.90
3. Length of head to tip of labrum	1.93- 2.10
4. Length of head to lateral base of mandibles	1.47- 1.57
5. Maximum width of head (with eyes)	1.70- 1.77 (3 exs)
6. Maximum height of head	0.90- 1.00
7. Maximum length of labrum	0.40- 0.47
8. Maximum width of labrum	0.57- 0.60
9. Maximum diameter of compound eye (with ocular sclerite)	0.53- 0.60
10. Distance of eye from lateral margin	0.17- 0.20
11. Maximum diameter of lateral ocellus	0.23- 0.30
12. Minimum diameter of lateral ocellus	0.13- 0.17
13. Minimum ocellus-antennal distance	0.23- 0.27
14. Maximum length of pronotum	0.90- 1.10
15. Maximum width of pronotum	1.70- 1.73
16. Length of forewing with scale	11.90-12.40 (3 exs)
17. Length of forewing scale	1.40- 1.50
18. Length of hindwing with scale	11.20- 11.40 (3 exs)
19. Length of hindwing scale	0.57- 0.66

Head-capsule flat, subcircular ; width with eyes broader than length to base of mandibles ; Y-shaped epicranial suture present ; a pale, V-shaped mark in between lateral arms of suture and two pale, round spots, one on either side, between the antennae, present ; frons slightly sloping in front ; eyes fairly large, round ; situated very close to antennae and well separated from lateral margins. Ocelli oval, translucent, touching the eyes and almost as far from antennae

as their long diameter. Clypeus faintly divided into ante- and postclypeus; postclypeus pale yellowish, flat and with a few bristles; anteclypeus subtrapezoidal, apilose. Antennae with 17 segments; segment 1 long, cylindrical; 2 about half of 1; 3 slightly shorter than 2, somewhat more strongly chitinized; 4-10 or 11 subequal, broadly pyriform; onwards up to penultimate gradually increasing in length; last ovate, shorter and narrower than penultimate. Labrum broadly dome-shaped; broader than long. Mandibles of typically *Neotermes*-type. Left mandible with an apical and two marginal teeth; posterior margin of 1st marginal equal to anterior margin of second. Right mandible also with an apical and two



Text-fig. 2. *Neotermes andamanensis* Snyder : Soldier : A, head and pronotum, in dorsal view; B, head and pronotum, in side view; C, postmentum, in ventral view.

marginals ; posterior margin of second marginal subequal to molar plate. Pronotum flat ; almost as wide as head with eyes ; anterior margin fairly incurved ; antero-lateral corners narrower than postero-lateral ones ; posterior margin substraight or faintly incurved. Legs short ; tibia somewhat darker than femora, each with 3 apical spurs ; tarsi 4-jointed ; empodium between claws present. Wings transparent, faintly brownish ; anterior veins prominent, thick and brownish ; running close to each other ; cubitus faint and further removed ; membrane between media and cubitus with weak reticulation. Forewing : Costa running along anterior margin ; subcosta uniting with costa at about 1/5th of wing membrane ; radius joining costa at about middle or a little before middle ; radial sector running

TABLE 2.—Measurements (in mm) and indices of soldier of *Neotermes andamanensis* Snyder

Body parts	Range (4 exs)
1. Total body-length	10.00-11.50
2. Length of head to lateral base of mandibles	2.67- 3.03
3. Maximum width of head	2.10- 2.17
4. Maximum height of head	1.60- 1.70
5. Head index I (width/length)	0.69- 0.79
6. Head index II (height/width)	0.76- 0.81
7. Head index III (height/length)	0.56- 0.60
8. Eye diameter (Max.)	0.23- 0.33
9. Eye diameter (Min.)	0.15- 0.23
10. Min. eye-antennal distance	0.13- 0.15
11. Median length of labrum	0.23- 0.40
12. Maximum width of labrum	0.50- 0.57
13. Minimum length of mandibles (from upper base of condyle to tip) :	
Left mandible 	1.53- 1.60
Right mandible 	1.53- 1.60
14. Head-mandibular length index (left mandible-length/head-length)	0.53- 0.57
15. Minimum (median) length of postmentum	1.93- 2.33
16. Maximum width of postmentum	0.73- 0.83
17. Minimum width of postmentum	0.25- 0.33
18. Maximum length of pronotum	1.03- 1.17
19. Maximum width of pronotum	2.00- 2.23

parallel with costa all along and giving off 6 oblique branches to latter ; media parallel to radial sector and connected to it by 6-7 evanescent branches ; cubitus with 13-15 branches to posterior margin. Hindwing : Costa and subcosta fused ; radius fusing with costa-subcosta at about middle ; radial sector as in the forewing ; media arising from radial sector a little before 1/3rd of wing-membrane, otherwise as in forewing ; cubitus with about 12 branches to posterior margin. Abdomen oblong ; anterior tergites with a row of long bristles near posterior margin ; distal tergites somewhat more hairy. Cerci 2-jointed ; 0.20 mm long. Styli (in male) single-jointed ; 0.17 mm long.

2. *SOLDIER* (Text-fig. 2 ; Table 2) : Head-capsule yellowish brown, frons, somewhat darker ; labrum and antennae light brownish, antennae paler distally ; mandibles blackish, dark reddish brown basally ; pronotum yellowish, anterior and posterior margins darker ; legs pale yellowish ; abdomen creamy white to pale yellowish. Head-capsule and pronotum fairly hairy, with long and short bristles ; meso- and meta-nota and abdominal tergites with a row of long bristles in middle and several short hairs, visible only in reflected light.

Head-capsule flat, subrectangular ; length about 1.3 to 1.45 times of width ; Y-shaped epicranial suture fairly marked ; frons inclining in front at an angle of about 45° Eyes oval, unpigmented ; 0.23-0.33 mm long and 0.15-0.23 mm wide. Clypeus demarcated from frons by a short line at base of mandibles ; postclypeus slightly darker than frons, pilose near anterior margin ; anteclypeus thin, strip-like, apilose. Labrum broad, sub-rectangular to subsquarish ; anterior margin weakly curved. Antennae with 14 segments ; segment 1 cylindrical, more than half covered by carina ; 2 half of 1 ; 3 longer than 2, pyriform and somewhat more strongly chitinized ; 4 shortest ; 5-7 gradually increasing in length, short and pyriform ; 8-13 gradually decreasing in length ; last oval, shorter and narrower than penultimate. Mandibles strong and robust ; left mandible with 5 and right with 2 marginal teeth, as in fig 2 A. Postmentum long, club-shaped ; anterior wider portion weakly divided into 2 halves and about two and a half times as wide as at waist. Pronotum flat, subrectangular ; almost as wide as head ; anterior margin fairly incurved. Legs short and stout ; each tibia with 3 apical spurs ; tarsi 4-jointed. Abdomen oblong hairy. Cerci 2-jointed ; 0.20 mm long. Styli single jointed, finger-like ; 0.20 mm long.

3. *PSEUDOWORKER* : Head-capsule, antennae and labrum pale yellow ; body and legs creamy white. Head and body moderately hairy. Total body length 6.60-9.30 mm.

Head-capsule subcircular ; broader than or as broad as length to base of mandibles. (length 1.57-1.72, width 1.67-1.80 mm). Eye spots unpigmented ; oval to subcircular, discernible only in strong

light. Antennae with 14 segments ; segment 2 half of 1 ; 3 shorter than 2 ; 4 shortest. Postclypeus flat, subrectangular, with a few hairs on side margins ; anteclypeus, apilose, narrow, strip-like. Mandibles as in imago. Pronotum (length 0.87-1.0, width 1.67-1.90 mm) and legs as in soldier, but paler in colour. Abdomen as in soldier.

Family RHINOTERMITIDAE

Subfamily COPTOTERMITINAE

2. *Coptotermes heimi* (Wasmann)

Material.—Seventeen vials with S. and W., as follows : Eight vials, coll. *B. S. Lamba*, Feb.-April, 1964, Port Blair, Wrafter's Creek, Baratang, Manner Ghat, Mt. Harriet ; Wright Myo ; and Burma Nullah (S. Andamans). Three vials, coll. *B. K. Tikader*, Apr.-July, 1971, Aerial Bay Jetty, Diglipur, (North Andamans) ; and Chiriatapu (S. Andamans). Three vials, coll. *K. S. Pradhan* and *G. S. Arora*, Dec. 1972-Jan. 1973, Hope Town, Port Blair (S. Andamans) ; Lapatty (Car Nicobar) ; and Yerata (Middle Andamans) ; Two vials, coll. *G. K. Srivastava*, March 1975, Humphrygunj and Port Blair (S. Andamans).

Distribution.—Andamans : North Middle and South Andamans and Little Andamans. It is a very widely distributed species in the Indian subcontinent and is also reported from middle Java. Earlier (Roonwal & Bose, 1970) it was reported from Little Andamans only.

3. *Coptotermes travians* Haviland

Material.—Three vials, S. and W., coll. *B. K. Tikader*, Apr.-May, 1971, from Havelock Is. (S. Andamans) and Maya Bunder (North Andamans).

Distribution.—From Andamans, this species was known only from North Andamans and Car Nicobar. Now it is reported from South Andamans. It is, however, a widely distributed species in the Orient.

Subfamily PRORHINOTERMITINAE

4. *Prorhinotermes flavus* (Bugnion & Popoff)

Material.—Six vials, S. and W., coll. *A. Daniel*, *H. K. Bhowmick*, *G. U. Kurup* and party, March to April 1966, Phulobaha, Gala River and Campbell Bay (Great Nicobar).

Distribution.—This species was described from Sri Lanka and later reported from the Little Andamans and Indian mainland. In the present account it has been recorded from the Great Nicobar Island.

Subfamily RHINOTERMITINAE

5. *Schedorhinotermes eleanorae* Roonwal & Bose

1970. *Schedorhinotermes eleanorae* Roonwal and Bose, *Rec. zool. Surv. India*, 62 (3 & 4) : 125-132.

Material.—One vial, S. and W., coll. *B. K. Tikader*, April 1970, Neil Is. Reserve Forest (South Andamans).

Distribution.—Roonwal & Bose (1970) described it from little Andamans (type-locality) and now it has been collected from South Andamans.

6. *Schedorhinotermes longirostris* (Brauer)

Material.—Six vials, S. and W., *A. Daniel, H. K. Bhowmick, G. U. Kurup and party*, March to April 1966, Galathea Bay, Gala Bay and Campbell Bay (Great Nicobar).

Distribution.—The species had only once been reported from Kondul Is., Nicobars (type-locality) which lies adjacent to Great Nicobar. In this account it is now reported from Great Nicobar Is. proper.

7. *Schedorhinotermes medioobscurus* Holmgren

Material.—Six vials, S. and W., coll. *B. S. Lamba*, Mar.-Apr. 1964, Jarva's Creek, Baratang Humphrygunj, Chiriatapu, Manner, Ghat, Mount Harriet Range, and Cowriaghat (South Andamans). Two vials, S. and W., coll. *B. K. Tikader*, April 1970 and May 1971, Wright Myo and Chiriatapu (South Andamans). Six vials, S. and W., coll. *K. S. Pradhan* and *G. S. Arora*, December 1972-Jan. 1973, Wright Myo, Panighat, Ferrargunj (South Andamans) and Bakultala (Middle Andamans). Three vials, S. and W., coll. *G. K. Srivastava*, Feb.-March 1975, Rangat (Middle Andamans), Kalatang and Ferrargunj (South Andamans).

Distribution.—Middle and south Andamans (Previous and present records). This species is also known from Malaya and Singapore.

8. Schedorhinotermes tiwarii Roonwal & Thakur

Material.—One vial, S. and W., coll. *B. S. Lamba*, March 1964, Wrafter's Creek, Baratang (S. Andamans).

Distribution.—South Andamans and Little Andamans (Previous and present records).

Family TERMITIDAE

Subfamily TERMITINAE

9. Microcerotermes danieli Roonwal & Bose

1970. *Microcerotermes danieli* Roonwal & Bose, *Rec. zool. Surv. India*, 62 (3 & 4) : 141-146.

Material.—Six vials, Im., S., W., coll. *B. S. Lamba*, March-April 1964, from Wrafter's Creek, Rajatgarh, Wright Myo and Cowriaghat (South Andamans). Four vials, S., W., coll. *B. K. Tikader*, April-June 1971, from Smith Island (North Andamans). Three vials, Im., S., W., coll. *G. K. Srivastava*, Mar. 1975, from Port Blair, Humphrygunj and Ferrargunj (South Andamans).

Distribution.—This species was recorded from North, South and Little Andamans. From South Andamans it had been reported from Phoenix Bay, Port Blair only, and presently it is reported from some other localities in South Andamans as given under material above.

10. Microcerotermes nicobarensis Roonwal & Bose

1970. *Micorcerotermes nicobarensis* Roonwal & Bose, *Rec. zool. Surv. India*, 62 (3 & 4) : 146-154.

Material.—Twelve vials with S. and W., as follows : One vial, coll. *B. S. Lamba*, March 1964, Port Blair (South Andamans) Six vials, coll. *B. K. Tikader*, March 1970, from Malacca village, Keating Point and Arong village (Car Nicobar) and Camorta Is. (Nicobars). One vial, coll. *K. S. Pradhan* and *G. S. Arora*, December 1972, from Kakana (Car Nicobar). Four vials, coll. *A. Daniel*, *H. K. Bhowmick* *G. U. Kurup* and party, March-April 1966, from Galathea Bay and Campbell Bay (Great Nicobar).

Distribution.—This species was described from Car Nicobar and Ross Is. (South Andamans). Recently, it has been collected again from South Andamans, Car Nicobar, Camorta Is. (Nicobars) and Great Nicobar Island.

Subfamily MACROTERMITINAE

11. *Odontotermes latigula* Snyder

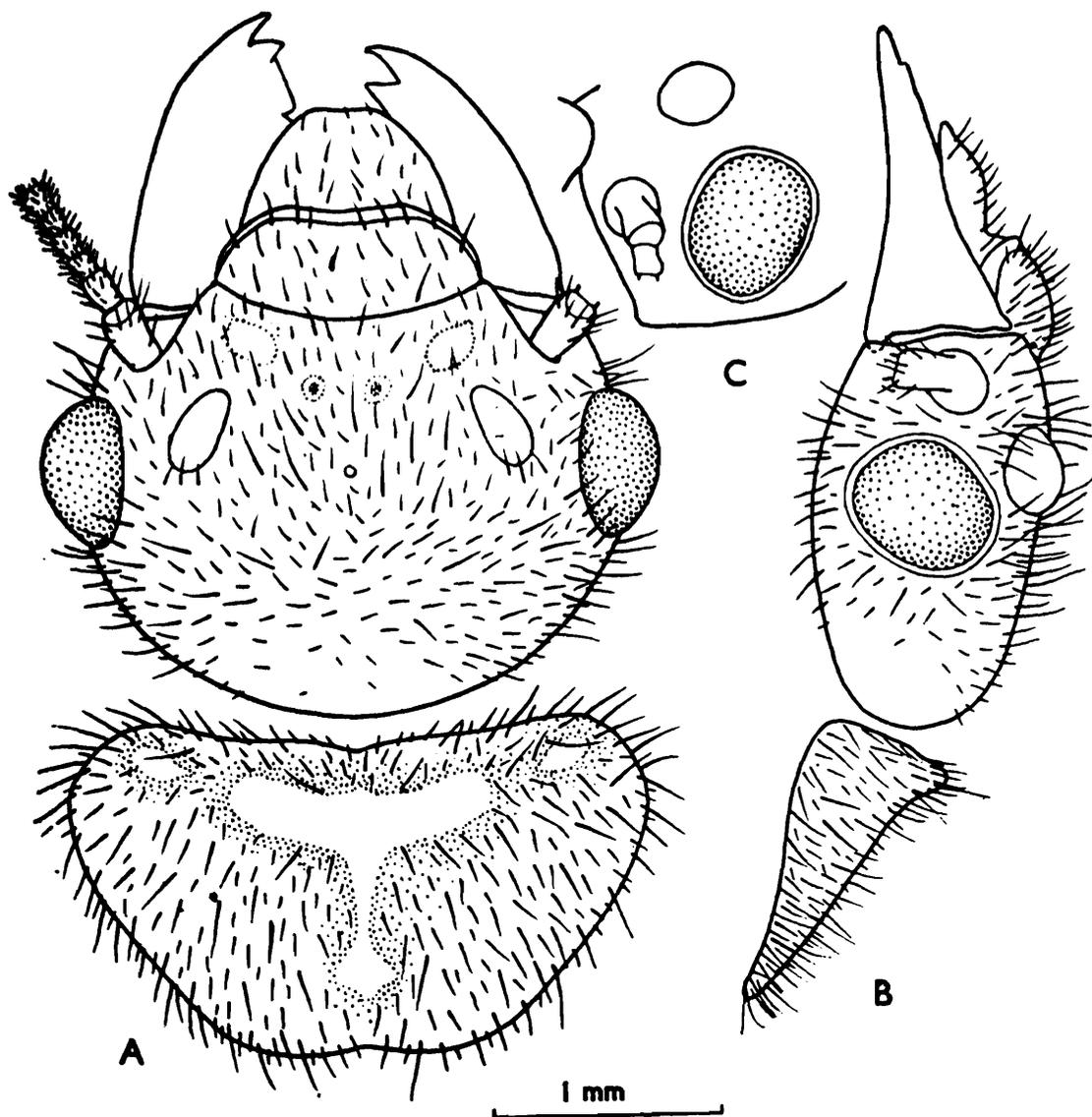
Material.—Sixtyseven vials with S. and W., as follows : Fourteen vials, coll. *B. S. Lamba*, Feb.-April 1964, from Port Blair, Wrafter's Creek, Humphrygunj, Wright Myo, Jarva's Creek, Baratang, Cowriaghat and Burma Nulla (South Andamans). Fifteen vials, coll. *B. K. Tikader*, Feb. 1970 and Apr.-May 1971, from Diglipur, Smith Island and Maya Bunder (North Andamans); Wright Myo, Port Blair, Chiriatapu and Haddo (South Andamans). Two vials, coll. *A. K. Mondal*, from Rangee Chak and Chiriatapu (South Andamans). Twelve vials, coll. *K. S. Pradhan* and *G. S. Arora*, from Maya Bunder (North Andamans); Rangat Bay, Panchwati and Bakultala (Middle Andamans); Aberdeen Bay, Humphrygunj and Ferrargunj (South Andamans). Twentyfour vials, coll. *G. K. Srivastava*, Mar. 1975, from Maya Bunder (North Andamans); Bakultala, Rangat and Webi (Middle Andamans); Humphrygunj, Ferrargunj, Wright Myo, Corbyn's Cove, Port Blair, Monglutan and Chiriatapu (South Andamans).

A vial with Im., S. and W., Smith Island (North Andamans) coll. *B. K. Tikader*, 27. iv. 1971, ex "mound"

Description.—The hitherto unknown imago caste of this species is described below.

IMAGO (Text-fig. 3 ; Table 3) : Head-capsule dark reddish-brown, paler anteriorly ; fontanelle plate light brownish yellow ; antennae brownish ; eyes black ; ocelli translucent ; postclypeus pale yellowish brown ; anteclypeus hyaline ; labrum pale yellowish with a brownish chitinized band in middle ; mandibles pale brownish, teeth dark brown ; pronotum, dark brown, with T-shaped lighter marking on dorsum ; wing veins dark brown, membrane paler, legs pale brownish yellow ; abdominal tergites dark brown, paler than head and pronotum. Head and body densely hairy. Total length with wings 25.10-25.50, without wings 11.40-12.60 mm.

Head-capsule subcircular, broader than long (head-width with eyes 2.50-2.55, head-length to base of mandibles 1.80-1.82 mm). Fontanelle plate, small, suboval. Eyes subcircular, strongly convexical. Ocelli large, oval, convexical ; from eyes situated at a distance of less than their short diameter. Antennae with 19 segments ; segment 3 short, subequal to 4 and 5. Labrum broadly tongue-shaped. Mandibles typically *Odontotermes*-type. Pronotum flat, almost as broad as head with eyes, subsemicircular and with a pale, irregular T-shaped mark on dorsum ; anterior margin substraight, weakly raised and incised medially ; sides converging to a narrower, weakly emarginate posterior margin. Wings long, narrow ; scales short. Forewing : Radial streak separating from Radial sector at about half the length of wing membrane ; media giving off 3 main and 3 smaller branches to apex of wing ; cubitus giving off several branches to



Text-fig. 3. *Odontotermes latigula* Snyder : Imago : A, head and pronotum ; in dorsal view ; B, head and pronotum, in side view ; C, portion of head, showing the position of eye, ocellus and antenna.

lower margin. Hindwing : Radial streak separating at middle of wing-membrane ; media arising from radial sector and giving off a few small branches to upper margin of wing and to wing-apex ; cubitus as in forewing. Legs long, apical tibial spurs 3 : 2 : 2 Abdomen oval ; cerci 2-jointed, 0.15 mm long ; styli single-jointed, 0.05 mm long.

Distribution.—*Odontotermes latigula* was previously known from North, Middle and South Andamans, Little Andamans and Car Nicobar. In the present account it is reported from several more localities in North Middle and South Andamans as given above under "Material" It is also known from Burma.

TABLE 3.—Measurements (in mm) of imago of *Odontotermes latigula* Snyder

Body parts	Range (2 exs)
1. Total body-length without wings <i>c</i>	25.10-25.50
2. Total body-length with wings <i>c</i>	11.40-12.60
3. Length of head to tip of Labrum	2.60- 2.62
4. Length of head to lateral base of mandibles	1.80- 1.82
5. Maximum width of head including eyes	2.51- 2.55
6. Maximum length of labrum	0.50- 0.53
7. Maximum width of labrum	0.83- 0.90
8. Maximum diameter of eye	0.64- 0.68
9. Minimum diameter of eye	0.60- 0.61
10. Eye-antennal distance	0.08- 0.13
11. Maximum diameter of ocellus	0.33- 0.38
12. Minimum diameter of ocellus	0.28- 0.32
13. Eye-ocellus distance	0.15- 0.23
14. Maximum width of postclypeus	0.40- 0.45
15. Maximum width of postclypeus	1.05- 1.15
16. Maximum length of pronotum	1.23- 1.30
17. Maximum width of pronotum	2.25- 2.30
18. Length of forewing with scale	22.00-22.50
19. Length of forewing scale	1.00- 1.10
20. Length of hindwing with scale	20.60-20.65
21. Length of hindwing scale	1.00- 1.05

12. *Odontotermes paralatigula* Chatterjee and Sen-Sarma

1962. *Odontotermes paralatigula* Chatterjee and Sen-Sarma, *J. Bombay nat. Hist. Soc.*, 59 (3) : 822-826.

Material.—Four vials with S. and W., as follows :—One, vial, coll. B. S. Lamba, March 1964, Humphrygunj (S. Andamans). One vial, coll. K. S. Pradhan and G. S. Arora, Jan. 1973, Ferrargunj (S. Andamans). Two vials, coll. G. K. Srivastava, March 1975, Humphrygunj and Monglutan (S. Andamans).

Distribution.—This species was so far known only from Hlegu

Range, Insein Forest Division, (Burma type-locality). It is now reported from South Andamans.

Subfamily NASUTITERMITINAE

13. *Nasutitermes krishna* Roonwal & Bose

1970. *Nasutitermes krishna* Roonwal & Bose, *Rec. zool. Surv. India.*, 62 (3 & 4): 157-161.

Material.—Four vials, with S. and W., from South Andamans, as follows :—One vial, coll. *B. S. Lamba*, March 1964, from Port Blair. Three vials, coll. *G. K. Srivastava*, March 1975, from Chiriatapu and Humphrygunj.

Distribution.—This species was first recorded from the little Andamans (type-locality) and North Andamans. In the present account it is reported from South Andamans.

14. *Nasutitermes matangensis matangensiformis* (Holmgren)

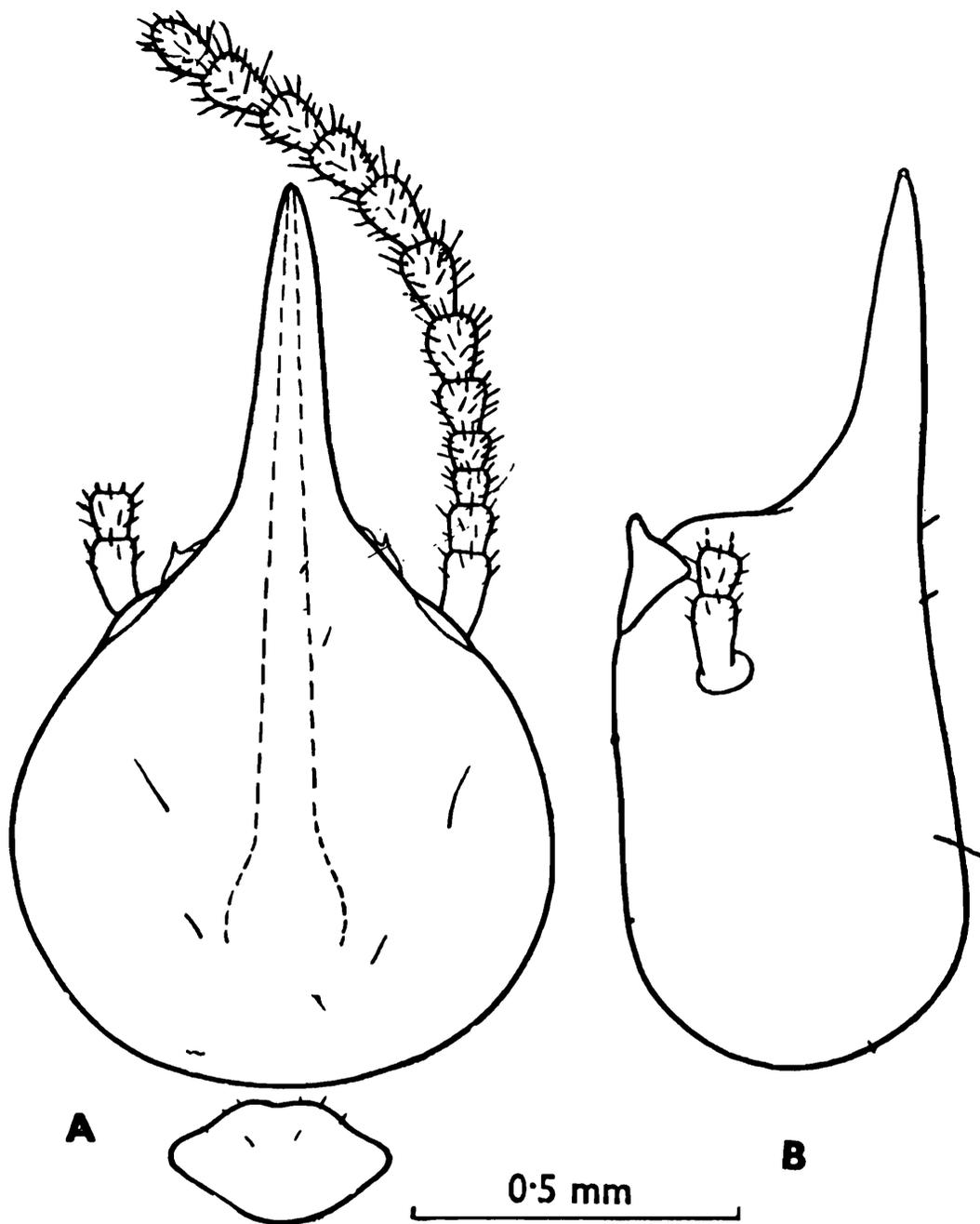
Material.—Thirtyfive vials with S. and W., as follows :—Five vials, coll. *B. S. Lamba*, Feb.-Mar. 1964, from Junglighat, Port Blair, Chabagicha, Mannar Ghat and Mt. Harriet (South Andamans). Nine vials, coll. *B. K. Tikader*, Feb.-Mar. 1970, and Apr.-May 1971, from Wright Myo, Chiriatapu and Neil Is. (South Andamans) and Malacca village, Keating point and Kakana (Car Nicobar) and Camorta Is. (Nicobars). Six vials, coll. *K. S. Pradhan* and *G. S. Arora*, Dec. 1972 from Cadlegunj and Chiriatapu (South Andamans) and Sawai, Arong and Kakana (Car Nicobar). One vial, coll. *S. K. Bhattacharya*, Jan. 1975, from Ramnagar (Nicobar Is.). Fourteen vials, coll. *A. Daniel*, *H. K. Bhowmick*, *G. U. Kurup* and party, Mar.-Apr. 1966, from Campbell Bay (Great Nicobar).

Distribution.—This species was previously recorded from Nicobars (Nankauri Is. and Camorta Is.), Car Nicobar Is. and Little Andaman, and from Malaysia and Indonesia. Presently, from Andaman and Nicobar group of islands, it is reported from Great Nicobar and South Andamans.

15. *Nasutitermes triloki* sp. n.

Material.—One vial with 10 S. and 4 W., coll. *B. K. Tikader*, 19. iv. 1970, Havelock Island, South Andamans.

Description.—1. *IMAGO*. Unknown.



Text-fig. 4. *Nasutitermes triloki* sp. n. Soldier : A, head and pronotum ; in dorsal view ; B, head, in side view.

2. **SOLDIER** (Text-fig. 4 ; Table 4) : Head-capsule pale creamy yellow, a little darker anteriorly ; rostrum pale yellowish brown ; antennae, pronotum, legs and abdomen creamy yellow. Head-capsule with numerous short and 1 or 3 pairs of long, hairs ; rostrum tip with a number of short hairs ; abdominal tergites also with short and a few long, hairs. Total body length 3.30-3.75 mm.

Head-capsule excluding rostrum subcircular, sides converging in front from base of antennae ; in profile head shallowly incurved ; posterior margin rounded. Rostrum slenderly conical ; shorter than head without rostrum (absolute length of rostrum 0.55-0.62, head-

length with rostrum 0.83-0.88 mm). Fontanelle gland not very clear, tube prominently visible. Antennae with 12 segments ; all segments pilose, segment 3 shortest. Mandibles vestigial ; each with a minute, spine-like process, situated at about middle. Pronotum saddle-shaped ; with a few minute hairs ; anterior margin convexical, weakly emarginate ; posterior margin rounded. Mesonotum subsemicircular, narrower than pronotum. Metanotum also subsemicircular, larger than pronotum. Legs moderately long and with long pilosity ; apical tibial spurs 2 : 2 : 2. Abdomen : Oblong, cerci 2 jointed, 0.05 mm long.

TABLE 4.—Measurements (in mm), etc. of soldier of *Nasutitermes triloki* sp. n.

Body parts	Range (5 exs)	Holotype
1. Total body-length (excluding antennae) c	3.30-3.75	3.70
2. Length of head including rostrum	1.43-1.45	1.45
3. Length of head without rostrum	0.83-0.88	0.85
4. Length of rostrum	0.55-0.62	0.60
5. Maximum width of head	0.83-0.95	0.83
6. Height of head	0.55-0.65	0.55
7. Posterior bulge of head	0.20-0.25	0.20
8. Minimum median length of postmentum	0.33-0.40	0.40
9. Maximum width of postmentum	0.25-0.30	0.26
10. Width of postmentum at anterior end	0.15-0.18	0.15
11. Maximum length of pronotum	0.24-0.28	0.24
12. Maximum width of pronotum	0.42-0.48	0.42
13. Maximum width of mesonotum	0.43-0.45	0.45
14. Maximum width of metanotum	0.48-0.55	0.55

3. *WORKER* : Head pale creamy yellow ; antennae, labrum, thorax, legs and abdomen creamy white ; mandibles pale creamy yellow, teeth light reddish brown. Total body length 3.50 mm.

Head subsquarish, broader than long (length of head to base of mandibles 0.83-0.85, head width 0.95-0.98 mm) ; sides diverging a little anteriorly. Antennae with 13 segments, segment 3 shortest. Postclypeus swollen, semicircular. Anteclypeus hyaline, subtrapezoidal. Mandibles of *Nasutitermes*-type. Pronotum saddle-shaped, very small (width 0.53, length 0.25-0.28 mm) ; weakly pilose. Legs fairly long, slender, weakly pilose, apical tibial spurs 2 : 2 : 2. Abdomen oblong, sparsely hairy.

Type specimens : Holotype S., Reg. No. 2263/H11 ; morphotype W., Reg. No. 2264/H11 ; and paratype S. (7) and parmorphotype W. (3), Reg. No. 2265/H11, all vide 'Material' above, in the National Zoological Collections, Z. S. I., Calcutta. A paratype S., each, deposited in Entomological Collection, Forest Research Institute, Dehra Dun (U.P., India) and in American Museum of Natural History, New York (U. S. A.).

Type locality : Havelock Island, South Andamans, India.

Comparisons : The soldier of *Nasutitermes triloki* sp. n. is separable from the other species of *Nasutitermes* of the region by its smaller size and pale colouration. From *N. matangensis matangensis-formis*, it is distinguished by its small size, delicate body, pale colour and extremely minute spines on mandibles. From *N. krishna*, the other species found in the Andamans and to which it is closest, it can be differentiated as follows : (i) Smaller and head pale yellow (vs larger and head dark reddish brown). (ii) Head subcircular, narrower, converging in front (vs nearly pear-shaped and broad). (iii) Rostrum slenderly conical, not very broad at base, (vs conical but thicker and broader at base). (iv) Spine on mandibles very minute (vs somewhat larger in *krishna*).

16. *Hospitalitermes blairi* Roonwal and Sen-Sarma

1956. *Hospitalitermes blairi* Roonwal and Sen-Sarma, *Indian J. agric. Sci.*, 26 (1) : 29-36.

Material.—Eighteen vials with S. and W., as follows : Nine vials coll. *B. S. Lamba*, Mar.-Apr. 1964, from Port Blair, Wrafter's Creek, Wright Myo, Shoal Bay, Cowriaghat, Rangachang and Burma Nulla (South Andamans). Two vials, coll. *B. K. Tikaper*, Apr. 1970 and May 1971, from Rangat Bay Jetty (Middle Andamans) and Chriatapu (South Andamans). Two vials coll. *A. K. Mondal*, July-Aug. 1972, Nimak Pahar and Chriatapu (South Andamans). One vial, coll. *K. S. Pradhan*, and *G. S. Arora*, Dec. 1972, from Humphrygunj (South Andaman). Four vials, coll. *A. Daniel*, *H. K. Bhowmick*, *G. U. Kurup* and party, Mar.-Apr. 1966, from Campbell Bay, and Mangrove Creek Area (Great Nicobar Island).

Distribution.—This species was previously recorded from South Andamans. Recently it has been collected (*vide* material above) from Middle and South Andamans and the Great Nicobar Is.

SUMMARY

An extensive study of the termite fauna of Andaman and Nicobar Islands was undertaken by Roonwal and Bose (1970).