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New species and records of cockroaches from Western Australia (Blattaria)

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Abstract – Three new species of cockroaches from Western Australia are described, namely *Hensaussurea humphreysi* (Blattellidae) and two cavernicolous taxa, *Nocticola brooksi* (Nocticolidae) and *Neotemnopteryx wynnei* (Blattellidae). A few new records of some Western Australian Blattidae: Polyzosteriinae, and Blattellidae are given.

INTRODUCTION

This paper presents the results of a study of some cockroaches that were sent to me for identification by Dr W.F. Humphreys of the Western Australian Museum. It was expanded to include a few specimens from other museums but I have generally restricted the work to species found in Western Australia.

Specimens were borrowed from the following museums through the courtesy of their curators or collection managers: ANIC = Australian National Insect Collection, Canberra, ACT, Australia; Dr David Rentz. MCZ = Museum of Comparative Zoology, Harvard University, Cambridge, MA, U.S.A. NMV = Museum of Victoria, Melbourne, Victoria, Australia; Ms Catriona McPhee. NTM = Northern Territory Museum, Darwin. PMYU = Peabody Museum of Natural History, Yale University, New Haven, CT, U.S.A.; Dr Charles Remington. WAM = Western Australian Museum, Perth, Western Australia; Dr W.F. Humphreys.

SYSTEMATICS

Family Nocticolidae Bruner

Genus *Nocticola* Bolívar

Nocticola Bolívar: Roth, 1988: 298 (diagnosis).

Remarks

There are three described Australian species of *Nocticola* of which two, namely *australiensis* Roth (cavernicolous) and *babindaensis* Roth (epigean) are from Queensland (Roth 1988: 302, 303), and *flabella* Roth (cavernicolous) is from Western Australia (Roth 1991a: 17). Two additional species have been found in Western Australia, one of which is described and named below.

Nocticola brooksi sp. nov.

Figures 1A–E

Material Examined

All specimens were collected in caves in the northern Kimberley of Western Australia and in the Northern Territory near Katherine. The material is preserved in alcohol, except for a male, female, and nymph that were cleared and mounted on slides in Permount. Figures 1A–E were drawn from slide mounted specimens.

Holotype

♂ (in alcohol), Cave KNI–41, Western Australia, Australia, 15°11'S, 128°38'E, 20 June 1994, R.D. Brooks, BES 3191 (WAM 94/1945).

Paratypes

Australia: Western Australia: The following specimens (nymphs and adults) have a small dark eye spot behind the antenna: KNI–19, 15°18'S, 128°37'E (BES: 2743, 2765, 2829, 2884, 3042, 3046, 3129, 3169, 3174, 3182, 3269): 1 nymph, 7 May 1994; 5 nymphs, 8 May 1994; 2 nymphs, 10 May 1994; 1♀, 16 May 94; 2♂♂, 1♀, 12 nymphs, 12 June 1994; 1 nymph, 6 June 1994; 2♀♀ (one on slide 28), 8 nymphs, 19 June 1994, R.D. Brooks; 1♂, 3 nymphs, 6 June 1994, W.F. Humphreys, R.D. Brooks, B. Vine; 1♂ (on slides 26a, 26b), 1♀ nymph (on slide 27), 19 June 1994, Wendy Binks; 3 nymphs, 19 June 1994, B. Jones; 1 nymph, 29 June 1994, W. Binks. KNI–19, 15°18'S, 128°37'E (BES: 2820, 2866): 1 nymph, 10 May 1994, B. Vine; 1 nymph, 15 May 1994, W.F. Humphreys. KNI–27, 15°17'S, 128°41'E (BES: 2876, 3022, 3028): 1 nymph, 16 May 1994; 3 nymphs, 6 June 1994, R.D. Brooks; 1 nymph, 6 June 1994, Trish Handasyde. KNI–41, 15°11'S, 128°38'E (BES: 3061, 3069, 3071, 3084, 3086, 3088, 3186, 3191, 3282): 1♀, 5 nymphs, 20 June 1994, W. Binks; 1

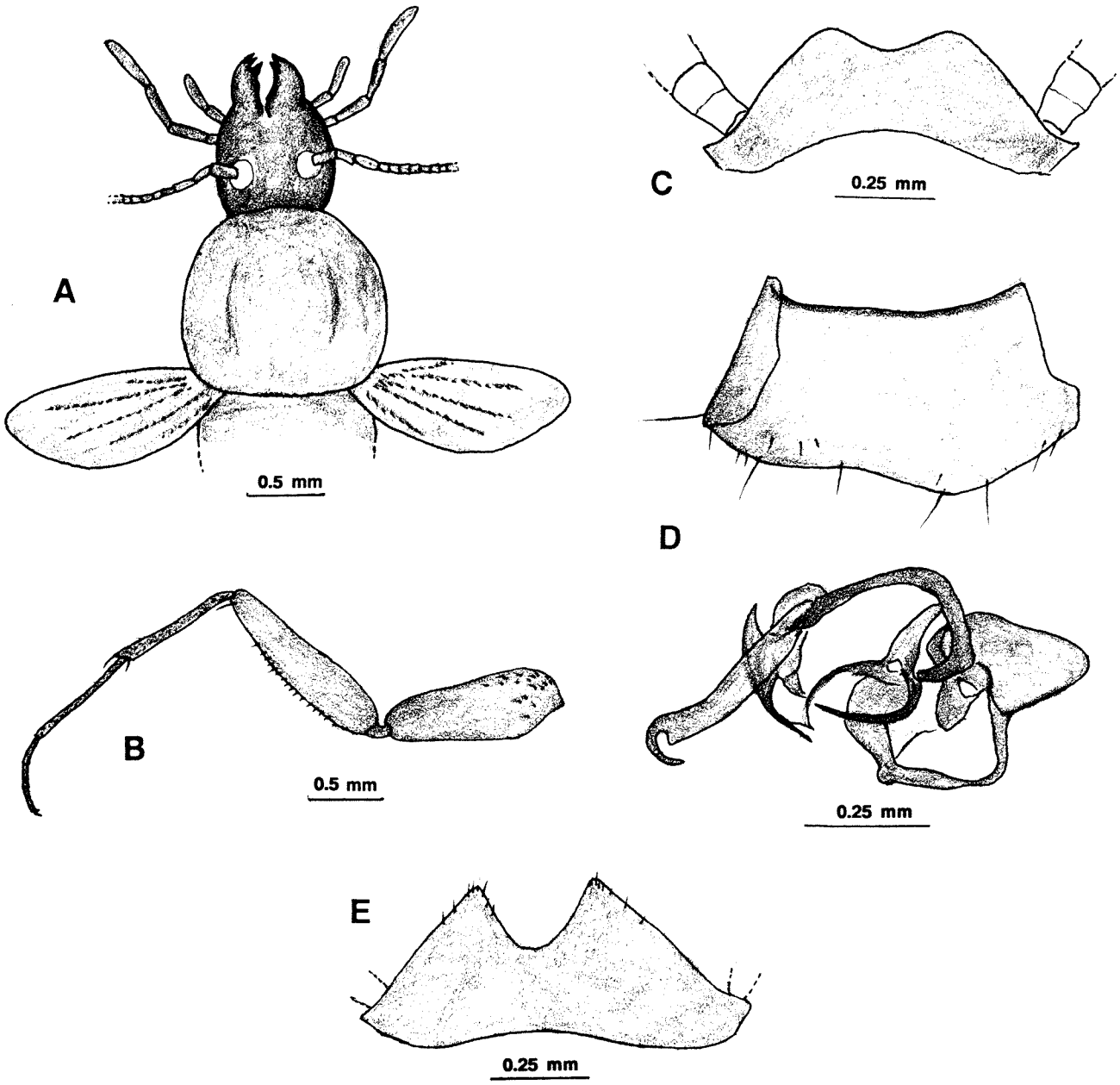

Figure 1 *Nocticola brooksi* sp. nov., paratypes from north Kimberley caves. A–D, male: A, head, pronotum, and tegmina (dorsal; the head is extended forward); B, front leg (anterior surface); C, supraanal plate (dorsal); D, subgenital plate (top) and genitalia (bottom) (dorsal); E, female, supraanal plate (dorsal).

nymph, 20 June 1994, R.D. Brooks; 1♀, 10 nymphs, 29 June 1994, W. Binks; 3 nymphs, 7 June 1994; 1 nymph, 8 June 1994, W.F. Humphreys; 1 nymph, 7 June 1994; 1 nymph, 8 June 1994, B. Vine; 4 nymphs, 7 June 1994; 5 nymphs, 8 June 1994, R.D. Brooks. The Tunnel (in the Oscar Range in the Western Kimberley, about 600 km to the southwest of Ningbing), KO–1 (BES 3341): 2 nymphs, 8 July 1994, R.D. Brooks. LCB1, 15°11'S, 128°37'E (BES 3095): 2 nymphs, 8 June 1994, R.D. Brooks. All lodged in WAM.

Northern Territory: The following specimens lack minute eye spots and were collected in Cutta Cutta Cave, 14°35'S, 132°25'E (near Katherine about 600 km east of Ningbing), 8K–1 (BES: 3203, 3219, 3227, 3234, 3244, 3287): 5 nymphs, 25 June 1994; 2 nymphs, 26 June 1994, R.D. Brooks; 5 nymphs, 25 June 1994; 8 nymphs, 26 June 1994, W. Binks; 3♀♀, 4 nymphs, 25 June 1994, B. Vine; 1 nymph, 25 June 1994, B. Jones. All lodged in WAM and NTM.

Diagnosis

Cavernicolous. Male: Eyes represented by a few minute black ommatidia (however, see female, below). Tegmina reduced, reaching to about the first abdominal tergum, membranous, with veins reduced, setose, hind wings absent. Front femur Type C_1, pulvilli and arolia absent, tarsal claws simple, symmetrical, minute. Abdominal terga unspecialized. Styli absent. Female: Eyes as in male,

except in Cutta Cutta Cave specimens which completely lack ommatidia. Apterous. Hind margin of supraanal plate distinctly, concavely excavated.

Description

Male

Head exposed, eyes represented by a few minute, black ommatidia located behind the antennal socket (these black dots disappear when the specimen is treated with KOH and cleared in slide preparation). Pronotum suboval (Figure 1A). Tegmina greatly reduced reaching only to about the first abdominal tergum, membranous, 5 setose veins present (Figure 1A). Hind wings absent. Legs with femora not uniformly slender, tapering distad, anteroventral margin of front femur with a row of minute piliform spinules terminating in a stout spine (Type C_1), pulvilli and arolia absent, tarsal claws minute, simple, symmetrical (Figure 1B). Abdominal terga unspecialized. Supraanal plate transverse, hind margin shallowly, concavely excavated (Figure 1C). Subgenital plate with hind margin weakly uneven, styli absent (Figure 1D, top). Genitalia as in Figure 1D, bottom; genital hook on the left side. Colouration, yellowish.

Female

Eyes with a few dark ommatidia as in males, these completely absent from Cutta Cutta Cave females. Apterous. Hind margin of supraanal plate deeply concavely excavated (Figure 1E).

Nymphs

The immatures are white. All stages including what are probably first instars have the minute black ommatidia, but these are lacking from Cutta Cutta Cave specimens. The hind margin of the supraanal plates of both sexes are not distinctly excavated and appear to be convexly rounded.

Measurements (mm) (♀ in parentheses)

Length, 4.3 (4.8–5.7); pronotum length x width, 1.3 x 1.5–1.6 (1.4–1.7 x 1.7–2.0); tegmen length, 1.1–1.5.

Etymology

The species is dedicated to Mr R. Darren Brooks who collected the holotype.

Remarks

The absence of a male tergal gland places *brooksi* in the *simoni*-species-group (Roth 1988). This new species keys to couplet 2 in the key to male Australian *Nocticola* (Roth 1991a: 21), where it can be separated from *N. flabella* by differences in the shape and texture of the reduced tegmina and shape of the supraanal plate. The females can be separated by differences in the shapes of the supraanal plates.

It is interesting that nymphs and adult females (males were not collected) from Cutta Cutta Cave all lack the few minute ommatidia that are found in adult males, females, and nymphs from all other localities. The reason for this complete loss of eyes in the Cutta Cutta Cave is unknown. Humphreys (personal communication) speculates that "eye" retention in *Nocticola* may be connected with the openness of the cave system where light is intermittent. The Cutta Cutta Cave is totally dark.

The following information regarding the three distinct cave areas in which *brooksi* was collected was kindly supplied by Dr W.F. Humphreys:

Cutta Cutta Cave (8K–1) is a fully developed cave system with some depth. It is totally dark, except where it is lit as a tourist cave, and connects to permanent water in a joint controlled phreatic system.

Caves in the Ningbing Ranges (prefix KNI–) are part of a Devonian reef complex.

For the most part they are grike developments which are frequently open to the surface so that there is intermittent light. Although this is not the case in some caves (e.g., KNI–19 and KNI–41), these populations are probably in continuity with those inhabiting the more open systems. The specimens were collected in the dry season so that the more open systems had become too dry to retain their populations – only the deeper recesses of the grike developments and the proper caves were still moist enough to have cavernicolous populations.

The Tunnel (KO–1) is in the Oscar Range which is part of a Devonian reef system that is separated by 550 km from a similar system in the Ningbing Ranges. It is a minor stream that cuts through the reef in a massive tunnel, but a minor side passage was humid.

Nocticola sp.

Material Examined

Australia: Western Australia: Barrow Island: Cave B–1, 20°48'S, 115°19'E: 1 nymph, 10 September 1991, BES: 297 (WAM 92/55); 1 ?♀, 12 September 1991, W.F. Humphreys, B. Vine, BES: 313 (WAM 92/56); 2 nymphs, Lower (mud) chambers, 17 September 1991, D. Goodgame, BES: 326 (WAM 92/57–8); Cape Range Peninsula: 1♀, Cave C–15, 22°13'S, 113°59'E, 29 May 1990, CR 1990: 218 (WAM); 1♀, Cave C–64, 22°03'S, 114°01'E, 25 May 1990, D. Brooks, CR 1990: 217 (WAM). All specimens in alcohol.

Remarks

All specimens are small (length about 4 mm or

less), white, eyeless, and lack tegmina and wings; in one specimen the posterior corners of the mesonotum are produced and appear to be nymphal tegminal pads which suggests that it is an immature male. Adult males of *Nocticola* may have fully developed tegmina and wings or their tegmina may be variably reduced and wings variably reduced or completely absent. Adult females are apterous. It is likely that the above specimens represent an undescribed species but adult males are needed to adequately describe a species in this genus.

Family Blattellidae

Subfamily Blattellinae

Genus *Hensaussurea* Princis

Hensaussurea Princis: Roth, 1991b: 625 (revision).

Remarks

There are 11 previously described species of *Hensaussurea*, all found in the southern half of Australia (Roth 1991b, fig. 45). Four species occur in Western Australia and of these at least three occur in the southwestern corner of the state. The new species, *humphreysi* described below also occurs in the southwestern part of Western Australia.

Hensaussurea humphreysi sp. nov.

Figures 2A–D

Material Examined

Holotype

♂, Perth, Kings Park, Western Australia, Australia, flight intercept-trough trap, ANIC 1047, January–February 1985, G.P. Hall (ANIC).

Paratypes

Australia: Western Australia: 3♂♂, same data as holotype, 3♂♂ (1 with terminalia slide 351), 1♀, 5 nymphs (1♂ each in WAM and MCZ, remainder in ANIC).

All specimens were originally preserved in alcohol and then pinned; colour may have been altered by the fluid.

Description

Male

Head hidden under pronotum (Figure 2B). Interocular space about the same as distance between antennal sockets (Figure 2A). Pronotum subparabolic (Figure 2B). Tegmina reduced to lateral pads, completely separated from the mesonotum, and reaching to or slightly beyond hind margin of the mesonotum. Hind wings absent (Figure 2B). Front femur Type B2, with four large proximal spines; pulvilli present on four proximal tarsomeres, tarsal claws symmetrical, simple, arolia present. Abdominal terga unspecialized. Supraanal plate trigonal, apex with a shallow U-shaped excavation forming two small lobes, and a few short setae on either side of the excavation; paraprocts dissimilar, both with spinelike processes (Figures 2B, C). Subgenital plate with strongly dissimilar styli, the right one elongated with a few large spines along the margins, the spinelike apex directed towards the left and reaching the much smaller, cylindrical left style (Figure 2D). Genitalia as in Figure 2D: hook on the left side, with a preapical incision; median phallomere distally enlarged, tapering to an acute apex; right phallomere with two principal sclerites one of them a large cleft structure; overlying the right phallomere is a membrane bearing four spines. Colour pale with dark markings: Head with pale occiput, a dark brown longitudinal band extending from the vertex to the lighter clypeus, labrum lighter brown, cheeks white (Figure 2A). Pronotal disk with a light brown macula on distal half, surrounded by a dark brown band, lateral and anterior borders white; the lateral pale borders of the pronotum continue on the tegmina and metanotum, and more narrowly on the abdominal terga; the mesonotum has two and metanotum four brown dots. The lateral pale margins of the abdominal terga are succeeded mesad by a dark brown longitudinal band, then by a large light brown middle zone (Figure 2B). Abdominal sterna brown, lateral margins pale. Cerci dorsally with two black basal segments, the remainder white, ventrally the cercomeres are dark brown on basal halves, and pale distally. Legs pale, without markings.

Female

Supraanal plate with apex shallowly excavated. Abdominal terga dark brown except for pale lateral borders, and a pale macula on either side of the midline on segments 1 and 2; supraanal plate with a white macula on distomedial region.

Nymph

The nymph resembles the adult (the colour pattern may differ only slightly) except for the complete absence of tegmina.

Measurements (mm) (♀ in parentheses)

Length, 6.0–6.3 (ca. 6.0); pronotum length x width, 1.8–2.1 x 2.6–2.9 (2.1 x 3.0); tegmen length x width, 1.0–1.4 x 0.4–0.7 (1.0 x 0.6); interocular width, 0.6–0.7 (0.7).

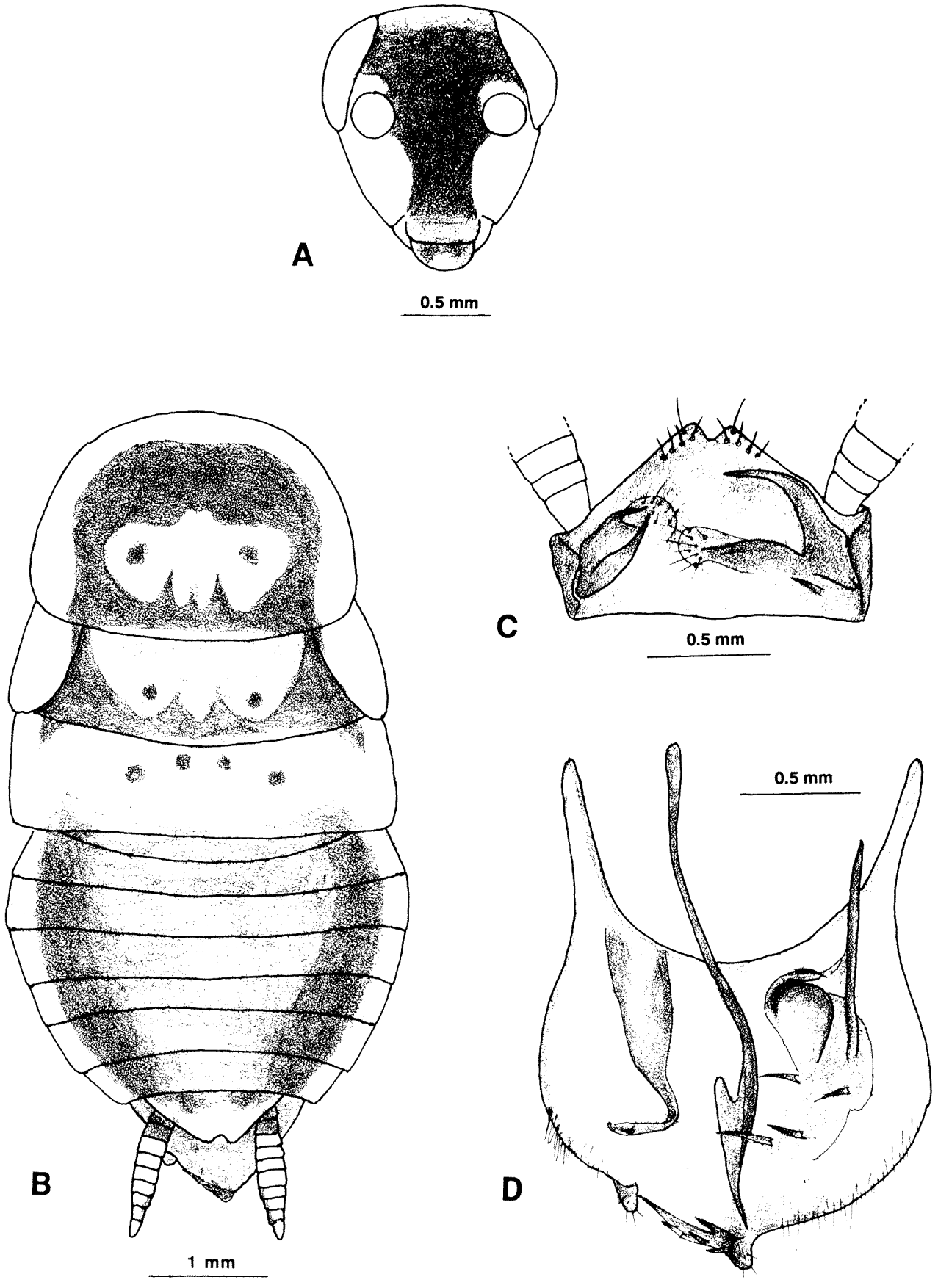

Figure 2 *Hensaussurea humphreysi* sp. nov. A, B, ♂ holotype, head and habitus respectively; C, D, ♂ paratype: C, supraanal plate and paraprocts (ventral); D, subgenital plate and genitalia (dorsal).

Remarks

The strongly dissimilar male styli places *H. humphreysi* in the *tricolor*-species-group. The species keys out to couplet 4 (Roth 1991b: 626) where it can be separated from *H. halmaturina* Shelford (*halmaturina*-species-group) by the dissimilar styli, and colour pattern differences.

Etymology

The species is dedicated to Dr W.F. Humphreys, senior curator at the Western Australian Museum, who has sent me many cockroach specimens from Western Australia.

Hensaussurea pedestris Princis

Hensaussurea pedestris Princis: Roth, 1991b: 630, figs. 47F, 48 (redescription: male and female).

Material Examined

Australia: Western Australia: Cape Range Peninsula: 1♂, camp, at night, 22°01'S, 114°03'E, 20 May 1990, J.M. Waldock, C.R. 90 #158 (WAM); 5 nymphs, Site TL–3, 22°15'S, 114°04'E, 17 May–5 June 1990, J.M. Waldock (WAM); 1♀, Site TL–4, 22°06'S, 114°00'E, pitfall traps, 17 May–3 June 1990, J.M. Waldock (WAM); 1♀, Site TL–5, 22°06'S, 114°00'E, litter, 3 June 1992, J.M. Waldock (WAM); 1♂, 1 nymph, Site TL–7, pitfall traps, 22°15'S, 114°04'E, pitfall traps, 20 May–5 June 1990, J.M. Waldock (WAM).

Hensaussurea peniculus Roth

Hensaussurea peniculus Roth, 1991b, 631, fig. 49 (male and female).

Material Examined

Australia: Western Australia: 1♀, Cape Range Peninsula, Site TL–4, pitfall traps, 22°06'S, 114°00'E, 17 May–3 June 1990, J.M. Waldock (WAM).

Measurements (mm)

Length, 7.0; pronotum length x width, 2.0 x 2.6 (sides deflexed); tegmen length x width, 1.3 x 0.9.

Remarks

The colour of this female differs somewhat from the unique female paratype. The pro- and mesonotum are yellowish and have a narrow dark brown transverse band on their hind margins. The first six abdominal terga are infuscated laterally, and segments seven to ten are yellowish and yellowish-white. Cerci are yellow on both surfaces. The specimen is slightly smaller than the paratype.

Paratemnopteryx sp. 1

Paratemnopteryx sp. 1 Roth, 1990: 580, figs 26A–C (male and female).

Material Examined

Australia: Western Australia: 1♀, Eneabba region, Cave E–22, 1 June 1991, C. Rippon (WAM); 1♂, Cape Range Peninsula, Cave C–79, 22°06'S, 14°00'E, 27 June 1989, W.F. Humphreys, R. Wood, CR'89 #3205 (WAM).

Remarks

This unnamed species combines characters of *P. australis* Saussure and *P. rufa* (Tepper). It was previously reported from Queensland (pitfall traps) and Northern Territory (bat caves). Its eyes are fairly well developed.

Genus *Neotemnopteryx* Princis

Neotemnopteryx Princis: Roth, 1990: 535 (revision).

Remarks

There are ten previously known species of *Neotemnopteryx*, most of them occurring on the eastern coast of Australia; one of them, *N. douglasi* (Princis), is cavernicolous, and with another species, *N. fulva* (Saussure), occur on the southwestern coast of Western Australia (Roth 1990, fig. 34). The following new species is the second cave dwelling member of the genus.

Neotemnopteryx wynnei sp. nov.

Figures 3A–F

Material Examined

Holotype

♂, Cave 6N–747, eastern extension, 70 m from entrance, Nullarbor Plain, Western Australia, Australia, 2 January 1994, R. Wynne (S47), BES: 1256 (WAM 94/714).

Diagnosis

Cavernicolous. Male: Eyes absent. Tegmina reduced, widely separated, hind wings vestigial. Front femur Type A_3, pulvilli and arolia absent. Supraanal plate hind margin convexly rounded, entire. Subgenital plate trigonal; styli dissimilar, the right one slightly larger and at the apex of the plate, apices with numerous small black spines. Reddish brown.

Description

Male

Head exposed; eyes absent (Figure 3B); antennae filamentous. Pronotum subparabolic (Figure 3A).

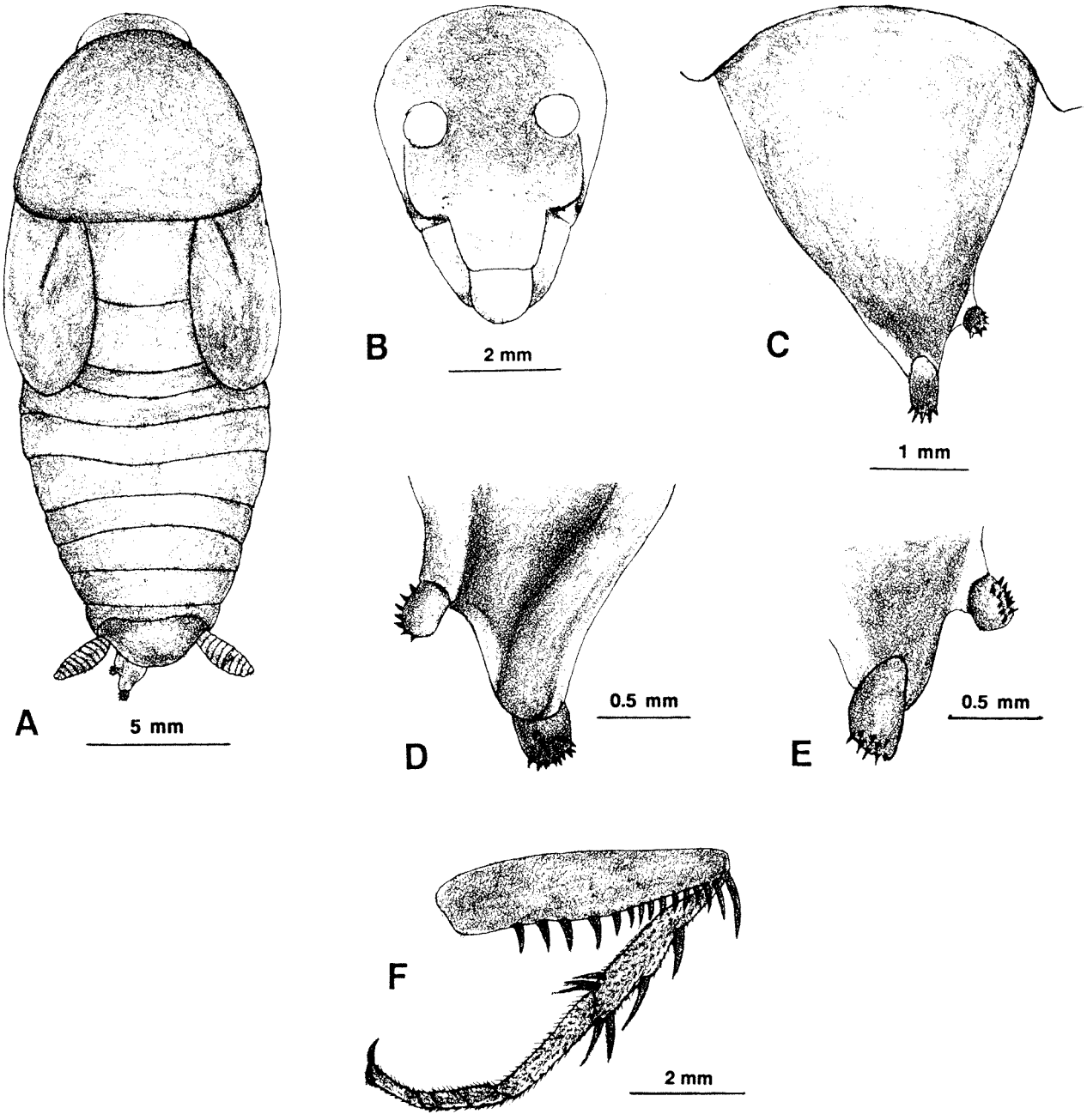

Figure 3 *Neotemnopteryx wynnei* sp. nov., ♂ holotype: A, habitus; B, head; C; subgenital plate (ventral); D, E, apex of subgenital plate showing styli (dorsal and ventral respectively); F, front leg (anterior view; coxa and trochanter not shown).

Tegmina reduced to well separated lateral, coriaceous pads, apices rounded, reaching to middle of second abdominal tergum (Figure 3A). Hind wings vestigial, narrow, hidden under tegmina, reaching to hind margin of first abdominal tergum. Front femur Type A3, five proximal spines widely spaced, succeeding row of seven smaller, equally long spines closer together; pulvilli and arolia absent, tarsal claws simple, symmetrical (Figure 3F); basitarsus of front leg about equal in length to the others combined (Figure 3F), of the mid and hind legs slightly longer than the others. Abdominal terga unspecialized (Figure 3A). Supraanal plate with hind margin convexly rounded, entire, not reaching apex of protruding subgenital plate (Figure 3A). Subgenital plate convex, trigonal, the sides at the apex thickened into rounded ridges; styli dissimilar, small, bulbous, sclerotised, both with numerous small dark spines, the right style larger at the apex of the plate, the smaller one a short distance to its left (Figures 3C–E). Colouration: Dark reddish brown. Head reddish brown with "ocular" area and clypeus, labrum, and mandibles lighter, yellowish (Figure 3B).

Female

Unknown.

Measurements (mm)

Length, 23.2; pronotum length x width, 6.8 x 8.8; tegmen length x width, 7.3 x 3.4; hind wings vestigial, hidden under tegmina.

Remarks

The other cavernicolous species in *Neotemnopteryx*, namely *douglasi* (*Princis*) (= *Shawella douglasi Princis*), from Jurien Bay, Western Australia, is distinctly different from *N. wynnei*, and has reduced eyes, longer tegmina, and a large densely setose tergal gland on the first segment (Roth 1990: 556).

Etymology

The species is dedicated to its collector, Mr Richard Wynne, a young speleologist.

Genus *Trogloblattella* Mackerras

Trogloblattella Mackerras, 1967a: 39.

Remarks

There is only one species in this monotypic genus, namely T. *nullarborensis* Mackerras, and it is found only in Western and South Australia. *Trogloblattella chapmani* Roth was described from limestone caves in Sarawak (Roth 1980: 97) but this species has been transferred to *Neotrogloblattella* Roth (Roth 1991c: 1017).

Trogloblattella nullarborensis Mackerras

Trogloblattella nullarborensis Mackerras, 1967a: 39, pl. 1A–D, figs 1–6; Roth, 1990: 558, Figures 15A–I, 35

Material Examined

Australia: Western Australia: Nullarbor Plain: 1♀, 1♀ nymph, Cave 6N–707, terminating chamber, 700 m from 10 m vertical entrance, ca. 30 km N. of Mundrabilla Homestead, 28 December 1993, BES.1254, (L13) (WAM); 1♂, same data except BES.1255 (M11), Norm Poulter (WAM); 1♀ nymph, Cave 6N–36, dark zone, ca. 10 m from entrance, 4 January 1994, M. Melh, BES.1258 (WAM); 1♀, Cave 6N–37, between the drop off and camp, 5 January 1994, BES.1259 (L2), N. Poulter (WAM); 1 nymph, Cave 6N–748, dark zone ca. 30 m from entrance, 3 February 1994 (S76), R. Wynne (WAM).

Subfamily Pseudophyllodromiinae

Ellipsidion humerale (Tepper)

Ellipsidion humerale (Tepper): Hebard, 1943: 110, Pl. XII, fig. 10; *Princis*, 1969: 986 (literature).

Material Examined

Australia: Western Australia: Cape Range Peninsula: 1♀ (tegmina and wing on slide 25), camp, near 22°15'S, 114°03'E, headtorch, 21 May 1990, Brooks, CR 90 #135 (WAM).

Remarks

The species has also been recorded from Northern Territory, and Central and Western Australia. The type specimen is a female from "Northern Territory of South Australia". Hebard suggested that *E. laetum* Hanitsch, from Burnside, Northern Territory may be a variant of *humerale*.

There is considerable colour variation in this species and Hebard suggested that those from Western Australia may represent a more western race or species but that a "Detailed consideration of large series is necessary to determine which." I have available a large number of specimens from different localities and time permitting hope to study the variation in colour, size, and genitalia in this taxon.

Family Blattidae

Subfamily Polyzosteriinae

Drymaplaneta semivittata (Walker)

Drymaplaneta semivittata (Walker): Mackerras, 1968b: 547, figs 37a–c, 45, 91 (male and female).

Material Examined

Australia: Western Australia: 1♀, Triggs, near Perth, 5 December 1965, Ch. Morris (PMYU).

Remarks

This species is confined to the south-western part of Western Australia, where apparently it is a common domestic pest throughout Perth and other settlements.

Platyzosteria (*Melanozosteria*) *?nigrofasciata* (Shaw)

Platyzosteria (*Melanozosteria*) *nigrofasciata* (Shaw): Mackerras, 1968a: 285, figs 87, 102, 120, pl. 2G (redescription: male and female).

Material Examined

Australia: Western Australia: 1♂, Cape Range Peninsula, near Cave C–60, 22°06'S, 113°59'E, 17 May 1990, J. Waldock (WAM).

Remarks

This specimen keyed closest to *nigrofasciata* (Mackerras 1968a: 240). However, the hind margin of its vestigial tegmina are separated from the

mesonotum by a little more than half its length (rather than about one third; see fig. 120 in Mackerras, 1968a) and the middle of the pronotal disk is yellowish rather than solidly dark (pl. 2G in Mackerras 1968a).

Platyzosteria (Leptozosteria) spenceri Shelford

Platyzosteria (Leptozosteria) spenceri Shelford: Mackerras, 1967b: 1295, figs 104, 110, pl. 4, figs 4, 5 (redescription).

Material Examined

Holotype

♂ (probably a nymph), "Central Australia", Spencer Gillen Expedition, 1901–02 (NMV).

Other Material

Australia: Northern Territory: 1 nymph, base of Ayers Rock, 22 May 1954, C.A., Geelong College Expedition (NMV). **Western Australia:** 1 ♀ nymph, nr. Boonbooa Pool, Pigandy Creek, Ashburton District, 27 August 1975, P.C. and C.W. Kendrick (WAM 92/659); 1 nymph, 130 miles SE. of Broome, September, A.S. Cudmore (NMV).

Remarks

The species is known only from nymphs and has been reported from Northern Territory, South Australia, and Western Australia.

Zonioploca pallida Shelford

Zonioploca pallida Shelford: Mackerras, 1965: 911, figs 5, 14, 23, pl. 1, figs 5, 6 (redescription, male and female).

Material Examined

Australia: Western Australia: 1 ♀ (with ootheca), Perth, 15 October 1931, Darlington, Australia/ Harvard Expedition (MCZ).

Remarks

The species is restricted to the southwestern corner of Western Australia.

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