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A New Genus and Two New Species of Brachypterous Lysiterminae (Braconidae)

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Abstract.—A new genus ***Neolysitermus*** gen. n. and two new species ***N. turneri*** sp. n. and ***N. spinator*** sp. n. (tribe Lysitermini), both from South Africa, are described and illustrated. These are the first brachypterous species belonging to the subfamily Lysiterminae.

Aptery and brachyptery are known in only a few subfamilies of Braconidae, including the Alysiinae, Aphidiinae, Blacinae, Doryctinae, Hormiinae, Masoninae, Pambolinae and Orgilinae. In the first of these, aptery is probably a result of their hosts dwelling within subterranean or filthy habitats and the associated difficulty in negotiating soil particles or costs of wing fouling, however, in the others, no obvious host habitat association is apparent, though many other brachypterous parasitoids are associated with stored products or with tree trunks/tall shrubs. The brachypterous and apterous braconids are more or less equally split between ecto- and endoparasitoids and between idiobiont and koinobiont taxa, suggesting that at least in this family when considered at subfamily level, brachyptery is not dependent upon major life history features. However, formal comparative analysis at species level will be required before firm conclusions can be reached.

The Lysiterminae have previously often been regarded as a tribe within either the Rogadinae, Exothecinae or the Hormiinae (van Achterberg 1976, 1982; Quicke & van Achterberg 1990; Wharton 1993; Belokobylskij 1993) but was afforded subfamily status by van Achterberg (1993, 1995) and van Achterberg & Steiner (1996) because it shares no obvious synapomorphies with either Rogadinae s.s. or Hormiinae. This arrangement seems best at present since there is considerable doubt about the monophyly of the Hormiinae as treated (conservatively) by some workers (see for example, Whitfield & Wharton 1997). New molecular data, as well as the investigation of more character systems, will be required to resolve this (see Quicke *et al.* 1992; Belshaw *et al.* 1998).

No apterous or brachypterous species have previously been described in the Lysiterminae. Although little is known biologically about the Lysiterminae, they appear to have diverse host associations including being ectoparasitoids, or presumed ectoparasitoids, of bagworms (Psychidae) and web-feeders (Xyloryctidae = Stenomidae), and also apparently endoparasitoids of Orthoptera (Hedqvist 1963; Wharton 1993; van Achterberg & Steiner 1996). Interestingly, all of these hosts live in retreats involving silk.

The Lysiterminae Tobias, 1968 includes only seven genera in the Old World (van

Achterberg 1995; Belokobylskij 1995; van Achterberg & Steiner 1996). Unfortunately, differences between lysitermine genera mostly concern fore wing venation, though members of the subtribe Tritermina, with 2 genera (*Tritermus* van Achterberg and *Afrotritermus* Belokobylskij) differ from the other genera of Lysiterminae in having fused, and therefore immobile, 1st and 2nd metasomal tergites (Belokobylskij 1993). Because of the major reliance of lysitermine systematics on wing venation, interpreting the relationships of *Neolysitermus* gen. n., with its reduced wings, is not so straightforward. Apart from the reduced wings, *Neolysitermus* gen. n. has a distinct median emargination of the posterior margin of 3rd metasomal tergite—a character not known in any other species of Lysiterminae.

TERMINOLOGY AND COLLECTIONS

The wing venation terms used largely follow Tobias (1986). The following abbreviation are used: POL—postocellar line; OOL—ocular-ocellar line; Od—maximum diameter of lateral ocellus. Collections are abbreviated as follows: The Natural History Museum, London (BMNH); Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia (ZIP).

Neolysitermus Belokobylskij and Quicke, new genus

Type species: *Neolysitermus turneri* new species

Etymology.—From "neo" (new) and "*Lysitermus*" the genus of the subfamily Lysiterminae.

Diagnosis.—The position of this new genus is not clear. Differences between genera of the tribe Lysitermini are connected mostly with the venation of the fore wing, but species of *Neolysitermus* gen. n. have very short wings with reduced venation. This new genus differs from other genera of Lysitermini (in addition to the very short wings) by the presence of distinct median emargination on the posterior margin of 3rd tergite, a character that is absent in all described species of this tribe.

Description.—Head weakly transverse (Figs 2, 11). Scapus (Fig. 4, 13) thick, with distinct round cut in outer apical side. Flagellum filiform. Apical flagellomere without apical spine. Maxillary palpi 6-segmented, labial palpi 4-segmented; 3rd labial segment distinctly shortened. Malar suture absent. Clypeus strongly convex (Figs 3, 12). Eyes glabrous. Occipital carina fused with hypostomal one higher mandibles. Hypostomal keel distinct. Ocelli small, forming an almost equilateral triangle. Mesosoma reduced, but with all sutures and depressions (Figs 7, 8, 16, 17). Propleura with longitudinal median carina on basal half. Pronotum with distinct lateral median corners (see Figs 8, 17). Notauli deep and wide. Lateral lobes of mesoscutum with oval depressions posterolaterally. Scutellum with high lateral carinae. Sternauli rather deep, wide, oblique, coarsely crenulate. Prepectal carina very strong. Postpectal carina absent. Metapleural flange long and narrow. Propodeal areola incomplete or absent. Fore wing very short and narrow, stylet-shaped or oval. Hind tibia and tarsus slender. Hind tibial spurs very short. Hind basitarsus 0.9–0.95 × as long as 2nd–5th segments combined. First and second metasomal tergites not fused, mobile (Figs 9, 10, 18, 19). Dorsope of first tergite small. Second suture deep. Dorsal carina of first tergite semicircularly united basally. Third tergite without spines and carina posteriorly, with deep and rather narrow median emargination, with small single tooth ventro-laterally (Figs 9, 18).

Distribution.—Afrotropical Region (South Africa).

KEY TO SPECIES OF *NEOLYSITERMUS*

1. Antenna 17-segmented; apical segment dark. Length of mesosoma 1.7–1.8 × height. Scutellum flat. Propodeum without lateral spines. Metasoma narrow, its length 2.3–2.4 × maximum width. First metasomal tergite longer, apically 1.2–1.3 × wider than long ..... ***N. turneri*** sp. n.
– Antenna 14-segmented; apical segment whitish. Length of mesosoma 1.3–1.4 × height. Scutellum strongly pointedly convex. Propodeum with distinct pointed lateral spines. Metasoma wide, its length twice maximum width. First metasomal tergite shorter, apically 1.7–1.8 × wider than long ..... ***N. spinator*** sp. n.

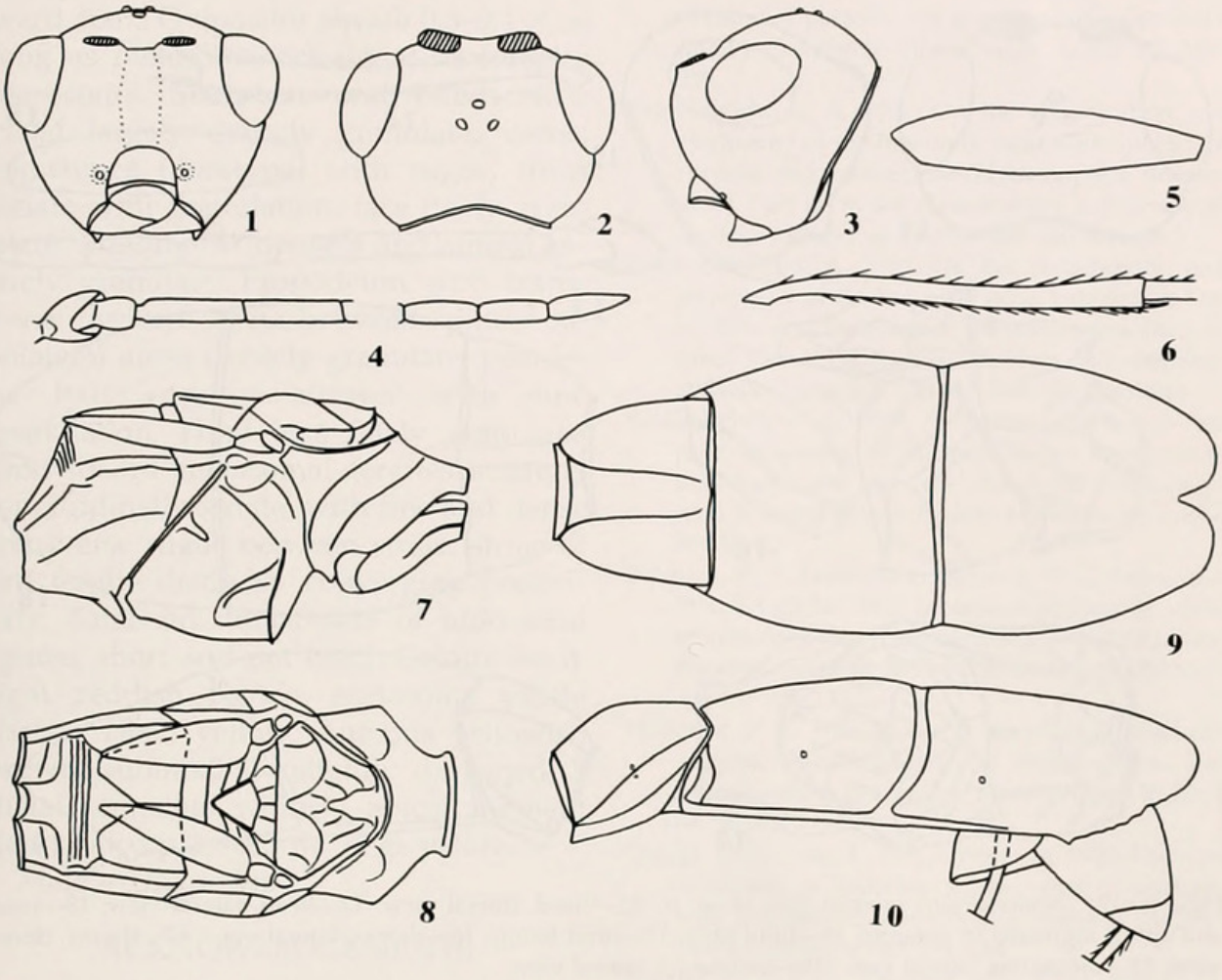
Neolysitermus turneri Belokobylskij and Quicke, new species

(Figs 1–10)

Holotype female.—"S. Africa. R.E. Turner. Brit. Mus. 1924–136", "Port St. John, Pondoland. 6–25. Feb. 1924" (BMNH).

Paratypes.—1 female, same data as holotype (BMNH); 1 female, "S. Africa. R.E. Turner. Brit. Mus. 1924–97", "Port St. John, Pondoland. Jan. 1924" (ZIP); 1 female, "S. Africa. R.E. Turner. Brit. Mus. 1924–109", "Port St. John, Pondoland. 29.I – 5.II.1924" (BMNH).

Description.—Female. Body length 1.8–2.3 mm. **Head**: 1.5–1.6 × wider than medially long; 1.7–1.8 × width of mesoscutum. Antennae 17-segmented. Scapus 1.5–1.6 × as long as wide. First flagellar segment 3.7–4.2 × longer than apically wide, slightly longer than 2nd segment. Penultimate segment 3 × as long as wide, 0.7 × as long as 1st flagellar segment, 0.9–1 × as long as apical segment. Temple roundly narrowed behind eyes. Transverse diameter of eye 1.4–1.6 × length of temple (dorsal view). POL 1.2–1.5 × Od, 0.3–0.4 × OOL. Antennal socket diameter 0.8–1 × distance between sockets, almost twice distance between socket and eye. Eye 1.2–1.3 × taller than broad. Cheek height 0.7–0.8 × height of eye, 1.6–1.7 × basal width of mandible. Face 1.2–1.4 × wider than eye height and 1.2 (wider than height of face and clypeus combined. Clypeus with distinct narrow flange along lower margin. Hypoclypeal depression oval, 0.7–0.8 × wider than distance from depression to eye. Head distinctly and roundly narrowed below eyes. **Mesosoma**: 1.7–1.8 × longer than high, almost twice longer than wide. Median lobe of mesoscutum with antero-lateral teeth. Prescutellar depression long, with median carina, granulose-crenulate, 0.5–0.6 × as long as scutellum. Scutellum rather flat. Subalar depression deep, narrow, crenulate. Mesopleura without median furrow. Propodeum without lateral spines. Fore wing stylet-shaped, 3.2–4.5 × longer than wide, 0.35–0.4 × length of mesosoma. Hind femur 4.5–5 × longer than wide. Hind tarsus 0.8–0.85 × hind tibia. Second tarsal segment 0.3–0.35 × length of 1st segment, almost as long as 5th segment (excluding pretarsus). **Metasoma**: Convex and narrow, its length 2.3–2.4 × maximum width (on the level of middle of 2nd tergite), 1.4–1.5 × as long as mesosoma. First tergite distinctly and roundly narrowed towards base, rather long, its apical width 1.2–1.3 × length, 2.0–2.2 × its minimum width. Second tergite almost as long as basally wide, 0.8–0.9 × maximum width, 1.3–1.4 × length of 1st tergite, 0.8–0.9 × length of 3rd tergite. Third tergite regularly and almost linearly narrowed toward apex. Ovipositor sheath 0.5–0.6 × as long as metasoma, 0.8–0.9 × as long as mesosoma. **Sculpture and pubescence**: Head densely granulate, vertex strongly granulate and usually with fine rugae; face finely granulate. Mesothorax densely and entirely granulate. Propodeum with median carina, which is



Figs. 1–10. *Neolysitermus turneri* gen. et sp. n.: 1—head, frontal view; 2—head, dorsal view; 3—head, lateral view; 4—basal and apical segments of antenna; 5—hind femur; 6—hind tibia; 7—thorax, lateral view; 8—thorax, dorsal view; 9—metasoma, dorsal view; 10—metasoma, lateral view.

1–1.4 × as long as furca; basolateral areas densely granulate; posterior half of propodeum transversely striate with dense granulation and 2 short submedian longitudinal carinae. Hind legs finely granulate. First to 3rd metasomal tergites strongly striate, with fine and dense transverse rugae between striae; striae at 2nd and 3rd tergites weakly convexly curved. Setae on dorsal side of hind tibia sparse, short and not erect. **Colour:** Body light reddish brown, sometimes dorsally darker. Head yellow. Antenna yellowish brown, submedially slightly darkened, 5–6 subapical segments whitish, apical segment dark. Palps pale yellow. Legs yellow.

Male.—Unknown.

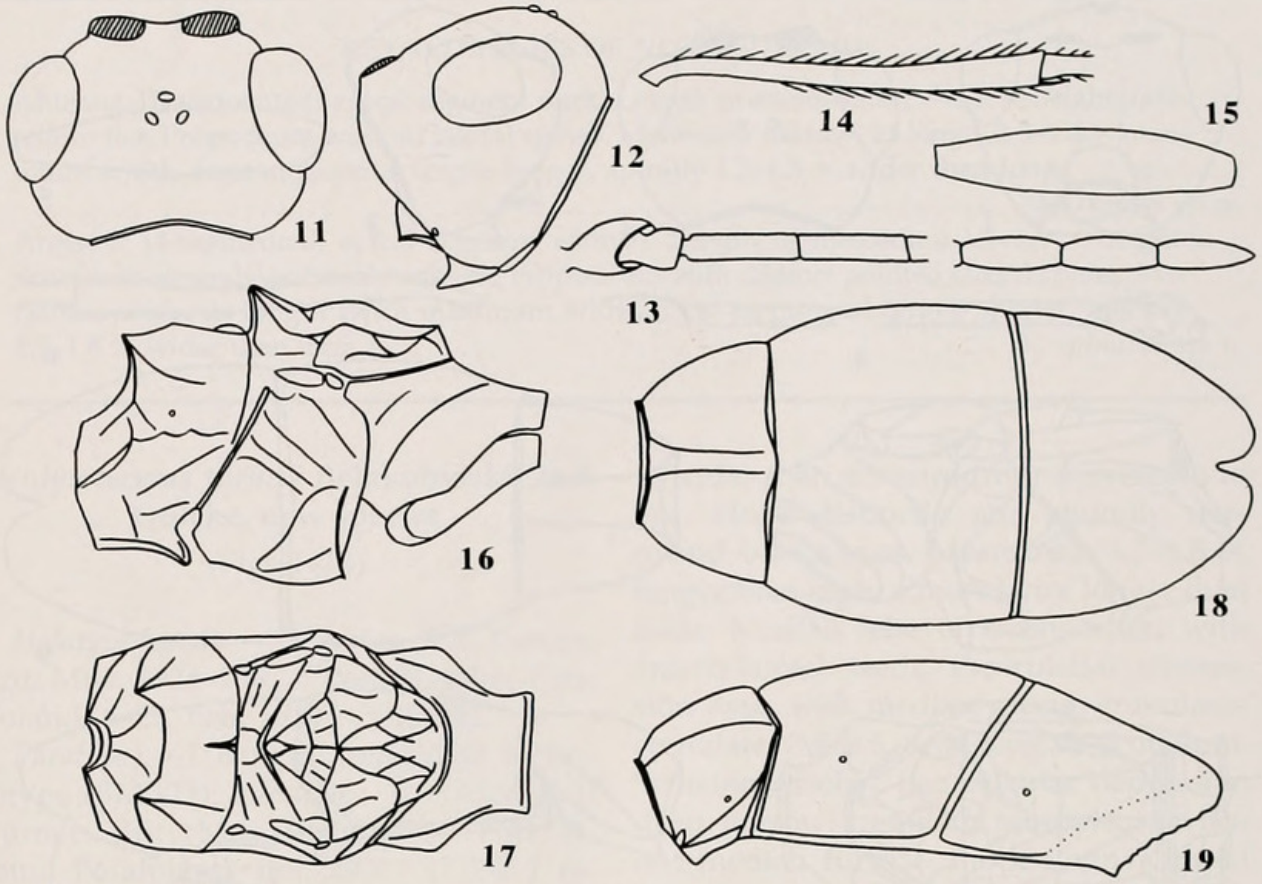
Neolysitermus spinator Belokobylskij and Quicke, new species

(Figs 11–19)

Holotype female.—"S. Africa. R.E. Turner. Brit. Mus. 1924–136", "Port St. John, Pondoland. 6–25. Feb. 1924" (BMNH).

Paratypes.—1 female, same data as holotype (BMNH).

Description.—Female. Body length 1.8–2.1 mm. **Head**: 1.4–1.5 × wider than medially long; 1.6–1.9 × width of mesoscutum. Temple roundly narrowed behind eyes. Transverse diameter of eye 1.7–2 × length of temple (dorsal view). POL 1–1.3 × Od, 0.3–0.4 × OOL. Antennal socket diameter 1.5–2 × distance between sockets,



Figs. 11–19. *Neolysitermus spinator* gen. et sp. n.: 11—head, dorsal view; 12—head, lateral view; 13—basal and apical segments of antenna; 14—hind tibia; 15—hind femur; 16—thorax, lateral view; 17—thorax, dorsal view; 18—metasoma, dorsal view; 19—metasoma, lateral view.

almost 1.5 × distance between socket and eye. Eye 1.3–1.4 × as taller than broad. Cheek height 0.8 × height of eye, nearly twice basal width of mandible. Face 1.3 × wider than eye height and 1.25 × wider than height of face and clypeus combined. Clypeus with distinct narrow flange along lower margin. Head distinctly and roundly narrowed below eyes. Antennae 14-segmented. Scapus 1.5–1.6 × as long as wide. First flagellar segment 3.7–4.0 × longer than apically wide, 1–1.2 × as long as 2nd segment. Penultimate segment 2.5–2.7 × as long as wide, 0.8 × as long as 1st flagellar segment, as long as apical segment. **Mesosoma**: 1.3–1.4 × longer than high, 1.5–1.8 × longer than wide. Median lobe of mesoscutum with antero-lateral teeth. Prescutellar depression long, with median carina, granulose-crenulate, 0.6–0.7 × as long as scutellum. Scutellum strongly pointedly convex. Subalar depression deep, narrow, granulose-crenulate. Mesopleura with fine oblique median furrow. Propodeum with distinct pointed lateral spines and mediobasal flat small lobe. Fore wing oval and short. Hind femur 4.5–5 × longer than wide. Hind tarsus 0.8 × length of hind tibia. Second tarsal segment 0.3 × as long as 1st segment, nearly as long as 5th segment (excluding pretarsus). **Metasoma**: Convex and wide, nearly twice longer than maximally wide (at level of middle of 2nd tergite), 1.7–1.9 × longer than mesosoma. First tergite distinctly and roundly narrowed towards base, short, its apical width 1.7–1.8 × length, 2.4 × its minimum width. Second tergite 0.9–1 × longer than basally wide, 0.8 × its maximum width, 1.7 × length of 1st tergite, as long as 3rd tergite. Third tergite regularly and roundly narrowed to-

ward apex. Ovipositor sheath 0.3–0.4 × as long as metasoma, 0.6–0.8 × as long as mesosoma. **Sculpture and pubescence**: Head largely densely granulate, vertex sometimes (paratype) with rugae, frons striate with granulation, face finely granulate. Mesothorax densely and almost entirely granulate. Propodeum with transverse median carina between spines; basolateral areas densely granulate; posterior half rugulose-striate, with fine granulation. Hind legs finely granulate. First to 3rd metasomal tergites strongly longitudinally striate, with fine and dense transverse rugae between striae; striae of 3rd tergite distinctly converging posteriorly. Setae on dorsal side of hind tibia sparse, short and not erect. **Colour**: Body light reddish brown, metasoma partly darker. Head yellow. Antenna yellowish brown, submedially slightly darkened, 5 distal segments whitish, apical segment dark. Palps pale yellow. Legs yellow.

Male.—Unknown.

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