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RESEARCH ARTICLE

A new species of *Nyleta* Dodd (Hymenoptera: Scelionidae) from Southeast Asia

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Abstract: The monotypic genus *Nyleta* was described by Dodd from Australia in 1926, with *Nyleta striaticeps* Dodd as the type species. A new species of *Nyleta* is now described and imaged from the remote island of Little Andaman in the Andaman and Nicobar group of Islands in the Indian Ocean. Variants of the same species were also collected from Tamil Nadu. The images of the holotype of *N. striaticeps* are also provided for the first time.

Key words: Platygastroidea, Scelioninae, India, egg parasitoids.

Introduction

The subfamily Scelioninae (Hymenoptera: Scelionidae) is one of the most frequently encountered groups in Hymenoptera. All species in this subfamily are known to parasitize the eggs of insects belonging to the orders Orthoptera, Mantodea, Heteroptera, Embioptera, Odonata and Araneae (Austin *et al.* 2005). This subfamily contains 40 genera with 150 species reported from India (Masner 1976; Johnson 1992, 2016; Rajmohana 2011). The genus *Nyleta* was described by Dodd from Australia (Dodd 1926). Masner (1976) in his revisionary work on Scelionidae mentioned that this genus is distributed in the Ethiopian, Oriental and Australian regions. In the Oriental region it has been reported from Nepal, Myanmar, Thailand, Laos and Vietnam (Masner 1976, Hymenoptera Online Database). Masner was of the opinion that *Nyleta* is closely related to *Oxyteleia* Kieffer and *Merriwa* Dodd and also provided a key for these three genera. Galloway and Austin (1984) provided diagnostic characters for the genus and mentioned that in Australia the genus is restricted to the rainforests of the central eastern coast. Some of the present collection was also made in

the rainforests of the remote Little Andaman island of the Andaman and Nicobar archipelago, which are closer to Southeast Asia than to mainland India. Ninety years after Dodd's description of the type species a new species has been discovered and described.

Nyleta can be identified from other scelionines by the following combination of characters: skaphion present, metascutellum bidentate, compound eyes glabrous, lateral pronotum without epomial carina; metasoma in female with six visible tergites, marginal vein in fore wing shorter than stigmal vein, postmarginal vein long, more than twice as long as stigmal vein; mesoscutellum without lateral spines derived from the axillular carina.

This genus is similar to *Oxyteleia* Kieffer and *Merriwa* Dodd in having two spines on metascutellum, large bare eyes, marginalis shorter than stigmalis and a long postmarginalis. *Nyleta* can be distinguished from *Oxyteleia* as follows: *Oxyteleia* and *Merriwa* have the axillular carina posteriorly developed into a spine (Fig. 1) which is not so in *Nyleta* (Fig. 2). *Nyleta* can be confused with some species of *Calotelea* Westwood which also has a bidentate metascutellum to accommodate the horn on T1 in females. *Calotelea* can however be easily distinguished by its marginalis being subequal to stigmalis whereas in *Nyleta* the marginalis is much smaller than stigmalis.

Material and methods

Morphological terminology follows Masner (1976, 1980) and Mikó *et al.* (2007, 2010). Specimens were collected by sweep netting (SN) and yellow pan traps. Specimens were mounted on point-card tips. The descriptions and imaging were carried out with a Leica M205A stereomicroscope, with 1x objective equipped with a Leica DFC-500 digital camera. The copyright for the images of *Nyleta striaticeps* is with Queensland Museum, Geoff Thompson and specific permission is to be sought from them for reproduction.

Primary types are deposited in the ICAR-National Bureau of Agricultural Insect Resources, Bangalore, India. Specimens were collected by K. Veenakumari.

Specimen locality and collection data for the type series of *Nyleta onge* is deposited in the Hymenoptera Online Database.

The following abbreviations are used in the description of the taxa.

HL – Head length

HW – Head width

HH – Head height

FCI – Frontal cephalic index (HW/HH)

LCI – Lateral cephalic index (HH/HL)

A1–A12 – Antennomeres 1–12 (A1=Scape, A2=Pedicel); Clava-incrassate distal antennomeres of female antenna

L – Length

W – Width

H – Height

OOL – Ocellar-ocular length

POL – Posterior ocellar length

LOL – Lateral ocellar length

IOS – Interorbital space

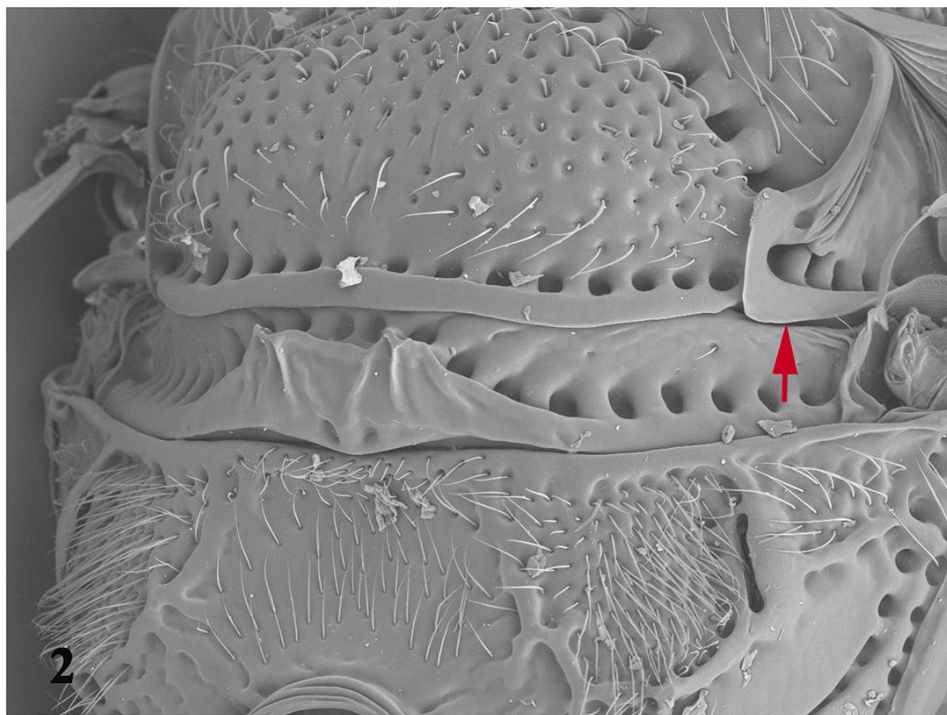
T1–T6 – Metasomal tergites 1 to 6.

All the measurements are taken as per Mikó (2010). Width of all metasomal tergites taken anteriorly.



0147

2016/07/22 14:51 HL D7.5 x150 500 um



0211

2016/07/25 11:20 HL D12.0 x300 300 um

Figures 1–2. SEM images. **1**, *Oxyteleia* sp. (USNMENT01197880) showing axillular carina (AC) developed into a spine; **2**, *Nyleta* sp. (OSUC174452) showing axillular carina not developed as a spine (Courtesy: E. Talamas, Hymenoptera Online).

Results

Nyleta onge Veenakumari sp. nov. (Figs 3–17)

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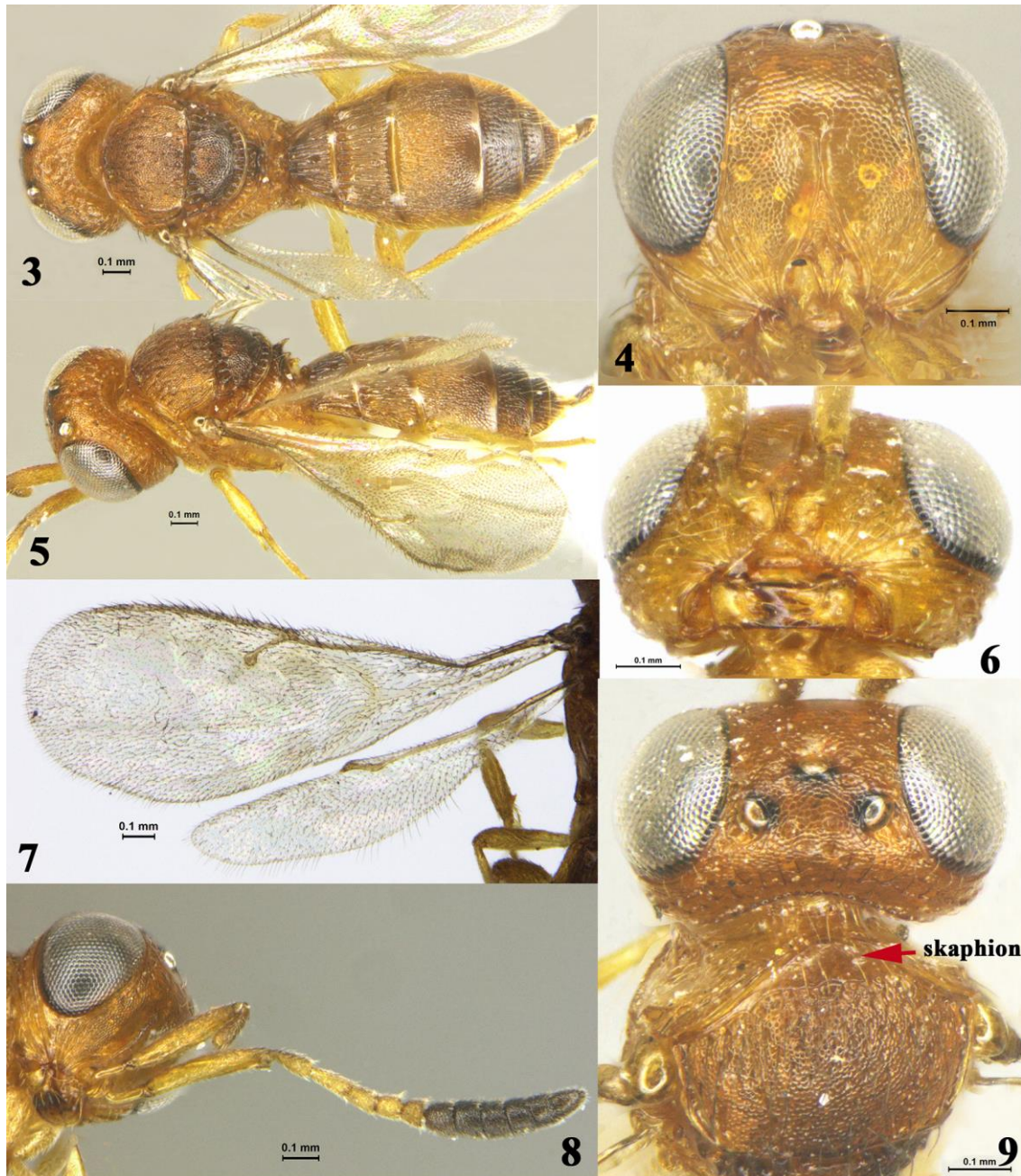
Holotype: Female; Body length=2.333mm; m=2.339mm (2.333–2.345mm; SD=0.006; n=3).

Body color (Figs 3, 5): Frons and vertex brown; eyes silvery, with a black border all around; black patches found on posterior margin of anterior ocellus and on inner margin of lateral ocelli; mandible and clypeus brown, mandibular teeth brownish black; A1–A6 yellowish brown, A7 brown, clava blackish brown; mesoscutum brown with uneven patches of black; mesoscutellum blackish brown with a small brown patch medially; metascutellum brownish black; metanotal trough and propodeum brown; legs yellow brown; T1 brownish black; T2 a shade paler; T3 brown antero-medially, otherwise dark brown; T4–T6 brownish black.

Head (Figs 4, 6, 8, 9, 10, 13): FCI=1.24; LCI=1.29; IOS 0.43× width of head, shortest anterior to anterior ocellus; frons, vertex with fine granulate microsculpture (Fig. 4); gena striate-granulate; occiput with upward directed dark, stout, sparse setae; upper frons with fine sparse setae; facial striae present; central keel short, 0.6× head height, not reaching anterior ocellus, posteriorly bifurcates surrounding the antennal foramen; eyes large (L: W=35.3:26.2), 1.16× length of mesoscutum (Figs 4, 9); ocelli large, POL>LOL>OOL in ratio of 15.3:9.1:2.3; OOL 0.35× the longest ocellar diameter (Fig. 9); clypeus triangular (L: H= 11.3:8.6); mandibles large (L: H= 16.6:6.8), tridentate, with median tooth shorter than the outer teeth (Fig. 6); antenna with 12 antennomeres, clava slender with 6 clavomeres; A1 slender; length and width of antennomeres A1–A12 in ratio of 35.2:6.6, 12.8:5.5, 11.6:5.4, 7.8:5.9, 6.9:6.3, 5.8:7.7, 8.5:9.4, 7.3:10.5, 6.4:10.7, 7.0:10.2, 6.3:8.9, 9.7:7.4, respectively; radicle long, 0.34× length of A1; interantennal process elongate 0.25× length of A1 (Fig. 8).

Mesosoma (Figs 7, 9, 10, 11, 13): Mesoscutum (L: W=30.4:47.7) and mesoscutellum (L: W=18.5:38.6) with same sculpture as that on frons (Figs 9, 10, 11); anterior margin of mesoscutum crenulate; notaulus either complete or abbreviated anteriorly; stout, long, sparse, black or brown setae present on mesoscutum and mesoscutellum; postero-medial margin of mesoscutum with a weak midlobe (Fig. 11); a short parapsidal line present posteriorly towards lateral margin of mesoscutum (Fig. 11); mesoscutal humeral sulcus foveate; lateral pronotal area almost smooth; netrion very wide; mesopleural carina extending to vicinity of mesopleural pit; speculum striate; a few oblique striae present beneath mesopleural pit, otherwise almost smooth; metapleuron with a prominent transverse median sulcus (Fig. 13); metapleuron above the median carina with a few weak foveae and beneath weakly reticulate; anterior margin of mesoscutellum foveate, foveae increasing in size laterally; posterior mesoscutellar sulcus foveate; metascutellum foveate with two spines; metanotal trough foveate; lateral propodeal area with uneven sculpture; posterior propodeal projections distinct. Fore wing (L: W=160.2:60.8) and hind wing (L: W=124.7:26.5) densely covered with microtrichia; fore wing marginal cilia 0.06× width of wing; hind wing marginal cilia 0.19× width of wing; length of submarginalis: marginalis: stigmalis: postmarginalis in ratio of 79.2:5.9:15.3:58.7, respectively; postmarginalis almost 10x as long as marginalis and >3.8× as long as stigmalis; stigmalis >2.5× as long marginalis (Fig. 7).

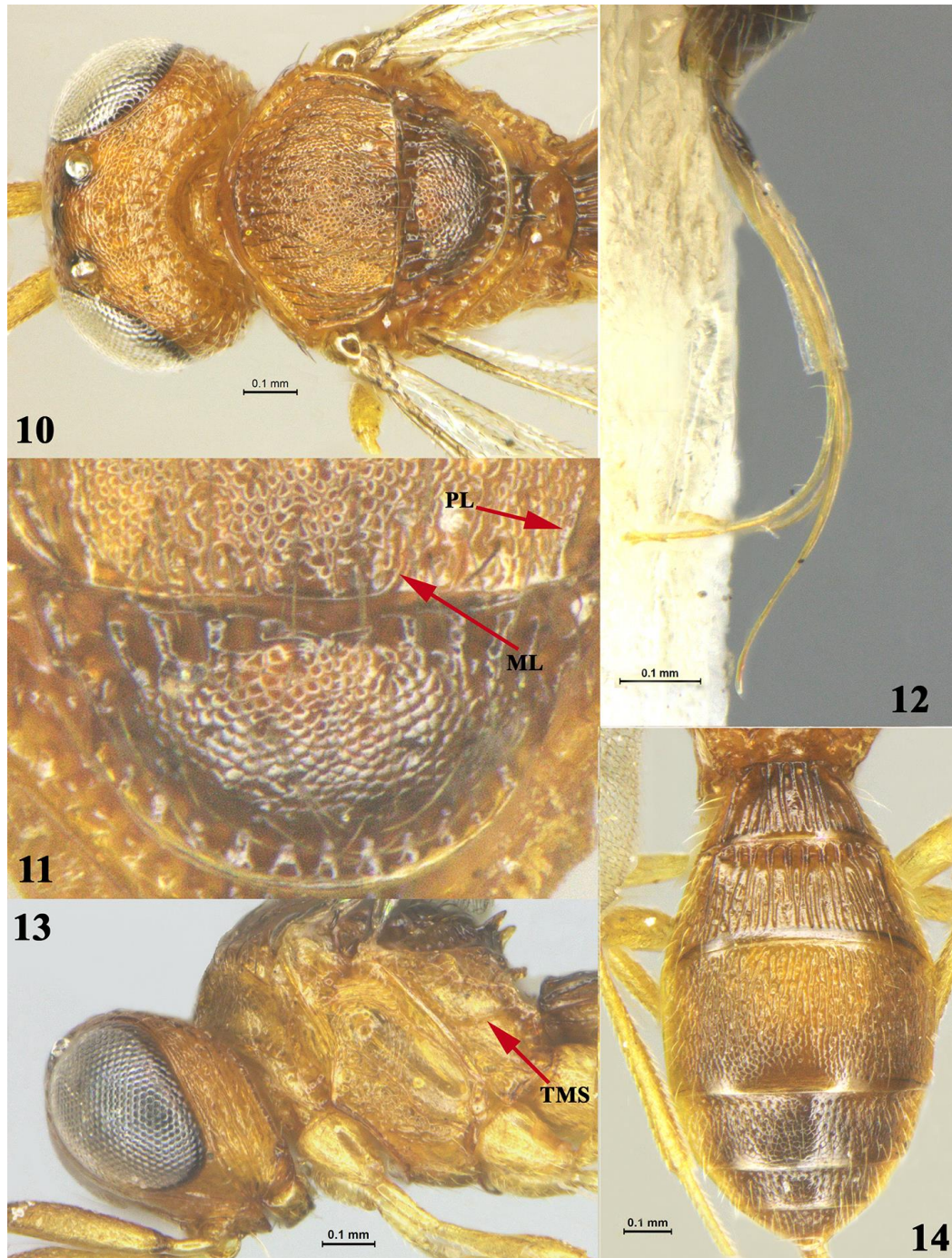
Metasoma (Figs 3, 5, 12, 14): (L: W=102.4:57.2); T1 striate, with five lateral setae and a weak hump antero-medially; T2 striate; T3 striate-reticulate anteriorly; T4–T6 reticulate-punctate; posterior margin of all tergites smooth; T2 and T3 laterally setose, T4–T6 setose



Figures 3–9. Bright field images of *Nyleta onge* sp. nov.. **3**, habitus (dorsal); **4**, head (frontal view); **5**, habitus (lateral); **6**, head showing tridentate mandibles; **7**, wings; **8**, antenna; **9**, head and mesosoma.

throughout (Fig. 14). Ovipositor system *Scelio*-type (Fig. 12). Length and width of tergites T1–T6 in ratio of 16.1:24.5, 21.3:39.3, 32.0:55.9, 15.7:53.8, 8.8:41.7, 6.9:27.1, respectively.

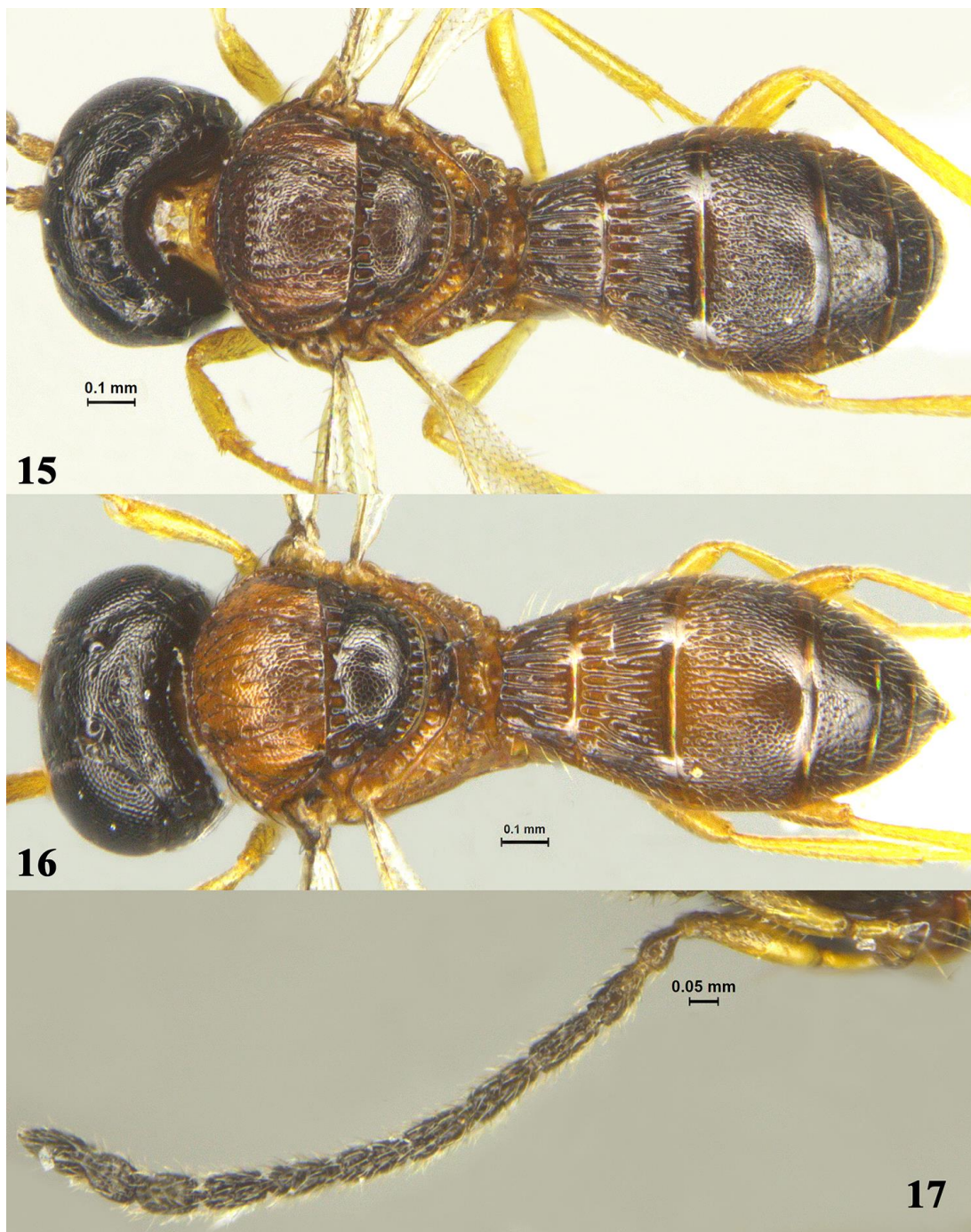
Male: Body length=2.362 mm (n=1); much darker than female (Fig. 16). Length and width of antennomeres A1–A12 in ratio of 2.57:7.0, 8.4:5.9, 12.2:5.7, 12.7:5.7, 13.7:5.5, 12.0:5.9, 12.5:6.2, 11.8:5.5, 10.5:5.9, 10.6:6.5, 9.1:6.9, 15.1:6.4, respectively (Fig.17); radicle 0.4x as long as A1.



Figures 10–14. Bright field images of *Nyleta onge* sp. nov.. **10**, head and mesosoma (dorsal); **11**, mesosoma (lateral view) PL-Parapsidal Line, ML-Midlobe; **12**, ovipositor; **13**, head and pleuron, TMS- Transverse median sulcus; **14**, metasoma.

Material examined: Holotype: Female, (ICAR/NBAIR/P875), INDIA: Andaman Islands: Little Andaman (White Surf waterfalls), 10°62'18"N 92°52'41"E, 49 m, 28.i.2013, K. Veenakumari, SN. Paratypes: 1 female, (ICAR/NBAIR/P876), same data as that of holotype. Female, (ICAR/NBAIR/P877), Tamil Nadu: Lower Pulney Hills, Thadiyankudisai, Horticulture Research Station (along the river) 10°29'95"N 77°71'17"E, 990m, YPT, 26.vi. 2015; male, (ICAR/NBAIR/P878), same data as P877.

Variability (Fig. 15): Specimens collected from Tamil Nadu are darker and have a black head; occiput not invaginate medially but almost straight.

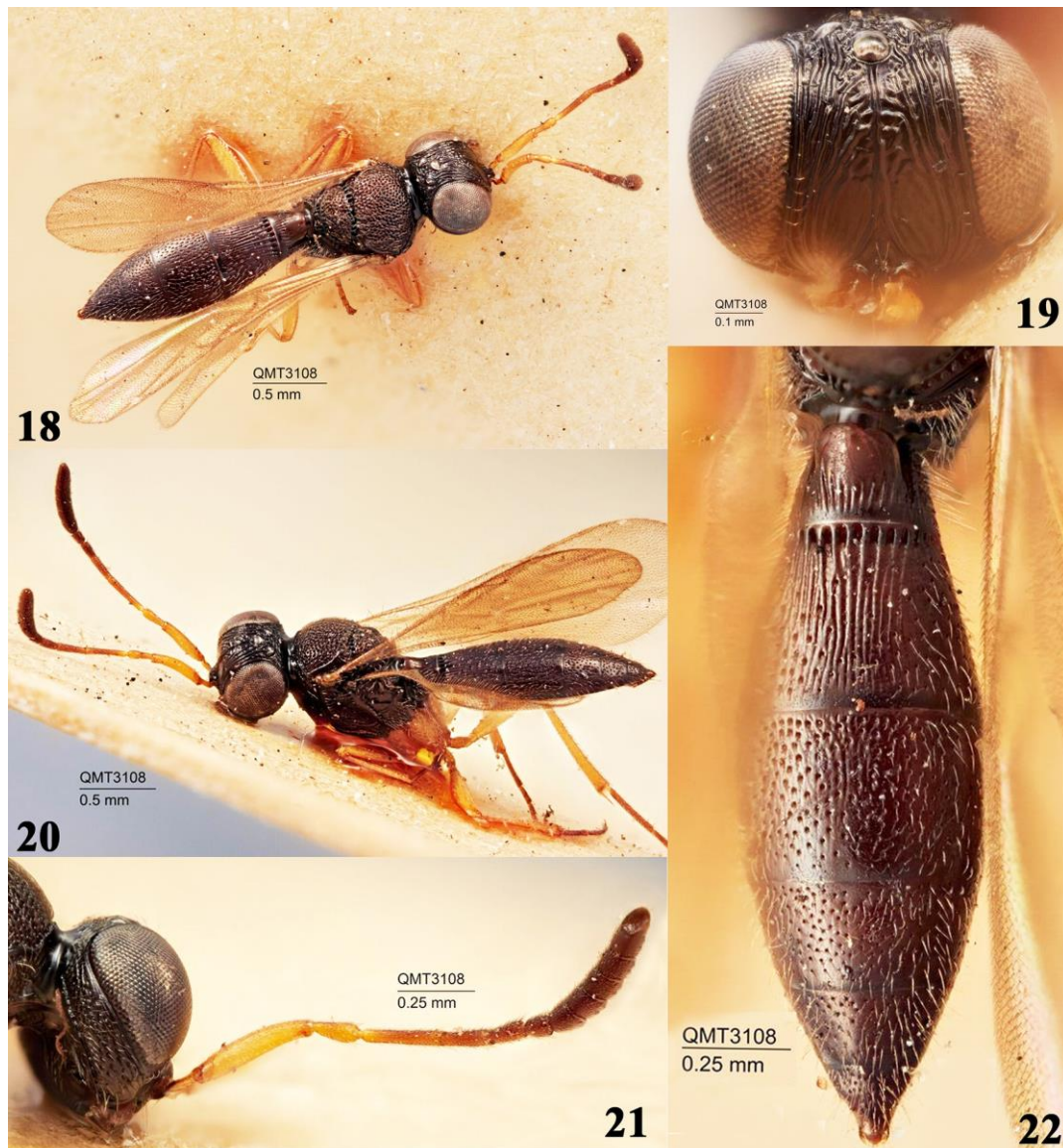


Figures 15–17. Bright field images of *Nyleta onge* sp. nov. showing variation in color. **15**, male (dorsal view); **16**, female (dorsal view) **17**, male antenna

Distribution: India, Thailand, Vietnam, Laos (Distributional data in latter three countries courtesy Dr. L. Masner)

Etymology: Named after the ‘*Onge*’, one of the last surviving negritoid tribes in the Andamans (less than 100 in number) living in two reserve camps Dugong Creek and South Bay of the Little Andaman Island from where the type specimens were collected.

Diagnosis: This species differs significantly from *N. striaticeps* (Figs 18–22) in the following characters. *N. striaticeps*: frons striate, striae extending from base of mandible to posterior ocelli (Fig. 19); central keel extending from anterior ocellus to base of torular triangle; mesoscutum and mesoscutellum deeply punctate (Fig. 18); T1 with a smooth median prominence; T2 striate and punctate posteriorly; T3–T6 punctate (Fig. 22); T2 1.1× as long as T3. Whereas in *N. onge*: frons finely granulate; central keel not reaching anterior ocellus; mesoscutum and mesoscutellum finely granulate; T1 with a weak hump antero-medially; T2 only striate without punctae; T3 striate-reticulate; T4–T6 reticulate-punctate; T2 0.66× as long as T3.



Figures 18–22. Bright field images of *Nyleta striaticeps* Dodd. **18**, habitus (dorsal); **19**, striated frons; **20**, habitus (lateral view); **21**, antenna; **22**, metasoma; ©Queensland Museum, Geoff Thompson.

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