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Two new species of *Apteroscelio* Kieffer (Hymenoptera: Scelionidae) from India

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Abstract

Two new species of *Apteroscelio* Kieffer, a previously monotypic genus, are here described, illustrated and keyed. Affinities between *Apteroscelio* and other scelionine genera are discussed. The male of this genus is imaged and described for the first time.

Key words: Scelionidae, brachyptery, taxonomy

Introduction

Apteroscelio, and the type species, *A. montanus*, were described by Kieffer (1913) from specimens collected in Kijabe, located in the forests of the Kikuyu Escarpment, Kenya. *Apteroscelio montanus* was later keyed and redescribed by Kieffer (1926). There have been no further taxonomic treatments of *Apteroscelio*, but other brachypterous genera of Scelionidae with *Scelio*-type ovipositor systems have since been described: the African *Platyscelidris* Szabó, and two Australian genera, *Jarabambius* Galloway and *Lidgbirdius* Galloway.

Materials and methods

Morphological terminology follows Masner (1976, 1980) and Mikó *et al*. (2007, 2010). The abbreviations T1–T7 correspond to metasomal mediotergites 1–7.

All specimens were collected by sweep netting (SN), pitfall traps (PFT) and yellow pan traps (YPT). The descriptions and imaging were carried out with a Leica M205A stereomicroscope, with 1× objective and Leica DFC-500 digital camera. SEM imaging was done with Jeol JCM-5000 NeoScope using specimens coated with gold. Full resolution images are archived at the image database at The Ohio State University (http://purl.oclc.org/NET/hymenoptera/specimage). Taxonomic synopses and matrix-based descriptions were generated from the Hymenoptera Online Database (hol.osu.edu) and the online program vSysLab (vsyslab.osu.edu) in the format of character: state.

The holotypes and paratypes with NBAIR registration numbers are deposited in the National Bureau of Agricultural Insect Resources, Bangalore, while those with ZSI/WGRC/IR/INV are deposited in the National Zoological Collection at Zoological Survey of India, Calicut. All specimens were collected by K. Veenakumari.

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Apteroscelio Kieffer

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http://bioguid.osu.edu/xbiod_concepts/450

Apteroscelio Kieffer, 1913: 17 (original description. Type: *Apteroscelio montanus* Kieffer, by monotypy and original designation); Kieffer, 1926: 266, 275 (description, keyed); Muesebeck & Walkley, 1956: 331 (citation of type species); Johnson, 1992: 343 (cataloged, catalog of world species).

Link to Distribution Map. http://hol.osu.edu/map-full.html?id=450

Diagnosis. Wings severely reduced in female; facial striae present; malar striae present; antennae in both sexes with 12 antennomeres, female clava 5-merous; male antenna filiform, A5 with tyloid; notaulus absent; epomial carina absent; mesoscutellum transverse; metascutellum present as a narrow transverse strip beneath mesoscutellum and divided from propodeum by a clear suture; metascutellum simple, without spine or lamella; metapleural carina present as a flange; female with 6 tergites and sternites externally visible; males with 8 external tergites and 7 external sternites; ovipositor *Scelio*-type.

Apteroscelio aureus Veenakumari, Talamas & Rajmohana, sp. n.

Figures 1–17

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http://bioguid.osu.edu/xbiod_concepts/399138

Description. Female body length: 1.05–1.21 mm (n=14). Male body length: 0.89–1.16 mm (n=8) Color: yellowish to dark brown; eyes grey; mandibular teeth dark brown; posterior margin of clypeus black; base of toruli with a black patch; apical tergites dark brown. A1 with orange tinge.

Head: Sculpture of A1: reticulate. Shape of clypeus: triangular. Maximum length of compound eye: less than or equal to length of malar sulcus. Setation of eyes: sparsely setose throughout. Ocelli: absent. Length of central keel: 0.24× length of frons. Setation of head: absent on antennal scrobe, otherwise even and moderately dense. Sculpture of head: punctate rugulose. Sculpture of vertex: reticulate. Occipital carina: incomplete dorsally.

Mesosoma: Transverse pronotal sulcus: present. Epomial carina: absent. Lateral face of pronotum: concave. Netrion: present. Sculpture of mesoscutum: reticulate rugose. Scutoscutellar sulcus: simple transverse furrow. Shape of mesoscutellum: rectangular. Sculpture of mesoscutellum: reticulate rugose. Sculpture of speculum: transversely striate. Mesopleural pit: present. Posterior mesepimeral sulcus: foveate. Mesopleural carina: present. Sculpture of mesopleuron below femoral depression: areolate. Postacetabular sulcus: indicated by cells. Sculpture of metascutellum: striate. Sculpture of metanotal trough: foveate. Metapleural sulcus: present. Metapleural epicoxal carina: present. Sculpture of metapleural triangle: areolate rugose.

Metasoma: Foveae along anterior margin of T1: anterior margin smooth. Sculpture of T1–T6: reticulate.

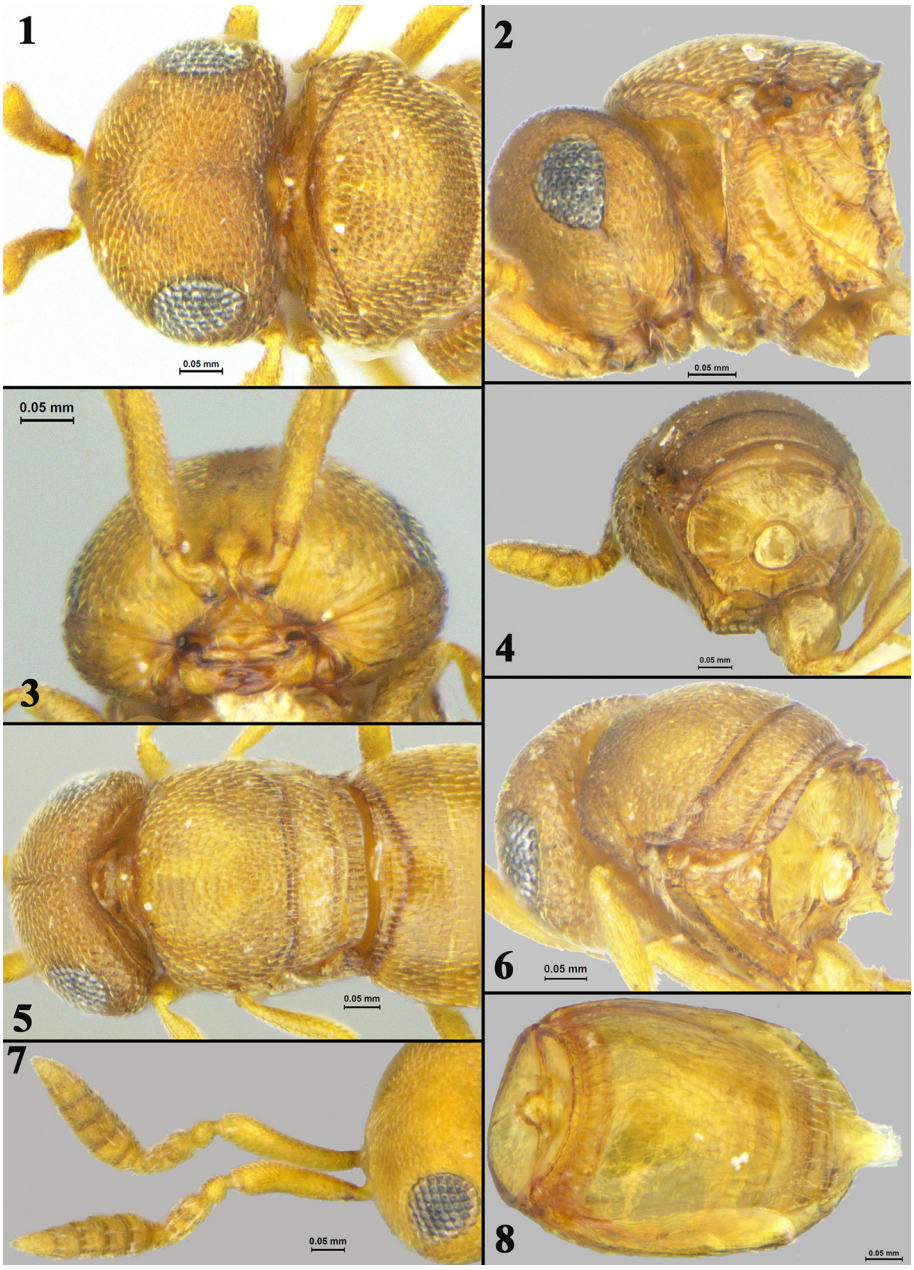
Male similar to female; length and width of A1–A12 in ratio of 18.5:4.4, 3.9:3.8, 3.6:4.3, 3.2:4.1, 3.3:4.4, 3.6:4.5, 4.2:4.4, 4.2:4.6, 4.2:4.7, 4.3:4.5, 4.4:4.5, 7.1:3.7, respectively. Wings strip-like reaching mid length of T1; Metasoma (L:W=39.6:31.5) 1.25× as long as wide; length and width of visible tergites T1–T7 in ratio of 1.6:21.0, 8.5:21.7, 21.1:34.0, 1.8:30.9, 2.0:28.0, 1.8:20.5, 5.6:11.5, respectively.

Diagnosis. *Apteroscelio aureus* can be separated from *A. montanus* and *A. shyamala* by the absence of ocelli and the small size of the eyes (maximum eye height less than length of malar sulcus).

Etymology. The species is named '*aureus*' meaning golden in Latin, referring to the color of the entire body.

Link to Distribution Map. http://hol.osu.edu/map-large.html?id=399138

Material Examined. Holotype, female: **INDIA**: Karnataka, Bengaluru, 936m, 13°09'68"N 77°56'41"E, Attur, 17.IX.2010, pitfall trap, K. Veenakumari, ICAR/NBAIR/P249 (deposited in NBAIR). Paratypes: **INDIA**: 17 females, 9 males, ICAR/NBAIR/P250, ICAR/NBAIR/P251–266, ICAR/NBAIR/P312–316, (NBAIR); ICAR/NBAIR/P857, ZSI/WGRS/IR/INV4092, ZSI/WGRC/IR/INV3431–3432 (ZSI, WGRS).



FIGURES 1–8. *Apteroscelio aureus* **1** Head and mesosoma, dorsal view (ICAR/NBAIR/P249) **2** Head and mesosoma, lateral view (ICAR/NBAIR/P253) **3** Head, ventral view (ICAR/NBAIR/P249) **4** Mesosoma, posterior view (ICAR/NBAIR/P253) **5** Head, mesosoma, metasoma, dorsal view (ICAR/NBAIR/P249) **6** Head and mesosoma, posterolateral view (ICAR/NBAIR/P253) **7** Head and antennae, dorsal view (ICAR/NBAIR/P249) **8** Metasoma, ventral view (ICAR/NBAIR/P253)

Apteroscelio shyamala Veenakumari, Talamas & Rajmohana, sp. n.

Figures 18–25

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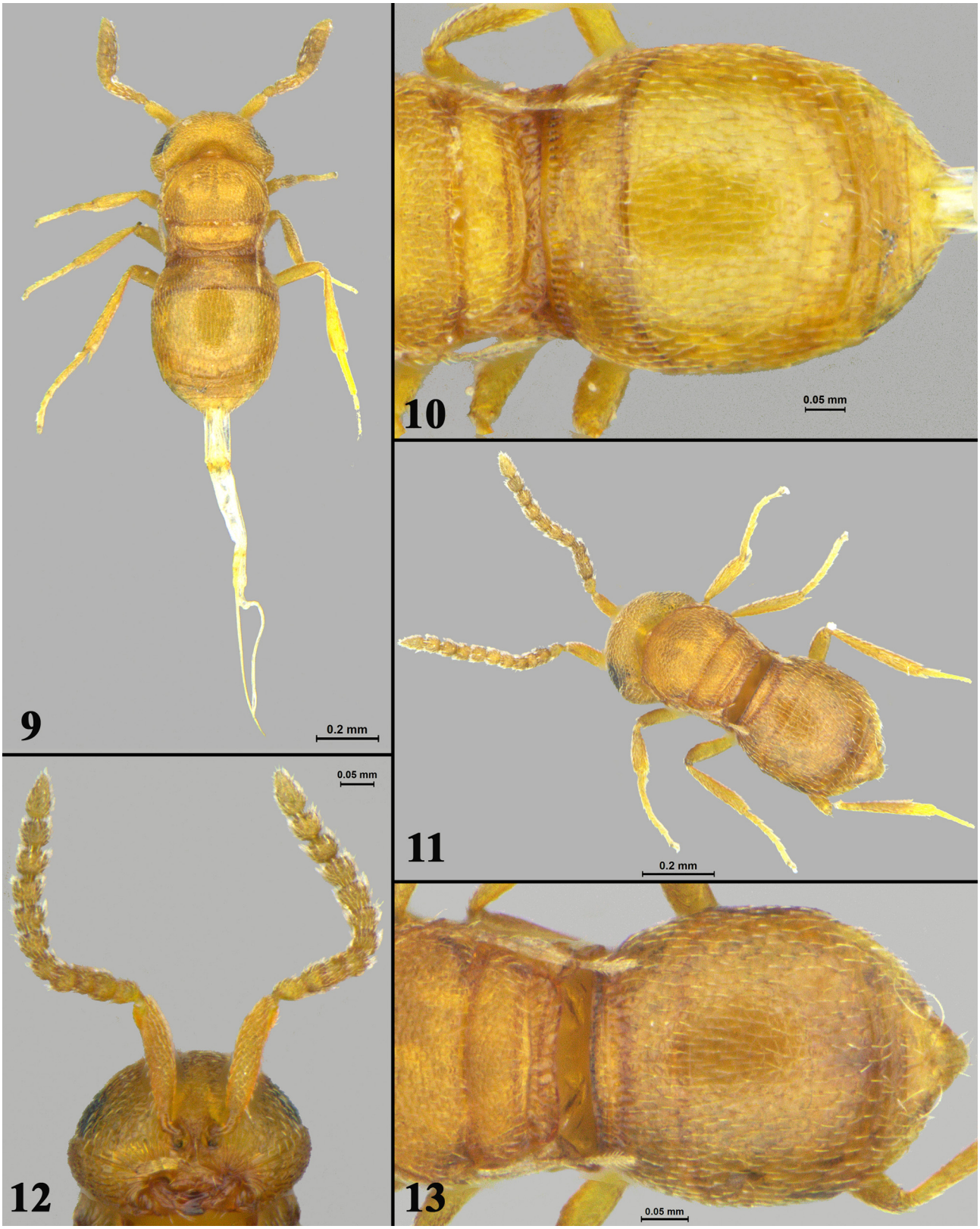
http://bioguid.osu.edu/xbiod_concepts/399139

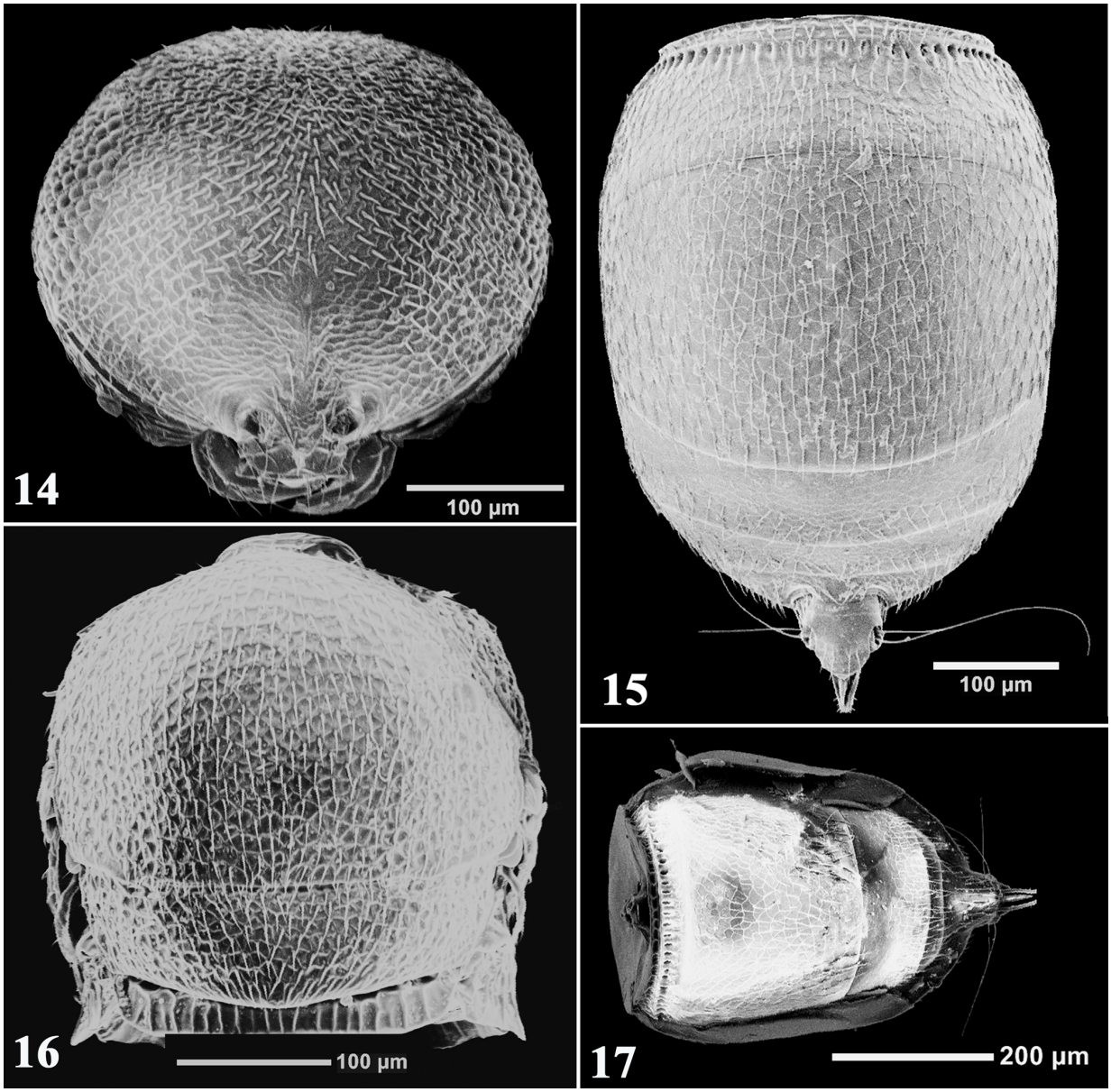
Description. Female body length: 0.95–1.21 mm (n=6). Color: mandibles, basal antennomeres and legs yellow to brown; otherwise dark brown to black.

Head: Sculpture of A1: reticulate. Shape of clypeus: rectangular. Maximum length of compound eye: greater than length of malar sulcus. Setation of eyes: sparsely setose throughout. Ocelli: present. Length of central keel:

0.4× length of frons. Setation of head: absent on antennal scrobe, otherwise even and sparse. Sculpture of head: reticulate microsculpture. Sculpture of vertex: reticulate. Occipital carina: incomplete dorsally.



FIGURES 9–13. *Apteroscelio aureus* **9** Head, mesosoma, metasoma, ovipositor, dorsal view (ICAR/NBAIR/P249) **10** Metasoma, dorsal view (ICAR/NBAIR/P249) **11** Head, mesosoma, metasoma, dorsal view (ICAR/NBAIR/P260)**12** Head and antennae, ventral view (ICAR/NBAIR/P260) **13** Mesosoma and metasoma, dorsal view (ICAR/NBAIR/P260)



FIGURES 14–17. *Apteroscelio aureus* ZSI/WGRC/IR/INV3432a **14** Head, anterior view**15** Metasoma, dorsal view **16** Mesosoma, dorsal view **17** Metasoma, ventral view

Mesosoma: Transverse pronotal sulcus: absent. Epomial carina: absent. Lateral face of pronotum: concave. Netrion: present. Sculpture of mesoscutum: reticulate. Scutoscutellar sulcus: simple transverse furrow. Shape of mesoscutellum: semicircular. Sculpture of mesoscutellum: scaly reticulate. Sculpture of speculum: transversely striate. Mesopleural pit: present. Posterior mesepimeral sulcus: weakly foveate. Mesopleural carina: complete. Sculpture of mesopleuron below femoral depression: coriaceous reticulate. Postacetabular sulcus: present as a smooth furrow or indicated by very fine cells. Sculpture of metascutellum: striate-foveate. Sculpture of metanotal trough: foveate. Metapleural sulcus: present. Metapleural epicoxal carina: absent. Sculpture of metapleural triangle: areolate rugose.

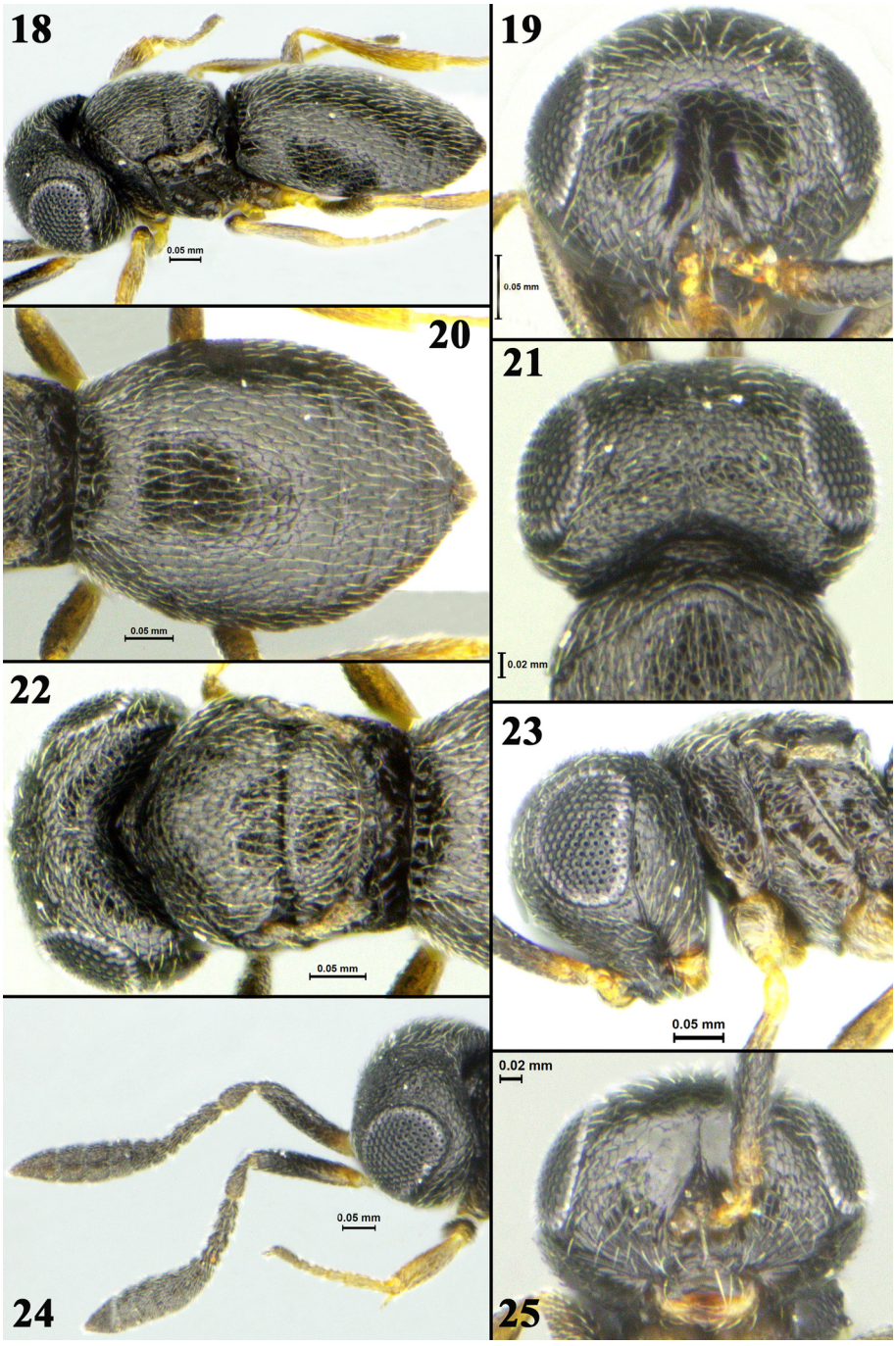
Metasoma: Foveae along anterior margin of T1: present. Sculpture of T1–T6: reticulate.

Diagnosis. *Apteroscelio shyamala* has T2 as the largest metasomal tergite. In *A. aureus* and *A. montanus* T3 is the largest.

Etymology. The species is named '*shyamala*' meaning black in Sanskrit, referring to the color of this species. The name is treated as a noun in apposition and is also intended as a tribute to the first author's friend, Dr. Radha Shyamala.

Link to Distribution Map. http://hol.osu.edu/map-large.html?id=399139

Material examined. Holotype, female: **INDIA**: 2890m, 77°12'99"E, 32°35'31"N, Himachal Pradesh, Manali, Dhundi, 6.VIII.2014, sweeping, K. Veenakumari, ICAR/NBAIR/P330 (deposited in NBAIR). Paratypes: **INDIA**: 6 females, ICAR/NBAIR/P331–333, ICAR/NBAIR/P350, (NBAIR); ZSI/WGRS/IR/INV4093 (ZSI, WGRS); ICAR/NBAIR/P311.



FIGURES 18–25. *Apteroscelio shyamala* female holotype **18** Head, mesosoma, metasoma, dorsolateral view **19** Head, anterior view **20** Metasoma, dorsal view **21** Head and mesosoma, dorsal view **22** Head and mesosoma, dorsal view **23** Head and mesosoma, lateral view **24** Head and antennae, dorsolateral view **25** Head, anteroventral view

Key to species of *Apteroscelio* (females)

1) Ocelli absent (Figs 5, 7, 14); maximum distance across compound eye less than or equal to length of malar sulcus (Figs 2, 14) . . . . . *A. aureus* Veenakumari, Talamas & Rajmohana **sp. n.**

\- Ocelli present (Figs 18, 21); maximum distance across compound eye distinctly greater than length of malar sulcus (Fig. 23) .

. 2
2. T2 the longest tergite (Fig. 20) . . . . . *A. shyamala* Veenakumari, Talamas & Rajmohana **sp. n.**
- T3 the longest tergite . . . . . *A. montanus* Kieffer

Comments. *Lidgbirdius* can be separated by the presence of a distinct skaphion, but we are not yet aware of reliable generic characters that separate *Apteroscelio, Platyscelidris* and *Jarabambius*. Among these, *Apteroscelio* is the oldest available name and at present we consider it to be the appropriate placement for the species here described based on characters presented in our diagnosis of *Apteroscelio*. Treatment of the generic status of *Apteroscelio* in relation to other genera is beyond the scope of this paper and is currently under study by EJT and others. We consider it best to defer decisions about the fate of these genera until they are analyzed in a broader geographic and taxonomic context. Given that delimitation of genera is based on the morphological diversity of their constituent species, our description of *A. shyamala* contributes to the generic concept of *Apteroscelio* by expanding it to include species in which T2 is the longest tergite.

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References

Johnson, N.F. (1992) Catalog of world Proctotrupoidea excluding Platygastridae. *Memoirs of the American Entomological Institute*, 51, 1–825.

Kieffer, J.J. (1913) Proctotrupidae, Cynipidae et Evaniidae. Voyage de Ch. Alluaud et R. Jeannel en Afrique Orientale (1911-1912). *Résultats scientifiques. Hyménoptères*, 1, 1–35.

Kieffer, J. J. (1926) Scelionidae. *Das Tierreich*. *Vol. 48*. Walter de Gruyter & Co., Berlin, 885 pp.

Masner, L. (1976) Revisionary notes and keys to world genera of Scelionidae (Hymenoptera: Proctotrupoidea). *Memoirs of the Entomological Society of Canada*, 108, 1–87.
https://doi.org/10.4039/entm10897fv

Masner, L. (1980) Key to genera of Scelionidae of the Holarctic region, with descriptions of new genera and species (Hymenoptera: Proctotrupoidea). *Memoirs of the Entomological Society of Canada*, 112, 1–54.
https://doi.org/10.4039/entm112113fv

Mikó, I., Masner, L. & Deans, A.R. (2010) World revision of *Xenomerus* Walker (Hymenoptera: Platygastroidea, Platygastridae). *Zootaxa*, 2708, 1–73.

Mikó, I., Vilhelmsen, L., Johnson, N.F., Masner, L. & Pénzes, Z. (2007) Skeleto-musculature of Scelionidae (Hymenoptera: Platygastroidea) head and mesosoma. *Zootaxa*, 1571, 1–78.

Muesebeck, C.F.W. & Walkley, L.M. (1956) Type species of the genera and subgenera of parasitic wasps comprising the superfamily Proctotrupoidea (order Hymenoptera). *Proceedings of the United States National Museum*, 105, 319–419.
https://doi.org/10.5479/si.00963801.3359.319