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NOTE

ADDITIONAL REPORTS OF SOLITARY POTTER WASPS (HYMENOPTERA: VESPIDAE: EUMENINAE) IN BHUTAN

Tshering Nidup, Wim Klein, P. Girish Kumar & Phurpa Dorji

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Potter wasps belong to the subfamily Eumeninae of family Vespidae. These are solitary species though some show primitive social behavior. This group is economically important as the predators of insect larva of many pests; however, adults feed on nectar (Srinivasan & Kumar 2010). The potter or mason wasp of Bhutan is documented by Giordani (1975) recording *Rhynchium haemorrhoidale quinquecinctum*, *Ancistrocerus sikkimensis*, *Delta pyriforme*, and described *Stenodynerus baronii* and *Antepipona bhutanensis* as new to science. *Pareumenes quadrispinosus* was reported from the Himalaya by Bingham (1897), and Srinivasan & Kumar (2010) specifically listed it from Bhutan in their distribution list. Nidup et al. (2016) reported seven species of petiolate potter wasps from Bhutan with an additional two subspecies, *Pareumenes quadrispinosus acutus* and *Delta pyriforme pyriforme*. This, however, is a mere underestimation of the vast diversity and richness of Eumeninae wasps in Bhutan. This paper reports 11 species with an additional subspecies from Bhutan including *Antepipona bhutanensis* Giordani, 1975, for the first time after its original description. This study is based on a series of specimens collected during the

ADDITIONAL REPORTS OF SOLITARY
POTTER WASPS (HYMENOPTERA: VESPIDAE:
EUMENINAE) IN BHUTAN

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invertebrate documentation project during the period of June 2014 to June 2017 from different localities of Bhutan.

The specimens were caught with a swift net and euthanized with ethyl acetate. The specimens were pinned, dried, stored in an insect box and deposited in the National Biodiversity Centre (NBCB), Bhutan. The specimens were studied under a stereomicroscope and photographed with a Nikon D5100 with an attached 40mm macro lens.

Abbreviations: BMNH - British Museum (Natural History), London, UK; MRSN - Museo Regionale di Scienze Naturali di Torino, Italy; MSNV - Museo di Storia Naturale di Venezia, Venice, Italy; NBCB - National Biodiversity Centre Bhutan, Bhutan; NHMB - Naturhistorisches Museum, Basel, Switzerland; OUM - Oxford University Museum, Oxford, UK; UZMC - Universitetets Zoologiske Museum, København, Denmark; ZMB - Zoologisches Museum der Humboldt Universität, Berlin, Germany; ZSIK - Western Ghat Regional Centre, Zoological Survey of India, Kozhikode (= Calicut), India.

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1a. *Anterhynchium flavomarginatum curvimaculatum*
(Cameron, 1903) (Images 1 & 2)

Rhynchium curvimaculatum Cameron, 1903, Ann. Mag. Nat. Hist., 11(7): 328, female, Khasia Hills, Assam [=Meghalaya] (OUM).

Rhynchium collinum Cameron, 1903, Ann. Mag. Nat. Hist., 11(7): 329, female, male, Khasia Hills, Assam [=Meghalaya] (OUM).

Diagnosis: Black with the following parts yellow: two spots on pronotum dorsally, postscutellum narrowly at base, a spot on mesopleuron, I & II tergites with narrow apical bands interrupted medially, clypeus with two spots at base laterally, spot between antennae, scape from inner side; wings fuscous with purple effulgence. For detailed description, consult van der Vecht (1963).



Image 1. *Anterhynchium flavomarginatum curvimaculatum* (female): habitus.

Measurements: 1 female: 24.20mm.

Materials examined: NBCB00193, 15.iv.2016, 1 female, Phuntshothang (Bangtar), Samdrup Jongkhar (27.89°N & 91.69°E, 258m), coll. Tshering Nidup & Phurpa Dorji.

Distribution: India (van der Vecht 1963). New record for Bhutan.

1b. *Anterhynchium flavomarginatum flavomarginatum*
(Smith, 1852) (Images 3 & 4)

Rhynchium flavo-marginatum Smith, 1852, Trans. Ent. Soc. Lond., 2(2): 35, male, China (BMNH).

Odynerus nigrifrons Smith, 1857, Cat. Hym. Brit. Mus., 5: 62, female - "North China (Shanghai)" (BMNH).

Diagnosis: This subspecies is distinguished from *Anterhynchium flavomarginatum curvimaculatum* in having smaller size, postscutellum wholly black, yellow spot between antennae, lacking of yellow mark on clypeus at base, broadly interrupted yellow bands on I & II tergites (separation much wider in II tergite), lacking yellow spots on mesopleuron. For more details, consult van der Vecht (1963).

Measurements: 1 female: 16.30mm.

Materials examined: NBCB00194, 12.x.2015, 1 female, Tsholingkhar, Tsirang (27°N & 90.08°E, 1,159m), coll. Tshering Nidup & Wim Klein from the paddy field.

Distribution: China, India, Vietnam, Pakistan, Nepal, Laos, Mongolia, Korea & Japan (van der Vecht 1963; Nguyen 2015). New record for Bhutan.

2. *Allorhynchium argentatum* (Fabricius, 1804) (Images 5 & 6)

Vespa argentata Fabricius, 1804, Syst. Piez.: 260, male, "Sumatra" (UZMC).

Rhynchium clypeatum Cameron, 1900, Ann. Mag.



Image 2. *Anterhynchium f. curvimaculatum* (female): facial view (A) and posterior portion of mesosoma (B).

Nat. Hist. (7) 6: 531, female, "Barrackpore, Bengal" (BMNH).

Allorhynchium argentatum; van der Vecht, 1963, Zool. Verh., Leiden 60: 60 (list), fig. 5a.

Diagnosis: Female: Body entirely black except yellow line in between antennal toruli and inner eye margin, tarsal claws blackish-brown. Wings dark with purple reflections, body with rather sparsely to moderately dense fine silvery white pubescence. Male: similar to female except partly to almost entirely yellow clypeus. For more details, consult Kumar & Sharma (2015).

Measurements: 3 males: 11.51–13.64 mm; 4 females: 12.15–12.51 mm.

Materials examined: NBCB00195, 18.iv.2016, 1 female, NBCB00196, 11.iv.2015, 1 male, Nganglam, Pema Gatshel (26.82°N & 91.23°E, 720m), coll. Phurpa Dorji, Thinley Gyeltshen & Tshering Nidup; NBCB00197, 26.x.2015, 1 female, Kapatapsa, Wangdiphodrang (27.71°N & 89.76°E, 1,476m), coll. Phurpa Dorji & Wim Klein; NBCB00198, 19.vii.2015, 1 female, Phuntshothang, Samdrup Jongkhar (27.89°N & 91.69°E, 258m), coll. Tshering Nidup & Phurpa Dorji; NBCB00199, 15.x.2015, 1 male, Berti, Zhemgang (27.15°N & 90.66°E, 531m), coll.



Image 3. *Anterhynchium f. flavomarginatum* (female): habitus.



Image 4. *Anterhynchium f. flavomarginatum* (female): facial view (A) and posterior portion of mesosoma (B).

Tshering Nidup & Wim Klein; NBCB00200, 12.x.2015, 1 male, Tsholingkhar, Tsirang (27°N & 90.08°E & 1,159m), coll. Tshering Nidup & Wim Klein; NBCB00201, 16.vi.2012, 1 female, Chuzomsa, Wangdiphodrang (27.50°N & 89.96°E, 1,362m), coll. Wim Klein.

Distribution: India, Indonesia, Laos, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Singapore & Thailand (Kumar & Sharma 2015). New record for Bhutan.

3. *Rhynchium brunneum brunneum* (Fabricius, 1793) (Image 7)

Vespa brunnea Fabricius, 1793, Entomol. Syst., 2: 264, Syntype, sex not mentioned, "Tranquebariae, India (UZMC)".

Rhynchium brunneum; Spinola, 1808, Ins. Ligur, 2: 189.

Rhynchium brunneum brunneum: Gusenleitner, 2006, Linzer biol. Beitr., 38 (1): 692 (Sikkim, Meghalaya, West Bengal).

Diagnosis: Female: clypeus broad and truncate, I and II tergite black at base, punctures on clypeus large and dense, reddish brown body. Male: other characters similar to female except yellow parts: clypeus, lower frons, inner eye margins. Mesonotum darker than in female. For more characters, consult Kumar & Sharma (2013).

Measurements: 3 males: 13.92–14.16 mm; 3 females: 14.96–21.17 mm.

Materials examined: NBCB00202, 17.iv.2016, 1 female, Panbang, Zhemgang (26.85°N & 90.97°E, 222m), coll. Phurpa Dorji, Thinley Gyeltshen & Tshering Nidup; NBCB00203, 07.x.2015, 1 female, Sorchen, Chhukha (26.89°N & 89.42°E, 960m), coll. Tshering Nidup & Wim Klein; NBCB00204, 15.vi.2016, 1 female, Kanglung, Trashigang (27.28°N & 91.52°E, 1,823m), coll. Phurpa Dorji & Tshering Nidup; NBCB00205, 25.vii.2016, 1 male,

Kanglung, Trashigang (27.28°N & 91.52°E, 1,823m), coll. Phurpa Dorji & Tshering Nidup; NBCB00206, 08.x.2015, 1 male, Pasakha, Chhukha (26.84°N & 89.45°E, 329m), coll. Tshering Nidup & Wim Klein; NBCB00207, 22.x.2015, 1 male, Trashigang Pam, Trashigang (27.31°N & 91.53°E, 987m), coll. Phurpa Dorji & Wim Klein.

Distribution: India, Afghanistan, Cambodia, China, Guam, Indonesia, Iran, Iraq, Malaysia, Marquesas Island, Myanmar, Nepal, New Britain, Pakistan, Taiwan & Thailand (Kumar & Sharma 2013). New record for Bhutan.

4. *Antodynerus limbatus* (de Saussure, 1852) (Images 8, 9 & 10)

Rhygchium limbatum de Saussure, 1852, Ét. Fam. Vesp. 1: 117, female, pl. 13 fig. 10, "L'Amérique?" (coll. de Romand).

Rhynchium rugolatum Cameron, 1900, Ann. Mag. Nat. Hist. (7) 6: 533, female, male, "Barrackpore, Bengal,

Poona, Khasia Hills" (syntypes: OUM; 2 male BMNH).

Diagnosis: Female: reddish-brown with black markings, thorax more or less black ventrally, reddish-brown parts: abdomen wholly except I & II tergites at base, hind coxa and femur, frons around antennae forming irregular shape, enlarged spot around ocelli, triangular shaped on mesonotum anteriorly and posterior apically, propodeum medially, tergites faintly yellow apically. Wings hyaline brown, marginal cell darker. Male: similar to female except smaller size, clypeus wholly, irregular marks on frons, around the ocular emargination and inverted triangular mark above clypeus, yellow. For structural details, consult Kumar & Carpenter (2013).

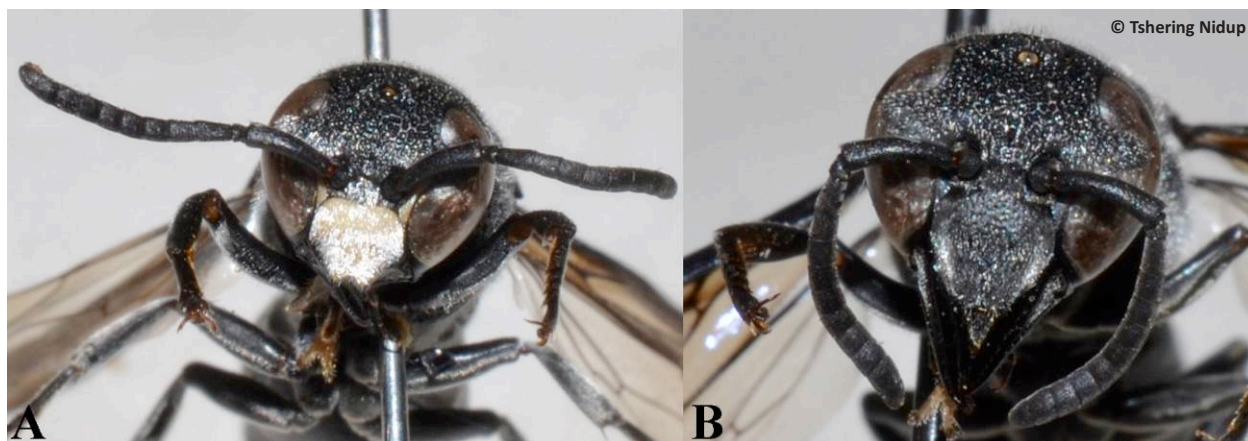
Measurement: 12 females: 11.44–14.72 mm; 13 males: 10.31–12.38 mm.

Materials studied: NBCB00208, NBCB00209, NBCB00210, NBCB00211, NBCB00212, 14.iv.2016, 4 females, 1 male, Nganglam, Pema Gatshel (26.82°N & 91.23°E, 720m), coll. Phurpa Dorji, Thinley Gyeltshen & Tshering Nidup from Deezama village; NBCB00213, NBCB00214, NBCB00215, NBCB00216, NBCB00217, 17.iv.2016, 2 females, 3 males, Panbang, Zhemgang (26.83°N & 90.94°E, 137m), coll. Phurpa Dorji, Thinley Gyeltshen & Tshering Nidup from Royal Manas National Park of Bhutan; NBCB00218, 9.x.2015, 1 female, Dhamdangra, Chhukha (26.87°N & 89.38°E, 310m), coll. Tshering Nidup & Wim Klein; NBCB00219, 13.x.2015, 1 female, Sarpang (26.87°N & 90.26°E, 331m), coll. Tshering Nidup & Wim Klein; NBCB00220, NBCB00221, 27.x.2015, 1 female, 1 male, Bajothango, Wangdi Phodrang (27.51°N & 89.88°E, 1,218m), coll. Phurpa Dorji & Wim Klein; NBCB00222, NBCB00223, 12.viii.2016, 1 female, 1 male, Wachey, Wangdi Phodrang (27.60°N & 89.87°E, 1,506m), coll. Tshering Nidup & Wim Klein;



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Image 5. *Allorhynchium argentatum* (female): habitus



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Image 6. *Allorhynchium argentatum*: Facial view (A: male; B: female)



Image 7. *Rhynchium brunneum brunneum* (female): feeding on flower.



Image 8. *Antodynerus limbatus* (female): habitus.

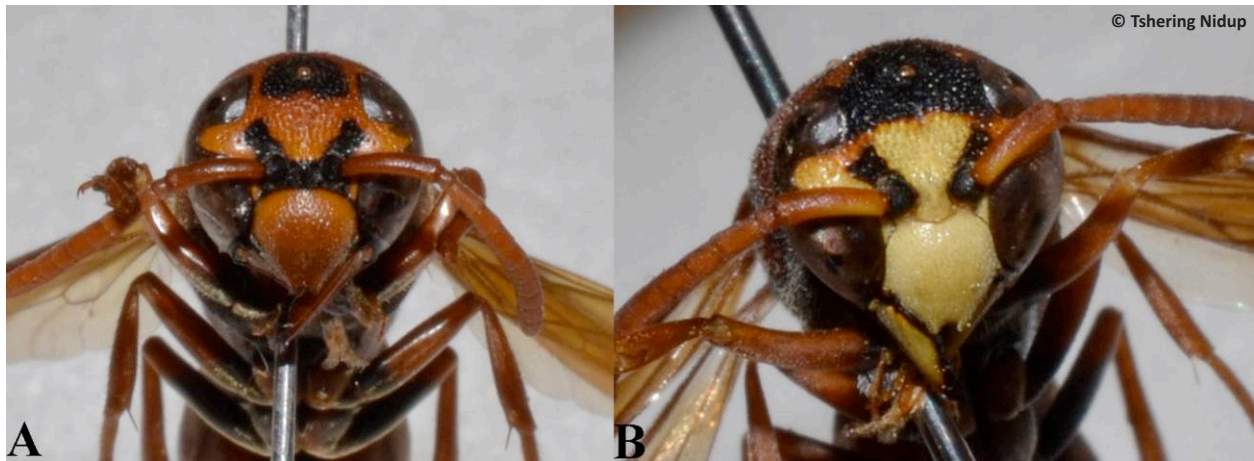


Image 9. *Antodynerus limbatus*: facial view (A: female; B: male).

NBCB00224, NBCB00225, 24.viii.2016, 2 females, Thridangbi, Mongar (27.29°N & 91.16°E, 1,512m), coll. Phurpa Dorji & Wim Klein; NBCB00226, NBCB00227, NBCB00228, NBCB00229, 21.viii.2016, 4 males, Phuntshothang (Bangtar), Samdrup Jongkhar (26.88°N & 91.70°E, 370m), coll. Phurpa Dorji & Wim Klein; NBCB00230, 14.x.2015, 1 male, Tingtibi, Zhemgang (27.14°N & 90.69°E, 631m), coll. Tshering Nidup & Wim Klein; NBCB00231, 23.x.2015, 1 male, Menghugang, Mongar (27.27°N & 91.14°E, 762m), coll. Phurpa Dorji & Wim Klein; NBCB00232, 18.vii.2016, 1 male, Yadi, Mongar (27.28°N & 91.37°E, 1514m), coll. Phurpa Dorji & Wim Klein; NBCB00233, 05.viii.2016, 1 male, Dharamsala, Chhukha (26.87°N & 89.41°E, 303m), coll. Tshering Nidup & Wim Klein; NBCB00234, 19.viii.2016, 1 male, Trashigang Chagzam, Trashigang (27.35°N & 91.55°E, 766m), coll. Phurpa Dorji & Wim Klein.

Distribution: India, China, Laos, Myanmar, Nepal, Pakistan, Thailand (Kumar & Carpenter 2013). New record for Bhutan.

5. *Phimenes flavopictum* (Zimmermann, 1931) (Image 11)

Eumenes arcuata continentalis Zimmermann, 1931, Zietschr. Morph. Oek. Tiere, 22: 203, female, male, Syntypes, Type Loc. Sikkim (ZMB).

Eumenes flavopictus continentalis; van der Vecht, 1959, Zool. Verh. Leiden, 41: 36.

Phimenes flavopictum continentale (Zimmermann); Gusenleitner, 2006, Linzer Biol. Beitr. 38(1): 694.

Diagnosis: Male: Black with the following parts yellow: Clypeus, interantennal space, inner orbit, ocular sinus, a line behind eye, band on pronotum in front, two curved spots antero-laterally and two parallel longitudinal lines



Image 10. *Antodynerus limbatus* (male): parasitic mite infestation on propodeum.



Image 12. *Coeleumenes burmanicus*: habitus (male).

medially on mesoscutum, broad C-shaped mark on tegula, subtriangular spot on scutellum laterally, broad line on postscutellum apically, broad vertical mark on mesopleuron, dorsum of propodeum laterally (depicting cross-shaped black mark centrally), two small spots at petiole base laterally, two slightly medially and a subapical band of petiole, two large pyriform spots near base of II gastral tergite, two minute spots on II gastral sternite laterally, subapical interrupted bands on margins of II-VI tergites posteriorly, VII tergite black entirely. Legs black, variegated with yellow. Wings fuscohyaline. Clypeus smooth, pyriform, the apex sharply truncated, frons, vertex and thorax with fine shallow punctures, petiole and gaster smooth.

Measurements: 1 male: 21.75mm.

Materials examined: NBCB00235, 15.iv.2016, 1 male, Panbang, Zhemgang (26.83°N & 90.94°E, 137m), coll. Phurpa Dorji, Thinley Gyeltshen & Tshering Nidup from



Image 11. *Phimenes flavopictum* (male): habitus.



Image 13. *Coeleumenes burmanicus* (male): facial view.

Royal Manas National Park of Bhutan.

Distribution: India, China (including Hong Kong), Indonesia, Malaysia, Myanmar, Singapore & Thailand (Srinivasan & Kumar 2010; Kumar 2013). New record for Bhutan.

6. *Coeleumenes burmanicus* (Bingham, 1897) (Images 12 & 13)

Montezumia burmanica Bingham, 1897, Fauna Brit. India, Hym. 1: 350, fig. 101, female, male, "Tenasserim" (BMNH).

Montezumia bisulcata Cameron, 1900, Ann. Mag. Nat. Hist. (7) 6: 535, female, "Khasia Hills, Assam [=Meghalaya]" (OUM).

Montezumia burmanica var. *malayana* Dover, 1931, J. Fed. Malay St. Mus. 16: 253, female, "Jor Camp, Perak, Malaya" (? BMNH). Synonymized by van der Vecht 1963: 46.

Coeleumenes burmanicus; van der Vecht, 1963, Zool. Verh. Leiden 60: 46, [Sikkim; Assam; Indo-China; Siam;



Image 14. *Coeleumenes impavidus impavidus* (male): habitus.



Image 15. *Coeleumenes impavidus impavidus* (male): facial view.

Malaya; Vietnam (Than Moi)].

Diagnosis: Male: Jet-black with the following parts yellow: inner side of scape, subtriangular shape at base of clypeus, wedge-shaped between antennae, narrow lines on dorsum of pronotum; wings fuscous with purple effulgence, posterior wings hyaline at base.

Measurements: 1 male: 11.26mm.

Materials examined: BNCB00236, 15.iv.2016, 1 male, Panbang, Zhemgang (26.84°N & 90.99°E, 390m), coll. Phurpa Dorji, Thinley Gyeltshen & Tshering Nidup from the village of Thinleygang.

Distribution: Vietnam, India, Malaysia, Myanmar (Bingham 1897; van der Vecht 1963; Nguyen 2016). New record for Bhutan.

7. *Coeleumenes impavidus impavidus* (Bingham, 1897) (Images 14 & 15)

Montezumia impavida Bingham, 1897, Fauna Brit. India, Hym., 1: 351, female, Burma; Tenasserim, type female, Thaungyin Valley, Tenasserim, (BMNH).

Pseudozumia impavida; Giordani Soika, 1941, Boll. Soc. Venez. Stor. Nat., 2: 165, 168, fig. 8 (4, 5, 8).

Diagnosis: Male: Black with the following parts yellow: clypeus, wedge-shaped above clypeus and between antennae, scape of antennae in front, broad line behind eyes not reaching vertex, pronotum dorsally and medially interrupted, spot at mesopleurae basally, one spot each on tegula anteriorly and posteriorly, mesoscutum on lateral apically, subtriangular marks on lateral angles of scutellum little marginally, medially interrupted transverse band on petiole, apical bands on II, III & IV tergites, on III divided to three interrupted spots, reduced to tiny spot on V tergite, inner side of femur and tibia (tibia apically) on fore legs, inner side of femur (apically) and tibia on mid legs, laterals of propodeum apically; wings brownish hyaline, darker along costal margin; antenna reddish yellow from inner side.

Variation: It differs from the description of Bingham (1897) in not having a yellow line on postscutellum and two longitudinal lines on mesonotum but agrees on having black mesoscutum as described by van der Vecht (1963).

Measurements: 1 male: 10.27mm.

Materials examined: BNCB00272, 01.x.2015, 1 male, Khaling, Trashigang (27.20°N & 91.60°E, 2073m), coll. Tshering Nidup & Phurpa Dorji from the village.

Distribution: India, Indo-China, Malaysia, Myanmar, Singapore, Sri Lanka, Indonesia (Bingham 1897; van der Vecht 1963). New record for Bhutan.

8. *Apodynerus troglodytes troglodytes* (de Saussure, 1856) (Images 16 & 17)

Odynerus troglodytes de Saussure, 1855, Ét. Fam. Vesp. 3: 249, male (in subgenus *Odynerus* division *Parodynerus*), "Le Sénégal" (MRSN).

Apodynerus troglodytes troglodytes; Gusenleitner, 1988, Linz. Biol. Beitr. 20: 180.

Antepipona malabarica Lambert, 2004, in Rajmohana et al., Perspectives Biosystematics Biodiversity: 554 (key), 560, female, "India, Kerala, Calicut University Campus", holotype female (ZSIK).

Antepipona narendrani Lambert, 2004, in Rajmohana et al., Perspectives Biosystematics Biodiversity: 558, female, male, "India, Kerala. Sulthan Bathery", holotype female (ZSIK).

Diagnosis: Body black with yellow maculation, wings hyaline, thickly infumated at stigma, slightly infumated at apex of median cell and radial cell entirely. Fine silvery white pubescence on body. The specimens studied agrees quite well with the description provided by Kumar et al. (2013) but specimens from Bhutan differs



Image 16. *Apodynerus troglodytes troglodytes* (male): habitus.



Image 17. *Apodynerus troglodytes troglodytes* (male): facial view.

in lacking yellow spots on II tergite and mesepisternum.

Measurements: 13 males: 5.85–7.08 mm.

Materials examined: NBCB00238, NBCB00239, NBCB00240, NBCB00241, 20.viii.2016, 4 males, Dewathang, Samdrup Jongkhar (26.85°N & 91.45°E, 941m), coll. Phurpa Dorji & Wim Klein from the campus of Jigme Namgyal College of Engineering; NBCB00242, NBCB00243, 21.viii.2016, 2 males, Bangtar, Samdrup Jongkhar (26.88°N & 91.69°E, 278m), coll. Phurpa Dorji & Wim Klein from the Bangtar market on the stream bank; NBCB0244, 21.viii.2016, 1 male, Mantar, Samdrup Jongkhar (26.91°N & 91.58°E, 584m), coll. Phurpa Dorji & Wim Klein from along the road; NBCB00245, NBCB00246, NBCB00247, 14.iv.2016, 3 males, Nganglam, Pema Gatshel (26.82°N & 91.23°E, 720m), coll. Phurpa Dorji, Thinley Gyeltshen & Tshering Nidup from Deezama Village and Alabari Village; NBCB00248, 9.x.2015, 1 male, Dhamdangra, Chhukha (26.87°N & 89.38°E, 310m), coll. Tshering Nidup & Wim Klein; NBCB00249, 04.viii.2016, 1 male, Rinchening, Chhukha (26.84°N & 89.39°E, 461m), coll. Tshering Nidup & Wim Klein; NBCB00250, 13.x.2015, 1 male, Chhokhorling, Sarpang (26.91°N & 90.36°E, 415m), coll. Tshering Nidup & Wim Klein from the village.

Distribution: India, China (including Hong Kong), Borneo, Myanmar, Philippines, Thailand, Laos, Malaysia (including Sarawak, Sabah), Singapore, Indonesia: Sumatra, Java (including Kangean), Sulawesi, Moluccas (Kumar et al. 2013). New record for Bhutan.

9. *Antepipona tytides* (Cameron, 1904) (Images 18 & 19)
Odynerus tytides Cameron, 1904, Entomologist 37: 309, male, female, "Darjeeling, India" (BMNH).

Antepipona tytides; Giordani Soika, 1975, Entomol. Basil. 1: 390, figs 3, 5 (compared to *A. bhutanensis* n. sp.).

Diagnosis: Female: Black with following parts red: two spots on clypeus basally, scape ventrally, spot above interantennal space and mesopleuron, narrow line along internal eye lobe till ocular sinus, elongated mark on temple, band on pronotum and scutellum (constricted in middle), tegula and parategula, all femora apically, all tibia and tarsi entirely, narrow apical band on I, II & IV tergites and II sternite, spot on VI tergite, lateral spots on I tergite basally. Wings fuscous with faint purple effulgence.

Variation: One female with red apical band on I-V tergites and sternum II & III; red spots at the base of each tubercle on postscutellum; one female lack red spot on interantennal space.

Measurements: 6 females: 8.54–9.97 mm.

Materials examined: NBCB00251, 16.vi.2012, 1 female, Geyneykha, Thimphu (27.31°N & 89.60°E, 2,824m), coll. Wim Klein; NBCB00252, NBCB00253, 06.x.2016, 2 females, Chapcha, Chhukha (27.15°N & 89.54°E, 2,264m), coll. Tshering Nidup & Wim Klein; NBCB00254, NBCB00255, 06.x.2015, 2 females, Wang sisina, Thimphu (27.35°N & 89.57°E, 2,209m), coll. Tshering Nidup & Wim Klein; NBCB00256, 17.x.2015, 1 female, Dechenpelrithang, Bumthang (27.51°N & 90.80°E, 2,483m), coll. Tshering Nidup & Wim Klein.

Distribution: India, Nepal, China, Myanmar, Laos (Kumar et al. 2016). New record for Bhutan.

10. *Antepipona bhutanensis* Giordani Soika, 1975 (Images 20 & 21)

Antepipona bhutanensis Giordani Soika, 1975, Entomol. Basil. 1: 390, figs 2, 4, male, female, "Bhutan: Thimphu" (holotype, male, NHMB).

Diagnosis: black with the following parts red: two



Image 18. *Antepipona tytides* (female): habitus.



Image 19. *Antepipona tytides* (female): facial view.



Image 20. *Antepipona bhutanensis* (male): habitus.



Image 21. *Antepipona bhutanensis* (male): facial view.

spots on clypeus connected narrowly medially, clypeus apically, scape ventrally, spot on interantennal space, mesopleuron, inner margin of eye till ocular sinus and lateral side of tergite II at base, elongated mark on temple, band on pronotum, scutellum and postscutellum, I-VI tergites with apical band, band on II-VI sternites, tegula (transparent in center), parategula, all femora apically, tibia and tarsi entirely. Wings fuscous with slight purple effulgence.

Measurements: 2 males: 8.72–8.90 mm.

Materials examined: NBCB00257, 09.viii.2016, 1 male, Paro (27.45°N & 89.42°E, 2,298m), coll. Tshering Nidup & Wim Klein; NBCB00258, 06.x.2015, 1 male, Chapcha, Chhukha (27.15°N & 89.54°E, 2,264m), coll. Tshering Nidup & Wim Klein.

Distribution: Endemic to Bhutan (Thimphu, Paro, Chhukha).

11. *Antepipona biguttata* (Fabricius, 1787) (Images 22 & 23)

Vespa biguttata Fabricius, 1787, Mant. Ins. 1: 291,



Image 22. *Antepipona biguttata* (female): habitus.

“China”, male, (UZMC).

Odontodynerus biguttatus: van der Vecht, 1959, Arch. Neerl. Zool. Suppl. 1: 241, fig 3 (redescription of type).



Image 23. *Antepipona biguttata*: facial view (A: male; B: female).

Antepipona biguttata; van der Vecht & Fischer, 1972, Hym. Cat. (n. ed.) 8: 71 (cat.). *Antepipona injucunda* Giordani Soika, 1973, Boll. Mus. Civ. Stor. Nat. Venezia 32: 104, female, male, "China; Wa-sha-toui, Kwan-tung" (ZMB).

Antepipona biguttata takaensis Giordani Soika, 1982, Boll. Mus. Civ. Stor. Nat. Venezia 32: 207 (key), 224, female, male, "Formosa: Takao", holotype, female (MSNV).

Diagnosis: Female: Body black with following parts yellow: base of mandibles and clypeus, long mark on temples, quadrangular mark on front above antennae, scape ventrally, pair of triangular mark on pronotum dorsally, tegulae except black center, parategulae, mesopleuron, pair of spots at scutellum and metanotum, lateral lines on propodeum, mid coxa. Apical half of fore and mid femur, all tibia on outer side, apical band at I, II (broader than on I), III (reduced to only at sides), IV, V (a spot in the center) tergites and sternum II; two spots laterally on II tergites at base. Male: color similar to female except: clypeus wholly yellow, mandibles yellow except reddish brown apically, yellow mark at lower front is inverted triangle touching base of clypeus. For detailed description, consult Kumar et al. (2016).

Measurements: 3 males: 6.44–8.03 mm; 6 females: 8.17–9.07 mm.

Materials examined: NBCB00259, 12.x.2015, 1 female, Tsholingkhar, Tsirang (27°N & 90.08°E, 1,159m), coll. Tshering Nidup & Wim Klein from the paddy field; NBCB00260, 14.iv.2016, 1 female, Nganglam, Pema Gatshel (26.82°N & 91.23°E, 720m), coll. Phurpa Dorji, Thinley Gyeltshen & Tshering Nidup from Alabari Village; NBCB00261, 04.viii.2016, 1 female, Rinchending, Chhukha (26.84°N & 89.39°E, 461m), coll. Tshering

Nidup & Wim Klein; NBCB00262, 11.viii.2016, 1 female, Punacha, Wangdiphodrang (27.50°N & 89.75°E, 1275m), coll. Tshering Nidup & Wim Klein along the road to Dawakha; NBCB00263, 22.x.2015, 1 female, Kafu, Monggar (27.32°N & 91.36°E, 885m), coll. Phurpa Dorji & Wim Klein from the village; NBCB00264, 26.viii.2016, 1 female, Serithang, Punakha (27.29°N & 91.31°E, 1,359m), coll. Phurpa Dorji & Wim Klein on the way to Gasa; NBCB00265, 27.x.2015, 1 male, Bajothango, Wangdi Phodrang (27.51°N & 89.88°E, 1218m), coll. Phurpa Dorji & Wim Klein; NBCB00266, 10.iv.2016, 1 male, Chenery, Trashigang (27.31°N & 91.33°E, 758m), coll. Phurpa Dorji, Thinley Gyeltshen & Tshering Nidup from the river bank; NBCB00267, 08.v.2016, 1 male, Fawan, Lhuntse (27.48°N & 91.18°E, 953m), coll. Phurpa Dorji, Kinzang Chophel & Thinley Gyeltshen from the waterfall.

Distribution: India, China, Korea, Laos, Malaysia, Myanmar, Taiwan, Thailand, Vietnam (Kumar et al. 2016). New record for Bhutan.

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