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A revision of the continental Asian species of the genus *Atysa* Baly, 1864 (Chrysomelidae, Galerucinae)

by Lev N. Medvedev

Abstract. A key to continental Asian species (including Taiwan) of *Atysa* Baly, 1864 is given. Three new species are described: *Atysa nepalica* sp.nov. (Nepal), *A. himalayana* sp.nov. (northern India) and *A. laotica* sp.nov. (Laos). The genus *Falsoplatyxantha* Pic, 1927 is a new synonym for the genus *Atysa* Baly, 1864. *Atysa collaris* Gressitt et Kimoto, 1963 and *A. mureana* Maulik, 1936 are removed from synonymy with *A. marginata* (Hope, 1831). *Atysa gressitti* is the new name for *A. marginata* Gressitt et Kimoto, 1982, arising out of homonymy with *Atysa marginata* Hope, 1831. *Atysa albofasciata* Jacoby, 1892 is transferred to the genus *Trichocerophysa* Gressitt et Kimoto, 1963. *Atysa octocostata* L. Medvedev, 2000 is transferred to the genus *Pyrrhalta* Joannis, 1866 and is synonymized with *P. multicostata* (Pic, 1928).

Key words. Chrysomelidae – Galerucinae – South Asia – new species – new synonyms – new combinations

Introduction

The comparatively small Oriental genus *Atysa* Baly, 1864 is widely distributed in continental Asia, including Taiwan, Indonesia and New Guinea, but has been very poorly studied to date. For continental Asia, 6 species were established in the past (WILCOX 1971), 3 more species have been described in recent years (CHEN 1987, MEDVEDEV 2000, 2005). A number of species were erroneously included in the synonyms of *Atysa marginata* (Hope, 1831) by KIMOTO (1989) – they are re-validated here. Eleven species from Indonesia and New Guinea are poorly known and therefore not included in the key.

Although many authors have given attention to this genus (MAULIK 1926, GRESSITT & KIMOTO 1963, KIMOTO 1982, 1989), the aedeagus, which seems a very valuable character in the differentiation of most species, has not been studied.

Abbreviations

NHMB Naturhistorisches Museum Basel, Switzerland
LM Author's collection, Moscow, Russia

Taxonomy

Key to species

- 1(22) Elytra unicolorous.
- 2(5) Elytra black. Prothorax with lateral margins more or less rounded, at least anteriorly, angles not protruding. Antennae nitidiform in both sexes.

- 3(4) Frontal tubercles smooth, lustrous. Prothorax red, sometimes with black median stripe and spots on sides. Antennal segments 3–6 about 4 times as long as wide. Aedeagus, Fig. 10. Length 5.6–6.7 mm. *A. collaris* (Gressitt et Kimoto)
- 4(3) Frontal tubercles microsculptured. Prothorax from entirely black to entirely dark red or fulvous, often red with black median stripe. Aedeagus asymmetrical (Fig. 11). Length 5.4–6.1 mm. *A. mureana* Maulik
- 5(2) Elytra red or fulvous.
- 6(7) Prothorax black with fulvous, explanate side margins. Head fulvous with black labrum and vertex. Legs fulvous, only tibiae with narrow black stripe dorsally. Lateral margins of prothorax rounded. Aedeagus, Fig. 12. Length 6.2–8.0 mm. *A. thoracica* L. Medvedev
- 7(6) Head and prothorax red or fulvous; if head and prothorax black, frontal tubercles strongly punctate. Lateral margins of prothorax straight or concave, with angles more or less produced.
- 8(9) Species from Taiwan. Upperside entirely red. Frontal tubercles microsculptured. Elytra without costae, with indications of elevations. Male: antennae filiform, aedeagus, Fig. 13. Female unknown to me. Length 8.0 mm. *A. brevithorax* (Pic)
- 9(8) Continental species. Upperside red or fulvous, vertex and prothorax usually with central black stripe. Intermediate antennal segments moderately or strongly widened in female.
- 10(11) Frontal tubercles strongly punctate, without distinct microsculpture. Antennal segments 3–7 widened, in male feebly (Fig. 1), in female strongly (Fig. 2). Elytra with 4 low ribs. Upperside dull red or head and prothorax except base black. Aedeagus, Fig. 20. Length 8.3–10.0 mm. *A. nepalica* sp.nov.
- 11(10) Frontal tubercles without punctures, densely microsculptured.
- 12(15) Antennal segments 3–7 feebly widened in female, segment 4 about twice as long as wide. Elytra with traces of 2–3 ribs or folds.
- 13(14) Male: antennae filiform, aedeagus, Fig. 14. Female: antennal segment 3 almost three times as long as 2 (Fig. 3). Length 6.0–7.0 mm. *A. montivaga* Maulik
- 14(13) Male: antennal segments 3–7 slightly widened and flattened, aedeagus, Fig. 15. Female: antennal segment 3 about twice as long as 2 (Fig. 4). Length 6.2–7.3 mm. *A. pyrochroides* (Fairmaire)
- 15(12) Intermediate antennal segments strongly widened in females, segment 4 about 1.2–1.3 times as long as wide.

- 16(17) Prothorax without longitudinal black stripe in middle. Each elytron with 4 distinct longitudinal ridges. Antennal segments 3–6 strongly widened, segment 7 moderately so. Length 10.0 mm. Male unknown.
..... *A. aurantiaca* (Pic)
- 17(16) Prothorax with longitudinal black stripe in middle. Each elytron with 1–3 longitudinal ridges or elevations.
- 18(21) Female: antennal segments 3–7 strongly widened (Figs 5, 7), segment 7 about twice as long as wide.
- 19(20) Elytra with indications of 1–2 longitudinal elevations. Upperside reddish-brown with golden hairs. Antennae, Fig. 5. Length 7.3–9.4 mm. Male unknown. *A. brevicornis* (Samoderzhenkov)
- 20(19) Elytra with 2 distinct ridges and feeble elevations starting at humerus. Upperside light brown with golden hairs. Antennae, Figs 6, 7. Aedeagus, Fig. 16. Length 6.3–7.1 mm. *A. laotica* sp.nov.
- 21(18) Female: antennal segments 3–5 strongly, 6th feebly, widened (Fig. 8), 7th almost 3 times as long as wide. Elytra with 3 feeble longitudinal elevations. Upperside purple-red with red hairs. Length 8.5–9.6 mm. Male unknown. *A. porphyrea* (Fairmaire)
- 22(1) Elytra bicolorous, without distinct ribs, with only feeble longitudinal elevation starting at humerus and disappearing beyond centre. Antennae of male filiform.
- 23(26) Elytra black with broad lateral stripe and apex fulvous or dirty fulvous. Antennae of female filiform.
- 24(25) Head black or more or less fulvous in anterior part. Prothorax black or more or less fulvous on sides. Neck impunctate. Frontal tubercles lustrous, without microsculpture. Antennae filiform in both sexes. Prothorax 1.6–1.9 times as wide as long. Aedeagus (Fig. 17) asymmetrical, with obliquely-cut apex. Length 5.0–7.5 mm. Pakistan, northern India, Nepal, Burma, South Vietnam, ?China.
..... *A. marginata* (Hope)
- 25(24) Head red-fulvous with large triangular black spot behind frontal tubercles, prothorax red-fulvous. Neck coarsely punctate. Prothorax more than twice as wide as long. Length 6.0–7.5 mm. On *Cinnamomum camphora*. Species unknown to me. China: Fukien.
..... *A. cinnamomi* Chen
- 26(23) Elytra fulvous or dirty fulvous with black or piceous longitudinal stripe in middle, but nearer to suture. Frontal tubercles with microsculpture. Male with antennal segments 3–7 ridged laterally, 2–5 with long hairs beneath (Fig. 9).

- 27(28) Lightly-coloured upperside dull red or orange, prothorax with black middle and sides. Male: anterior femora and tibiae with long hairs beneath. Aedeagus (Fig. 18) symmetrical, with extreme tip curved upwards. Female: antennal segments 3–7 feebly widened, elongate; segment 3 twice as long as wide and twice as wide as segment 11. Length 7.2–7.6 mm. South China. *A. gressitti* **nom.nov.**
- 28(27) Lightly-coloured upperside dirty fulvous, prothorax with black middle, rarely darkened on sides. Male: anterior tibiae without long hairs beneath [in sp. A (see 30(29) male unknown)]. In female antennal segments 3–5 almost unwidened, segment 3 more than three times as long as 2 and only a little thicker than segment 11.
- 29(30) Elytra 1.9–2.05 times as long as wide, dark elytral stripe about as wide as light sutural stripe. Aedeagus (Fig. 19) with narrowed, more or less finger-like, apical stripe. Body larger, male 6.8–7.3 mm, female 7.5–8.1 mm. India (Uttar-Pradesh). *A. himalayana* **sp.nov.**
- 30(29) Elytra 1.6 times as long as wide, light sutural stripe narrow. Male unknown. Body smaller, 6.7 mm. Laos. *A. sp. A*

List of species

Genus *Atysa* Baly, 1864

Type of genus: *Atysa terminalis* Baly, 1864: *Trans. Ent. Soc. London*, ser. 3, 2: 238.

Triaplatarthris Fairmaire, 1878: *Ann. Soc. Ent. France*, ser. 5, 8: 138 (**type of genus:** *Triaplatarthris pyrochroides* Fairmaire, 1878). [Synonymized by KIMOTO (1982): *Ent. Rev. Japan* 37(2): 8.]

Falsoplatyxantha Pic, 1927: *Mel. Exot. Ent.* 49: 23. (**type of genus:** *Falsoplatyxantha aurantiaca* Pic, 1927) **syn.nov.**

Formosogalerucella Pic, 1928: *Mel. Exot. Ent.* 61: 32 (**type of genus:** *Formosogalerucella brevithorax* Pic, 1928). [Synonymized by KIMOTO (1982): *Ent. Rev. Japan* 37(2): 8.]

Atysa collaris (Gressitt et Kimoto 1963) (valid species)

Triaplatarthris collaris Gressitt et Kimoto, 1963: *Pacif. Ins. Mon.* 1B: 408.

Atysa marginata Hope, 1831: KIMOTO (1982): *Ent. Rev. Japan* 37(2): 8.

Distribution. Southern China (Szechuan, Fukien, Chekiang).

Remarks. This species was synonymized with *A. marginata* (KIMOTO 1982) but differs from the latter in entirely black elytra and thinner and longer aedeagus; because of these properties I accept it as a valid species.

Atysa mureana Maulik, 1936 (valid species)

Atysa mureana Maulik, 1936: *Fauna Brit. India. Galerucinae*, p. 247.

Atysa marginata Hope, 1831: KIMOTO (1982): *Ent. Rev. Japan* 37(2): 8.

Distribution. Southern China (Szechuan, Fukien, Chekiang). Northern India (Punjab, Assam), Nepal.

Remarks. *Atysa mureana* was synonymized with *A. marginata* by KIMOTO (1982). I have studied the types of both species and found that *A. mureana* differs from *A. marginata* (Hope, 1831) in entirely black elytra and a different form of the aedeagus.

***Atysa thoracica* L. Medvedev, 2005**

Atysa thoracica L. Medvedev, 2005: *Entom. Basiliensia* 27: 000.

Distribution. China (Yunnan).

***Atysa brevithorax* (Pic, 1928)**

Formosogalerucella brevithorax Pic, 1928: *Mel. Exot.-Ent.* 51: 32.

Atysa brevithorax: KIMOTO (1982): *Ent. Rev. Japan* 37(2): 8.

Distribution. Taiwan, also recorded for China.

***Atysa nepalica* sp.nov.**

Material examined. Holotype (male): Nepal, Chisapani, 7. VI. 1976, leg. W. Wittmer & C. Baroni Urbani (NHMB). [This specimen was determined by S. Kimoto as *Atysa montivaga* Maulik, 1936.]

Paratype: Eastern Nepal, Arun valley, Khandabari-Bhotebas, 1000–1750 m, 5. VI. 1988, leg. J. Probst, 1 female (LM).

Description. Male: Black, two indistinct spots on vertex, base of prothorax divided at centre by black stripe; elytra dull red.

Body elongate, widened posteriorly. Clypeus and interantennal space smooth, frons and vertex very densely punctate and granulate, frontal tubercles clearly delimited, with large punctures, vertex with longitudinal impressed line. Antennae reach beyond centre of elytra, proportions of segments: 5–15–12–11–11–9–10–10–10–15, segments 3–7 moderately widened, but not less than twice as long as wide (Fig. 1). Prothorax twice as broad as long, widest at base, side margins feebly concave, almost straight; hind angles very distinct. Surface finely and very densely punctate, with longitudinal central impression and grooves near hind angles. Elytra almost 2 times as long as wide at base, finely and very densely granulate, with 4 feeble, but quite distinct, ridges. Last abdominal sternite with truncate hind margin. Aedeagus, Fig. 20. Length 8.3 mm.

Female: Head and upperside dull red, only central groove of prothorax slightly darkened. Antennal segments 3–7 strongly widened, almost as wide as long (Fig. 2). Length 10 mm.

Differential diagnosis. Near *A. porphyrea* Fairmaire, 1899 and nearest species with strongly widened intermediate antennal segments in female and costate elytra, differs from all of them in punctate frontal tubercles.

***Atysa montivaga* Maulik, 1936**

Atysa montivaga Maulik, 1936: Fauna Brit. India, Galerucinae, p. 250.

Distribution. Nepal, western Bengal, Assam, Burma. Indications for China and Taiwan (KIMOTO 1982) are doubtful.

***Atysa pyrochroides* (Fairmaire, 1878)**

Triplatarthris pyrochroides Fairmaire, 1878: *Ann. Soc. Ent. France* **47**: 138.

Atysa pyrochroides: KIMOTO (1982): *Ent. Rev. Japan* **37(2)**: 8.

Distribution. China (Hupeh).

***Atysa brevicornis* (Samoderzhenkov, 1988) (comb.nov.)**

Triplatarthris brevicornis Samoderzhenkov, 1988: Fauna and Ecol. Ins. Vietnam, p. 74.

Distribution. North Vietnam.

***Atysa aurantiaca* (Pic, 1927) (comb.nov.)**

Falsoplatyxantha aurantiaca Pic, 1927: *Mel. Exot. Ent.* **49**: 23.

Distribution. North Vietnam (Shapa).

***Atysa laotica* sp.nov.**

Material examined. Holotype (male): Laos, Khammouang Prov., Ban Khoung-Kham (Nahin), 18°13'N, 104°31'E, 200 m, 25. IV. 2005, leg. O. Gorbunov (LM).

Paratypes: same locality and date, 2 females (LM); same locality, 16. IV. 2005, 1 female (NHMB).

Description. Light brown with golden pubescence, antennae, underside and legs black, prothorax with dark central stripe.

Male: Body narrow, almost parallel-sided. Clypeus smooth and lustrous, frons and vertex dull, densely punctate, frontal tubercles microsculptured. Antennae reach beyond centre of elytra, almost nitidiform, with segments 3–6 slightly widened, proportions of segments: 10–4–11–11–11–10–10–8–8–7–9 with corresponding maximal width 3–3–6–7–8–6–5–3–2–2–2 (Fig. 6). Prothorax 1.75 times as wide as long, broadest at base, with distinct anterior angles, more obtuse hind angles, side margins straight; surface very densely punctate, with longitudinal impression in middle. Elytra 2.4 times as long as wide, very densely punctate, each elytron with 2 distinct ridges in inner part and very feeble ridge starting at humerus. Last abdominal sternite with arcuate hind margin. Aedeagus, Fig. 16. Length 6.5 mm.

Female: Body slightly widened posteriorly. Antennae with strongly widened intermediate segments, proportions of segments: 10–4–11–11–11–10–10–8–7–9 with corresponding maximal width 5–3–7–8–8–6–5–3–2–2 (Fig. 7). Length 6.3–7.1 mm.

Differential diagnosis. Near to *A. brevicornis* Samoderzhenkov, 1988 but differs in having distinct ridges on elytra and a differently coloured upperside.

***Atysa porphyrea* (Fairmaire, 1889)**

Triaplatarthris porphyrea Fairmaire, 1889: *Ann. Soc. Ent. France* 58: 76.

Atysa porphyrea: KIMOTO (1982): *Ent. Rev. Japan* 37(2): 8.

Distribution. China (Singkiang, Szechuan, Kiangsi).

***Atysa marginata* (Hope, 1831)**

Auchenia marginata Hope, 1831 in Gray: *Zool. Misc.*, p. 29.

Distribution. Northern India, Nepal, Assam, Burma. All indications for China, Indochina and Taiwan are associated with other species.

***Atysa cinnamomi* Chen, 1978**

Atysa cinnamomi Chen, 1978: *Acta Entom. Sinica* 21(1): 55.

Distribution. China (Fukien). (Feeding on camphor tree.)

***Atysa gressitti* (nom.nov., valid species)**

Triaplatarthris marginata Gressitt et Kimoto, 1963: *Pacif. Ins. Monogr.* II, p. 409.

Atysa marginata Hope, 1831: KIMOTO (1982): *Ent. Rev. Japan* 37(2): 8.

Distribution. South China (Fukien, Chekiang).

Remark. A new name is proposed due to homonymy with *A. marginata* Hope, 1831. This species, however, differs distinctly in the structure of the antennae and the form of the aedeagus.

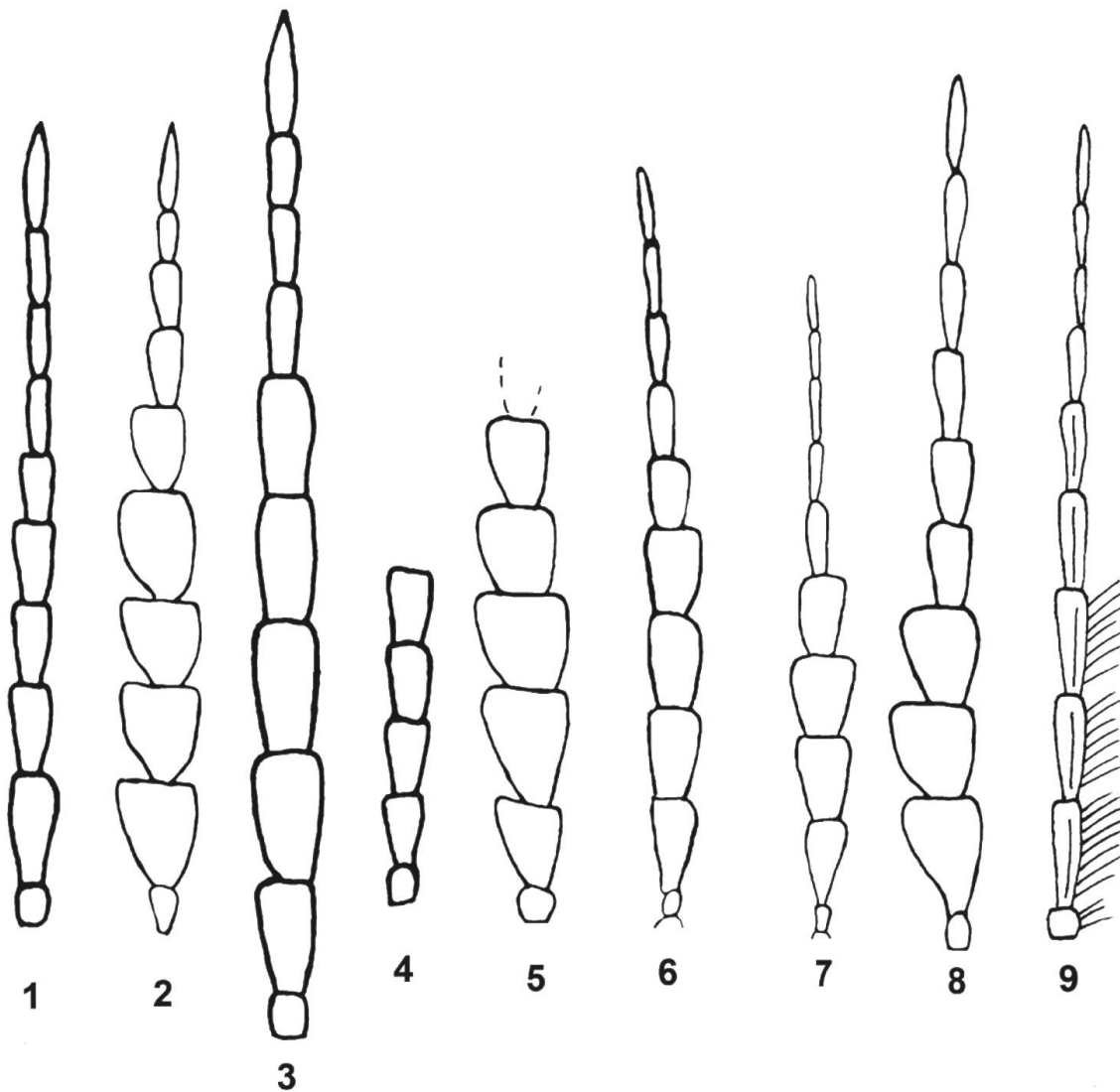
***Atysa himalayana* sp.nov.**

Material examined. Holotype (male): India, Uttar Pradesh, Mussoorie, 1800–2000 m, 27. VI. 1976, leg. W. Wittmer (NHMB).

Paratypes: same locality, 5 ex. (NHMB, 2 ex. – LM); same locality, 2100 m, 5. IX. 1987, leg. A. Riedel, 1 female (NHMB).

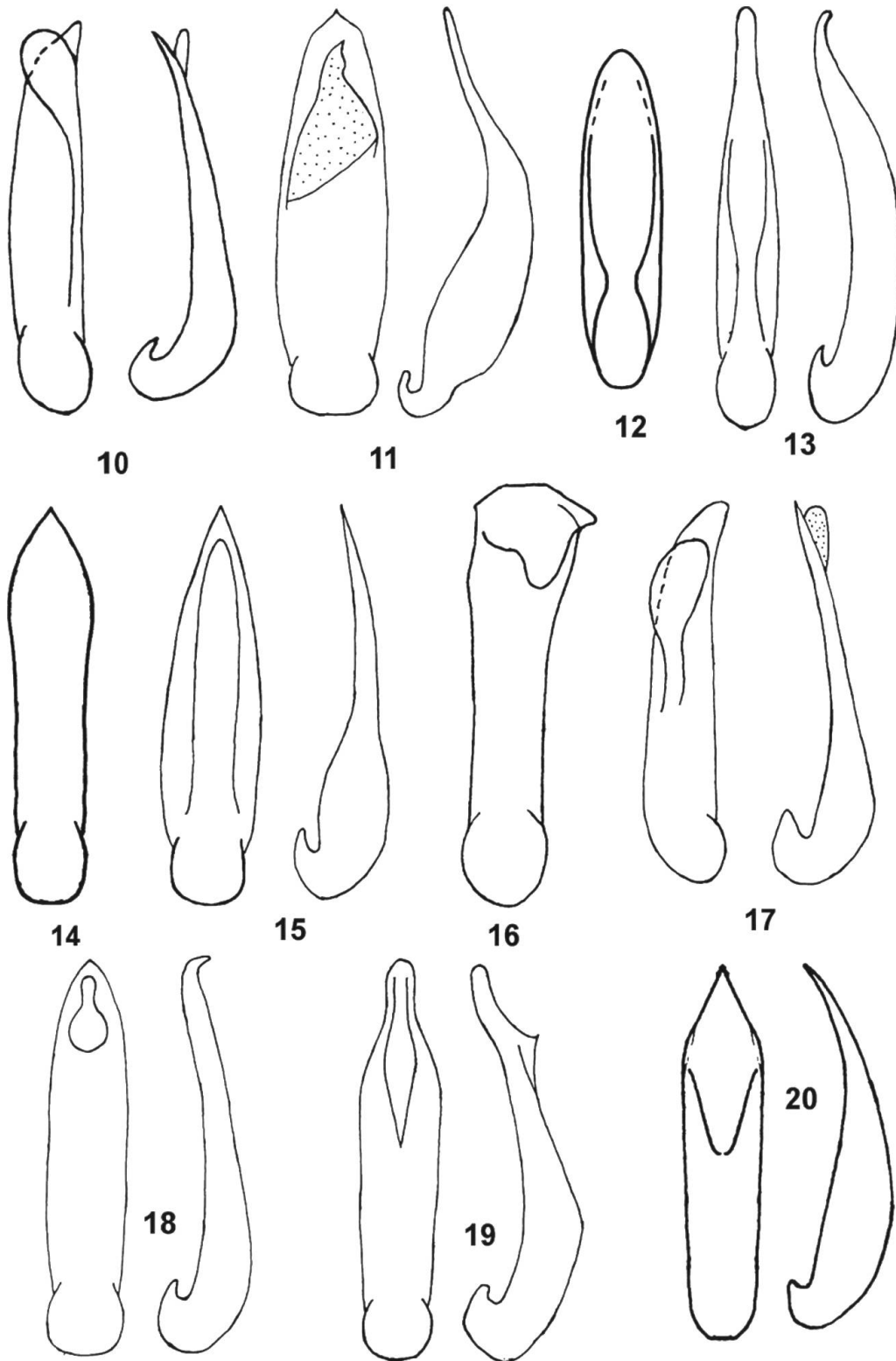
Description. Black or piceous, head and upperside dark fulvous or reddish-fulvous, vertex with dark stripe or spot, prothorax with central stripe, anterior angles and propleurae black or pitchy, scutellum black, elytra with black or pitchy longitudinal stripe, placed nearer to suture than to side margin; base or underside of femora more or less fulvous; pubescence reddish-fulvous.

Male: Body elongate, parallel. Clypeus smooth and lustrous, frons and vertex very densely punctate, dull; frontal tubercles convex, well delimited, miscosculptured,



Figs 1–9. Antenna: 1, *nepalica* sp.nov., male (segments 2–11); 2, ditto, female (2–11); 3, *montivaga* Maulik, female (2–11); 4, *pyrochroides* Fairmaire, female (2–6); 5, *brevicornis* Samoderzhenkov, female (2–7); 6, *laotica* sp.nov., male (2–11); 7, ditto, female (2–11); 8, *porphyrea* Fairmaire, female (2–11); 9, *gressitti* nom.nov., male (2–11).

moderately lustrous. Antennae long, reaching apical slope of elytra, filiform, with apical segments a little thinner, segments 2–5 with long hairs beneath, segments 3–7 with longitudinal ridges on inner sides. Prothorax 1.7 times as wide as long, widest at base, with distinct anterior and posterior angles and concave side margins; surface finely and very densely punctate and granulose. Elytra 2.3 times as long as wide at base, very densely punctate and granulose, lacking ridges or longitudinal elevations. Last abdominal sternite emarginate at apex. Aedeagus (Fig. 19) with narrowed, more or less finger-like, apical part. Length 6.8–7.3 m.



Figs 10–20. Aedeagus (d – dorsal, v – ventral, l – lateral): 10, *collaris* Gressitt et Kimoto (d, l); 11, *mureana* Maulik (d, l); 12, *thoracica* L. Medvedev(d); 13, *brevithorax* Pic (d, l); 14, *montivaga* Maulik (v); 15, *pyrochroides* Fairmaire (v, l); 16, *laotica* sp.nov. (d); 17, *marginata* Hope (d, l); 18, *gressitti* nom.nov. (d, l); 19, *himalayana* sp.nov. (d, l); 20, *nepalica* sp.nov. (d, l).

Female: Antennae filiform, but without ridges and long hairs. Elytra slightly widened posteriorly. Last abdominal sternite feebly emarginate at apex. Length 7.5–8.1 mm.

Differential diagnosis. Near to *A. gressitti* L. Medvedev, 2005 (nom.nov.), differs mainly in form of aedeagus. A large series in the Basel Museum was determined by S. Kimoto as *A. marginata* Hope, 1831.

Atysa sp. A

Material examined. Laos, Khammouang Prov., Ban Khoung-Kham (Nahin), 18°13'N, 104°31'E, 200 m, 26. IV. 2005, leg. O. Gorbunov, 1 female (LM).

Species excluded from the genus *Atysa*

Trichocerophysa albofasciata (Jacoby, 1892) comb.nov.

Atysa albofasciata Jacoby, 1892: *Ann. Mus. Stor. Nat. Genova* **32**: 977.

Remark. Possibly identical with *T. latifascia* Gressitt et Kimoto, 1963.

Pyrrhalta multicostata (Pic, 1928)

Galerucella multicostata Pic, 1928: *Mel. Exot. Ent.* **51**: 32.

Pyrrhalta multicostata: KIMOTO (1989): *Esakia* **27**: 20.

Atysa octocostata L. Medvedev, 2000: *Russ. Entom. Journ.* **8(4)**: 261. (syn.nov., comb.nov).

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