| Entomologica Basiliensia | 26 | 339–348 | 2004 | ISSN 0253–24834 |
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# Towards knowledge of the genus *Xenoda* Baly, 1877 (Chrysomelidae, Galerucinae)

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**Abstract.** Three new subgenera – *Xenodina* (type species: *X. fulva* sp.nov.), *Xenodania* (type species: *X. vittata* sp.nov. ), *Paraxenidea* (type species: *P. brancuccii* sp.nov.) subgenn.nov. – and eight new species – *X. vittata, X. cyanipennis, X. fulva* (Malay Peninsula), *X. impressa* (Sumatra), *X. tuberculata* (Kalimantan), *X. luzonica, X. bakeri* (Luzon), *X. brancuccii* (Palawan) spp. nov. – are described. *X. nigricollis* Jacoby is found for the first time in the Malay Peninsula and Thailand. The genus is recorded for the first time from Thailand and the Philippines. A key to subgenera and species is given.

**Key words.** Coleoptera – Chrysomelidae – Galerucinae – new subgenera – new species

## Introduction

The small oriental genus *Xenoda* Baly, 1877, including 2 subgenera and 16 species (WILCOX 1973, MOHAMEDSAID 2001), was previously known only from the islands of Indonesia and the Malay Peninsula.

In this article 3 subgenera are proposed and 8 species are described as new for science. Apart from the author's own collection, material from Basel Museum of Natural History was investigated. The genus is registered for Thailand and the Philippines for the first time.

## Material

The following abbreviations are used for the places in which the material is deposited:

NHMB ..... Naturhistorisches Museum, Basel
LM ..... author's collection, Institute for Problems of Ecology and Evolution, Moscow

## Taxonomy

### Genus *Xenoda* Baly, 1877

BALY (1877): *Ent. Monthly Mag.* **13:** 225.
**Type of genus:** *Xenoda spinicornis* Baly, 1877

### Subgenus *Xenoda* (s.str.) Baly, 1877

#### *Xenoda* (s.str.) *nigricollis* Jacoby, 1896

**Material examined.** Thailand, Khao Sok (8.55N, 98.45E), 12.XI.1995, leg. M. Mostovski, 1 male (LM); – Malaysia, Benom Mts., 15 km E Kampong Dong (3.53N, 102.01E), 700 m, 1.IV.1998, leg. Dembický & Pacholátko, 1 male (NHMB), 1 female (LM).

**Remarks.** The species was known from Sumatra and found for the first time in Malacca and Thailand; the genus is registered for continental Asia for the first time. Aedeagus see Fig. 13.

### *Xenoda* (s.str.) *bakeri* sp.nov.

**Material examined.** Holotype (male): Philippines, Luzon, Mt. Makiling, leg. Baker (LM).

**Description and differential diagnosis.** Morphologically almost the same as *X. pallida* Jacoby, 1896 from Sumatra, but the antennal bulb is a little more elongate – 1.55 times as long as wide against 1.37 in *X. pallida* – the elytra are less densely pubescent and its size is smaller. These two species differ only in form of aedeagus: in *X. pallida* it is more broad, with truncate apex and widened base (Fig. 8), in *X. bakeri* sp.nov. aedeagus it is almost parallel-sided, feebly widened basally, with triangular apex prolonged in short protuberance (Fig. 15). Body entirely fulvous. Length of body 5.2 mm (in *X. pallida* 5.7–6.3 mm).

### *Xenoda* (s.str.) *luzonica* sp.nov.

**Material examined.** Holotype (male): Philippines, Luzon, Butao, ex Staudinger (LM).

**Description**. Dark fulvous with frontal tubercles, prothorax and elytra more pale, apical antennal segments, elytral suture, tibiae, tarsi and metasternum darkened.

Head impunctate, frontal tubercles elongate triangular, sharp, delimited to the rear by arcuate impression. Antennae reach anterior third of elytra, covered with short and dense erect hairs, segment 1 long and slightly curved, 2 small, 3–8 forming elongate bulb (2.5 times as long as wide), 8 with long, curved spine, 9–11 thin and long (Fig. 7). Prothorax twice as wide as long, lateral margins straight and parallel-sided, surface transversely concave, impunctate. Elytra 1.6 times as long as wide, with dense erect hairs and lateral ridge from humerus to apical quarter dividing elytron into horizontal and vertical parts, surface uneven, finely and densely rugose, but without distinct punctures. Fore- and mid-tarsi with segment 1 slightly widened. Length of body 5.7 mm.

**Differential diagnosis**. Near *X. pallida* Jacoby, 1896 from Sumatra, which has, however, much broader antennal bulb (about 1.3–1.4 times as long as wide) and much thicker antennal segments 9 and 10.

## Subgenus *Xenodina* subgen.nov.

**Type of subgenus:** *Xenoda fulva* sp.nov.

**Description**. Antennae without bulb, nitidiform, segment 2 small and short, segments 3–10 moderately thickened, quadrangular, elongate or almost quadrate, apical segment more thin, spines absent, segment 10 often with groove or pore (Figs 1–4). Horizontal part of elytra roughly punctate or uneven, with impressions or tubercles.

**Differential diagnosis.** Differs from nominative subgenus in structure of antennae without bulb and curved spines. This subgenus is definitely the most primitive in the genus *Xenoda.*

### *Xenoda (Xenodina) fulva* sp.nov.

**Material examined.** Holotype (male): Malaysia, Benon Mts., 15 km E Kampong Dong (3°53'E, 102°01'N), 700 m, 1.IV.1998, leg. Dembický & Pacholátko (NHMB).
Paratype: same locality, 1 male (LM).

**Description.** Fulvous, antennal segments 3–10, tibiae except bases and tarsi black.

Head impunctate, frontal tubercles elongate triangular, delimited to the rear by arcuate impression. Antennae reach anterior third of elytra, proportions of segments 15–4–13–10–2–8–9–9–9–19, segment 1 long, slightly arcuate, 2 very short, 3, 4 and 10 a little longer than broad, 5–9 nearly subquadrate, segment 10 with narrow membranous pore, 11 very narrow, 3 times as long as wide.

Prothorax 1.9 times as wide as long, lateral margins straight and parallel-sided, all angles with pore and bristle on tubercle; surface transversely concave, lustrous, impunctate. Elytra 1.55 times as long as wide, broadest before apex, surface with sharp ridge from humerus almost to apex, dividing elytron into horizontal and narrow vertical parts; horizontal part with dense erect pubescence, coarsely punctuate; vertical part almost impunctate. Epipleurae very narrow. All tarsi thin.

Aedeagus (Fig. 9) narrowed to apex, slightly curved in lateral view, with broad base.

Length of body 4–4.1 mm.

**Differential diagnosis.** It differs from other species of this subgenus in the entirely fulvous elytra lacking either impressions or tubercles.

### *Xenoda* (*Xenodina*) *cyanipennis* sp.nov.

**Material examined.** Holotype (male): Malaysia, Benon Mts., 15 km E Kampong Dong (3°53'E, 102°01'N), 700 m, 1.IV.1998, leg. Dembický & Pacholátko (NHMB).
Paratypes: same locality, 2 males (NHMB, LM).

**Description.** Fulvous or dark fulvous, antennae black with segments 1 and 11 more or less fulvous, underside piceous, legs from fulvous with dark hind femora to piceous.

Head as in preceding species, antennae (Fig. 2) also almost the same, but segment 10 with large round pore and 11 thicker, 3 times as long as wide.

Prothorax and elytra as in preceding species, but vertical part of elytron with distinct punctures.

Aedeagus (Fig. 10) narrowed to apex, with broad base, with apical quarter curved downwards in lateral view.

Length of body 3–3.5 mm.

**Differential diagnosis.** It differs from *X. fulva* sp.nov. in its different colour and the apical part of aedeagus curved downwards.

### *Xenoda* (*Xenodina*) *impressa* sp.nov.

**Material examined.** Holotype (male): Sumatra, Tandjong, leg. Morava (LM).

**Description.** Head piceous with fulvous mouthparts, antennae piceous with two apical segments fulvous, prothorax fulvous with poorly delimited piceous spot on each side, elytra fulvous with basal and preapical piceous spots, underside piceous, legs fulvous.

Head impunctate, frontal tubercles elongate triangular, convex and lustrous, delimited to the rear by arcuate impression. Antennae (Fig. 3) reach anterior third of elytra, proportions of segments 14–3–10–9–8–7–7–8–8–9–13, segments 3–10 widened, subquadrangular, 7 and 8 almost subquadrate, apical segment 3 times as long as wide.

Prothorax twice as wide as long, lateral margins slightly rounded, surface transversely concave, lustrous and impunctate. Elytra 1.5 times as long as wide, broadened towards the rear, not pubescent, with sharp curved ridge from humerus almost to apex, dividing elytron into horizontal and vertical parts. Horizontal part with feeble basal convexity and deep triangular impression in centre not reaching suture, roughly punctuate on impressed parts and much more finely on elevated areas. Vertical part broad in anterior part, distinctly narrowed beyond centre, finely punctuate.

Aedeagus feebly lanceolate, slightly curved in lateral view.

Length of body 3.3 mm.

**Differential diagnosis.** Spotted elytra with deep impression in centre differentiate this species from its congeners.

### *Xenoda* (*Xenodina*) *tuberculata* sp.nov.

**Material examined.** Holotype (male): Malaysia, [Kalimantan], Prov. Sabah, Banjaram (LM).

**Description.** Fulvous, antennae black with piceous basal segments and pale flavous basal half of segment 11, on elytra postmedian tubercle near suture black.

Head very finely punctuate, microsculptured, frontal tubercles triangular, sharp, delimited to the rear by straight impression, vertex with central groove. Antennae almost reach middle of elytra, proportions of segments 20–5–15–15–15–15–15–15–14–10–30, segment 1 long, slightly curved, 2 short and subquadrate, 3 elongate, dull, about 2–2.5 times as long as wide, 7–9 lustrous, slightly widened, about twice as long as wide, 10 subquadrate, 11 with broad basal part and narrow apical third, segments 9 and 10 with impressions (Fig. 4).

Prothorax 2.1 times as wide as long, feebly narrowed to base, lateral margins almost straight, surface microsculptured, uneven, with triangular impression on each side and two transverse impressions, one before centre, the other beyond. Elytra 1.4 times as long as wide, coarsely and densely punctuate, including vertical part, with two tubercles before apical slope: one rather high near suture, the other feeble, near side margin. Epipleurae very narrow. All tarsi thin, segment 1 of hind tarsus as long as following segments together.

Aedeagus (Fig. 12) narrowed to apex, slightly curved in lateral view.

Length of body 5.1 mm.

**Differential diagnosis.** It differs clearly in having two very distinct tubercles before the apical slope of the elytra.

## Subgenus *Xenodania* subgen.nov.

**Type of subgenus:** *Xenoda vittata* sp.nov.

**Description.** Antennae without bulb, nitidiform, with segments 3 and 4 more than twice as long as wide, 5 and 6 about twice as long as wide, 7–9 slightly thickened, about 1.5 times as long as wide, segment 8 deeply concave, segment 10 with apical process on outside (Fig. 5). Horizontal part of elytra roughly sculptured.

**Differential diagnosis.** Differs in structure of male antennae, which have no bulb, but apical process on segment 10.

### *Xenoda* (*Xenodania*) *vittata* sp.nov.

**Material examined.** Holotype (male): Malaysia, Benon Mts., 15 km E Kampong Dong (3°53'E, 102°01'N), 700 m, 1.IV.1998, leg. Dembický & Pacholátko (NHMB).

Paratype: same locality, 1 male (LM).

**Description.** Fulvous, antennae with segments 7–9 or 8–9 black or piceous, prothorax with poorly delimited piceous spot on each side, elytra with black lateral stripe widened to apex, metasternum black.

Head impunctate, frontal tubercles elongate triangular, delimited to the rear by arcuate impression. Antennae (Fig. 5) reach anterior third of elytra, nitidiform with preapical segments only slightly thickened, proportions of segments 15–5–9–10–10–10–10–8–8–7–20, segment 1 long and slightly curved, small, 3–11 elongate, 8 deeply concave, 10 with apical process, 11 almost as thick as 10.

Prothorax 1.9 times as wide as long, very feebly narrowed to base, lateral margins straight, all angles with pore and bristle, surface transversely concave, lustrous and impunctate. Elytra twice as long as wide, parallel-sided, with horizontal and vertical parts, divided by sharp ridge starting on humerus, surface with dense erect pubescence, coarsely punctuate, punctures more feeble on vertical part. Epipleurae very narrow. Tarsi narrow.

Aedeagus (Fig. 11) slightly narrowed to apex, with apical protuberance, curved in lateral view.

Length of body 3.5 mm.

**Differential diagnosis.** Species belongs to the monotypic subgenus.

## Subgenus *Paraxenidea* subgen.nov.

**Type of subgenus:** *Xenoda brancuccii* sp.nov.

**Description.** Antennae without bulb, nitidiform, with segment 3 about 4 times as long as wide and segment 4 about 3 times as long as wide, segments 5–8 moderately

thickened, but each of them about twice as long as wide, 3 apical segments thin, 8 with long curved spine (Fig. 6). Horizontal part of elytra coarsely punctuate.

**Differential diagnosis.** This subgenus differs clearly in its combination of reduced bulb on the middle antennal segments and well developed curved spine on segment 8. It seems to be nearest to *Xenoda* s.str. but appears definitely more primitive.

### *Xenoda* (*Paraxenidea*) *brancuccii* sp.nov.

**Material examined.** Holotype (male): Philippines, Palawan, Cleopatra Needle N.P., Tanabank river valley, 300 m, 20–22.XÏ.1990, leg. Bolm (NHMB).

Paratype: Philippines, N. Palawan, Bahile, 50 m, 22.XÏ.1992, leg. Bolm, 1 male (LM).

**Description.** Fulvous, antennal segments 4–10 and apices of hind femora piceous, tibiae more or less darkened.

Head impunctate, smooth, frontal tubercles elongate triangular, microsculptured, delimited to the rear by impression, vertex with longitudinal groove. Antennae (Fig. 6) reach beyond middle of elytra, nitidiform, proportions of segments 14–3–14–10–9–8–8–9–13–12–16, segments 3–11 elongate, 4–8 slightly thickened, 8 with apical curved spine, 9–11 very thin.

Prothorax 1.7 times as wide as long, slightly narrowed to base, side margins almost straight, all angles with pore and bristle, surface transversely concave, impunctate. Elytra 1.6 times as long as wide, with dense erect hairs and lateral ridge from humerus to elytral slope, dividing elytron into horizontal and vertical parts, horizontal part densely and rugosely granulate, vertical part almost smooth. Fore- and mid-tarsi with segment 1 not widened.

Length of body 3.4–3.5 mm.

**Differential diagnosis.** Species belongs to the monotypic subgenus.

## A preliminary key to *Xenoda* (males)

1(12) Antennae more or less nitidiform, mostly with intermediate segments thickened, but without thick ovate bulb (Figs 1–6).

2(9) All antennal segments without curved spine (*Xenodina* subgen.nov.).

3(4) Elytra metallic blue. Antenna as Fig. 2, aedeagus as Fig. 10. Length 3–3.5 mm.
Malay Peninsula. ..... *X. cyanipennis* sp.nov.

4(3) Elytra not metallic.

5(6) Elytra with impressions or tubercles, not entirely fulvous.

7(8) Elytron with impression near side margin just beyond centre, fulvous with basal and preapical piceous spots. Antenna as Fig. 3. Length 3.3 mm.
Sumatra. ..... *X. impressa* sp.nov.

8(7) Elytron with two tubercles before apical slope, one high near suture, the other shallow near side margin; dark fulvous with high tubercles black. Antenna as Fig. 4, aedeagus as Fig. 12. Length 5.1 mm.
Kalimantan. ..... *X. tuberculata* sp.nov.

9(2) Antennal segments 8 or 10 with curved spine on apex.

10(11) Antennal segment 10 with spine (Fig. 5) (*Xenodania* subgen.nov.). Upperside fulvous, prothorax darkened on sides, elytra with black lateral stripe widened towards the rear. Aedeagus as Fig. 11. Length 3.5 mm.
Malay Peninsula. ..... *X.vittata* sp.nov.

11(10) Antennal segment 8 with spine (Fig. 6) (*Paraxenidea* subgen.nov.). Upperside entirely fulvous. Length 3.4–3.5 mm.
Philippines: Palawan. ..... *X. brancuccii* sp.nov.

12(1) Antennal segments 3–8 united in thick ovate bulb (Figs 7, 8). [1)]

13(28) Antennal segment 8 with long curved spine (*Xenoda* s.str.).

14(19) Elytra metallic blue, greenish blue or bronze, strongly and densely punctuate.

15(18) Head and prothorax fulvous.

16(17) Legs fulvous. 3 apical antennal segments pale flavous. Length 5 mm.
Kalimantan, Sumatra. ..... *X. spinicornis* Baly, 1877

17(16) Legs entirely or mostly black. 2 apical antennal segments pale flavous. Length 5.5–6 mm.
Sumatra, Mentawei. ..... *X. weyersi* Duvivier, 1885

18(15) Head, prothorax and legs black or dark metallic, antennae black with 2 apical segments pale flavous. Aedeagus as Fig. 13. Length 5.5–6.3 mm.
Sumatra, Malay Peninsula, Thailand. ..... *X. nigricollis* Jacoby, 1896

19(14) Upperside fulvous or reddish fulvous.

20(21) Prothorax very densely punctuate, punctures small, more or less rugose. Pale flavous, antennal segments 5–8 black, 9–11 almost white. Length 6 mm. Male unknown.
Java. ..... *X. puncticollis* Weise, 1922

21(20) Prothorax impunctate or indistinctly punctate.

22(25) Species from Sumatra and maybe also Java.

23(24) Elytra densely punctate and pubescent, finely rugose. Entirely fulvous or tibiae and tarsi darkened. Antennal club thick, 1.3–1.4 times as long as

[1)] The species *X. carinata* Laboissiere, 1929 from Mentawei and *X. ovalis* Mohamedasid, 2001 from Sabah are not included in the key.

wide. Aedeagus as Fig. 14. Length 5.7–6.3 mm.
Sumatra, ?Java. ..... *X. pallida* Jacoby, 1896

24(23) All characters of preceding species, but elytra not rugose. [Unclear species, possibly identical with *X. pallida*.] ..... *X. hirtipennis* Jacoby, 1884

25(22) Species from the Philippines.

26(27) Body entirely fulvous Antennal bulb short ovate, 1.55 times as long as wide (Fig. 8). Aedeagus as Fig. 15. Length 5.2 mm.
Luzon. ..... *X. bakeri* sp.nov.

27(26) Body fulvous with darkened 3 apical antennal segments, elytral suture, tibiae, tarsi and metasternum. Antennal bulb elongate ovate, 2.5 times as long as wide (Fig. 7). Length 5.7 mm.
Luzon. ..... *X. luzonica* sp.nov.

28(13) Segment 8 of antennal bulb without long curved spine (subgenus *Xenodella* Weise, 1922). [Includes 8 poorly known species from Sumatra and Mentawei.]

## Acknowledgements

I am grateful to Dr. M. Brancucci (NHMB) for the opportunity to study the interesting material in his care.

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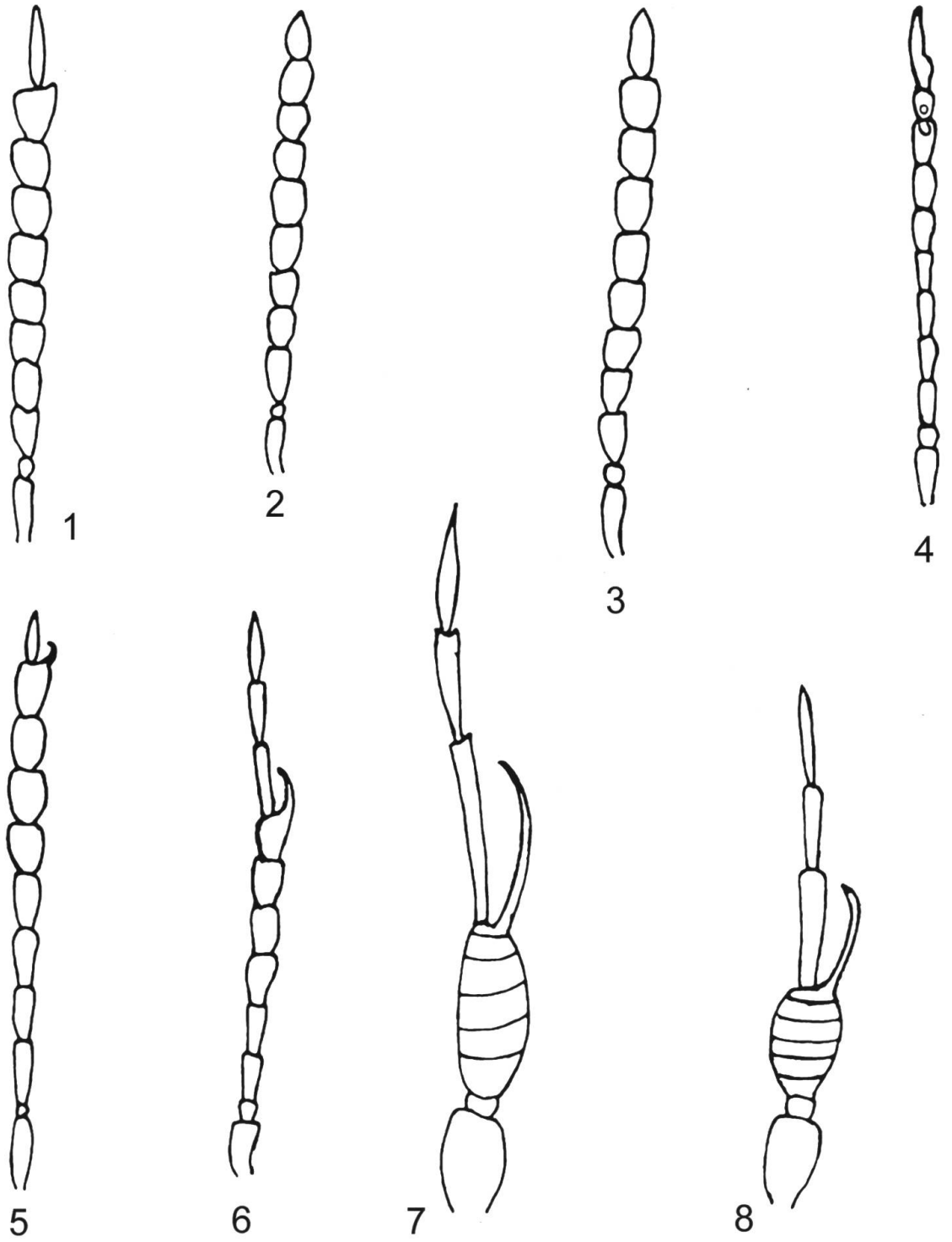
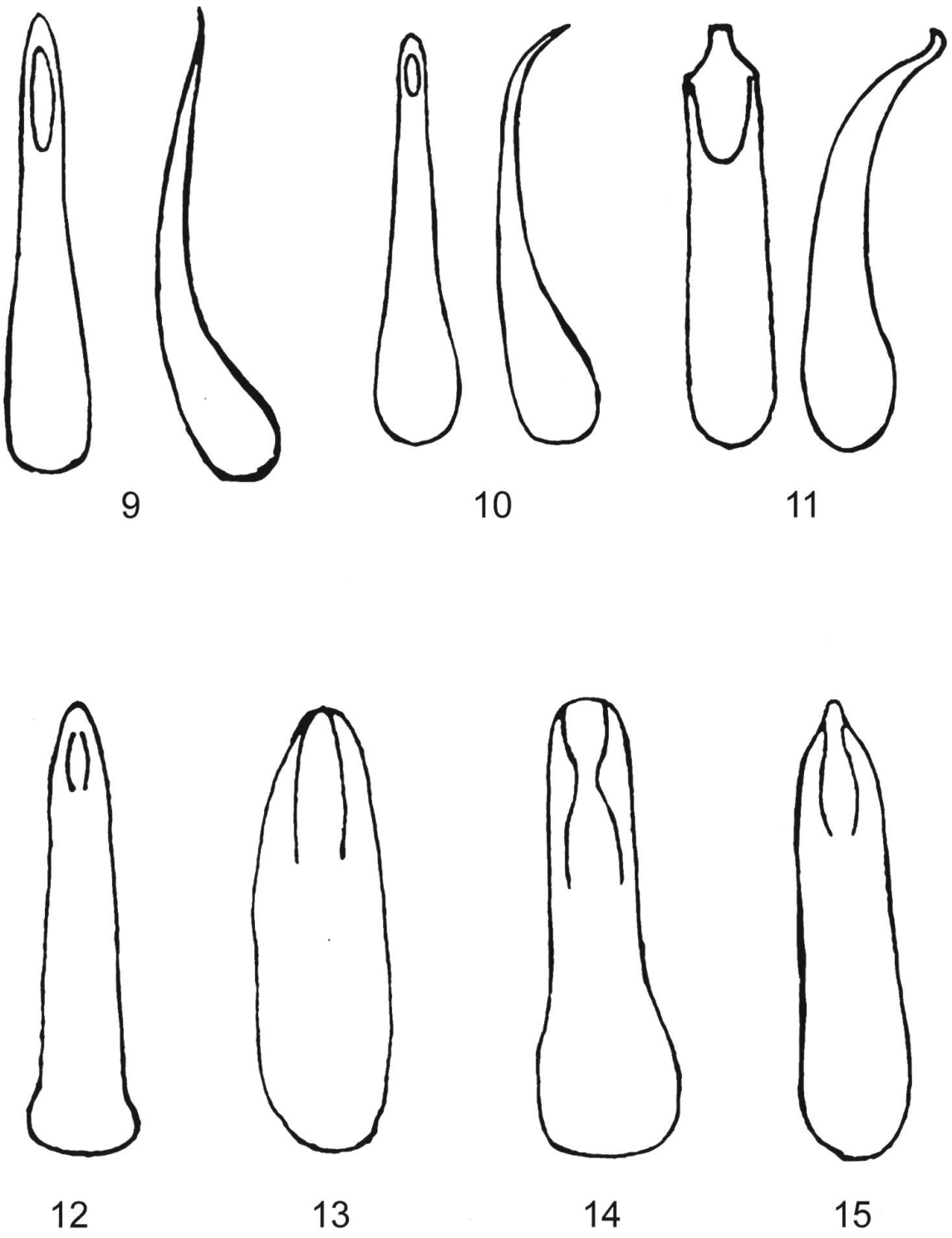



**Figs 1–8.** Antennae of males: 1, *X.* (*Xenodina*) *fulva* sp.nov.; 2, *X.* (*Xenodina*) *cyanipennis* sp.nov.; 3, *X.* (*Xenodina*) *impressa* sp.nov.; 4, *X.* (*Xenodina*) *tuberculata* sp.nov.; 5, *X.* (*Xenodania*) *vittata* sp.nov.; 6, *X.* (*Paraxenidea*) *brancuccii* sp.nov.; 7, *X.* (s.str.) *luzonica* sp.nov.; 8, *X.* (s.str.) *bakeri* sp.nov.




**Figs 9–15.** Aedeagi dorsally, (9–11 also laterally): 9, *X.* (*Xenodina*) *fulva* sp.nov.; 10, *X.* (*Xenodina*) *cyanipenni* sp.nov.; 11, *X.* (*Xenodania*) *vittata* sp.nov.; 12, *X.* (*Xenodina*) *tuberculata* sp.nov.; 13, *X.* (s.str.) *nigricollis* Jacoby ; 14, *X.* (s.str.) *pallida* Jacoby; 15, *X.* (s.str.) *bakeri* sp.nov.