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A new leafhopper genus *Comahadina* Huang and Zhang (Hemiptera: Cicadellidae: Typhlocybinae) and a key to genera of *Eupteryx*-complex

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Introduction

Leafhoppers of the *Eupteryx*-complex differ from other members of the tribe Typhlocybini in having the posterior branch of hind wing vein R separate from the anterior branch of M (Young 1952). The complex now includes 9 known genera of which 5 genera, *Aguriahana* Distant 1918, *Eurhadina* Haupt 1929, *Eupteryx* Curtis 1833, *Caknesia* Dworakowska 1994, *Almunisna* Dworakowska 1969 and *Bellpenna* Chiang *et al* 1989, have been reported from China. Here we propose a new genus *Comahadina* Huang and Zhang which shares the hind wing character with other genera in the complex, based on a new species, *Comahadina angelica* Huang and Zhang, here designated as the type-species. The new genus and species are described and illustrated and a key to all genera of the *Eupteryx*-complex is provided. In this study we follow Dworakowska (1993) for the nomenclature of wings and Zhang (1990) for methods and other terminology.

The type specimens of the new species are deposited in the collections of the Entomological Museum of Northwest A&F University (NWAFU) in Yangling (Shaanxi) and of the Institute of Zoology, Chinese Academy of Sciences (IZCAS) in Beijing.

Key to genera of *Eupteryx*-complex

1. Forewing broadened to apex with all veins separated distally (apical cells quadrate basally), and with apical cells occupying about half total area of forewing ..... *Almunisna* Dworakowska
- Forewing parallel sided to apex with some veins confluent preapically, and with apical cells occupying no more than 1/3 total area of forewing 2
2. Body robust, with dorsum pale and with multicoloured pattern..... 3
- Body slim, with upper part dark, and with color pattern brownish to brownish-black 8
3. Subgenital plate more or less abruptly narrowed preapically with row of peg-like setae there..... *Aguriahana* Distant
- Subgenital plate not narrowed as above and without row of peg-like setae..... 4
4. Paramere without subapical tooth on caudal part; gonopore preapical 5
- paramere with subapical tooth on caudal part; gonopore apical..... 6
5. Male pygofer side with dense groups of setae near ventral margin; apex of aedeagal shaft semimembranous..... ..... *Comahadina* **gen. nov**
- Male pygofer side without dense groups of microsetae near ventral margin; apex of aedeagal shaft well sclerotized ..... *Eurhadina* Haupt
6. Subgenital plate with apex pocket-like..... *Wagneriunia* Dworakowska
- Subgenital plate with apex narrowed..... 7
7. Aedeagual shaft with processes basally..... *Bellpenna* Chiang *et al*
- Aedeagal shaft with processes apically ..... *Omanesia* Thapa
8. Male pygofer side bilobed; aedeagal shaft with paired apical processes ..... *Knightipsis* Dworakowska
- Male pygofer side not bilobed; aedeagal shaft with single apical process 6
9. Male pygofer side with dense rigid setae ventrally near base; subgenital plate with base broadened then abruptly narrowed toward middle line at outer margin; paramere with distinct subapical tooth..... *Eupteryx* Curtis
- Male pygofer side without dense rigid setae; subgenital plate gradually narrowed toward apex; paramere without distinct subapical tooth ..... *Caknesia* Dworakowska

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***Comahadina* Huang and Zhang gen.nov.**

Type species: *Comahadina angelica* **sp. nov.**

Description. Body somewhat robust. Head slightly narrower than pronotum; vertex rounded to face which is swollen anteriorly; coronal suture visible. Forewing semitransparent, area of apical cells less than 1/3 of wing length; hindwing transparent with cross vein between R and M apically.

Abdominal apodemes large.

Male genitalia. Genital capsule cylindrical. Pygofer lobe with dense setae near ventral margin. Subgenital plate gradually narrowed towards apex, apical 2/3 of outer margin with row of microsetae, several macrosetae near middle of outer margin. Paramere long, caudal part with a row of microsetae on outer margin and a row of sensorial pits on inner margin. Connective slim. Aedeagus with short preatrium and developed dorsal apodeme; shaft tubular, mildly curved and desclerotized terminally, with paired subapical processes; gonopore subapical.

Etymology. The new genus name is derived from the Latin "coma" which refers to the densely grouped setae on pygofer lobe. The gender is feminine.

Notes. This new genus externally resembles some members of the nominate subgenus of *Eurhadina* Haupt but occupies only Oriental Region. The following characters distinguish the new genus from *Eurhadina*: 1) hind wing with crossvein connecting CuA and ambient vein more apical than the crossvein connecting CuA and MP; 2) pygofer lobe more consolidated and not lobed and sclerotized distinticly, and with setae strongly differentiated into dense groups; 3) aedeagus with large semimembranous apex.

Distribution. Oriental Region (East and South of China).

***Comahadina angelica* Huang and Zhang sp.nov.**

Figs 1–16.

Description. Ivory to yellowish. Broad transverse band in upper part of face, short streak on ScP+RA and round patch, sometimes diffusing to apical margin of forewing on RP, brownish-black; area of crossvein, adjoining area of apical margin and apical 1/3 of CuA', smoky (Figs 1–3). Abdomen with dorsum brownish and venter yellowish; pygofer capsule and subgenital plate brownish to brownish-black.

Vertex at midline longer than half its width at base; face shorter than its greatest breadth, with anteclypeus dilated in male. Forewing gradually narrow and about four times longer than its maximal breadth; three longitudinal veins on corium almost equidistant from each other at crossvein; RP+MP' with common stalk arising between R and M and leading to subtriangular third apical cell; first apical cell smallest, second apical cell largest, widening towards apex.

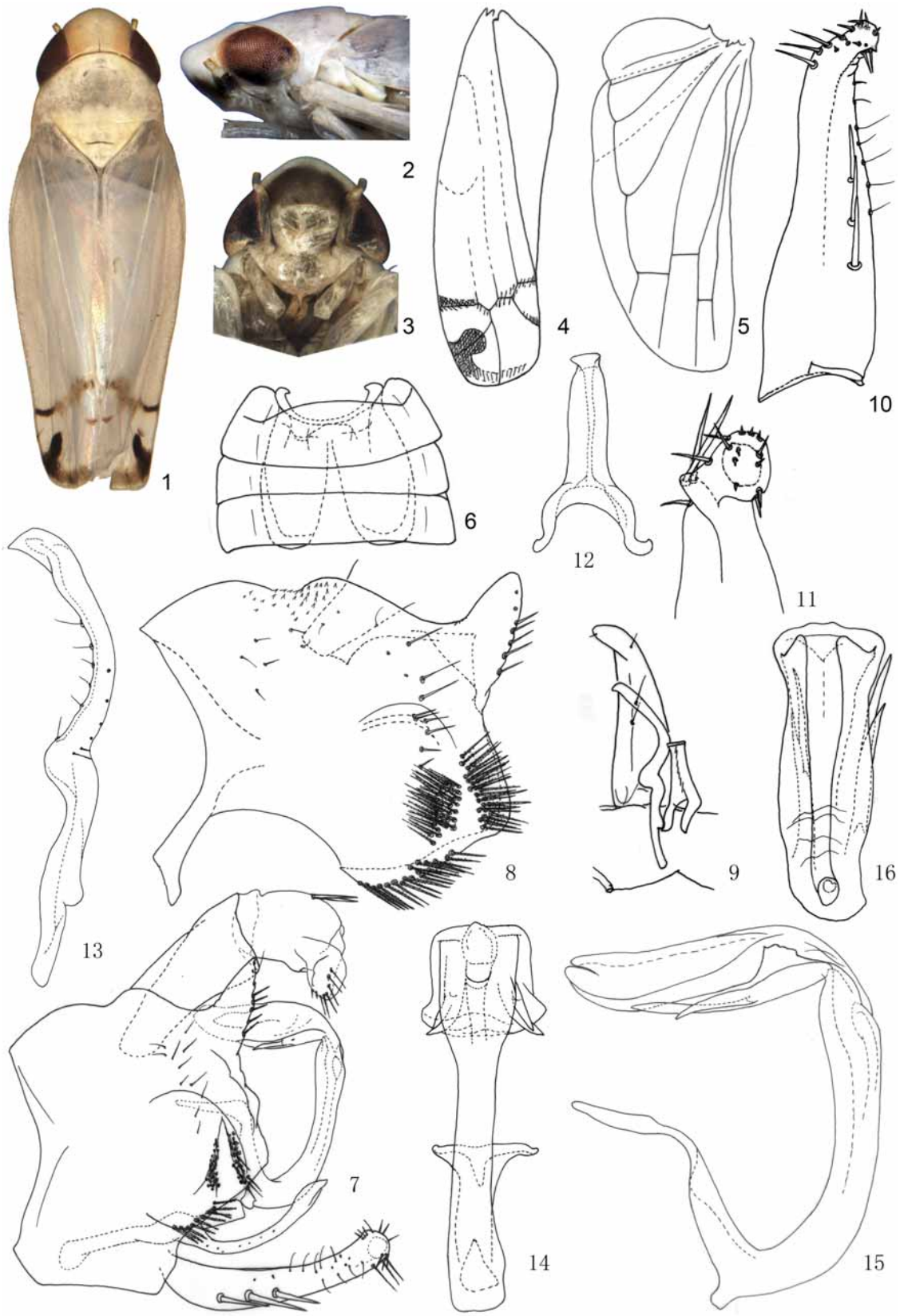
Abdominal apodemes reaching distal margin of 5th abdominal sternite (Fig. 6).

Male genitalia. Pygofer lobe with base broad, concave near hind margin, with plumose setae (under high magnification there are many mini spots on each seta) in two dense groups near caudo-ventral margin and in row along basal half of ventral margin, longitudinal row of microsetae in upper half near caudal margin; angulate projection at caudo-dorsal angle with row of rigid microsetae marginally (Fig.8). Subgenital plate with apex rounded and slightly twisted laterad; apex with tiny protrusion on outer margin, with few microsetae on surface and 2 medium setae on protrusion, and with row of rigid setae on inner ventral margin gradually becoming shorter toward apex; apical 2/3 of outer margin with row of microsetae, 2–4 macrosetae near center of outer margin (Figs 10–11). Paramere with basal part short, about 1/3 length of caudal part; caudal part narrowed at mid-length and broadened apically, inner margin slightly expanded subapically, apex truncate, with a row of microsetae on outer basal margin and row of sensorial pits on inner basal margin lower than former (Fig.13). Connective Y-shaped with manubrium slim (Fig.12). Aedeagus with termination of dorsal apodeme triangular; shaft with semimembranous termination large directed cephalad, and with subapical processes branched; gonopore subapical .

Measurement: Male 3.36–3.50 mm, female 3.39–3.71 mm long, including wings.

Type Material. Holotype, ♂, CHINA. Zhejiang Province: Qingliangfeng Natural Reserve, Shunxi village, altitude 430 m, 8.viii.2008, coll. Daozheng Qin; paratype, 2♂♂1♀, same data as holotype; 2♂♂3♀♀, same locality and date as holotype, coll. Xia Gao et Xiaoting Li; 1♂1♀, Mt. Fengyangshan, altitude 1300 m, 8.viii.2003, 1♂, altitude 1250 m, 10.viii.2003, by lamp, coll. Wu Dai; 1♂3♀♀, Hubei Province: Mt. Jiugong, 13.vi.1984, coll. Yang Jikun (NWAFU); 1♂, Guangxi Province: Napo, Defu, altitude 1350m, 19.vi.2000, coll. Jian Yao (IZCAS).

Etymology. The specific name is derived from the Latin word "angelica" which refers to its forewing white.



FIGURES 1–16. *Comahadina angelica* **sp.nov.** 1, habitus, dorsal view; 2, anterior dorsum, lateral view; 3, face of male; 4, forewing; 5, hindwing; 6, abdominal apodemes; 7, male pygofer, lateral view; 8, male pygofer lobe, lateral view; 9, paramere, connective, subgenital plate and sternite IX, dorsal view; 10, subgenital plate, dorsal view; 11, apex of subgenital plate; 12, connective; 13, paramere; 14, aedeagus, posterior view; 15, aedeagus, lateral view; 16, apex of aedeagus, dorsal view.

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