



***Hainanaella lutea* gen. and sp. nov., a new genus and species of delphacid planthopper (Hemiptera: Fulgoromorpha) from China**

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Abstract

A new genus of Chinese Delphacidae (Hemiptera: Fulgoromorpha), *Hainanaella* n. gen. with one new species, *H. lutea* n. sp. is described and illustrated. The new genus is assigned to the tribe Delphacini *sensu* Asche (1985, 1990), and subtribe Numatina based on the definition of Emeljanov (1993).

Key words: Delphacidae, Delphacini, Taxonomy, Auchenorrhyncha, China

Introduction

Despite the recently published monograph treating the entire delphacid fauna of China (Ding 2006), the size and diversity of habitats in China (Liang & Jiang, 2002) and recent description of several new taxa from this region (Qin 2005, Qin & Zhang 2006) suggest that the fauna remains inadequately surveyed.

In this paper, a new genus and species, *Hainanaella lutea*, discovered during recent examination of holdings in the Entomological Museum, Northwest A & F University, Yangling, Shaanxi, China (NWAUFU), is described as a member of the subtribe Numatina, tribe Delphacini of the subfamily Delphacinae. This addition brings the Chinese Delphacini fauna to 132 genera.

Material and methods

Dry preserved specimens were used in this study. The methods and terminology in this paper follow those of Ding (2006). Measurements of body length equal the distance between the apex of vertex and distal margin of tegmina. All measurements are in millimeters (mm).

Results

***Hainanaella* gen. n.**

Type species. *Hainanaella lutea* n. sp., here designed.

Description. Small-sized and brownish delphacids. Head longer and narrower than pronotum. Angle of fastigium obtuse. Median carina of frons forked above level of ocelli. Calcar thickly foliate, tectiform, with

many black-tipped teeth on lateral margin. Male pygofer with single median process on the midventral margin. Parameres moderately long, divergent. Diaphragm of pygofer broad, sclerotized, armature absent. Aedeagus greatly compressed laterally, plate-like, with subapical tag reflected cephalad. Suspensorium Y-shaped, arms connecting with anal segment, common stem dorsally attached to the aedeagus base. Male anal segment ring-like, caudoventral margin produced medially.

Etymology. The name is derived from the type locality of the type species (Hainan Province). Gender: feminine.

Remarks. *Hainanaella* is placed into the tribe Delphacini by the following combination of characters: hindwings with 4 veins from band of crossveins to posterior margin; hind tibia with 5 (2 inner + 3 outer) distal spines; calcar of hind tibia thickly foliate, tectiform, with teeth on lateral margin; aedeagus base articulate with anal segment by distinct Y-shaped suspensorium. The features of median facial carina and articulated suspensorium indicates that *Hainanaella* belongs to the subtribe Numatina.

Using the keys of Ding (2006), Yang (1989) and Fennah (1965), *Hainanaella* runs to *Zhudelphax* Ding, *Kakuna* Matsumura and *Thymalops* Fennah respectively. It differs from *Zhudelphax* and *Thymalops* mainly in the structures of the male genitalia, in *Hainanaella* the male anal segment being ring-like and the caudoventral margin produced rather than collar-shaped, lateroapical angle produced. From *Thymalops* it differs by the diaphragm being apparently sclerotized, not membranous and from *Zhudelphax* by the suspensorium being unibifurcated ventrally and parameres divergent. It differs from *Kakuna* whose metabasitarsus is nearly as long as tarsomere 2+3 combined, by the pygofer with medioventral process, the diaphragm broad and without armature, the suspensorium Y-shaped and the parameres divergent apically. The new genus also differs from all these genera in the characters of aedeagus (greatly compressed and plate-like laterally).

The new genus is somewhat similar to *Ditropsis* Wagner and *Dicranotropis* Fieber using the key provided by Anufriev *et al.* (1988). It differs from these genera by: male pygofer with single median process on the midventral margin; anal segment produced caudoventrally; aedeagus greatly compressed laterally, without small teeth or denticles on its surface and subapical tag reflected cephalad. It also differs from *Ditropsis* whose median facial carina is forked above the level of the ocelli, by diaphragm of pygofer without armature, suspensorium Y-shaped and parameres divergent and not pointed apically. It differs from *Dicranotropis* in laterodorsal angle of male pygofer in profile not produced and parameres moderately long and rather broad.

***Hainanaella lutea* n. sp.**

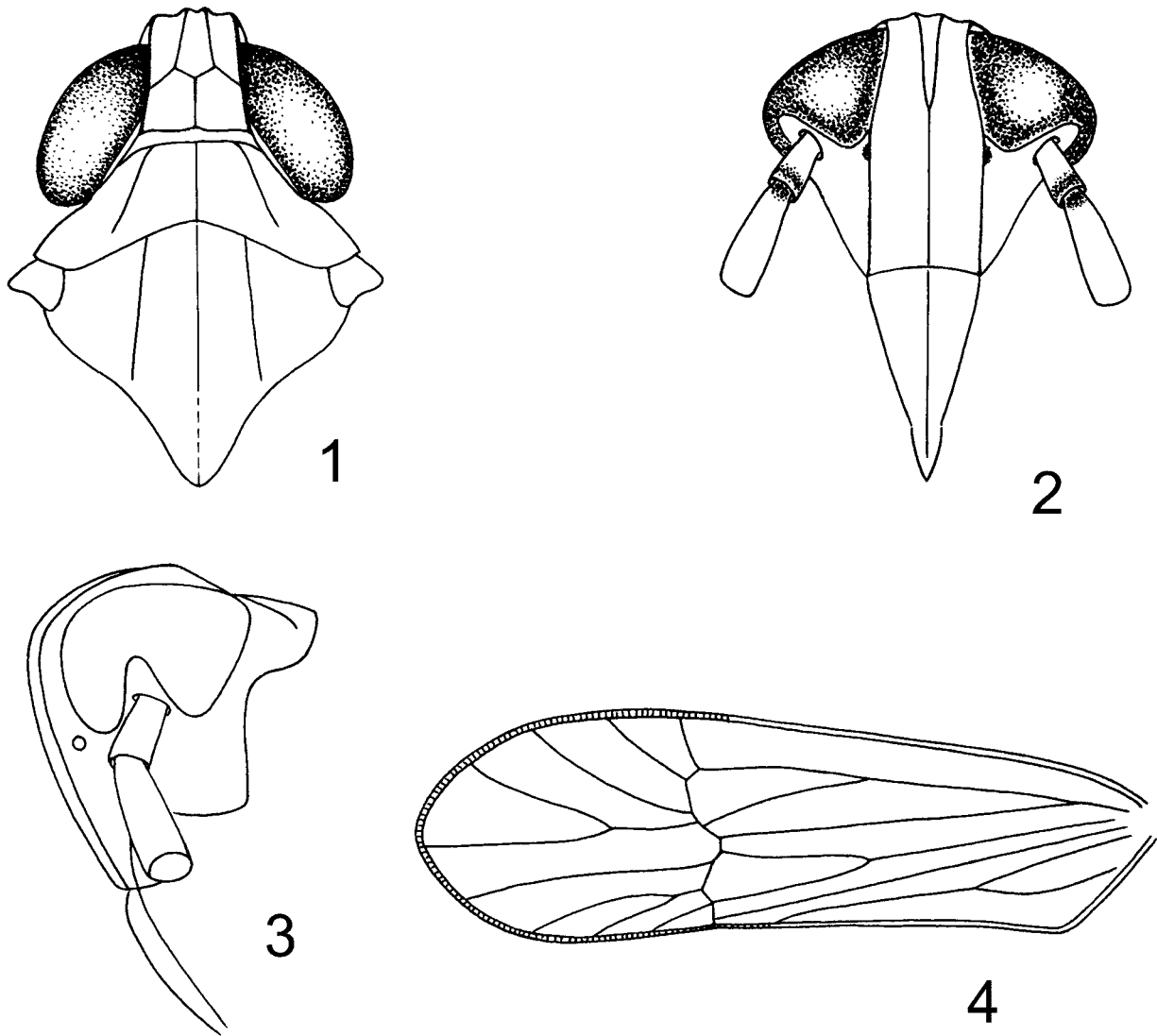
(Figs. 1–15)

Type material. Holotype, male (macropterous): Jianfengling, Hainan Province, China, 18.v.1983, coll. Yalin Zhang. Paratype, 1 male (macropterous), same data as holotype (NWFU).

Description. Color. General color yellowish orange. Eyes black. Ocelli reddish black. Antennae with a blackish brown ring around apex of first segment, base of second segment with blackish brown maculation. Macropterous wings hyaline, light yellowish orange. Dorsum of male abdomen ornamented with irregular brown spots laterally, middorsum brown, venter with light brownish patches sublaterally. Male pygofer tan, paler dorsally. Parameres and median elongate process of anal segment blackish brown.

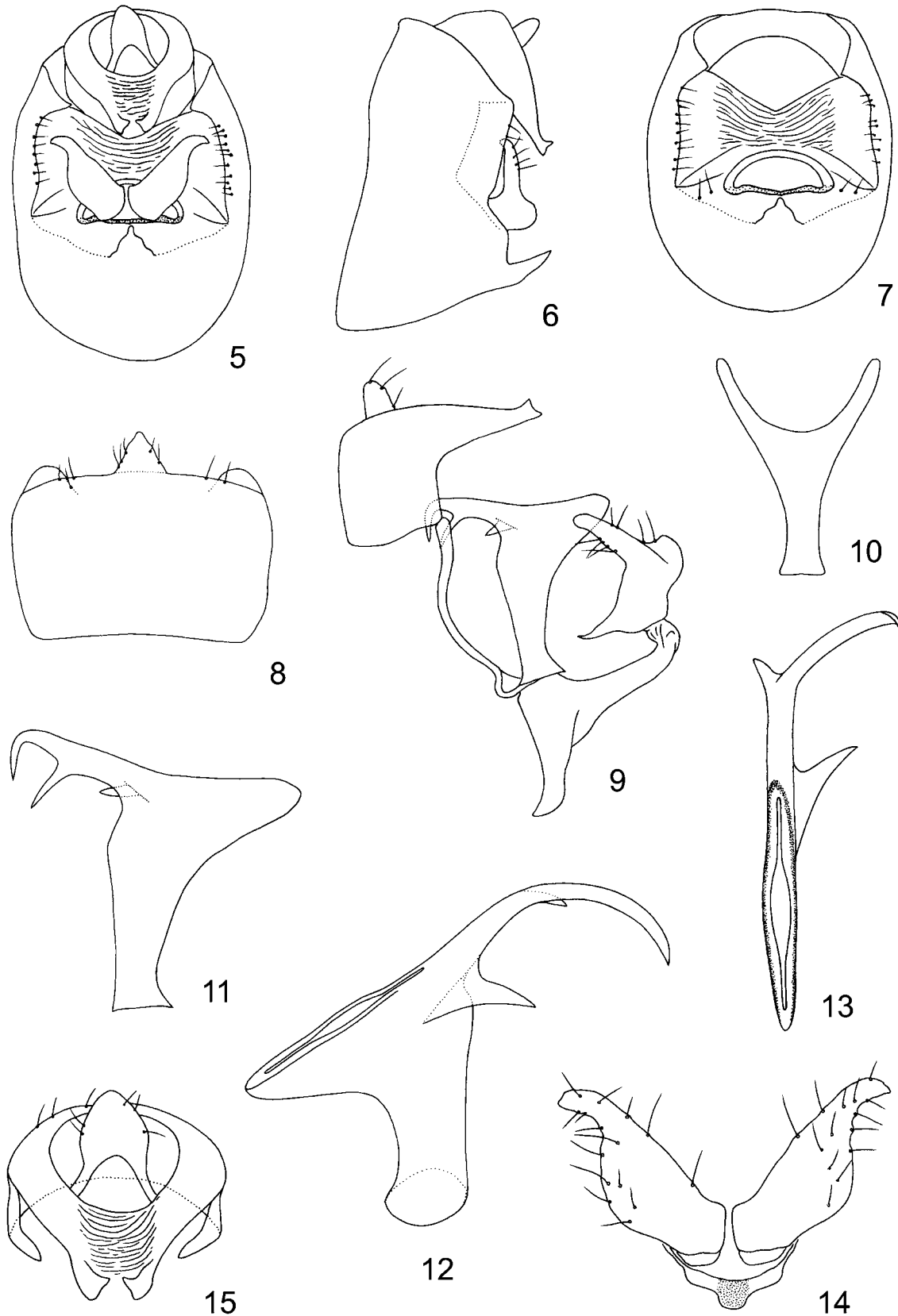
Structure. Body length of macropterous form in males 4.31–4.41, width at tegula 0.94–0.98. Head including eyes narrower than pronotum (0.95:1), vertex quadrate, longer medially (0.30–0.31) than wide (0.24–0.25), anteriorly transverse, slightly produced medially, lateral carinae subparallel, in lateral view meeting lateral carinae of frons with obtuse angle at fastigium, basal compartment wider at base than greatest length about 1.8:1. Frons longer (0.63–0.66) than wide (0.28), lateral carinae concave between eyes, nearly parallel below ocelli, widest at level of ocelli. Postclypeus and anteclypeus with distinct median carinae, together approximately 0.8x length of frons, in profile shallowly convex, postclypeus as wide as frons at apex. Ros-

trum reaching beyond meso-trochanters. Antennae terete, surpassing frontoclypeal suture, segment I longer than wide about 1.8:1, segment II longer (0.31–0.33) than I (0.16–0.18). Pronotum in dorsal view shorter than vertex, lateral carinae of pronotum posterolaterally directed, slightly curved, not reaching posterior margin, pronotum width 0.83–0.85, length 0.15. Mesonotum length 0.63–0.66, lateral carinae not extending to posterior margin, median carina obscure apically. Forewing length 3.53–3.73, rounded at apex. Legs with tibia normal (not expanded), metatibia with two lateral spines, metabasitarsus (0.39–0.41) nearly as long as the tarsomere 2 (0.16–0.18) + 3 (0.19–0.22) combined, calcar (0.35–0.37) slightly shorter than metabasitarsus, thickly foliate, tectiform, with 34–39 small, black-tipped teeth on lateral margin.



FIGURES 1–4. *Hainanaella lutea* n. sp., 1, head and thorax, dorsal view; 2, face; 3, head and pronotum, left lateral view; 4, right forewing.

Male genitalia. Pygofer with medioventral process single, lobe-like, broad at base and attenuating towards apex. Diaphragm of pygofer with dorsal margin incised medially. Parameres not reaching dorsal margin of diaphragm, apex narrowed and directed laterad, outer margins sinuate. Aedeagus tubular, in profile widening towards apex, with subapical tag reflected cephalad, its apex turned ventrad and pointed, its sub-apex with a short process, basal part with another short and stout process; in dorsal and dorsocaudal view aedeagus greatly



FIGURES 5–15. *Hainanaella lutea* n. sp., 5, male genitalia, caudal view; 6, same, left lateral view; 7, pygofer, caudal view, anal segment and parameres removed; 8, same, ventral view; 9, anal segment, aedeagus and parameres, left lateral view; 10, suspensorium, caudal view; 11, aedeagus, left lateral view; 12, same, dorsocaudal view from right side; 13, same, dorsal view; 14, parameres, caudal view; 15, anal segment, caudal view.

compressed laterally, plate-like, with 3 processes, two of them at right and one left, phallosome dorsad near apex. Opening for parameres with dorsal margin evenly arched upward, ventral margin sinuate. Arms of suspensorium symmetrical, shorter and narrower than stem. Anal segment ring-like, median elongate process bifurcate apically, each bifurcation with a dentate-like process subapically.

Female unknown.

Brachypterous form. Unknown.

Etymology. The name is derived from the Latin word “luteus” (brown) which refers to the general color of the type specimens.

Distribution. Known only from the type locality in southern China (Hainan Province).

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