

## FOUR NEW SPECIES AND A NEW RECORD OF DELPHACIDAE (HEMIPTERA) FROM CHINA

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**ABSTRACT.** Four new species of Delphacidae (Hemiptera) are described from China, viz., *Hadeodelphax afurculus* Guo & Liang, sp. nov.; *Tropidocephala prolixa* Guo & Liang, sp. nov.; *Arcofaciella obflexa* Guo & Liang, sp. nov. and *Nilaparvata terracefrons* Guo & Liang, sp. nov. *Smicrotatodelphax maritimus* Yang, 1989 is newly recorded in mainland of China. All specimens studied are deposited in the insect collection of the Institute of Zoology, Chinese Academy of Sciences, Beijing, China.

Key words: Hemiptera, Delphacidae, New species, China.

### Introduction

The delphacid fauna of China remains inadequately studied. The only comprehensive treatment of Chinese Delphacidae was that of Ge *et al.* (1983) in their Delphacidae volume of the Economic Insect Fauna of China, which deals with 123 species distributed in 47 genera, 2 tribes and 2 subfamilies. The number of described species likely represents only a small fraction of the actual diversity of the whole Chinese delphacid fauna considering the vast territory and various complex habitats of China (Liang, 2002; Liang & Jiang, 2003). Several distinct delphacid genera, e.g. *Asiraca* Latreille, 1796, *Vizcaya* Muir, 1917, *Neovizcaya* Liang, 2002 and *Punana* Muir, 1913, were reported and recorded from the Chinese fauna in recent years (Liang, 1996, 1998, 2002; Liang and Jiang, 2003). More genera and species are expected as intensive collecting in China is carried out.

In this paper we describe four new Chinese delphacid species in genera *Hadeodelphax* Kirkaldy, 1906, *Tropidocephala* Stål, 1853, *Arcofaciella* Fennah, 1956 and *Nilaparvata* Distant, 1906 and record *Smicrotatodelphax maritimus* Yang, 1989 for the first time in the mainland of China.

### Genus *Hadeodelphax* Kirkaldy

*Hadeodelphax* Kirkaldy, 1906: 410. Type species: *Hadeodelphax pluto* Kirkaldy, 1906.

*Sardia* Kirkaldy, 1908: 14 (7). Type species: *Sardia rostrata* Melichar, 1903.

**Generic diagnosis:** Head including eyes narrower than pronotum. Vertex longer in middle line than wide at narrowest part between eyes about 1.8:1, strongly produced in front of eyes, sides converging to apex, apical margin acutely produced medially, submedian carinae uniting on vertex, Y-shaped carina distinct, basal compartment wider at base than greatest length. Frons in middle line longer than widest part about 3.8:1, lateral carinae nearly straight. Rostrum reaching meso-trochanters. Antennae short, cylindrical.

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Pronotum with lateral carinae attaining hind margin. Spinal formula of hind leg 5-8-4. Post-tibial spur with over 30 teeth. Tegmen with anterior margin distinctly convex medially, acute at apex.

Anal segment of male collar-shaped, in profile processes arising from dorsad. Pygofer in profile distinctly wider ventrally than dorsally. Phallus rather long, stout, tubular. Suspensorium ring-like, stem very small. Diaphragm very narrow. Genital style short and broad.

*Distribution:* Oriental and Australian regions.

*Hadeodelphax afurculus* Guo & Liang, sp. nov. (Figs. 1-13)

*Macropterous male:* Length of body: 3.3mm; length (including tegmen): 5.6mm; length of tegmen: 4.5mm.

General color light yellowish brown, lighter ventrally. Tegmen (Fig. 13) semitransparent, concolorous with body, membranous area at apex of median cell with brown suffusion, hind margin pale yellow.

Vertex (Fig. 1) in middle line longer than wide at base (about 1.6:1), and longer than pronotum in middle line (2.6:1); vertex at base slightly narrower than pronotum (0.7:0.9); submedian carinae arising from about 1/3 of vertex near base, uniting at apex. Vertex longer submedially than wide at base (1.3:1). Basal compartment wider at base than stem of Y-shaped carina (1.6:1), and wider than greatest length (1.3:1). Frons (Fig. 2, 3) in middle line longer than wide at widest part (4:1), widest at middle part, and longer than postclypeus in middle line, median carina not forked, postclypeus at base as wide as frons at apex, postclypeus in profile not protrudent. Rostrum surpassing meso-trochanters. Antennae not surpassing frontoclypeal suture, first segment cylindrical, basal segment longer than wide at apex (1.5:1), and shorter than second segment (1:2.2). Pronotum in middle line longer than wide between lateral carinae on anterior margin (3.3:1). Mesonotum medially as long as vertex and pronotum together, and longer than scutellum (3.3:1), mesonotum at base wider than length in middle line (1.3:1). Basal tarsal segment of hind leg longer than other two segments together.

*Male genitalia:* Anal segment with an obtusely process at base of spinous process ventrally. Lateroapical angles (Fig. 7) produced in spinous processes, falcate and curved ventrad, separated basally and approximated apically. Pygofer (Figs. 4, 5, 6) with opening small, medioventral process absent, lateral margin broad and thick, with a triangular protrusion at middle, laterodorsal angle uniting with dorsal margin at obtuse angle, ventral margin concave. Aedeagus (Figs. 10, 11) long and slender, tubular, base with a triangular process. Dorsal margin of diaphragm (Fig. 12) concave, with a small process medially. Genital styles (Figs. 8, 9) long, flake-shaped, slightly narrowing from middle to apex, bent outward, apex slightly bifurcate, inner apical angle long, oblique mesad, outer angle short and obtuse.

*Holotype:* ♂, P. R. CHINA: Sichuan, Emeishan, Jiulaodong, 1800-1900m, 3.iii.1937, Coll. K. R. Huang.

*Distribution:* P. R. China: Sichuan.

*Etymology:* The species name is derived from the Latin prefix *a-* and *furcula*, referring to its unforked aedeagus.

*Remarks:* This species is similar to *H. pluto* Kirkaldy, but differs in the aedeagus not forked and in the shapes of the pygofer and genital styles.

### Genus *Tropidocephala* Stål

*Tropidocephala* Stål, 1853: 266. Type species: *Tropidocephala flaviceps* Stål, 1855.

*Generic diagnosis:* Head including eyes narrower than pronotum. Vertex longer in middle line than wide at base, apex producing in front of eyes apparently or very much, median carina simple, lateral carinae converging apically, submedian carinae protruding from apex of lateral carinae, uniting at apex, forming anterior margin of vertex. Frons longer in middle line than wide at widest part about 1.9-3.0:1, in profile more or less reclined apically, lateral carinae convex medially not really connecting with lateral carinae of vertex; median carina forked at extreme base. Postclypeus at base wider than or subequal to frons at apex, tricarinate distinctly or not. Rostrum reaching mesocoxae. Antennae short, cylindrical, second segment longer than first, in most species not reaching frontoclypeal suture. Pronotum tricarinate, lateral carinae well developed, somewhat converging posteriorly, attaining hind margin. Spinal formula of hind leg 5-6-4 or 5-7-4. Tegmen with small hair-bearing granules beside veins.

Anal segment of male relative large. Pygofer in posterior view with opening longer than wide, lateral margin with or without production, ventral margin with distinct medio-ventral process. Aedeagus with distinct phallobase, phallus slender, curved ventrad, phallobase broad at base, concave submedially to receive phallus with very long process apically or basoventrally. Aedeagus fastened in anal segment, supporting plate irrecognizable. Diaphragm membranous. Genital styles long, sometimes basal angles with long process.

*Distribution:* Palearctic, Oriental, Australian and African regions.

### *Tropidocephala prolixa* Guo & Liang, sp. nov. (Figs. 14-23)

Macropterous. Length of body: ♂ 2.5mm, ♀ 2.6mm; length (including tegmen): ♂ 3.2mm, ♀ 3.7mm; length of tegmen: ♂ 2.5mm, ♀ 2.7mm.

*Male:* Vertex, pronotum and mesonotum between lateral carinae including scutellum and carinae yellowish brown, median carina of head, thorax and outer margin of lateral carinae of thorax with light brown line. Lateral area of pronotum and mesonotum (excluding lateral margin of pronotum light yellow), tegulae black brown. First segment of antennae black brown, second segment light yellowish brown, apex and oblique line light brown. Base and apex of frons, postclypeus and genae black, median frons yellowish brown, apical area not concave. In profile postclypeus not protrudent. Thorax ventrally, abdomen, pygofer, femora and trochanters of legs black brown, tibiae and tarsi yellowish brown. Tegmen black brown, with small granules, without burl spot, apical area slightly membranous, slender, area from cross veins to base somewhat leathery.

Vertex (Fig. 14) longer in middle line than wide at base (1.6:1), and longer than pronotum (1.6:1), vertex slightly wider than pronotum (0.5:0.7). Frons (Fig. 15, 16) longer in middle line than wide at widest part (2.3:1.0), widest near middle part, median carina not forked nearly, frons longer than postclypeus about 2.4:1, postclypeus at base as wide as frons at apex. Distal rostrum not surpassing meso-trochanters. Antennae not surpassing frontoclypeal suture, first segment shorter than wide at apex (1:1.5), second segment longer than first segment (2.5:1.0). Lateral carinae of pronotum straight, attaining hind margin, pronotum in middle line slightly longer than wide between lateral carinae on

anterior margin. Mesonotum nearly as long as vertex and pronotum together, median carina reaching distal scutellum. Mesonotum longer than scutellum (2.6:1), mesonotum at base wider than length in middle line (0.8:0.6). Spinal formula of hind leg 5-6-4, basal tarsal segment longer than other two segments together.

*Male genitalia:* Pygofer (Figs. 17, 18, 19) in profile with laterodorsal angles produced in a lobed process, hind margin at base deeply concave, slightly acute apically, with a small triangular process ventrally; ventral margin with a extremely long stick-shaped medioventral process. Aedeagus (Figs. 20, 21) tubular, with a long spinose process and a short triangular process. Dorsal margin of diaphragm widely separated, not joined. Genital styles (Fig. 22) flake-shaped, outer side arced at 2/3 near base, then turning over mesad at near right angle, inner side slightly concave at near right angle, then convex and twisted.

*Holotype:* ♂, P. R. CHINA: Fujian, Shaowuchengguan, 160-210m, 17.iii.1960, Coll. Y. Zuo. *Paratypes:* 1♂, same data as holotype; 1♀, Guangxi: Yangshuo, 7.iv.1938.

*Distribution:* P. R. China: Fujian, Guangxi.

*Etymology:* The species name is derived from the Latin *prolixa*, referring to this species with an extremely long medioventral process.

*Remarks:* This species is similar to *T. touchi* Kuoh, but in the latter species the pygofer with the opening without lateral and medioventral processes and the aedeagus tubular, with a long spine near base dorsally.

### Genus *Arcofaciella* Fennah

*Arcofaciella* Fennah, 1956: 466. Type species: *Arcofaciella verrucosa* Fennah, 1956.

*Generic diagnosis:* Head including eyes as wide as pronotum. Vertex distinctly wider at base than long medially about 3:1, median carina simple, feeble; submedian carinae transversely protruding, parallel with base. Frons in profile reclined anteriorly, longer than wide at widest part about 1.4:1, widest at level of ocelli, median carina distinct, forked at base. Postclypeus in profile more or less at right angle to apex of frons, lateral carinae distinct, median carina obsolete. Rostrum reaching meso-trochanters. Antennae short, basal segment longer than wide, and shorter than second, not reaching frontoclypeal suture. Pronotum with median carina distinct, lateral carinae developed only in anterior portion, converging posteriorly, not reaching hind margin. Mesonotum strongly convex, almost gibbose, scutellum horizontal. Legs relatively short and stout. Spinal formula of hind leg 5-8-5 or 5-9-5.

Anal segment of male ring-like, not produced in spinose process. Pygofer short, without medioventral process. Aedeagus with distinct phallobase; phallus tubular, simple, with apical part recurved downward, phallobase quadrate at basal 2/3, with several processes, supporting plate of aedeagus indistinct. Genital styles moderately long, slender, simple.

*Distribution:* China (Hong Kong, Taiwan, Fujian, Tibet, Yunnan) (see Liang & Jiang, in press).

*Arcofaciella obflexa* Guo & Liang, sp. nov. (Figs. 24-36)

*Macropterous male*: Length of body: 2.1mm; length (including tegmen): 4.4mm; length of tegmen: 3.8mm.

Vertex, face yellowish green. Antennae light scorched green, distal part black brown. Pronotum, mesonotum dorsally and ventrally and legs scorch, abdomen light nacarat, slightly lighter ventrally, and disc of first abdominal segment ventrally and dorsally black. Tegmen (Fig. 36.) grayish brown, darker at base, veins brown with yellowish white granules, veins dashed, apex of longitudinal veins brown.

Vertex (Fig. 24) almost hexagonal, median carina distinct. Vertex in middle line shorter than wide at base (1:3.2), and shorter than pronotum (1:2), vertex about as wide as pronotum (0.85:0.9), basal compartment at base wider than stem of Y-shaped carina (4:1), and wider than greatest length (3.2:1). Frons (Figs. 25, 26) with median carina of forked at base, in middle line longer than wide at widest part (1.5:1), widest at level of upper ocelli, frons longer than postclypeus in middle line (2:1). Postclypeus at base wider than frons at apex about 1.2:1, median carina of postclypeus absent. Rostrum surpassing mesotrochanters. Antennae not attaining frontoclypeal suture, first segment cylindrical. First segment of antennae longer than wide at apex about 1.7:1, second segment longer than first (1.6:1). Lateral carinae of pronotum uniting at anterior margin, flexing backwards near middle at sub-right angle and nearly attaining hind margin. Mesonotum with median carina distinct, nearly reaching distal scutellum. Mesonotum in middle line longer than scutellum about 0.8:0.3, and shorter than wide at base about 1:1.2. Tegmen with three small black dots along cross veins near base. Femora and tibiae of legs broad and flattened, spinal formula of hind leg 5-9-5, basal tarsal segment longer than other two segments together, post-tibial spur knife-shaped, only one tooth at apex.

*Male genitalia*: In ventral view anal segment (Figs. 29) concave medially, lateroapical angle protruding caudad. Pygofer (Figs. 27, 28) in posterior view with opening longer than wide, lateral margin thick and not well defined, medioventral process absent. Dorsal margin of diaphragm (Fig. 35) separated, not joined. Genital styles (Figs. 30, 31) long, reaching basal anal segment, with an angled process medioventrally and 2 small teeth at outer base laterally, tapering gradually from middle to apex, outer apical angle rounded and protruding, slightly dorsad, inner apical angle bifurcate, inner laterodorsal margin with a dull angled process at 2/3 of genital styles near base. Aedeagus (Figs. 32, 33, 34) long, tubular, with distinct phallobase, with basal part lying between two valvular processes of phallobase, deflecting leftward, apical part recurved downward and reaching 2/3 of phallobase. Phallobase almost reaching base of genital styles, apical part warping dorsad, basal part stout, with two valvular processes, in dorsal view with a large and a small round valvular processes, tapering from 3/5 to apex, in right view with three processes near base.

*Holotype*: ♂, P. R. CHINA: Yunnan, Xishuangbanna, Damenglong, 650m, 5.viii.1958, Coll. S. Y. Wang.

*Distribution*: P. R. China: Yunnan.

*Etymology*: The species name is derived from the Latin prefix *ob-* and *flexa*, referring to this species with phallobase flexing upward apically.

*Remarks*: This species is similar to *A. verrucosa* Fennah, but differs in the phallobase in right view with three valvular processes near base and the apex warping upward.

### Genus *Smicrotatodelphax* Kirkaldy

*Smicrotatodelphax* Kirkaldy, 1906: 411. Type species: *Smicrotatodelphax perkinsi* Kirkaldy, 1906.

**Generic diagnosis:** Head including eyes as wide as pronotum. Vertex as long submedially as wide at base or slightly wider, apical margin transverse, submedian carinae uniting at apex or not. Y-shaped carina with stem feeble, basal compartment longer at base than greatest length (1.4-2.1:1). Frons in middle line longer than wide at widest part (1.6-2.0:1), widest at middle, lateral carinae convex, median carina simple or forked slightly below level of median eyes. Postclypeus wider at base than frons at apex. Rostrum reaching meso-trochanters. Antennae surpassing frontoclypeal suture, cylindrical, basal segment longer than wide, shorter than second. Pronotum with lateral carinae not attaining hind margin. Spinal formula of hind leg 5-7-4, post-tibial spur with 10-22 teeth.

Anal segment of male ring-like, deeply sunk in dorsal emargination of pygofer, lateroapical angles rather closely approximated, each produced in a moderately long spinous process. Pygofer in profile as long dorsally as ventrally, laterodorsal angle strongly produced, caudal margin nearly straight, in posterior view with opening as wide as long, without medioventral process. Phallus moderately long, tubular, armed with several teeth. Diaphragm moderately broad. Suspensorium ring-like ventrally, stem small. Genital styles moderately long, divergent.

**Distribution:** Oriental Region.

#### *Smicrotatodelphax maritimus* Yang, New record (Figs. 37-46)

*Smicrotatodelphax maritimus* Yang, 1989: 229.

**Macropterous male:** Length of body: 1.4mm; length (including tegmen): 2.5mm; length of tegmen: 2.1mm.

Body small. Body ventrally, thorax, tegmen and legs light yellow, basal part of abdominal tergites yellowish brown, apical part black brown.

Vertex about as long as pronotum, submedian carinae uniting at apex. Vertex in middle line approximately equal to wide at base, basal compartment at base wider than stem of Y-shaped carina (2:1), and wider than greatest length 2:1.2, vertex submedially shorter than wide at base (1:2). Frons widest at middle part, median carina not forked, lateral carinae slightly convex, frons in middle line longer than wide at widest part (about 0.4:0.2), and longer than postclypeus (1:0.4), postclypeus at base wider than frons at apex (1.5:1), in profile postclypeus not protrudent. Pronotum in middle line about equal to wide between lateral carinae on anterior margin. Mesonotum in middle line longer than vertex and pronotum together, and longer than scutellum (about 0.4:0.2), and shorter than wide at base (1:1.5), median carina attaining distal scutellum. Tegmen hyaline, stigma absent. Post-tibial spur with 10 teeth, basal tarsal segment of hind leg shorter than other two segments together.

**Male genitalia:** Anal segment with anal style small and sunk in anal segment. Pygofer (Figs. 37, 38, 39) with opening ring-like, dorsal margin concave, ventral margin angulately concave, lateroventral and lateral margins with long hairs, laterodorsal angle slightly protruding mesad. Aedeagus (Figs. 40, 41) tubular, with small spines ventrally. Dorsal margin of diaphragm concave, with a nipple-shaped process medially.

**Specimens examined:** P. R. CHINA: Guangdong, Huguang, 1♂ (macropterous), 4♂♂, 2♀♀ (brachypterous), 1 nymph, 21.ii.2003; 12 ♂♂ (macropterous), 4♂♂, 7♀♀ (brachypterous), 2 nymphs, 4.x.2003, Coll. L. Z. Guo.

*Distribution:* China: Guangdong, Taiwan.

### Genus *Nilaparvata* Distant

*Nilaparvata* Distant, 1906: 473. Type species: *Delphax lunges* Stål, 1854.

*Generic diagnosis:* Head including eyes narrower than pronotum. Vertex submedially slightly longer than wide at base or nearly same, submedian carinae not really uniting at apex, Y-shaped carina distinct. Frons longer in middle line than wide at widest part about 2.4:1, widest at middle or near apex, median carina forked at base or not. Postclypeus at base slightly wider than frons at apex. Rostrum reaching meso-trochanters. Antennae cylindrical, slightly surpassing frontoclypeal suture, with basal segment longer than wide, shorter than second about 1:2. Pronotum with lateral carinae not attaining hind margin. Spinal formula of hind leg 5-7-4, basal tarsal segment with 1-5 lateral teeth, post-tibial spur with 15-33 teeth.

Anal segment of male ring-like, lateroapical angles each produced into spinous process or not. Pygofer in profile longer ventrally than dorsally, laterodorsal angle slightly produced, in posterior view with opening wider than long, medioventral process present or absent. Shape of phallus varied. Suspensorium with stem broad, ventral half ring-like, or Y-shaped. Diaphragm broad. Genital styles long, complex.

*Distribution:* Palearctic, Oriental, African, Neotropical and Australian regions.

### *Nilaparvata terracefrons* Guo & Liang, sp. nov. (Figs. 47-59)

*Brachypterous:* Length of body: ♂ 2.13mm, ♀ 3.08mm.

*Macropterous (female):* Length of body: 3.08mm; length (including tegmen): 4.34mm; length of tegmen: 3.48mm.

*Male (Brachypterous):* Body and tegmen blackish brown.

Vertex (Figs. 47) approximately trapezoid, base slightly wider than apex; in profile vertex joined with frons at sub-right angle, stem of Y-shaped carina feeble but distinct. Vertex in middle line slightly longer than wide at base (1.1:1.0), and longer than pronotum about 1.2:1, submedian carinae arising from about 1/3 of vertex near base, not uniting at apex. Basal compartment at base wider than stem of Y-shaped about 1.8:1.0, and wider than greatest length about 1.5-1.6:1.0, vertex submedially shorter than wide at base about 0.7:1.0. Frons (Figs. 48, 49) sub-trapezoid, narrower at base and widest near apex, median carina forked at base, frons in middle line longer than wide at widest part (2.2:1.0), and longer than postclypeus about 2.4:1.0. Postclypeus at base as wide as frons at apex, in profile postclypeus slightly protrudent. Rostrum surpassing meso-trochanters, reaching meta coxae. Antennae with black brown ring at apex, first segment longer than wide at base about 1.5:1, second segment longer than basal segment about 1.0:0.6. Pronotum shorter than vertex (about 1.0:1.2), longer in middle line than wide between lateral carinae on anterior margin (1.0:0.5-0.6), lateral carinae bending outward, not reaching hind margin. Mesonotum broad, lateral carinae divergent, median carina not reaching distal scutellum, mesonotum in middle line longer than scutellum about 1.8:1.0, and shorter than wide at base (1.0:2.3-2.4). Tegmen without stigma. Area between distal longitudinal veins and outer margin light yellow. Post-tibial spur of hind leg thin, with 14-18 teeth, basal tarsal segment longer than other two segments together, basal tarsal segment with 1-3 lateral teeth.

*Male genitalia*: Anal segment with lateroapical angles each produced in very small process, obtusely round. Pygofer (Figs. 50, 51) with laterodorsal angles each protruding into finger-shaped process, slightly bent ventrally, with a small spinous process below the finger-shaped process. Aedeagus (Figs. 54, 55, 56), in right view, with dorsal margin straight, ventral margin turning over rightward; in left view concave medially, flake-shaped, gradually narrowing from base to apex, with small teeth on two side. Aedeagus bifurcate at 2/3 near base, apex obtusely round, left fork twisting right backside at clockwise, right fork twisting backside of left fork. Suspensorium (Fig. 57) Y-shape, with long stem and short arm. Diaphragm with dorsal margin transverse (Fig. 58). Genital styles (Figs. 52, 53) with outer margin sinuate and a small entad spine at about 2/3 of inner margin near base, bifurcate at apex, inner angle small and short, finger-formed, outer angle large and round apically.

*Female*: Head including compound eyes narrower than pronotum (about 1.0:1.3). Vertex in middle line slightly longer than or subequal to wide at base (about 1.1:1.0), and longer than pronotum (about 1.2:1), vertex submedially shorter than wide at base about 0.7:1.0. Basal compartment at base wider than stem of Y-shaped (about 1.7-1.9: 1.0), and wider than greatest length (about 1.5:1.0).

*Nymph*: Frons with two median carinae, nearly parallel, uniting with submedian carinae, in profile postclypeus protrudent. Antennae with second segment stout and short, median carina of postclypeus absent. Lateral spines on basal tarsal segment of hind leg absent, post-tibial spur with 10 teeth.

*Holotype*: ♂ (brachypterous), P. R. CHINA: Guangdong, Zhanjiang, 23. ii. 2003, Coll. L. Z. Guo. *Paratypes*: 11♂♂ (brachypterous), 2♀♀ (macropterous), 31♀♀ (brachypterous); 7 nymphs, same data as holotype.

*Distribution*: P. R. China: Guangdong.

*Etymology*: The species name is derived from the Latin prefix *terrace-* and *frons*, referring to the frons of this species widest at about 1/3 of frons near apex, apparently narrower at base than wide at apex.

*Remarks*: This species is similar to *N. chaeremon* Fennah (1973-1975) (Sir Lank, Mundel lake), but differs in body mostly blackish brown, dorsal margin of diaphragm transverse, and tegmen with outer margin light yellow. *N. chaeremon* is yellowish brown with the dorsal margin of diaphragm slightly concaved, and the aedeagus short and broad.

#### Acknowledgments

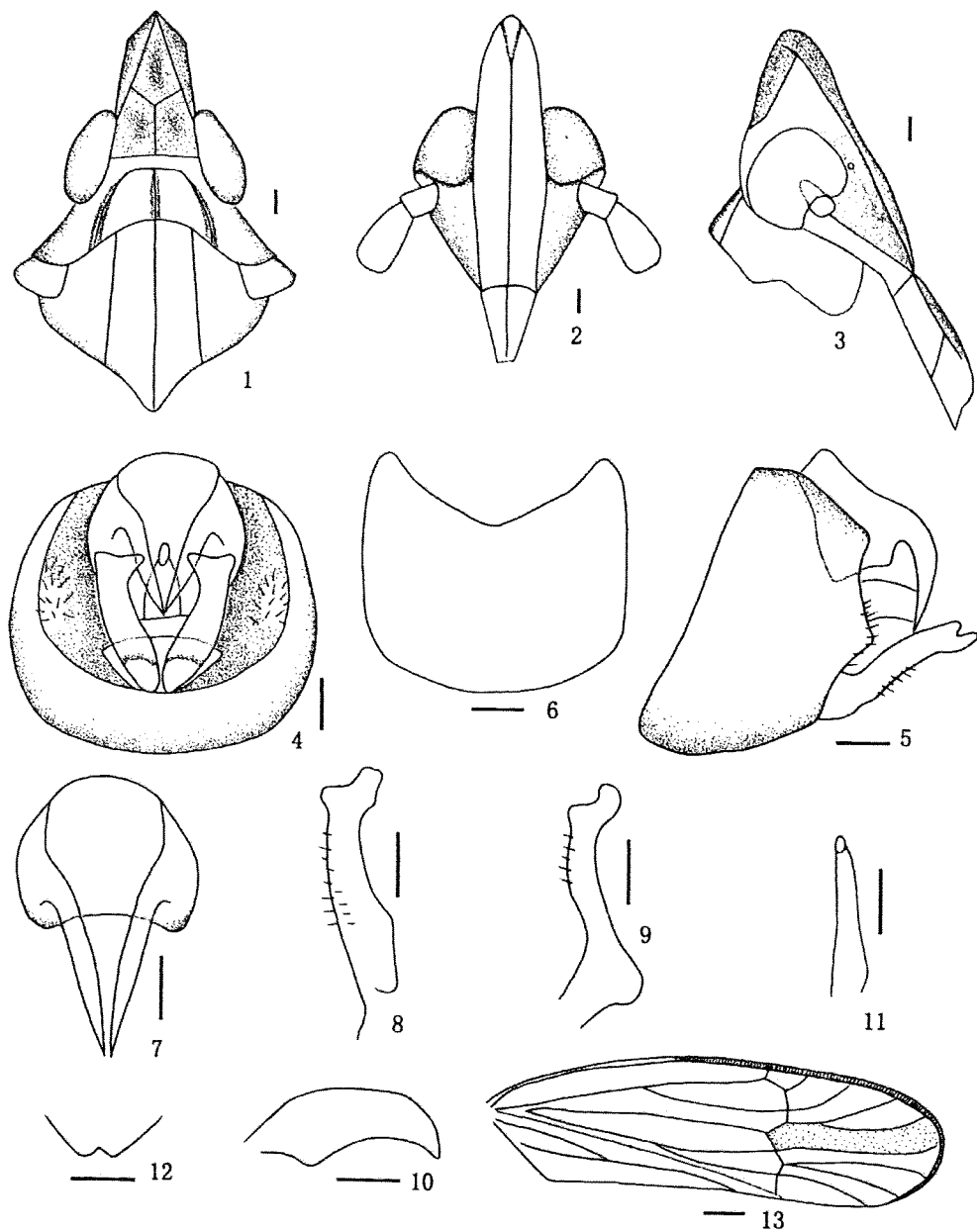
This work was supported by a grant from the "Hundred Talent Program" of Chinese Academy of Sciences, the National Natural Science Foundation of China (grant number 30370187) and the National Science Fund for Fostering Talents in Basic Research (NSFC-J0030092), all awarded to the second author. We thank Prof. Jin-Hua Ding, Dr. Hai-Xia Wu and Mrs. Shu-Ming Ma for their help.

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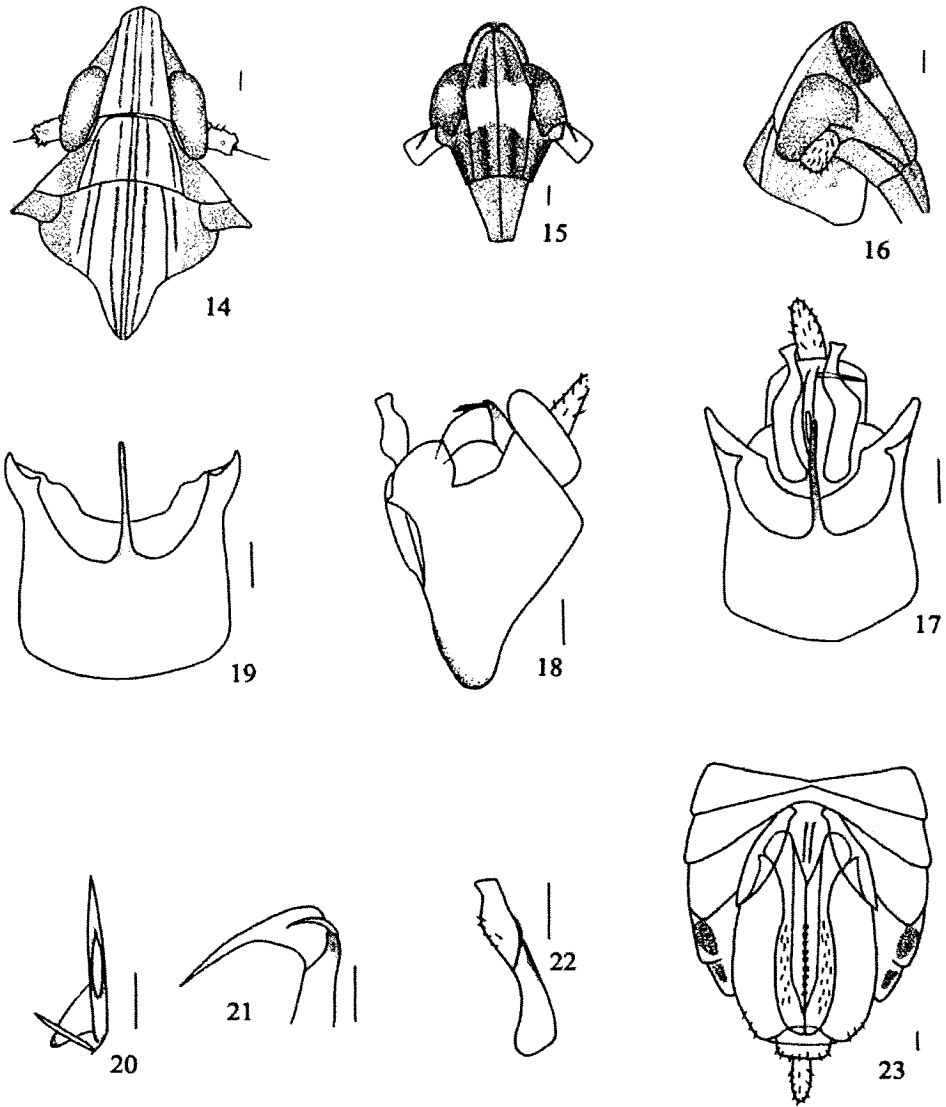
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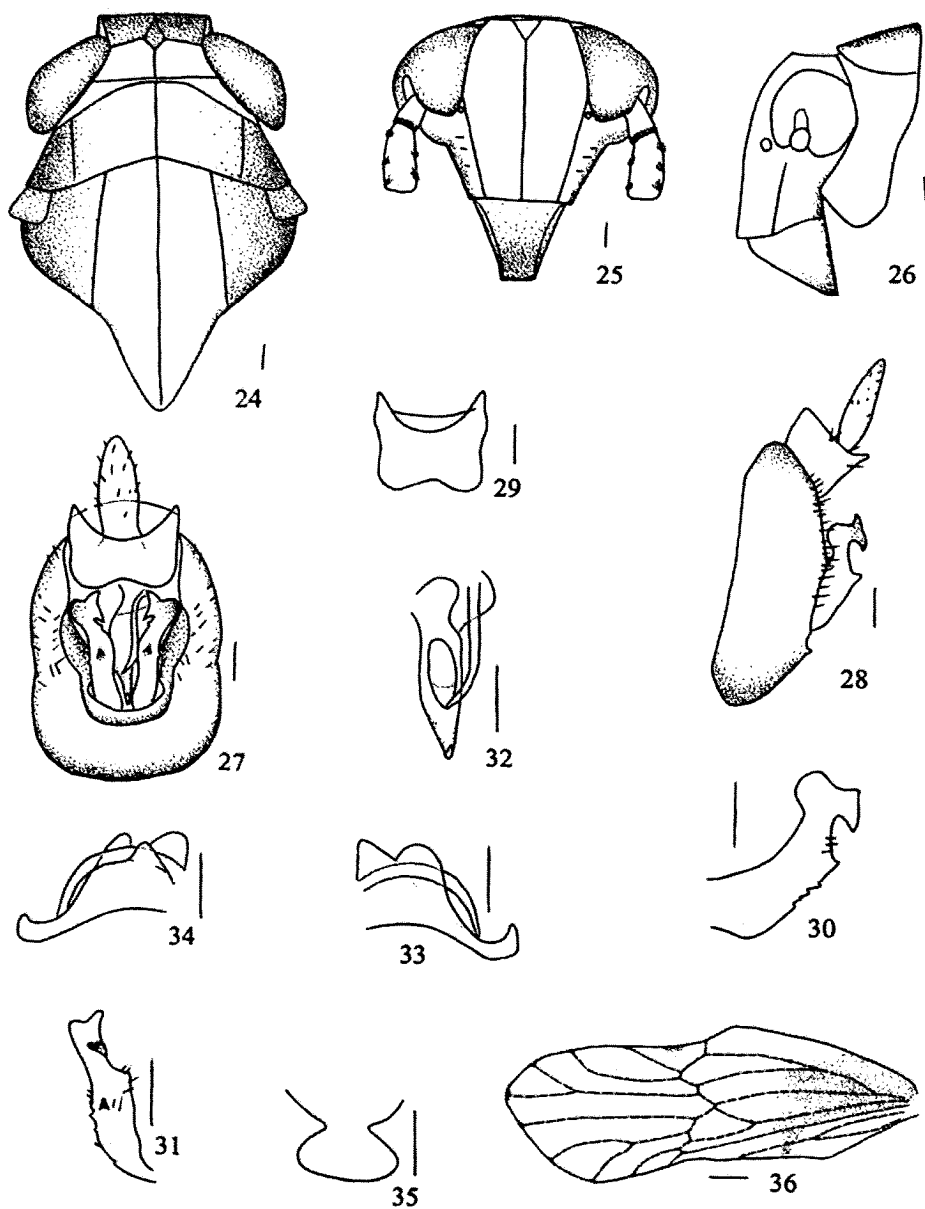
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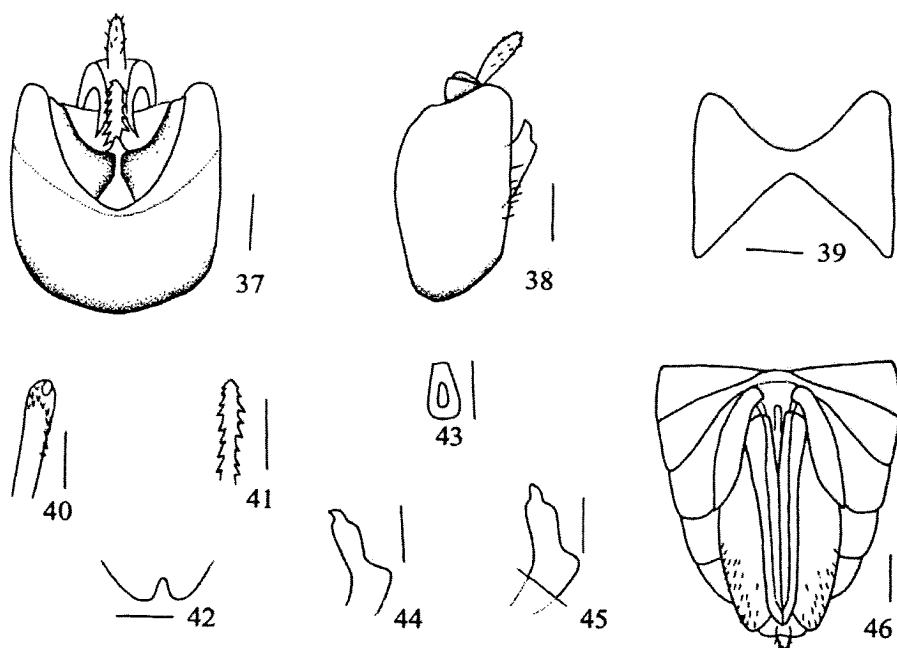
Figs. 1-13. *Hadeodelphax afurculus* Guo & Liang, sp. nov.: 1, head and thorax (dorsal view); 2, head (ventral view); 3, head and pronotum (right lateral view); 4, male genitalia (posterior view); 5, male genitalia (excl. anal style, left view); 6, pygofer (ventral view); 7, anal segment (caudal view); 8, genital style (left side, ventral view); 9, genital style (left side, left view); 10, aedeagus (left view); 11, aedeagus (ventral view); 12, diaphragm (dorsal margin); 13, tegmen. Scale bars: Figs. 1-12=0.1mm, Fig. 13=0.4mm.



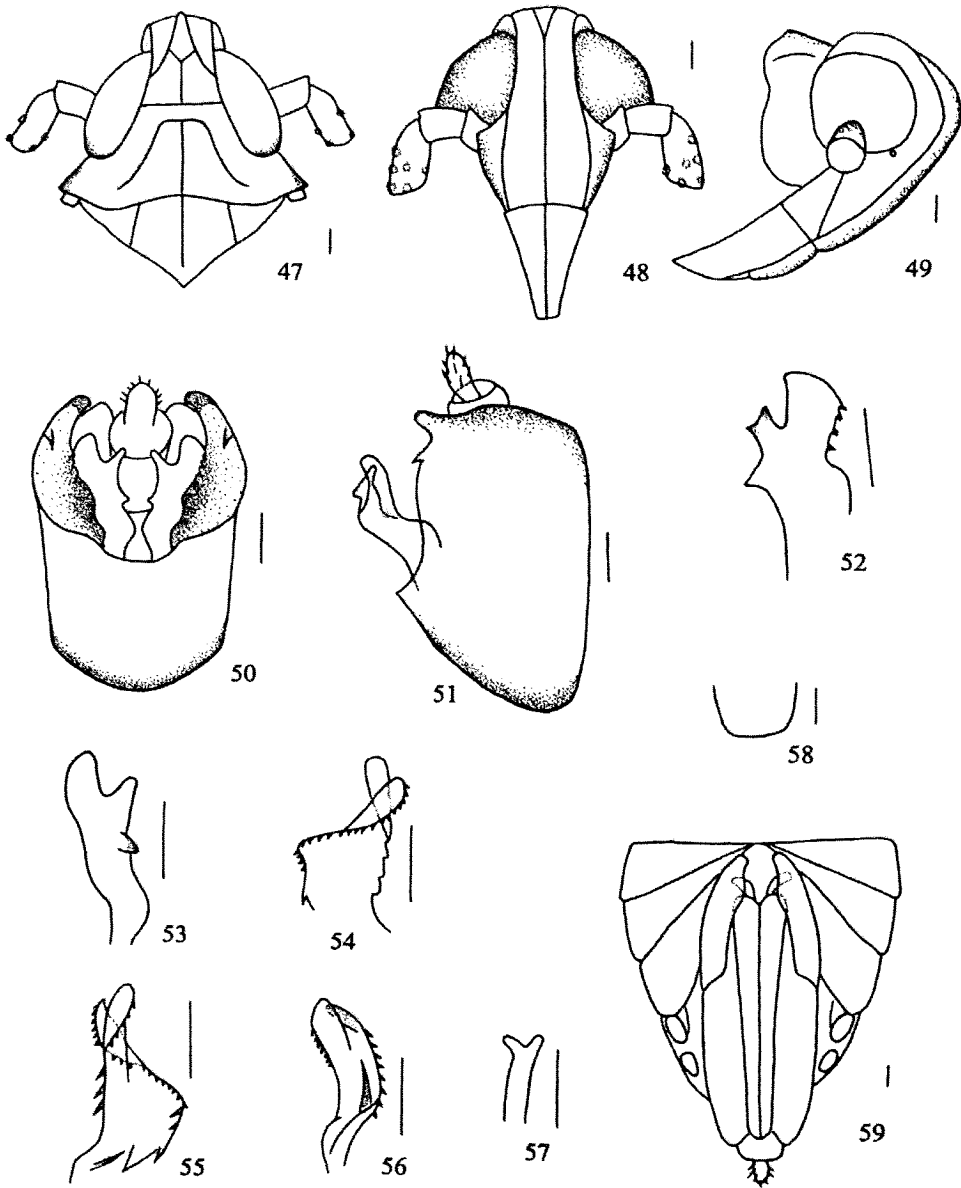
Figs. 14-23. *Tropidocephala prolixa* Guo & Liang, sp. nov.: 14, head and thorax (dorsal view); 15, head (ventral view); 16, head and pronotum (right, in profile); 17, male genitalia (posterior view); 18, male genitalia (right view); 19, pygofer (ventral view); 20, aedeagus (dorsal view); 21, aedeagus (right view); 22, genital style (left side, left view); 23, female abdomen (ventral view). Scale bars: Figs.14-23=0.1mm.



Figs. 24-36. *Arcofaciella obflexa* Guo & Liang, sp. nov.: 24, head and thorax (dorsal view); 25, head (ventral view); 26, head and pronotum (left, in profile); 27, male genitalia (posterior view); 28, male genitalia (left view); 29, anal segment (ventral view); 30, genital style (left side, left view); 31, genital style (left side, ventral view); 32, aedeagus (dorsal view); 33, aedeagus (left view); 34, aedeagus (right view); 35, diaphragm (dorsal margin); 36, tegmen. Scale bars: Figs. 24-35=0.1mm, Fig. 36=0.4mm.



Figs. 37-46. *Smicrotatodelphax maritimus* Yang: 37, male genitalia (posterior view); 38, male genitalia (left view); 39, pygofer (dorsal view); 40, aedeagus (left view); 41, aedeagus (ventral view); 42, diaphragm (dorsal view); 43, suspensorium (dorsal view); 44, genital style (left side, left view); 45, genital style (ventral view); 46, female abdomen (ventral view). Scale bars: Figs. 37-46=0.1mm.



Figs. 47-59. *Nilaparvata terracefrons* Guo & Liang, sp. nov.: 47, head and thorax (dorsal view); 48, head (ventral view); 49, head and pronotum (right, in profile); 50, male genitalia (posterior view); 51, male genitalia (right view); 52, genital style (right side, ventral view); 53, genital style (left side, ventral view); 54, aedeagus (right view); 55, aedeagus (left view); 56, aedeagus (ventral view); 57, suspensorium (dorsal view); 58, diaphragm (dorsal margin); 59, female abdomen (ventral view). Scale bars: Figs. 47-59=0.1mm.