



A new genus and one new species of the Tribe Selizini (Hemiptera: Fulgoromorpha: Flatidae) from China, with a checklist of the tribe from the Oriental Region

LING-FEI PENG, YING-LUN WANG & YA-LIN ZHANG¹

Key Laboratory of Plant Protection Resources and Pest Management, Ministry of Education, Entomological Museum, College of Plant Protection, Northwest A & F University, Yangling, Shaanxi 712100, China

¹Corresponding author. E-mail: yalinzh@yahoo.com.cn

Abstract

This paper describes one new genus *Pseudoseliza* **gen. n.** and one new species *P. crassiprocessa* **sp. n.** of Flatidae from China. The new genus is assigned to the tribe Selizini of the subfamily Flatinae. A key to genera of the tribe Selizini from the Oriental Region is proposed and a checklist of all known species of the tribe from the Oriental Region is provided.

Key words: Homoptera, planthopper, Fulgoroidea, Oriental Region, taxonomy, morphology

Introduction

The tribe Selizini was originally established by Melichar (1923) and assigned to the subfamily Flatinae (Metcalf 1957). General characteristics of the tribe are: body brown or dark brown, body length about 10 mm; antennal segment I very short, ring-like, segment II tubular; pronotum with postocular eminence conical; tegmen elongated, often twice as long as broad, with bulla at base of vein Sc, costal margin sinuate before apex or not, claval vein 2A and base of clavus strongly elevated and heavily pustulate.

Metcalf (1957) lists 40 genera in the Selizini. Since then, ten additional genera have been assigned to the tribe: *Afrodascalia* Fennah 1957, *Exomella* Fennah 1957, *Afroseliza* Fennah 1961, *Afrocyarda* Fennah 1965, *Stenocyarda* Fennah 1965, *Hameishara* Linnavuori 1973, *Austrodascalia* Fletcher 1988, *Barsac* Fletcher 1988, *Dascanga* Medler 2001 and *Cryptobarsac* Fletcher & Moir 2002. Medler (1996, 1999, 2006) moved four additional genera into the tribe after he examined the holotype or plesiotype: *Meulona* Zia 1935, *Paraflatoptera* Lallemand 1939, *Satapa* Distant 1906 and *Zecheuna* Zia 1935. In addition, Medler (1999, 2006) also transferred four genera out of the tribe: *Daeda* Banks 1910 and *Flatula* Melichar 1901 into the Flatini (Medler 1999) and *Anaya* Distant 1906 and *Ketumala* Distant 1906 into Ormenisini (Medler 2006).

Leocerus Metcalf & Bruner 1948 was considered a junior synonym of *Exoma* Melichar 1901 by Fennah (1965) because of the distinctive features of the male genitalia, the weak median depression of the frons and the apical margin of the tegmen.

In this tribe, there are 16 genera distributed in the Neotropical Region, nine genera in the Oriental Region, nine genera in the Australasian Region, nine genera in the Afrotropical Region, four genera in the Palaeartic Region and two genera in the Nearctic Region. Four genera are recorded in China: *Seliza* Stål, *Meulona* Zia, *Satapa* Distant and *Zecheuna* Zia.

In this paper, a new genus and new species *Pseudoseliza crassiprocessa* sp. n. is described and illustrated and a checklist of the tribe and a key to genera from the Oriental Region are given. The tribe Selizini now comprises 50 genera world wide, of which five are recorded from China.

Materials and methods

Dry preserved specimens were used in this study. The methods and terminology follow Chou & Lu (1985) with the male genitalia terminology following Yang & Chang (2000). All measurements described in this

paper are in millimeters (mm). The genital segments of the examined specimens were macerated in 10% NaOH and figured in glycerin jelly using a Leica MZ125 stereomicroscope. Photographs of the specimens were made using a Nikon SMZ1500 stereomicroscope with a Q-image CCD. Images were produced using the software Synoptics Automontage.

Abbreviation for collection mentioned in the text is NWAUFU: Entomological Museum, Northwest A & F University, Yangling, Shaanxi, China.

Taxonomy

Checklist of the tribe Selizini from the Oriental Region

Farona Melichar, 1902

Farona fuscipennis Melichar, 1902, 142; Distant, 1906: 445, fig. 237. Distribution: Burma, India.

Gomeda Distant, 1906

Gomeda abdominalis (Kirby, 1891: 151, pl. V, fig. 16); Melichar, 1902: 75; Distant, 1906: 444, fig. 236. Distribution: India, Sri Lanka.

Meulona Zia, 1935

Meulona parva Zia, 1935: 530; Medler, 1999: 63, fig. 26. Distribution: China, Vietnam (Tonkin).

Paraflatoptera Lallemand, 1939

Microlyza Medler, 1991: 32; synonymised by Medler, 1996: 70.

Paraflatoptera calix (Medler, 1991: 33); Medler, 1996: 71. Distribution: Indonesia (Borneo).

Paraflatoptera desiris (Medler, 1991: 33); Medler, 1996: 70. Distribution: Philippine (Mindanao).

Paraflatoptera epicis (Medler, 1991: 32); Medler, 1996: 70. Distribution: Indonesia (Sulawesi Utara).

Paraflatoptera transversa Lallemand, 1939: 74. Distribution: Malaysia (Sarawak).

Paragomeda Distant, 1914

Paragomeda typica Distant, 1914: 422. Distribution: India (Mysore).

Paragomeda viridis Distant, 1914: 422, synonymised by Medler, 1990: 184.

Paraketumala Distant, 1912

Paraketumala anomala Distant, 1912 : 467. Distribution: Bengal, India (Bihar).

Pseudoseliza gen. n.

Pseudoseliza crassiprocessa sp. n. Distribution: China (Yunnan).

Satapa Distant, 1906

Satapa ferruginea (Walker, 1851: 333); Stål, 1862b: 490; Medler, 1999:143. Distribution: China, India, Japan.

Flatoides minor Walker, 1851: 417, synonymised by Metcalf, 1957: 406;

Satapa granulosa Distant, 1906: 427, synonymised by Medler, 1990: 170.

Satapa sicula Distant, 1906: 426. Distribution: India, Sri Lanka.

Satapa tuberculosa Distant, 1914: 421, synonymised by Medler, 1990: 183.

Seliza Stål, 1862a

Seliza immunis (Walker, 1858: 107); Melichar, 1902: 98; Distant, 1910: 315. Distribution: Unknown.

Seliza lignaria (Walker, 1851: 413); Stål, 1862b: 489. Distribution: China (Guangdong, Hong Kong, Fujian, Taiwan).

Seliza dubitans Walker, 1858: 101, synonymised by Stål, 1862b: 489;
Poeciloptera punctifrons Walker, 1858: 118, synonymised by Atkinson, 1886:78;
Seliza angulifrons Jacobi, 1915: 176, synonymised by Medler, 1986: 107.
Seliza nigropunctata Kirby, 1891: 152. Distribution: Bengal, India (Bihar, Madras), Sri Lanka.
Ormenis fuscata Melichar, 1902: 65, 73, synonymised by Distant, 1906: 443.
Seliza partita Melichar, 1902: 138, pl. VII, fig. 18. Distribution: Bengal, India (Madras, North-West Provinces, United Provinces).
Seliza pusana Distant, 1912: 465. Distribution: Bengal.
Seliza siporensis Baker, 1927: 400, figs. 4a, 4b. Distribution: Indonesia (Mentawai Island, Sipora Island).
Seliza truncata (Walker, 1851: 419) Stål, 1862b: 490. Distribution: India.
Seliza variata Melichar, 1902: 137, pl. VII, fig. 8. Distribution: Indonesia (Java), Malaysia (Sarawak).
Seliza vidua (Stål, 1854: 248), Stål, 1862a: 312. Distribution: India (Malacca Island), Indonesia (Java, Sulawesi), Malaysia (Sarawak, Malay States).

***Zecheuna* Zia, 1935**

Zecheuna azira Medler, 1999: 66, figs. 22, 29, 32, 36. Distribution: Indonesia (Java, Lesser Sunda Island, Sumatra).

Zecheuna tonkinensis Zia, 1935: 533, fig. 4. Distribution: China, Vietnam (Tonkin).

Key to genera of the tribe Selizini from the Oriental Region

1. Metatibia without lateral spine *Satapa* Distant
- Metatibia with at least 1 lateral spine 2
2. Tegmen with the sutural angle produced as a prominent lobe (Fig. 4) 3
- Tegmen with the sutural angle not produced 6
3. Metatibia with 1 lateral spine, head truncate in dorsal view 4
- Metatibia with 2 lateral spines, head not truncate in dorsal view 5
4. Tegmen with costal margin convex throughout, veins Sc and R united at base *Paraflatoptera* Lallemand
- Tegmen with costal margin strongly sinuate before apex, veins Sc and R originating separately from basal cell
..... *Meulona* Zia
5. Head pointed in lateral view (Fig. 2), tegmen with 2 subapical lines, costal margin not sinuate before apex (Fig. 4) .
..... *Pseudoseliza* gen. n.
- Head not pointed in lateral view, tegmen with 1 subapical line, costal margin sinuate before apex..... *Seliza* Stål
6. Tegmen with apical margin oval convex *Zecheuna* Zia
- Tegmen with apical margin not oval convex 7
7. Vertex truncate, frons wider than long..... 8
- Vertex conically produced, frons longer than wide 9
8. Face with a distinct median carina, tegmen with sutural angle obtuse..... *Paraketumala* Distant
- Face with a very obscure median carina, tegmen sutural angle approximately right angled *Farona* Melichar
9. Tegmen with apical and posterior angles angulate, costal margin strongly sinuate *Paragomeda* Distant
- Tegmen with apical and posterior angles rounded, costal margin not sinuate *Gomeda* Distant

***Pseudoseliza* gen. n.**

Type species. *Pseudoseliza crassiprocessa* sp. n.

Medium-sized planthoppers. Head narrower than pronotum. Vertex wider than long, anterior margin slightly pointed in dorsal view. Frons broader than long, with median carina extending onto vertex. Pronotum slightly shorter than head, with median carina; postocular eminence small, conical. Tegmen about 2.5 times longer than wide, costal membrane slightly broader than costal cell; costal margin truncate, not sinuate before apex, apical margin convex with two submarginal lines of crossveins; three longitudinal veins arising from basal cell (Sc+R, M, Cu); vein Sc crossing elevated bulla. Metatibial lateral spines 2.

Etymology. The name is derived from the Greek prefix “*pseudo*” meaning “false”, in combination with the genus *Seliza*, which means this new genus resembles *Seliza*. The gender is feminine.

Remarks: This new genus is placed into the tribe Selizini by the following combination of characteristics: all fawn-colored and medium in size; tegmen elongated, about 2.5 times as long as broad, claval vein at the base strongly elevated; postocular eminence conical (Figs. 1–2); antennal segment I very short, ring-like, segment II tubular.

The new genus is close to *Paraflatoptera* and *Meulona*, but differs from them mainly by: head slightly pointed in dorsal view; two metatibial lateral spines. It is also very similar to *Seliza* by the shape of tegmen and the number of metatibial lateral spines, but can be distinguished by: frons with a median carina extending onto vertex and projection medially in lateral view (Figs. 1–2); tegmen with 2 subapical lines and costal margin not sinuate before costal angle (Fig. 4); male abdominal segment IX narrowed in lateral view, genital style not triangular (Fig. 6).

***Pseudoseliza crassiprocessa* sp. n.**

(Figs. 1–9)

Color. Body and tegmen fawn, hindwing light brown. Eye dark brown. Ocelli reddish. Male genitalia all pale fawn.

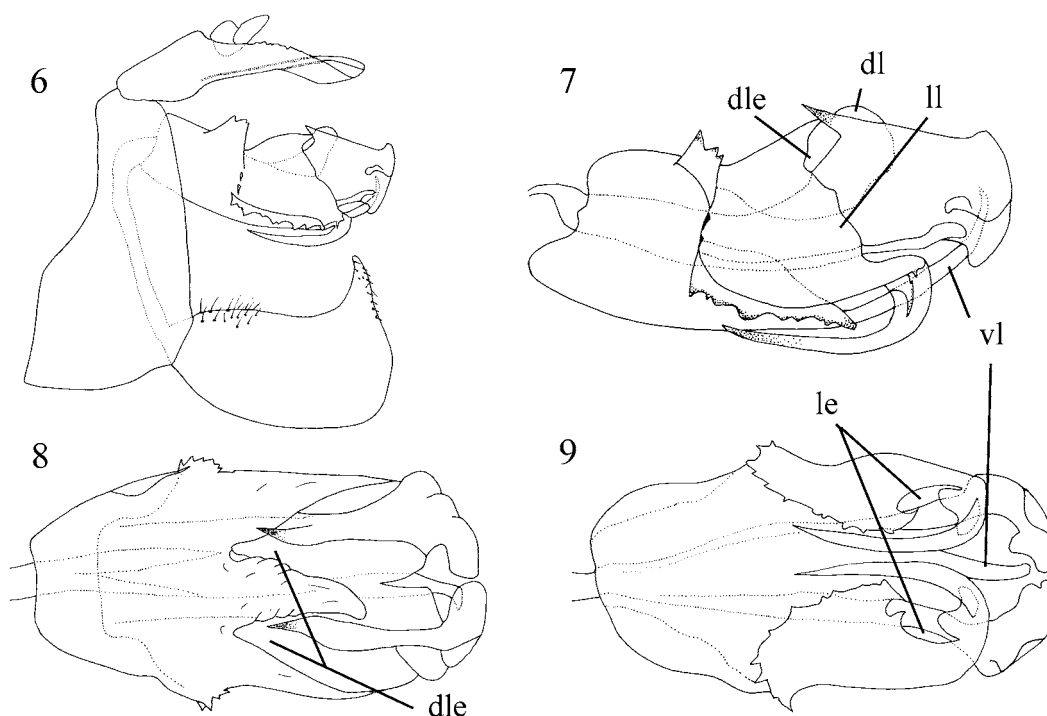
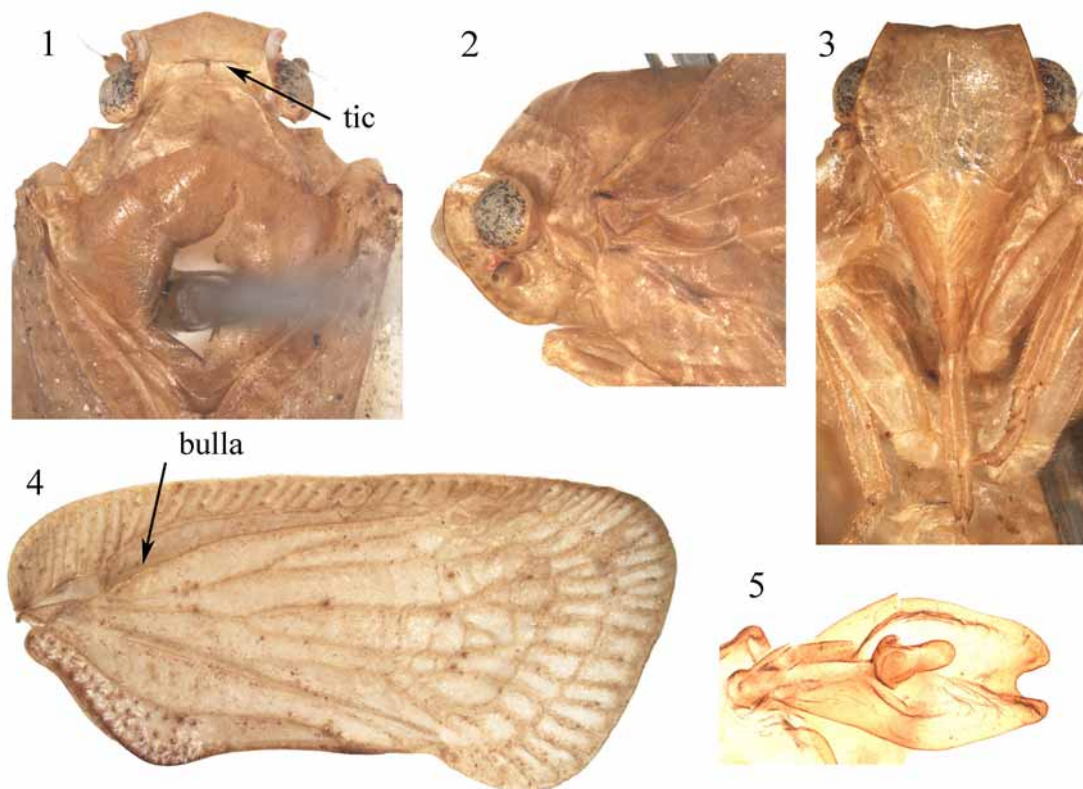
Structure. Body length 8.30–8.43. Head including eyes narrower than pronotum; vertex wider (0.77) than long (0.47–0.48), rounded into frons; anterior margin slightly pointed, lateral carinae subparallel and slightly raised; intergenal carina obvious, positioned near anterior margin of pronotum (Fig. 1). Frons wider (1.10) at widest part than long (0.90) in middle line, widest at level of antennae, apical margin and basal margin rounded, lateral carinae slightly elevated, leaf-like, with a clear median carina extending onto vertex (Fig. 3). Clypeus triangular. Antenna with basal segment short, second segment cylindrical (fig. 2). Pronotum longest in midline (0.37–0.38), anterior margin width 0.55, convex and truncate and extending to level of middle of eyes, posterior margin concave, postocular eminence conical (Figs. 1–2). Mesonotum wider (1.95–2.17) than long (1.28–1.30), without median longitudinal carina. Post-tibia with 6 or 7 spines apically, basal tarsal segment with 9 or 10 spines apically. Tegmen length 7.36–7.45, width between costal and sutural margins 3.20–3.25; rounded at apical and anal angles, postclaval sutural margin convex; precostal membrane wider than costal cell about 1: 0.6; vein Sc with one fork at apex, fork of M slightly basad of bifurcation of R; vein Cu forked at midlength of tegmen, both branches joining postclaval submarginal line beyond claval apex (Fig. 4).

Male genitalia. Abdominal segment IX ring-like, in lateral view slightly elongate trapezium (Fig. 6). Genital style parallel-sided in lateral view, dorsocaudal portion produced dorsad into broad process (Fig. 6). Anal segment elongate, widest at midlength in dorsal view, apically concave (Fig. 5). Phallus as long as genital style, phallobase tubular in lateral view, with line of teeth from middle of dorsolateral margin to ventral surface near apex; dorsolateral emargination shallow in lateral view, deep and wide in dorsal view, lateral emargination distinct in ventral aspect (Fig. 7), dorsal lobe prolonged and membranous, lateral lobe with pair of cephaloventrad processes reaching middle of phallobase, ventral lobe slender, sword-like. Dorsum of theca with small spine medially, distal part of theca inflated and lobed (Figs. 7–9).

Female unknown.

Type material. Holotype, ♂: Santaishan, Mangshi, Yunnan Province, China, 366m. 18. v.1955, Kpyzhanovs (NWAFU); Paratype, 1♂: Damenglong, Xishuangbanna, Yunnan Province, China, 198m. 16.iv.1958, Shuyong Wang (NWAFU).

Etymology. The name is derived from the Latin words “*crass*” (big, thick) and “*processus*” (process) which means the phallobase is large.



FIGURES 1–9. *Pseudoseliza crassiprocessa* sp. n. 1, head and thorax, dorsal view, transverse intergenal carina (tic); 2, head and thorax, left lateral view; 3, face; 4, tegmen, show bulla; 5, male anal segment, dorsal view; 6, male genitalia, left lateral view; 7, phallus, left lateral view, show dorsolateral emargination (dle), lateral lobe (ll), dorsal lobe (dl), ventral lobe (vl); 8, phallus, dorsal view, show dorsolateral emargination (dle); 9, phallus, ventral view, show ventral lobe (vl), lateral emargination (le).

Discussion

This paper brings the known fauna of Selizini recorded from the Oriental Region from 22 species in 9 genera to 23 species in 10 genera. Five genera are widely distributed in the Oriental Region (Bengal, China, India, Indonesia, Japan, Malaysia, Sri Lanka and Vietnam) but *Paraketumala* and *Paragomeda* are endemic to India (Bihar) and Bengal. *Farona* is endemic to India (Assam) and Burma. *Meulona* is only known from South China and North Vietnam and *Pseudoseliza* gen. n. is only known from China (Yunnan).

Acknowledgment

We would like to express our sincere thanks to Dr M. Fletcher, Orange Agricultural Institute, Orange, Australia for revising the manuscript while visiting this university. This study is supported by the National Natural Science Foundation of China (Grant No. 30870325) and the Pilot Project of Standardized Curation, Data Integration and Resource Sharing of Zoological Collections (2005DKA21402).

References

- Atkinson, E.T. (1886) Notes on Indian Rhynchota, No. 5. *Journal of the Asiatic Society of Bengal*, 55, 12–83.
- Baker, C.F. (1927) Spolia Mentawiensia: Homoptera-Fulgoroidea. With an introduction by C. Boden. Kloss. *Philippine Journal of Science*, 32, 391–400.
- Banks, C.S. (1910) Rhynchota Palawanica. Part 2. Homoptera. *Philippine Journal of Science*, 5, 33–55.
- Chou, I. & Lu, J.S. (1985) *Economic insect fauna of China. Fasc. 36. Homoptera, Fulgoroidea*. Science Press, Beijing, China. 152 pp., 20pls.
- Distant, W.L. (1906) Rhynchota-Homoptera In: Bingham, C.T. (ed.). *The fauna of British India including Ceylon and Burma*. Volume 3, 397–464. Taylor & Francis, London.
- Distant, W.L. (1910) Rhynchotal Notes L. *Annals and Magazine of Natural History*. (8) 5, 297–322.
- Distant, W.L. (1912) New genera and species of Oriental Homoptera. *Annals and Magazine of Natural History*, (8) 9, 459–471.
- Distant, W.L. (1914) Some additions to the genera and species in the Homopterous family Fulgoridae. *Annals and Magazine of Natural History*, (8) 13, 409–424.
- Fennah, R.G. (1957) Fulgoroidea from the Belgian Congo (Hemiptera Homoptera). *Annales du Musée Royal du Congo belge*. (Sér. 8°) *Sciences Zoologiques*, 59, 1–206, 132 figs.
- Fennah, R.G. (1961) Homoptera Fulgoroidea. le Parc National du Niokolo-Kaba fasc. II. *Memories de l'Institut Francais d'Afrique Noire*, 62, 305–320, 6 figs.
- Fennah, R.G. (1965) New species of Fulgoroidea from the West Indies. *Transactions Royal Entomological Society*, 117, 95–125.
- Fletcher, M.J. (1988) The Australian genera of Flatidae (Homoptera, Fulgoroidea). *General and Applied Entomology*, 20, 9–32.
- Fletcher, M.J. & Moir, M.L. (2002) *Cryptobarsac rubriops*, a new genus and species of selizine Flatidae (Hemiptera: Fulgoromorpha) from grasstrees (*Xanthorrhoea preissii*) in south Western Australia. *Records of the Western Australian Museum*, 21(3), 221–225.
- Jacobi, A. (1915) Kritische Bemerkungen über die Flatinae (Rhynchota Homoptera). *Deutsche Entomologische Zeitschrift*, 1915, 157–178.
- Kirby, W.F. (1891) Catalogue of the described Hemiptera Heteroptera and Homoptera of Ceylon, based on the collection formed (chiefly at Pundaloya) by Mr E. Ernest Green. *Journal of the Linnaean Society, Zoology*, 24, 72–176.
- Lallemand, V. (1939) Faune de Sarawak. Homoptères recueillis par l'expédition universitaire d'Oxford en 1932 et par Mr. Shelford autour de Kuching en 1900. *Annals and Magazine of Natural History*, (11) 4, 57–78.
- Linnavuori, R. (1973) Hemiptera of the Sudan, with remarks on some species of the adjacent countries. 2. Homoptera Auchenorrhyncha: Cicadidae, Cercopidae, Machaerotidae, Membracidae and Fulgoroidea. (Zoological contribution from the Finish expedition to the Sudan No. 33), *Notulae Entomologicae*, 53, 365–137.
- Medler, J.T. (1986) Types of Flatidae I. Lectotype designations and taxonomic notes on species in Staatliches Museum für Tierkunde Dresden (Homoptera, Auchenorrhyncha). *Reichenbachia*, 23, 107–113.
- Medler, J.T. (1990) Types of Flatidae (Homoptera) XIV. Walker and Distant types in the British Museum. *Oriental Insects*, 24, 127–195.

- Medler, J.T. (1991) Flatidae of Sulawesi, with notes on some related Philippine and Indomalayan species (Homoptera, Fulgoroidea). *Oriental Insects*, 25, 1–43.
- Medler, J.T. (1996) Flatidae of Borneo, with descriptions of new genera and species (Homoptera: Fulgoroidea). *Oriental Insects*, 30, 11–96.
- Medler, J.T. (1999) Flatidae of Indonesia, exclusive of Irian Jaya. *Zoologische Verhandelingen (Leiden)*, 324, 1–88.
- Medler, J.T. (2001) Flatidae of New Guinea and adjacent areas. *Bishop Museum Bulletins in Entomology*, 8, 1–117.
- Medler, J.T. (2006) A Review of the Sri Lankan Flatidae. *Oriental Insects*, 40, 231–265.
- Melichar, L. (1901) Monographie der Acanaloniiden und Flatiden (Homoptera). *Annalen des k.k. naturhistorischen Hofmuseums, Wien*, 16, 178–258.
- Melichar, L. (1902) Monographie der Acanaloniiden und Flatiden (Homoptera) (Fortsetzung). *Annalen des k.k. naturhistorischen Hofmuseums, Wien*, 17, 1–123.
- Melichar, L. (1923) Homoptera Fam. Acanaloniidae, Flatidae et Ricaniidae. *Genera Insectorum*, 182, 185 pp., 2pls.
- Metcalf, Z.P. (1957) *General catalogue of the Homoptera. Fascicle IV. Fulgoroidea. Part 13. Flatidae and Hypochthonellidae*. North Carolina State College, Raleigh, N.C., U.S.A., 565 pp.
- Metcalf, Z.P. & Bruner, S.C. (1948) Cuban Flatidae with new species from adjacent regions. *Annals Entomological Society of America*, 41, 62–118.
- Stål, C. (1854) Nya Hemiptera. *Öfversigt af Kongliga Svenska Vetenskaps-Akademiens Förhandlingar*, 11, 231–255.
- Stål, C. (1862a) Novae vel minus cognitae Homoterorum formae et species. *Berliner Entomologische Zeitschrift*, 6, 303–315.
- Stål, C. (1862b) Synonymiska och systematiska anteckningar öfver Hemiptera. *Öfversigt af Kongliga Svenska Vetenskaps-Akademiens Förhandlingar*, 9, 479–504.
- Walker, F. (1851) List of the specimens of Homopterous insects in the collection of the British Museum, 2, 261–636.
- Walker F (1858) 'Homoptera. Insecta Saundersiana: or characters of undescribed insects in the Collection of William Wilson Saunders Esq.' (London) 117 pp.
- Yang, C.T. & Chang, T.Y. (2000) *The External Male Genitalia of Hemiptera*. Shih Way Publishers, Taichung, 746 pp.
- Zia, Y. (1935) Note sur les Flatinae et les Ricaniinae de la Chine du sud et du Tonkin. *Sinensia*, 6, 525–535.