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REVISION OF THE ARAEOPIDAE OF JAPAN, RYUKYU ISLANDS AND FORMOSA
(Hemiptera).

(With 232 figures)

BY

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CONTENTS

I. INTRODUCTION

Araeopidae (=Delphacidae) is a family which belongs to the superfamily Fulgoroidea of Hemiptera-Homoptera. Not a few species injurious to cultivated plants are found in this family, especially *Sogata furcifera* (Horváth), *Nilaparvata lugens* (Stål), etc. are the serious pests for rice-plants, of which abundant outbreaks were often direct causes for miserable famines in Japan. Even at present our efforts and expenditure paid to control them are never small. But in Japan there are some species which closely resemble them, and the systematical information on this family had been so poor as to leave them in the condition not yet identified, which fact made very difficult and confused early recognition of the beginning of their appearance. Thereupon the the Ministry of Agriculture and Forestry entrusted the Entomological Institute of the Kyushu University with the systematical study of the Japanese Araeopidae and I began this work in May, 1941 under the guidance of Dr. Teiso Esaki and, in August, 1944, finished general study of species, which are injurious to rice-plants, and also that of some species allied to them, though the main report of this study has not been published due to various difficulties felt during and after the war.

Araeopidae is a group most species of which are so small and moreover systematical features of which are mostly so hard to be secured, that it seems to be perhaps one of groups most difficult to be classified. It encouraged me, however, to continue this study that I happened thanks to Dr. Shonen Matsumura's favour, to get an opportunity to cooperate him in revising and examining some of his type-specimens.

In the present paper, all known genera and species from Japan, Ryukyu Islands and Formosa are revised and seven new Japanese species are described, being supplemented with as many figures drawn by me to faciliate their identification as possible.

Before going further, I must express here my hearty thanks first to Dr. Teiso Esaki for his kind guidance, to Dr. Shonen Matsumura, Dr. Keizo Yasumatsu, Mr. Shuta Kinoshita and Mr. Hiroharu Yuasa, who all encougraed me and gave some facilities, and also to Dr. Satoru Kuwayama, Mrs. Takashi Shirozu, Masayoshi Kuwahara and late Kyuma Sasaki, etc., who heiped me in getting specimens during this work.

II. FOOD-HABITS

All species of the family Araeopidae are phytopagous and it is noteworthy that the most host-plants of this family belong to the Class Monocotyledoneae (Poaceae, Bambusaceae, Araceae, Commelinaceae) of the Subphylum Angiospermae, except that meagre species are parasitic on plants of the Phylum Pterygophyta. From the point of phylogeny, species parasitic on Pterygophyta are presumed to be primitive ones.

When a host-plant is the cultivated one, the attacking species becomes more or less injurious to agriculture, and not a few familiar species injurious to the rice-plant, to the sugar-cane, to the maize, etc. are known now, especially *Nilaparvata lugens* (Stål) and *Sogata furcifera* (Horváth) which attack the rice-plant are the most formidable pests in Japan.

The main kinds of known host-plants of Japan, Ryukyu Islands and Formosa are as follows.

Ugyops vittatus (Matsumura) ..... Pterygophyta: *Pterys* sp.?
Tropidocephala brunnipennis Signoret ..... Poaceae: *Oryza sativa, Saccharum officinarum.*
Tropidocephala formosana Matsumura ..... Poaceae: *Saccharum officinarum.*
Tropidocephala saccharivorella Matsumura ..... Poaceae: *Saccharum officinarum.*
Purohita cervina Distant ..... Bambusaceae: *Phyllostachys* sp.
Purohita taiwanensis Muir ..... Bambusaceae.
Purohita maculata Muir ..... Bambusaceae: *Dendrocalamus* sp.
Perkinsiella vastatrix (Breddin)..... Poaceae: *Saccharum officinarum, Andropogon sorghum, Zea Mays.*
Perkinsiella saccharicida Kirkaldy..... Poaceae: *Saccharum officinarum, Zea Mays.*
Perkinsiella sinensis Kirkaldy ..... Poaceae: *Oryza sativa, Andropogon sorghum, Phragmites communis, Zizania longifolia.*
Hirozuunka japonica Matsumura et Ishihara..... Poaceae: *Phragmites communis, P. prostrata.*
Stenocranus breviceps Matsumura..... Poaceae: *Phragmites communis.*
Stenocranus tateyamanus Matsumura ..... Poaceae: *Phalaris arundinaceae.*
Stenocranus ? taiwanensis Muir ..... Poaceae: *Phragmites* sp.
Chloriona spp. ..... Poaceae: *Phragmites* spp.
Numata sacchari (Matsumura)..... Poaceae: *Saccharum officinarum.*
Delphacodes striatella (Fallén) ..... Poaceae: *Oryza sativa, Zea Mays, Saccharum officinarum, Hordeum vulgare, Andropogon*

emerged form than the macropterous one. Both forms appear in most genera, but only one form either macropterous or brachypterous appears in others. Venation on tegmina is very variable within one species and then tegmina are very inconvenient as systematical features, especially as specific ones, except for the case when conspicuous patterns or special coloration are found there. The male genitalia are most reliable specific characters and in some species the identification is almost impossible without examining them; on the contrary the female genitalia are used' to little purpose. Of anterior and intermediate legs, it is an important generic character that femora or tibiae are simple or more or less compressed and flattened. Of posterior legs, one or several small spines are often conspicuous on tibiae, which are, however, of little significance, but small spines found on the first segment of each tarsus viz. basitarsus are important and not neglisible and spurs are very essential parts which are used for the family-, subfamily-, and tribal classification as related before.

IV. CLASSIFICATION

Key to the Japanese and Formosan genera.

1 (2) Spur subulate, with the cross section either circular or angular, apex more or less acute, without teeth on side .....Subfamily **ASIRACINAE.**
First segment of antennae considerably shorter than the second. Scutellum with five carinae ..... Genus **Ugyops** Guérin, 1834.

2 (1) Spur not subulate; cultrate, subcultrate or laminate; with or without teeth on the hind margin.....Subfamily **ARAEOPINAE.**

3 (4) Spur cultrate, thick, both surface convex, with distinct teeth along the hind margin .....Tribe **ALOHINI.**

4 (3) Spur thin, if thick without teeth along the hind margin.

5 (8) Spur thick, concave on the inner surface, hind margin without teeth..... .....Tribe **TROPIDOCEPHALINI.**

6 (7) Vertex triangular. Lateral carinae of vertex and of face only moderately developed.....Genus **Tropidocephala** Stål, 1853.

7 (6) Vertex quadrate. Lateral carinae of vertex and of face strongly keeled .....Genus **Purohita** Distant, 1906.

8 (5) Spur laminate or foliaceous, sometimes tectiform, hind margin with or without teeth .....Tribe **ARAEOPINI.**

9 (14) Antennae with one or both segments distinctly flattened.

10 (11) Head as wide or nearly as wide as pronotum .... Genus **Araeopus** Spinola, 1839.

11 (10) Head clearly narrower than pronotum.

12 (13) Medio-longitudinal carina of face furcate about at the lower margin of eyes. Scutellum large, with length which is more than twice the length of pronotum .....Genus **Perkinsiella** Kirkaldy, 1903.

13 (12) Medio-longitudinal carina of face furcate inferior to the lower margin of eyes and obsolete near base. Scutellum small, a little longer than the

length of pronotum ..... Genus **Hirozuunka** Matsumura et Ishihara, 1945.

14 (9) Antennae terete or very slightly flattened.

15 (16) Anterior and intermediate femora and tibiae compressed and foliaceous ..... Genus **Phyllodinus** Van Duzee, 1897.

16 (15) Legs simple, not folianceous.

17 (18) Pronotum comparatively narrow, as wide as head including eyes or nearly so. Antennae slender, reaching apex of clypeus, with the first segment which is more than half the length of the second ..... Genus **Euidella** Puton, 1886.

18 (17) Pronotum of moderate width, clearly wider than head including eyes.

19 (20) Vertex very short, much wider than its length. Spur with minute teeth at apex or very minute hair-like ones there ..... Genus **Eurysa** Fieber, 1866.

20 (19) Vertex longer than the width or about as long as the width.

21 (22) Lateral edges of face laminate, conspicuously projecting laterally (genae distinctly excavated). Vertex twice as long as the width ..... Genus **Zuleica** Distant, 1912.

22 (21) Face and genae ordinally.

23 (24) Medio-lateral carinae of vertex meeting together some distance before apex and continued as a single medio-longitudinal carina on face. Vertex long, convergent apically and considerably produced in front of eyes ..... Genus **Saccharosydne** Kirkaldy, 1907.

24 (23) Medio-lateral carinae of vertex meeting together not before apex but at apex or on face.

25 (26) Vertex very long, more than three times the width or more, spatulate. Antennae short, hardly reaching apex of face ..... Genus **Terauchiana** Matsumura, 1915.

26 (25) Vertex not so long, less than three times the width.

27 (36) Medio-lateral carinae converging apically, but distinctly not meeting on vertex and continued on to face, where they meet except at extreme base (=medio-longitudinal carina of face furcate except at extreme base).

28 (29) Antennae short, not or hardly reaching apex of face. Vertex produced considerably in front of eyes, with apex which is somewhat narrower than base ..... Genus **Stenocranus** Fieber, 1866.

29 (28) Antennae protruding more or less apex of face.

30 (31) Lateral carinae of pronotum distinctly not reaching the hind margin of pronotum but vanishing before it. Medio-longitudinal carina of face forked at one-third or more from base ..... Genus **Dicranotropis** Fieber, 1866.

31 (30) Lateral carinae of pronotum reaching the hind margin or nearly so.

32 (33) Scutellum as long or shorter than head and pronotum put together. Vertex somewhat longer than the width. Carinae on pronotum often in line with carinae on scutellum. Male genitalia complex ..... Genus **Megameius** Fieber, 1866.

33 (32) Scutellum much longer than head and pronotum put together. Carinae on pronotum not in line with carinae on scutellum. Male genitalia simple.

34 (35) Vertex convergent apically. Face conspicuously narrowed between eyes ..... Genus **Numata** Matsumura, 1935.

35 (34) Vertex divergent apically. Face not narrowed between eyes ..... Genus **Peregrinus** Kirkaldy, 1904.

36 (27) Medio-lateral carinae of vertex meeting together on vertex (sometimes obscurely), continued on to face as a single medio-longitudinal carina or frontal carina forked only at extreme base.

37 (42) Vertex long, nearly twice the width or more.

38 (39) Vertex protruding much the anterior margin of eyes, acutely projecting anteriorly. Face narrowest about at the middle. ..... Genus **Sardia** Melichar, 1903.

39 (38) Vertex protruding moderately the anterior margin of eyes, truncate or subtruncate at apex. Face widest about at the middle.

40 (41) Antennae a little protruding apex of face, with the first segment which is clearly less than half the length of the second ..... Genus **Hosunka** Matsumura, 1935.

41 (40) Antennae short, hardly protruding apex of face, with the first segment which is about half the length of the second ..... Genus **Himeunka** Matsumura et Ishihara, 1945.

42 (37) Vertex clearly shorter than twice the width.

43 (44) Apex of vertex narrower than base. Antennae protruding apex of face. Male genitalia peculiar as shown in Figures ..... Genus **Chloriona** Fieber, 1866.

44 (43) Vertex not convergent apically.

45 (46) Antennae slender, almost reaching or a little protruding apex of clypeus. Posterior basitarsus very large, twice as long as other two tarsal segments put together ..... Genus **Kakuna** Matsumura, 1935.

46 (45) Antennae moderate in length, a little protruding apex of face. Posterior basitarsus less than twice the length of the other two tarsal segments put together.

47 (48) Hind basitarsus armed with one or several small spines ..... Genus **Nilaparvata** Distant, 1906.

48 (47) Hind basitarsus destitute of such spines.

49 (50) Face widest about in the middle ..... Genus **Delphacodes** Fieber, 1866.

50 (49) Face widest at apex or very near apex ..... Genus **Sogata** Distant, 1906.

i. Subfamily ASIRACINAE

1. Genus Ugyops Guérin, 1834

Haplotype: *Ugyops percheronii* Guérin, 1834.

1834 *Ugyops* Guérin, Voy. Belanger, 477.
1835 *Ugyops* Burmeister, Handb. d. Ent., 2: 152.
1843 *Hygyops* Amyot et Serville, Hist. Hem., 511.
1856 *Bidis* Walker, J. Linn. Soc. London, Zool., 1: 88.
1907 *Ugyops* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 3: 127.
1909 *Ugyops* Distant., Trans. Linn. Soc. London, Zool., 13: 44.
1913 *Ugyops* Muir, Proc. Haw Ent. Soc., 2: 251.

1915 *Ugyops* Muir, Canad. Entomol., 47: 247, 268 and 269.
1915 *Jugodina* Schumacher, Suppl. Ent., 4: 141 (syn. nov.).
1917 *Ugyops* Distant, Trans. Linn. Soc. London, Zool., 17: 305.
1918 *Ugyops* Muir, Proc. Haw. Ent. Soc., 3: 425.
1924 *Ugyops* Muir et Giffard, Haw. Sugar Pl. Ass., 15: 4.
1926 *Ugyops* Muir, J. Malay Branch, Royal Asia. Soc., 4: 398.
1927 *Ugyops* Muir, Ins. Samoa, 2: 7.
1935 *Ugyops* Osborn, New York Acad. Sci., 14: 235.
1943 *Ugyopus* (!) Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 5.
1945 *Ugyopus* (!) Matsumura et Ishihara, Mushi, 16: 59.

Large-formed, Dictyopharid-shaped genus. Vertex more or less longer than the width, parallel-sided, with apex which is roundly projecting anteriorly. Medio-lateral carinae of vertex occurring nearly from the base and meeting together before apex. Eyes comparatively large, well-developed posteriorly. Face long, about three times the largest width, widest near apex and narrowest between eyes, medio-longitudinal carina furcate at about two-third portion from base. Clypeus oblong, with the base which is almost as wide as apex of face. Antennae very long, both segments with circular cross sections, second segment less than three times the length of the first. Pronotum short, less than the length of vertex, the hind margin conspicuously excavated anteriorly, with three longitudinal carinae, lateral ones of which are divergingly curved posteriorly and clearly not reaching the hind margin. Scutellum large, longer than the length of vertex and pronotum put together, with apex which is fairly acutely projecting posteriorly, five-carinate. Tegmina large, much protruding apex of abdomen. Femora and tibiae simple. Hind basitarsus longer than the other two tarsal segments put together. Spur large, subulate, with angular cross section. Male genitalia comparatively small, with parameres which is simple and more or less slender.

This genus is widely distributed in the tropics of the Oriental and the Australian Regions, including many islands in the Pacific and in the Indian Oceans. Meagrely have hitherto been recorded from Japan, Ryukyu Island, and Formosa the following two species.

Key to the species

1 (2) Body mostly uniformly stramineous. Pronotum with a traverse row of three conspicuous small fuscous spots on each side. Length: 8 mm. (including tegmina)..... **Ugyops tripunctatus** (Kato, 1931).

2 (1) Body dirty light brown, scattered with black spots on vertex and on pronotum. A row of black spots in each side of pronotum indistinct. Length 9-11 mm. (includ. teg.)..... **Ugyops vittatus** (Matsumura, 1905).

1. Ugyops vittatus (Matsumura, 1905)

Figs. 1-4.

1905 *Bidis vittatus* Matsumura, Trans. Sapporo Nat. Hist. Soc., 1: 31, pl. 1, f. 5 (Okinawa Is., Bonin Is.).

1913 *Bidis vittatus* Matsumura, Thous. Ins. Jap., Addit., 1: 58, pl. 6, f. 7. (Hachijo Is., Formosa).
1915 *Jugodina dictyophoroides* Schumacher, Suppl. Ent., 4: 141 (syn. nov.)
1930 *Bidis vittatus* Matsumura, Illustr. Thous. Ins. Jap., 1: 54, pl. 4, f, 7.
1931 *Bidis vittatus* Matsumura, Nippon K. Daizukan, 1264, f.
1933 *Bidis vittatus* Kato, Three-col. Illustr. Ins. Jap., ser. 4, pl. 14, f. 1.
1940 *Bidis vittatus* Matsumura, Ins. Matsum., 15: 36 (Botel-Tobago).
1943 *Ugyopus* (!) *vittatus* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 5.
1945 *Ugyopus* (!) *vittatus* Matsumura et Ishihara, Mushi, 16: 59, f. 46 (male genitalia figured).

Distribution: Hachijo Is., Bonin Is., Ryukyu Is. (Okinawa), Formosa, Botel-Tobago.

Host-plant: Pterygophyta *Pteridis* sp. (Matsumura) (=? *Pteris* sp.)

I have carefully examined the description by Schumacher, 1915, and come to the conclusion that *Jugodina dictyophoroides* Schumacher, 1915, which was recorded from Kankau, Formosa, is nothing but the present species.

2. Ugyops tripunctatus (Kato, 1931)

1931 *Bidis tripunctatus* Kato, Bull. Biogr. Soc. Jap., 2: 165, f. (Botel-Tobago).
1933 *Bidis tripunctatus* Kato, Three-col. Illustr. Ins. Jap., ser. 4, pl. 14, f. 2.
1943 *Ugyopus* (!) *tripunctatus* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 6.

Habitat: Botel-Tobago.

This species may be perhaps parasitic on Pterygophyta-plants and the female is not known yet.

ii. Subfamily ARAEOPINAE (=DELPHACINAE)

Tribe TROPIDOCEPHALINI

2. Genus Tropidocephala Stål, 1853

Haplotype: *Tropidocephala flaviceps* Stål, 1853.

1853 *Tropidocephala* Stål, Oefv. Ak. Förh., 10: 266.
1862 *Nephropsia* Costa, Ann. Mus. Zool. Npoli, 1: 76.
1866 *Tropidocephala* Stål, Hem. Afr., 4: 176 and 178.
1866 *Nephropsia* Fieber, Verh. zool.-bot. Ges. Wien, 16: 518, pl. 8, f. 1.
1875 *Tropidocephala* Fieber, Rev. Mag. Zool., 3: 368.
1900 *Conicoda* Matsumura, Ent. Nachr., 26: 258.
1903 *Orchesma* Melichar, Hom. Faun. Ceylon, 94.
1906 *Ectopiopterygodelphax* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 1: 412.
1906 *Smara* Distant, Faun. Brit. Ind., Rhynch., 3: 478.
1907 *Tropidocephala* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 3: 141.
1907 *Tropidocephala* Matsumura, Ann. his.-nat. Mus. Hung., 5: 57.
1908 *Tropidocephala* Oshanin, Verz. Paläark. Hem., 2: 299.
1912 *Tropidocephala* Oshanin, Kat. Paläark. Hem., 117.
1913 *Tropidocephala* Muir, Proc. Haw. Ent. Soc., 2: 243.
1915 *Tropidocephala* Schumacher, Mitt. Zool. Mus. Berlin, 8: 133.
1915 *Tropidocephala* Muir, Canad. Entomol., 47: 247 and 270.

1916 *Orchesma* Distant, Faun. Brit. Ind., Rhynch., 6: 142.
1917 *Tropidocephala* Matsumura, Applied Ent., form. ser., 373.
1926 *Tropidocephala* Muir, Ann. Mag. Nat. Hist., (9), 17: 17.
1935 *Tropidocephala* Wu, Cat. Ins. Sin., 2: 199.
1943 *Tropidocephala* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 16.
1943 *Tropidocephala* Esaki et Ishihara, Syst. Stud. Jap. Araeopid., 57.
1945 *Tropidocephala* Matsumura et Ishihara, Mushi, 16: 60.

Vertex more or less longer than the width, lateral margins convergent anteriorly and apex rounded, with a distinct median carina which is occurring from base and reaching apex and lateral carinae which are running along the lateral margins. Face moderate in length, less than twice the largest width, widest about at the middle, with medio-longitudinal carina which is furcate at extreme base. Apex of face narrower or about as wide as base of clypeus. Antennae short, in most species not reaching apex of face, second segment about twice the length of the first. Pronotum tricarinate, lateral carinae somewhat convergingly curved posteriorly and distinctly reaching the hind margin, hind margin shallowly excavated anteriorly. Scutellum about as long as vertex and pronotum put together, apex fairly acutely projecting posteriorly. Tegmina large, protruding abdominal apex, membrane conspicuously turned inside. Veins (especially apical veins) not so distinct, furnished with a small hair-bearing granules beside them. Legs simple, with a small spine in the middle of hind tibia. Hind basitarsus about as long as the other two tarsal segments put together. Spur thick, without teeth along the hind margin. Male genitalia peculiar as shown in Figures.

In this genus, several species have been recorded from the Paläarctic, and much species from the Oriental Regions, while no species has been known in the Nearctic and in the Neotropical Regions. Any brachypterous form has not been captured yet. Seven species have been found in Japan and Formosa to date.

Key to the species

1 (4) Length of vertex less than $1\text{-}^1/_5$ times the length of pronotum.
2 (3) Vertex, pronotum and scutellum mostly yellowish green but dark brown and sometimes almost black on both sides of median carina and on each outer side of lateral carinae. Length ♂ 3.3 - 3.6 mm., ♀ 3.6 - 4 mm. (includ. teg.) ..... **Tropidocephala brunnipennis** Signoret, 1860.
3 (2) Vertex mostly yellow, median carina silverish white and lateral carinae mostly green. Pronotum greenish yellow, all the three longitudinal carinae silverish white, of which central one is bordered with black. Length ♂ 3.5 mm., ♀ 3.8 mm. (includ. teg.) ..... **T. formosana** Matsumura, 1910.
4 (1) Length of vertex more than $1\text{-}^1/_2$ times the length of pronotum.
5 (6) Vertex, pronotum and scutellum brownish black or black except their lateral carinae which are white, sometimes median carina of vertex is also white. Length ♂ 4 mm. (includ. teg.) ..... **T. nigra** (Matsumura, 1900), ♂.
6 (5) Vertex, pronotum and scutellum neither browish black nor black.
7 (12) Near apex of vertex, in each side of median carina, placed one conspicuous oblong black spot.

8 (9) Tegmina without any, knob-shaped elevation. Vertex, pronotum and scutellum yellowish red, with one wide yellow line on the median line. Length ♂ 4 mm. (includ. teg.) ....**T. flavovittata** Matsumura, 1907.

9 (8) Tegmina with several small knob-shaped elevations.

10 (11) Body light brown dorsally and ventrally, lateral carinae of pronotum bordered with black. Length ♀ 4 mm. (includ. teg.) ....**T. nigra** (Matsumura, 1900) ♀.

11 (10) Body dorsally dirty light yellow, ventrally fresh yellow (♂); entirely light yellow (♀). Length 4 mm. (includ. teg.) ....**T. maculosa** Matsumura, 1907.

12 (7) Vertex without any black spot near apex.

13 (14) Vertex, pronotum and scutellum mostly yellowish green, adorned with black lines in each side of median carina and in other some places. Length ♂ 3.7 mm., ♀ 4 mm. .....**T. festiva** (Distant, 1906).

14 (13) Vertex, pronotum and scutellum entirely and uniformly pale coloured. Length 4 mm. (includ. teg.).....**T. saccharivorella** Matsumura, 1907.

3. Tropidocephala brunnipennis Signoret, 1860

Figs. *22 - 25*.

1860 *Tropidocephala brunnipennis* Signoret, Ann. Soc. Ent. France, 8: 185 (Mayotta Is. near Madagascar).

1866 *Tropidocephala brunnipennis* Stål, Hem. Afr. 4: 178 (Africa: Caffraria).

1900 *Conicoda graminea* Matsumura, Ent. Nachr., 26: 259 (♂ ♀. Japan: Akashi, Gifu).

1905 *Ectopiopterygodelphax eximius* Kirkaldy. Haw. Sugar Pl. Ass., Bull. 1: 412 (Australia: Queensland).

1907 *Tropidocephala eximius* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 3: 142, pl. 12, fs. 5 - 7, pl. 17, fs. 15 - 16.

1907 *Tropidocephala brunnipennis* Matsumura, Ann. hist.-nat. Mus. Hungar., 5: 59, pl. 1, fs. 3, 9 (redescript.).

1908 *Conicoda graminea* Oshanin, Verz. Paläark. Hem., 2: 300.

1910 *Tropipocephala brunnipennis* Oshanin, Ibid., 2: 451.

1910 *Tropidocephala brunnipennis* Matsumura, Schäd. u. nütz. Ins. Zuckerrohr Formosas, 16 (in German), 28 (in Japanese), pl. 16, fs. 3, 7.

1912 *Tropidocephala brunnipennis* Oshanin, Kat. Paläark. Hem., 117.

1913 *Tropidocephala brunnipennis* Muir, Proc. Haw. Ent. Soc., 2: 245.

1915 *Tropidocephala brunnipennis* Suzuki, List Spec. Hanazono Ent. Inst., 10.

1917 *Tropidocephala brunneipennis* (!) Matsumura, Applied Ent., form. ser., 382, pl. 15, f. 4.

1920 *Tropidocephala (Conicoda) brunneipennis* (!) Matsumura, Dainippon Gaichu Zensho, rev. and addit. ed., form. ser., 267, pl. 8, f. 9.

1931 *Tropidocephala brunneipennis* (!) Matsumura, Nippon Konchu Daizukan, 1274, f.

1932 *Tropidocephala brunneipennis* (!) Esaki, Iconogr. Ins. Jap., 1781, f. 3520.

1932 *Tropidocephala (Conicoda) brunneipennis* (!) Matsumura, Dainippon Gaichu Zusetsu, 228, pl. 8, f. 9.

1933 *Tropidocephala brunneipennis* (!) Kato, Three-col. Illustr. Ins. Jap., 4, pl. 15, f. 7.

1935 *Tropidocephala brunneipennis* (!) Wu, Cat. Ins. Sin., 2: 119.

1943 *Tropidocephala brunnipennis* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 7.

1943 *Tropidocephala brunnipennis* Esaki et Ishihara, Syst. Stud. Jap. Araeopid., 60, pl. 1. f. a; pl. 2, f. a; pl. 3, fs. a, b (redescript.).
1945 *Tropidocephala brunnipennis* Matsumura et Ishihara, Mushi, 16: 60, f. 25.

Distr.: Honshu, Shikoku, Kyushu, Formosa, China, Malaya, India, New Guinea, Australia, Madagascar, N. Africa, S. Europe.

Host-plants: Poaceae—*Oryza sativa*, *Saccharum officinarum*, etc.

This species, which is not so serious pest, is found on the above mentioned cultivated plants and is also captured comparatively commonly in Poaceae-weeds.

4. Tropidocephala festiva (Distant, 1906)

Fig. 27.

1906 *Smara festiva* Distant, Faun. Brit. Ind., Rhynch., 3: 478, f. 264. (Ceylon).
1907 *Tropidocephala festiva* Matsumura, Ann. hist.-nat. Mus. Hungar., 5: 62, pl. 1, f. 6, 12 (Japan; Honshu—Atami, Formosa, China, Malaya).
1908 *Tropidocephala festiva* Oshanin, Verz. Paläark. Hem., 2. 451.
1912 *Tropidocephala festiva* Oshanin, Kat. Palzärk. Hem., 117.
1913 *Tropidocephala festiva* Muir, Proc. Haw. Ent. Soc., 2: 244, pl 6, f. 9 (Borneo, Java; male genitalia figured).
1915 *Tropidocephala festiva* Schumacher, Suppl. Ent., 4: 142.
1915 *Tropidocephala festiva* Schumacher, Mitt. zool. Mus. Berlin, 8: 133.
1935 *Tropidocephala festiva* Wu, Cat. Ins., Sin., 2: 119.
1943 *Tropidocephala festiva* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 8 (Japan; Shikoku).
1943 *Tropidocephala festiva* Esaki et Ishihara, Syst. Stud. Jap. Araeopid., 64, pl. 1, f. b; pl. 2. f. b; pl. 3, fs. f, g.
1945 *Tropidocephala festiva* Matsumura et Ishihara, Mushi, 16: 60, f. 27.

Distr.: Honshu, Shikoku, Formosa, China, Malaya, Celyon, Java, Borneo.

This species is widely distributed in the Oriental Region but seems to be fairly rare. No host-plant is known yet.

5. Tropidocephala formosana Matsumura, 1910

1910 *Tropidocephala formosana* Matsumura, Schäd. u. nütz. Ins. Zuckerrohr Formosas, 16 (in German), 23 (in Japanese), pl. 16, f. 2 (Formosa: Ako, Rinkiho, injurious to sugar-canes).
1911 *Tropidocephala formosana* Matsumura, Mem. Soc. Ent. Belg., 18: 134.
1915 *Tropidocephala formosana* Schumacher, Mitt. zool. Mus. Berlin, 8: 133.
1917 *Tropidocephala formosana* Matsumura, Applied Ent., former ser., 382.
1932 *Tropidocephala* (*Conicoda*) *formosana* Matsumura, Dainippon Gaichu Zusetsu, 229.
1933 *Tropidocephala formosana* Kato, Three-col. Illustr. Ins. Jap., 4, pl. 15, f. 6.
1943 *Tropidocephala formosana* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 10.
1943 *Tropidocephala formosana* Esaki et Ishihara, Syst. Stud. Jap. Araeopid., 69, f. 1 c; f. 2 c.

Host-plant: Poaceae—*Saccharum officinarum*.

This species may be found on sugar-canes in Formosa but seems to be not so seriously injurious to them.

6. Tropidocephala nigra (Matsumura, 1900)

Fig. 26.

1900 *Conicoda nigra* Matsumura Ent. Nachr., 26: 251 (♂ ♀ Honshu—Akashi).
1907 *Tropidocephala nigra* Matsumura, Ann. hist.-nat. Mus. Hungar., 5: 63, pl. 2, fs. 3, 9.
1903 *Conicoda nigra* Oshanin, Verz. Paläark. Hem., 2: 300.
1910 *Tropidocephala nigra* Oshanin, Ibid., 451.
1912 *Tropidocephala nigra* Oshanin, Kat. Paläark. Hem., 117.
1932 *Tropidocephala nigra* Esaki, Iconogr. Ins. Jap., 1782, f. 3521 ♂ (Kyushu).
1943 *Tropidocephala nigra* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 8.
1943 *Tropidocephala nigra* Esaki et Ishihara, Syst. Stud. Jap. Araeopid., 8, pl. 1, c, d; pl. 2, c, d; pl. 3, c—e.
1945 *Tropidocephala nigra* Matsumura et Ishihara, Mushi, 16: 60, f. 26.

Distr.: Honshu, Shikoku, Kyushu.

This species is captured not rarely by sweeping Poaceae-weeds and it is noteworthy that the coloration of this species entirely differs in both sexes.

7. Tropidocephala flavovittata Matsumura, 1907

1907 *Tropidocephala flavovittata* Matsumura, Ann. hist.-nat. Mns. Hungar., 5: 62, pl. 2, fs. 1, 7 (♂ Formosa—Hokuto).
1915 *Tropidocephala flavovittata* Schumacher, Mitt. zool. Mus. Berlin, 8: 133.
1943 *Tropidocephala flavovittata* Esaki et Ishihara, Cat. Areaopid. Imp. Jap., 9.
1943 *Tropidocephala flavovittata* Esaki et Ishihara, Syst. Stud. Jap. Araeopid., 66, f. 1 a, f. 2 a (descript. quoted).

Habitat: Formosa.

Any host-plant of this species is unknown.

8. Tropidocephala maculosa Matsumura, 1907

1907 *Tropidocephala maculosa* Matsumura, Ann. hist.-nat. Mus. Hungar., 5: 63, pl. 2, fs. 2, 8 (♂ Formosa—Koshun, Heito, Ako.).
1915 *Tropidocephala maculosa* Schumacher, Mitt. zool. Mus. Berlin, 8. 133.
1943 *Tropidocephala maculosa* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 9.
1943 *Tropidocephala maculosa* Esaki et Ishihara, Syst. Stud. Jap. Araeopid., 67, f. 1 b; f. 2 b (descript. quoted).

Habitat: Formosa.

This seems to be rare, the host-plant of which is unknown.

9. Tropidocephala saccharivorella Matsumura, 1907

1907 *Tropidocephala saccharivorella* Matsumura, Ann. hist.-nat. Mus. Hungar, 5: 65, pl. 2, fs. 6, 12 (Formosa—Wanri, Ako, Tainan Arikan).
1910 *Tropidocephala saccharivorella* Matsumura, Schäd. u. nütz. Ins. Zuckerrohr Formosas, 16 (in German), pl. 16, f. 1, a, b.
= *Tropidocephala saccharivora* (!) Matsumura, Ibid., 28 (in Japanese) (injurious to sugar-canes in Formosa).

1913 *Tropidocephala saccharivorella* Muir, Proc. Haw. Ent. Soc., 2: 244 (China—Macao).
1915 *Tropidocephala saccharivorella* Schumacher, Mitt. zool. Mus. Berlin, 8: 133.
1917 *Tropidocephala saccharivora* (!) Matsumura, Applied Ent., form. ser., 382.
1920 *Tropidocephala* (*Conicoda*) *saccharivorella* Matsumura, Dainippon Gaichu Zensho, rev. and addit. ed., form. ser., 268.
1929 *Tropidocephala saccharivorella* Dammerman, Agr. Zool. Malay Archipelago, 236 (Mindanao).
1932 *Tropidocephala* (*Conicoda*) *saccharivorella* Matsumura, Dainippon Gaichu Zusetsu, 229.
1935 *Tropidocephala saccharivorella* Wu, Cat. Ins. Sin., 2: 120.
1943 *Tropidocephala saccharivorella* Esaki et Ishihara, Cat. Araeopid. Im. Jap., 9.
1943 *Tropidocephala saccharivorella* Esaki et Ishihara, Syst. Stud. Jap. Araeopid., 68, f. 1 d, f. 2 d (descript. quoted).

Distr.: Formosa, China, Philippines (Mindanao).

Host-plant: Poaceae—*Saccharum officinarum*.

This is known as a rather serious pest of the sugar-canes in Formosa and in China.

3. Genus Purohita Distant, 1906

Orthotype: *Purohita cervina* Distant, 1906.

1906 *Purohita* Distant, Faun. Brit. Ind., Rhynch., 3: 470.
1907 *Purohita* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 3: 129.
1913 *Purohita* Muir, Proc. Haw. Ent. Soc., 2: 243.
1915 *Purohita* Schumacher, Suppl. Ent., 4: 142.
1915 *Purohita* Schumacher, Mitt. zool. Mus. Berlin, 8: 132.
1915 *Purohita* Muir, Canad. Entomol., 47: 267, 270.
1916 *Purohita* Distant, Faun. Brit. Ind., Rhynch., 6: 136.
1943 *Purohita* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 11.
1945 *Purohita* Matsumura et Ishihara, Mushi, 16: 60.

Head including eyes much narrower than pronotum. Vertex quadrate, hardly projecting in front of eyes, somewhat convergent apically, with lateral carinae which are strongly keeled and with a median carina which occurs in base and reaching apex. Face long but less than three times the largest width, widest about in the middle or at apex, with a single median carina and prominent lateral carinae. Clypeus tricarinate like in face. Antennae very large, first segment very long and wide, with a central axis, on each side of which the surface is obliquely reclined, second segment very short, less than or barely half the length of the first, only slightly flattened. Pronotum short, less than the length of vertex, with three longitudinal carinae, of which lateral ones convergingly curved posteriorly and all reaching the hind margin, where pronotum roundly excavated anteriorly. Scutellum large, longer than vertex and pronotum put together, tricarinate like in pronotum. Tegmina longly passing beyond abdominal apex, with veins which are fairly distinctly granulose. Legs simple, hind tibia without spines, hind basitarsus about as long as the other two tarsal segments put together. Spurs thick, inner surface more or less concave, hind margin without teeth.

All species of this genus are found on Bambusaceae-plants.

Key to the species

1 (2) Body light bluish or yellowish green. Parameres of the male genitalia acutely angular and the apices pointed. Length ♂ ♀ 3.7 mm. (exclud. teg.), tegmen ♂ ♀ 4.8 mm. ·····**Purohita maculata** Muir, 1916.

2 (1) Body and legs light brown or ochreous.

3 (4) Face widest about in the middle. Parameres of the male genitalia thin, pointed, having a half turn inward, base of which is broader and flattend. Length ♂ ♀ 3 mm. (exclud. teg.), teg. ♂ ♀ 5 mm. ·····**P. taiwanensis** Muir 1914.

4 (3) Face widest at apex. Parameres of the male genitalia very fine, slightly curving inward. Length ♂ ♀ 4.2 mm. (exclud. teg.), teg. ♂ ♀ 5 mm. ····· **P. cervina** Distant, 1906.

10. Purohita cervina Distant, 1906

Figs. 5 - 9.

1905 *Purohita cervina* Distant, Faun. Brit. Ind., Rhynch., 3: 470 (Ceylon).
1913 *Purohita cervina* Muir, Proc. Haw. Ent. Soc., 2: 243 (♀ Macao, on a bamboo).
1915 *Purohita cervina* Schumacher, Suppl. Ent., 4: 142 (Formosa).
1915 *Purohita cervina* Schumacher, Mitt. zool. Mus. Berlin, 8: 132.
1933 *Purohita cervina* Kato, Three-col. Illustr. Ins. Jap., 4, pl. 15, f. 8.
1935 *Purohita cervina* Wu, Cat. Ins. Sin., 2: 120.
1943 *Purohita cervina* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 10.
1945 *Purohita maculata* Matsumura et Ishihara (nec Muir), Mushi, 16: 60, f. 29 (genitalia figured).

Distr.: Formosa, China, Ceylon.
Host-plant: Bambusaceae—*Phyllostachys* sp.
This is the commonest species of the genus.

11. Purohita taiwanensis Muir, 1914

Figs. 10 - 14.

1914 *Purohita taiwanensis* Muir, Proc. Haw. Ent. Soc., 3: 52 (♂ ♀ Formosa—Horisha, on a bamboo).
1915 *Purohita taiwanensis* Schumacher, Mitt. zool. Mus. Berlin, 8: 132.
1943 *Purohita taiwanensis* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 11.
1945 *Purohita taiwanensis* Matsumura et Ishihara, Mushi, 16: 60, f. 28 (male genitalia figured).

Habitat: Formosa.
This species which is parasitic on a bamboo does not seem rare in Formosa.

12. Purohita maculata Muir, 1916

1916 *Purohita maculata* Muir, Phil. J. Sci., D. 11: 311 (♂ ♀ Formosa—Kanshirei, on a blood-leafed bamboo, *Dendrocalamus*).

Habitat: Formosa.

Host-plant: Bambusaceae—*Dendrocalamus* sp.

The species which Dr. S. Matsumura and I identified with this species and figured in 1943 (loc. cit.) was truely the related species, *P. cervina* Distant, 1906.

Tribe ARAEOPINI (=DELPHACINI)

4. Genus Araeopus Spinola, 1839

Logotype: *Araeopus crassicornis* (Panzer, 1796).

1798 *Delphax* Fabricius, Syst. Ent., Suppl., 522 (nom. praeocc.).
1803 *Delphax* Fabricius, Syst. Rhyng., 83.
1826 *Delphax* Fallén, Hem Suec. Cicad., 73.
1835 *Asiraca* Burmeister, Handb. d. Ent., 2: 151 (Partim).
1839 *Araeopus* Spinola, Ann. Soc. Ent. France, 1839: 336.
1861 *Araeopus* Flor, Rhynch. Livl., 2: 87.
1866 *Delphax* Stål, Hem. Afr., 4: 175 (partim).
1866 *Araeopus* Fieber, Verh. zool.-bot. Ges Wien, 16: 518.
1878 *Araeopus* Ferrari, Ann. Mus. Stor. Nat. Genova, 18: 87.
1896 *Delphax* Melichar, Cicad. v. Mit.-Eur., 52.
1901 *Delphax* Melichar, Wien. Ent. Zeit., 20: 55.
1908 *Araeopus* Oshanin, Verz. Paläark. Hem., 2: 298.
1912 *Araeopus* Oshanin, Kat. Paläark. Hem., 117.
1914 *Delphax* Crawford, Proc. U. S. Mus., 46: 577.
1915 *Delphax* Muir, Canad. Entomol., 47: 262, 296.
1924 *Delphax* Muir et Giffard, Haw. Sugar Pl. Ass., Bull. 15: 4.
1943 *Araeopus* Esaki et Ishihara, Cat. Araeoid. Imp. Jap., 12.
1945 *Araeopus* Matsumura et Ishihara, Mushi, 16: 60.

Large formed. Head as wide or nearly as wide as pronotum. Vertex almost equilateral-quadrate, medio-lateral carinae distinctly converging anteriorly but not meeting together on vertex, Y-shaped carina distinct. Eyes very large, conspicuously swollen postero-laterally. Face a little longer than the largest wdith, somewhat narrower towards apex, widest near the lower margin of eyes, with medio-longitudinal carina which is furcate between eyes. Clypeus clearly wider than apex of face. Antennae distinctly protrnding apex of clypeus, with first segment which is distincly flattened and second segment which is about as long as the first and tapering apically. Pronotum as long as vertex, with three longitudinal carinae, of which lateral ones are divergingly curved posteriorly and distinctly vanishing before reaching the hind margin, hind margin shallowly concave anteriorly. Scutellum somewhat longer than vertex and pronotum put together, its apex equilateral-triangularly projecting posteriorly.

Tegmina compartively broad, much passing beyond abdominal apex. Legs simple. Spurs thin, with minute teeth along the posterior margin. Hind basitarsus large, longer than the second and the third segments placed together, second segment about as long as the third.

Although the length of tegmina fairly varies individually, the macropterous form only is known. In Japan the following one species is known at present.

Body mostly dark yellow, pronotum somewhat paler in hue, with fuscous tints in both sides of scutellum and slightly of pronotum. Tegmina hyaline, each with a fuscous oblique band a little anterior to the middle and with fuscous tints along the apical and the hind margins and also along the apical veins. Length ♂ ♀ 7–7.5 mm. (includ. teg.)……**Araeopus crassicornis** (Panzer, 1796).

13. Araeopus crassicornis (Panzer, 1796)

Fig. *225–228.*

1796 *Cicada crassicornis* Panzer, Faun. Ins. Germ., 35: 19 (Germany).
1798 *Delphax crassicornis* Fabricius, Syst. Ent., Suppl., 522.
1835 *Asiraca crassicornis* Burmeister, Handb. d. Ent., 2: 151.
1835 *Asiraca crassicornis* Herrich-Schäfier, Nom. Ent., 1, 66.
1842 *Delphax crassicornis* Sahlberg, Acta Soc. Sci. Fenn., 1: 399.
1851 *Araeopus crassicornis* Flor, Rhynch. Livl., 2: 88.
1878 *Araeopus crassicornis* Ferrari, Ann. Mus. Stor. Nat. Genova, 18: 87.
1895 *Delphax crassicornis* Melichar, Cicad. v. Mit.-Eur., 53, pl. 3, fs. 38–41.
1901 *Delphax crassicornis* Melichar, Wien. Ent. Zeit., 20: 55.
1908–1910 *Araeopus crassicornis* Oshanin, Verz. Paläark. Hem., 2: 298 (1908); 3: 450 (1910).
1912 *Araeopus crassicornis* Oshanin, Kat. Paläark. Hem., 117.
1932 *Delphax crassicornis* Esaki, Iconog. Ins. Jap., 1781, f. 3519 (Hokkaido, Honshu).
1943 *Araeopus crassicornis* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 12 (Kyushu).
1945 *Araeopus crassicornis* Matsumura et Ishihara, Mushi, 16: 60, f. 6 (male genitalia figured).

Distr.: Hokkaido, Honshu, Kyushu, Europe, Caucasus, etc.

This is a large, fine, not so common species which is widely distributed in the Paläarctic Regions. To our lights it comes often flying in autumn. Its host-plant is unknown.

5. Genus Perkinsiella Kirkaldy, 1903

Orthotype: *Perkinsiella saccharicida* Kirkaldy, 1903.

1903 *Perkinsiella* Kirkaldy, Entomologist, 36: 179.
1906 *Perkinsiella* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 1, 404.
1907 *Perkinsiella* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 3, 136.
1908 *Perkinsiella* Kirkaldy, Proc. Haw. Ent. Soc., 1: 201.
1910 *Perkinsiella* Muir, Haw. Sugar Pl. Ass., Bull. 9, 4.
1910 *Perkinsiella* Kirkaldy, Faun. Haw., 2: 578.
1913 *Perkinsiella* Muir, Proc. Haw. Ent. Soc., 2: 240.

1915 *Perkinsiella* Muir, Canad. Entomol., 47: 266, 297.
1917 *Perkinsiella* Muir, Proc. Haw. Ent. Soc., 3: 324.
1917 *Perkinsiella* Matsumura, Applied Ent., form. ser., 378.
1926 *Perkinsiella* Muir, Ann. Mag. Nat. Hist., ser. 9, 17: 23.
1927 *Perkinsiella* Muir, Ins. Samoa, 2: 11.
1943 *Perkinsiella* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 44.
1945 *Perkinsiella* Matsumura et Ishihara, Mushi, 16: 73.

Large-formed. Vertex slightly produced in front of eyes, subparallel-sided, medio-lateral carinae taking their rises in lateral carinae a little posterior to the middle and somewhat converging anteriorly, continued on to face and furcate near the lower margins of eyes. Y-shaped caeina and often a obscure traverse carina between medio-lateral carinae present. Face about twice as long as the width between eyes where it is broadest, and narrow near apex which is somewhat excavated superiorly. Base of clypeus about as wide as apex of face. Antennae large, almost reaching apex of clypeus, of which first segment is triangular and second segment is somewhat flattened and about 1-1/2 times as long as the first. Pronotum a little wider than vertex including eyes, somewhat shorter than vertex, with lateral carinae which are divergingly curved posteriorly and vanishing before reaching the hind margin. Scutellum comparatively small, obtusely projecting posteriorly, with length which is about as long as vertex and pronotum put together, with three longitudinal carinae which are almost parallel to one another. Legs simple, with hind basitarsus which is more than twice as long as the other two tarsal segments placed together. Spurs comparatively small, thin, with numerous (about forty) minute teeth along the hind margin.

Key to the species

1 (2) Frons concolorous. Length 6 mm. (includ. teg.) ..... **Perkinsiella vastatrix** (Breddin, 1896).

2 (1) Frons darker between eyes than below.

3 (4) Tegmina with patterns on the fifth and the sixth apical cells, and pallid and fine granules on veins. Length 6 mm. (includ. teg.) ..... **P. saccharicida** Kirkaldy, 1903.

4 (3) Tegmina with patterns on the sixth and at each end of the fifth apical cells, making curved pattern and dark and coarse granules on veins. Length 5.8 mm. (includ. teg.) ..... **P. sinensis** Kirkaldy, 1907.

14. Perinsiella saccharicida Kirkaldy, 1903

Figs. 192, 202 - 205.

1903 *Perkinsiella saccharicida* Kirkkaldy, Entomologist, 36: 179 (Hawaii—Honolulu, on sugar-canes).

1906 *Perkinsiella saccharicida* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 1: 406. pls. 26 - 27, fs. 1 - 5.

1907 *Perkinsiella saccharicida* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 3: 135, pl. 11, fs. 5-8; pl. 13, fs. 11-13.

1908 *Perkinsiella saccharicida* Kirkaldy, Proc. Haw. Ent. Soc., 1: 205.

1910 *Perkinsiella saccharicida* Muir, Haw. Sugar Pl. Ass., Bull. 9: 5 (Fiji—Viti Lev, Australia, New Guinea).

1910 *Perkinsiella saccharicida* Kiekaldy, Faun. Haw., 2: 578.

1913 *Perkinsiella saccharicida* Melichar, Notes Leyd. Mus., 36: 111 (Java-Semarang).

1917 *Perkinsiella saccharicida* Matsumura, Applied Ent., form. ser., 378 (Formosa).

1920 *Perkinsiella saccharicida* Matsumura, Dainippon Gaichu Zensho, form. ser., rev. and addit. ed., 257.

1925 *Perkinsiella saccharicida* Singh-Pruthi, Trans. Ent. Soc. London, (1925), 228, pl. 30, f. 265 (on genitalia).

1926 *Perkinsiella saccharicida* Muir, Ann. Mag. Nat. Hist., ser. 9, 17: 23 (S. Africa).

1926 *Perkinsiella saccharicida* Gater et Corbett, Fed. Malay. Stat. Straits Settlem., Bull. 38: 5 (Malaya, on sugar-canes and on maizes).

1932 *Perkinsiella saccharicida* Matsumura, Dainippon Gaichu Zusetsu, 228.

1938 *Perkinsiella saccharicida* Takano et Yanagihara, Spec. Rep. Togyo Exp. Stat. Formosa, 2: 122, pl. 5, f. 15.

1943 *Perkinsiella saccharicida* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 45.

1945 *Perkinsiella saccharicida* Matsumura et Ishihara, Mushi, 16: 73, f. 35.

Distr.: Formosa, Malaya, Java, Hawaii, Fiji, New Guinea, Australia, S. Africa.

Host-plants: Poaceae—*Saccharum officinarum, Zea Mays.*

This species is an injurious species which is world-wide known and is found in Formosa perhaps as an imported pest at present.

15. Perkinsiella sinensis Kirkaldy, 1907

Fig. 193. (from Kirkaldy, 1907)

1907 *Perkinsiella sinensis* Kirkaldy, Haw. Sugar Plant. Ass., Bull. 3: 138, pl. 12, fs. 14-15 (China—Wei Chou).

1910 *Perkinsiella sinensis* Muir, Haw. Sugar Pl. Ass., Bull. 9: 5. (West Borneo—Tolok Ayer).

1917 *Perkinsiella sinensis* Matsumura, Applied Ent., form. ser., 379 (Honshu, Kyushu, Formosa, N. India).

1920 *Perkinsiella sinensis* Matsumura, Dainippon Gaichu Zensho, form. ser., rev. and addit ed., 26 .

1931 *Perkinsiella sinensis* Matsumura, Nippon Konchu Daizukan, 1271, f.

1932 *Perkinsiella sinensis* Matsumura, Dainippon Gaichu Zusetsu, 227, pl. 8, f. 8.

1935 *Perkinsiella sinensis* Wu, Cat. Ins. Sin., 2: 120.

1938 *Perkinsiella sinensis* Takano et Yanagihara, Spec. Rep. Togyo Exp. Stat., 2: 122.

1940 *Perkinsiella sinensis* Matsumura, Ins. Matsum., 15: 36 (Botel-Tobago, Palau).

1943 *Perkinsiella sinensis* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 45.

1945 *Perkinsiella sinensis* Matsumura et Ishihara, Mushi, 16: 73, f. 34.

Distr.: Honshu, Kyushu, Formosa, Botel-Tobago, China, N. India, W. Borneo, Micronesia (Palau).

Host-plants: Poaceae—*Saccharum officinarum, Oryza sativa, Andropogon sorghum, Phragmites communis.*

This species had been recorded from Japan as an injurious species to the above mentioned Poaceae-crops, but to my regret, no specimen was available for this study, so I gave here a copy of the male genitalia shown by Kirkaldy, 1907.

16. Perkinsiella vastatrix (Breddin, 1896)

Fig. 194 (from Kirkaldy, 1907)

1896 *Dicranotropis vastatrix* Breddin, Deutsch. ent. Zeitschr., (1896), 107 (Java).
1899 *Dicranotropis vastatrix* Krueger, Zuckerrohr u. s. Kulture, 312, pl. 14, f. 1 c.
1904 *Dicranotropis vastatrix* Brusse, Arb. biol. Abt. Land. Kais. Ges. Amt., 4: 319, pls. 1—2, etc.
1906 *Perkinsiella vastatrix* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 1: 407 (Java, on sugar-canes: German E. Africa, on *Andropogon sorghum*).
1907 *Perkinsiella vastatrix* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 3: 135, 137, pl. 12, fs. 12-13 (Java).
1910 *Perkinsiella* (*Dicranotropis*) *vastatrix* Matsumura, Schäd. u. nütz. Ins. Zuckerrohr Formosa, 15 (in German), 27 (in Japanese), (Formosa, injurious to sugar-canes).
1910 *Perkinsiella vastatrix* Muir. Haw. Sugar Pl. Ass., Bull. 9: 5, 9. (Java, W. Borneo, Amboina, Ceram, New Guinea).
1926 *Perkinsiella vastatrix* Gater et Corbett, Fed. Malay. Stat. Straits Settlem., Bull. 38: 5 (on maize).
1929 *Perkinsiella* (*Dicranotropis*) *vastatrix* Dammerman, Agric. Zool. Malay Archipel., 235.
1938 *Perkinsiella vastatrix* Takano et Yanagihara, Spec. Rep. Togyo Exp. Stat., 2: 122.
1943 *Perkinsiella vastatrix* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 45.

Distr.: Formosa, Amboina, West Borneo, Java, Ceram, New Guinea.

Host-plants: Poaceae—*Saccharum officinarum*, *Andropogon sorghum*, *Zea Mays*.

This is also a familiar species as an injurious one to sugar-canes and to other crops in tropics, but the damage is of slight importance.

6. Genus Hirozuunka Matsumura et Ishihara, 1945

Orthotype: *Hirozuunka japonica* Matsumura et Ishihara, 1945.

1945 *Hirozuunka* Matsumura et Ishihara, Mushi, 16: 73.

Vertex very wide and short, about half as long as the basal width, convergent to apex which is truncate; medio-lateral carinae slightly converging apically, Y-shaped carina vanishing except for its branches. Eyes produced postero-laterally. Face oval, broadest a little superior to the middle, of length which is less than twice the largest width; carinae obscure at base, medio-longitudinal carina furcate under eyes. Clypeus about 1-1/2 times as long as the basal width, which is clearly wider than frontal apex. Antennae long, reaching apex of clypeus, somewhat curved inside, of which first segment is conspicuously flattened and is thickened towards apex but the second has a

round cross section and is thinner towards apex. Pronotum a little longer than vrtex including eyes, with lateral carinae which are divergent posteriorly and vanishing before reaching the hind margin. Tegulae very small. Scutellum very small, a little longer than pronotum and much narrower than it, with three longitudinal carinae, of which median one vanishes on apex. Tegmina comparatively short, not reaching abdominal apex, membrane hardly developed, of length which is about 1-1/5 of that of corium. Legs simple, with hind basitarsus which is about 1-1/2 times as long as the other two tarsal segments put together. Spurs thin, furnished with about thirty teeth along the hind margin.

This is a peculiar genus which, in some respects, is somewhat allied to the Genus *Perkinsiella* Kirkaldy, 1906, but which may be easily separated from it by the characteristic features in vertex, pronotum, scutellum and so on. The following one species, the genotype which are usually brachypterous, has been hitherto known in Japan.

17. Hirozuunka japonica Matsumura et Ishihara, 1945

Figs. 190, 195 - 198.

1945 *Hirozuunka japonica* Matsumura, Mushi, 16: 74, fs. 1 - 4 (♂ ♀ Kyushu—Fukuoka, Oita, on reeds).

♂ (brachypt. f.). Vertex light brown, with fairly strong lustre. Eyes dark brown. Face and genae light brown, except for lower parts which are tinted with whitish brown. Clypeus dark brown. Ocelli dark brown. Antennae whitish brown, scattered with small brownish setae; a flagellum at each apex of antennae brown, comparatively shining. Scutellum light brown, with dull lustre. Tegmina subhyaline, milkish white, except for base, apex and a large oblique marking in each tegmen which are all deep brown. Abdominal segments mostly blackish in the basal several segments and light brown in the others. Legs furnished with small brownish setae, generally light brown, except for somewhat darkened femora, two or three not so clear dark brown bands both in anterior and intermediate tibiae and dark brown apices of the first and the third tarsal segments. Genitalia with fairly strong lustre, furnished with small setae especially conspicuously on pygofer and on anal style, pygofer dark brown, parameres mostly dark brown except for light brown apices, anal segment light brown, anal style dark brown except apex which is lighter in hue.

♀ (brachypt. f.). Body mostly light brown, conspicuously lighter in hue than in the male. Tegmina mostly light brown except for each apex and pterostigmas which are blackish. Legs also light brown except for two or three not so distinct dark bands and darkened apex of the distal segment of each tarsus.

Length of body: ♂ 2.5 mm., ♀ 4.7 mm.

Width of head includ. eyes: ♂ 0.9 mm., ♀ 1.2 mm.

Distr.: Houshu—Nara (hab. nov.), Kyushu—Oita, Fukuoka.

Host-plants: Poaceae—*Phragmites communis*, *Phragmites prostrata* (new host- plant).

This species had been known only from Kyushu, but I could examine several specimens which were collected on *Pharagmites prostrata* in Nara, Honshu by Mr. Masayoshi Kuwahara, and newly added Honshu to its distribution.

7. Genus Stenocranus Fieber, 1866

Logotype: *Stenocranus minutus* (Fabricius, 179+)

1866 *Stenocranus* Fieber, Verh. zool.-bot. Ges. Wien, 16: 519.
1871 *Stenocranus* Sahlberg, Not. Sällsk. Faun. Fenn. Förh., 12: 413.
1875 *Stenocranus* Fieber, Rev. Mag. Zool., 370.
1878 *Stenocranus* Farrari, Ann. Mus. Stor. Nat. Genova, 18: 87.
1889 *Stenocranus* Ashmead, Ent. Amer., 5: 27.
1896 *Stenocranus* Melichar, Cicad. v. Mit.-Eur., 56.
1897 *Stenocranus* Van Duzee, Bull. Buffalo Soc. Nat. Sci., 5: 230.
1906 *Stenocranus* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 1: 409.
1907 *Stenocranus* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 3, 138.
1908 *Stenocranus* Oshanin, Verz. Paläark. Hem., 2: 302.
1912 *Stenocranus* Oshanin, Kat. Paläark. Hem., 118.
1914 *Stenocranus* Crawford, Proc. U. S. Mus., 46: 587.
1915 *Stenocranus* Schumacher, Mitt. zool. Mus. Berlin, 8: 123.
1917 *Stenocranus* Van Duzee, Cat. Hem. Amer., 762.
1924 *Stenocranus* Muir et Giffard, Haw. Sugar Pl. Ass., Bull. 15: 5.
1935 *Stenocranus* Matsumura, Ins. Matsum., 9: 125.
1935 *Stenocranus* Matsumura, Ins. Matsum., 10: 71.
1943 *Stenocranus* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 13.
1945 *Stenocranus* Matsumura et Ishihara, Mushi, 16: 68.

Head including eyes in most species about equal to the length of vertex and pronotum put together. Vertex fairly oblong (ordinarily from 1-1/2 to 2 times the width), produced more or less in front of eyes, apex considerably narrower than base, with medio-lateral carinae which meet lateral carinae before reaching base and are convergent apically, but not meet on vertex, being continued on to face where they meet each other somewhat inferior to base. Eyes comparatively large, swollen postero-laterally. Y-shaped median carina not obscure. Face more than twice as long as the width at the middle where it is broadest. Clypeus wider in base than in frontal apex. Antennae short, in most species not reaching frontal apex, with second segment which is clearly longer than twice the first. Pronotum shorter than the length of vertex, wider than head including eyes, with lateral carinae which are convergingly curved posteriorly and distinctly reach the hind margin. Scutellum large with the blunt-pointed apex, with length which is about equal in length to vertex and pronotum placed together, with three carinae of which median one vanishes on apex. Tegmina well-developed, much protruding abdominal apex. Legs all simple, with hind basitarsus which

is about as long as, or a little longer than, the other two tarsal segments put together. Spurs thin, tectiform, furnished with about twenty teeth along the hind margin. Male genitalia, as figured, with conspicuous slender sward-shaped parameres.

Although this genus is widely distributed in the world, the Japanese Islands are perhaps richest in species, and most of the species of this genus are parasitic on Poaceae-weeds and therefore it has little bearing on human beings. Usually macropterous forms appear.

Key to the species

1 (28) Vertex longer than the width.

2 (21) Face between carinae entirely black or nearly so.

3 (4) Medio-longitudinal carina of face at the basal one-third black. Tegmina hyaline, with apical veins which are mostly infuscated and more broadly infuscated towards to the margin. Length including tegmina ♂ 4.5 mm., ♀ 5 mm.……**Stenocranus hopponis** Matsumura, 1935.

4 (3) Medio-longitudinal carina of face entirely not black.

5 (6) Width of head including eyes much less than the length of vertex and pronotum put together (1: 1.6). Both face and clypeus between carinae and genae below eyes all black. Length excluding tegmina ♂ 2.6 mm., ♀ 3.6 mm., tegmen ♂ 3.5 mm., ♀ 4 mm.……**S. nigrifrons** Muir, 1917.

6 (5) Width of head including eyes about equal to the length of vertex and pronotum put together.

7 (8) Tegmina conspicuously tinted with black or darkened towards each base, with membrane which is mostly blackish or darkened. Length includ. teg. ♂ 5.5 mm., ♀ 6 mm. ……**S. harimensis** Matsumura, 1935.

8 (7) Tegmina not so darkened basally, with membrane which is mostly not blackish or not darkened.

9 (16) Face between carinae entirely black.

10 (13) Vertex and pronotum each with a white longitudinal stripe along the median line.

11 (12) Scutellum also with a white longitudinal stripe along the median line. Tegmina hyaline, with colourless veins and often with an infuscated stripe near each hind margin. Length includ. teg. ♂ 5 mm., ♀ 6 mm. ……**S. tateyamanus** Matsumura, 1935.

12 (11) Scutellum in the middle reddish brown. Tegmina hyaline, with apical veins which are brown and of which apices conspicuously infuscated. Length includ. teg. ♂ 5.5 mm., ♀ 6 mm.…**S. takasagonis** Matsumura, 1935.

13 (10) Vertex and pronotum without the white longitudinal marking along the median line.

14 (15) Body dorsally entirely testaceous. Tegmina with apical veins which are infuscated at the apices. Length includ. teg. ♂ 5.5 mm., ♀ 6 mm…… …… **S. formosanus** Matsumura, 1935.

15 (14) Pronotum and scutellum both between lateral carinae conspicuously

reddish. Tegmina without fuscous tip at each apex of apical veins. Length includ. teg. ♀ 6.5 mm. ..... **S. elongatus** Matsumura, 1935.

16 (9) Face black except for carinae and also some portions neighbouring to them.

17 (18) Vertex as long as pronotum. Tegmina subhyaline, with light yellowish tinge, hind margin of membrane broadly infuscated. Length. includ. teg. ♀ 5 mm. ..... **S. ogasawarensis** Matsumura, 1935.

18 (17) Vertex longer than pronotum. Tegmina hyaline, without light yellowish tinge.

19 (20) Face with two black broad longitudinal stripes between carinae, of which width is more than half the width between carinae. Tegmina hyaline, at the hind margin narrowly whitish, veins pale brownish, with granules which are deeper in hue. Length includ. teg. ♂ 4 - 5 mm., ♀ 5 mm. ..... **S. akashiensis** Matsumura, 1935.

20 (19) Face with two black narrow longitudinal stripes between carinae, of which width is less than half the width between carinae. Tegmina subhyaline, slightly brownish, with a trace of fuscous stripe at the apical one-third, veins mostly concolorous with tegmina. Length includ. teg. ♂ 4.5 mm. ..... **S. sukumonus** Matsumura, 1935.

21 (2) Face between carinae not black or only with two faint narrow black stripes.

22 (25) Face with two faint, narrow black stripes.

23 (24) Face comparatively swollen laterally, with two black longitudinal stripes placed rather near lateral carinae. Genae somewhat darkened. Tegmina hyaline, with more or less conspicuous fuscous stripes near the hind margin, veins very light pale brown, fairly indistinct, hardly darkened at their apices. Length includ. teg. ♂ 6 mm., ♀ 6.5 - 7 mm. ..... **S. minutus** (Fabricius, 1794).

24 (23) Face subparallel-sided, with two black longitudinal stripes between carinae which are placed rather near medio-longitudinal carina and vanish towards frontal apex. Genae not darkened. Tegmina hyaline, colourless but membrane darkened on M-vein and at each tip of apical veins, veins all brownish, distinct. Length includ. teg. ♂ 4.5 mm., ♀ 6 mm. ..... **S. fallax** Matsumura, 1935.

25 (22) Face without any black longitudinal stripes.

26 (27) Body pale brownish except for the pale longitudinal marking from vertex to apex of scutellum along the median line. Tegmina subhyaline, pale brownish, quite concolorous with the body; veins comparatively obscure, with or without more or less fuscous stripe near the hind margin. Length includ. teg. ♂ 5.5 mm., ♀ 6 mm. ..... **S. tamagawanus** Matsumura, 1935.

27 (26) Body mostly fuscous. Tegmina subhyaline, brownish, at pterostigmas somewhat deeper in hue, lacking the fuscous longitudinal stripe, apical veins all at the ends and also cross veins fuscous. Length includ. teg. ♂ ♀ 6 m. ..... **S. breviceps** Matsumura, 1935.

28 (1) Vertex not longer then the width.

29 (30) Length of vertex equal to the width. Tegmina hyaline, furnished with ochreous tinge, clavus and cubital cells light brown, with a dark marking on the claval border near base, another near apex. Length exclud. teg. ♂ 2.3 mm., ♀ 3.8 mm., tegmen ♂ 3.5 mm., ♀ 4.1 mm. ....**S. ? taiwanensis** Muir, 1917.

30 (29) Length of vertex less than the width. Tegmina entirely fuscous except for costa and membrane, the latter traversed by a fuscous stripe near the hind margin. Length includ. teg. ♀ 6 mm.……**S. niijimai** Matsumura, 1935.

18. Stenocranus minutus (Fabricius, 1794)

Figs. 38 - 41.

1794 *Delphax minutus* Fabricius, Ent. Syst., 4 : 6 (Germany—Sachsen).
1818 *Delphax lineola* Germar, Mag. Ent., 3 : 209.
1847 *Delphax longifrons* Boheman, Oefvers. K. Vetensk. Acad. Handl., (1847), 42.
1866 *Stenocranus (Delphax) lineolus* Fieber, Verh. zool.-bot. Ges. Wien, 16 : 519, pl. 8, f. 3.
1870 *Liburnia lineola* Scott, Entomol. Month. Mag., 7 : 25.
1878 *Stenocranus lineolus* Fieber, Rev. Mag. Zool., (1878), 281.
1878 *Stenocranus lineolus* Ferrari, Ann. Mus. Stor. Nat. Genova, 18 : 89.
1886 *Liburnia lineola* Edwards, Trans. Ent. Soc. London, 1 : 62.
1890 *Liburnia lineola* Buckton, Mon. Brit. Cicad. Tettigid., 1 : 31, pl. 9, fs. 5 - 6.
1890 *Chloriona farinosa* Buckton, Ibid., 75, pl. 31, fs. 1 - 10.
1896 *Stenocranus lineolus* Melichar, Cicad. v. Mit.-Eur., 57, pl. 4, fs. 9 - 12.
1896 *Stenocranus lineolus* Edwards, Hem. Hom. Brit. Isl., 39, pl. 4, f. 7.
1900 *Stenocranus minutus* Matsumura, Ent. Nachr., 26 : 257.
1908 *Stenocranus minutus* Oshanin, Verz. Paläark. Hem., 2 : 302.
1910 *Stenocranus minutus* Oshanin, Ibid., 452.
1912 *Stenocranus minutus* Oshanin, Kat. Paläark. Hem., 118.
1915 *Stenocranus vittatus* Suzuki, List Spec. Hanazono Ent. Inst., 10 (nom. nud.).
1932 *Stenocranus minutus* Esaki, Iconogr. Ins. Jap., 1783, f. 3523.
1935 *Stenocranus sapporensis* Matsumura, Ins. Matsum., 9 : 131 (Hokkaido—Sapporo, Jozankei, syn. nov.).
1935 *Stenocranus vittatus* Matsumura, Ibid., 132 (Hokkaido—Sapporo, syn. nov.).
1935 *Stenocranus sapporensis* Matsumura, Ibid., 10 : 71.
1943 *Stenocranus minutus* Esaki et Ishihara, Cat. Araeopid. Im. Jap., 13.
1943 *Stenocranus sapporensis* Esaki et Ishihara, Ibid., 17.
1943 *Stenocranus vittatus* Esaki et Ishihara, Ibid., 17.
1945 *Stenocranus vittatus* Matsumura et Ishihara, Mushi, 16 : 69 (Honshu, Kyushu).

Distr.: Hokkaido, Honshu, Kyushu, Europe, N. Africa.

This is one of the commonest species of the genus. *Phragmites communis* seems to be a host-plant.

19. Stenocranus fallax Matsumura, 1935

Figs. 35 - 37, 55.

1935 *Stenocranus fallax* Matsumura, Ins. Matsum., 9 : 122 (♂ ♀ Hokkaido—Sapporo, ♀ Honshu —Iwate, ♂ ♀ China—Hongkong).

1943 *Stenocranus fallax* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 15.
1945 *Stenocranus fallax* Matsumura et Ishihara, Mushi, 16: 69, f. 13 (male genitalia figured).

Distr.: Hokkaido, Honshu, Kyushu, China.
This is comparatively common species; yet any host-plant is not known.

20. Stenocranus tamagawanus Matsumura, 1935

1935 *Stenocranus tamagawanus* Matsumura, Ins. Matsum., 9: 131 (♂ ♀ Honshu—Tamagawa).
1943 *Stenocranus tamagawanus* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 17.

Habitat: Honshu.
This species seems to be fairly rare and the host-plant is unknown.

21. Stenocranus breviceps Matsumura, 1935

Figs. 42 - 45.

1935 *Stenocranus breviceps* Matsumura, Ins. Matsum., 9: 127 (♂ ♀ Hokkaido).
1943 *Stenocranus breviceps* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 15.
1945 *Stenocranus breviceps* Matsumura et Ishihara, Mushi, 16: 68, f. 45 (Honshu, Kyushu. male genitalia figured).

Distr.: Hokkaido, Honshu Kyushu.
This is the commonest species of the genus and is presumed to be parasitic on *Phragmites communis*.

22. Stenocranus tateyamanus Matsumura, 1935

Figs. 28 - 31.

1935 *Stenocranus tateyamanus* Matsumura, Ins. Matsum., 9: 131 (♂ ♀ Honshu—Tateyama).
1943 *Stenocranus tateyamanus* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 17.

Distr.: Honshu, Kyushu (hab. nov.)
Host-plant: Poaceae—*Phalaris arundinacea*.
I have examined some specimens of this species collected in several places of Honshu (Shizuoka, Nara, etc.) and also N. Kyushu (Fukuoka and its neighbourhood). Through the observation by Mr. Masayoshi Kuwahara, it became clear that the present species is parasitic on *Phalaris arundinacea* in the Nara district.

23. Stenocranus akashiensis Matsumura, 1935

Figs. 32 - 34.

1935 *Stenocranus akashiensis* Matsumura, Ins. Matsum., 9: 127 (♂ ♀ Honshu—Akashi, Gifu, Kamakura, Tokyo).

1943 *Stenocranus akashiensis* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 15.
1945 *Stenocranus akashiensis* Matsumura et Ishihara, Mushi, 16: 68, f. 41 (male genitalia figured).

Habitat: Honshu.
This species seems to be not so common, nor is known the host-plant.

24. Stenocranus sukumonus Matsumura, 1935

Figs. 52 - 54.

1935 *Stenocranus sukumonus* Matsumura, Ins. Matsum., 10: 71 (♂ Shikoku—Sukumo).
1943 *Stenocranus sukumonus* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 18.
1945 *Stenocranus sukumonus* Matsumura et Ishihara, Mushi, 16: 69, f. 44 (male genitalia figured).

Habitat: Shikoku.
The host-plant and the female are not known yet.

25. Stenocranus ogasawarensis Matsumura, 1935

1935 *Stenocranus ogasawarensis* Matsumura, Ins. Matsum., 9: 130 (♀ Bonin-Is.).
1943 *Stenocranus ogasawarensis* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 16.

Habitat: Bonin Island.
This is perhaps an endemic species to the Bonin Islands, which was described from there basing upon only two females, except these no individual having been studied yet.

26. Stenocranus harimensis Matsumura, 1935

Figs. 46 - 48.

1935 *Stenocranus harimensis* Matsumura, Ins. Matsum., 9: 129 (♂ ♀ Honshu—Akashi, Chichibu).
1943 *Stenocranus harimensis* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 16.
1945 *Stenocranus harimensis* Matsumura et Ishihara, Mushi, 16: 69, f. 40 (Kyushu. male genitalia figured).

Distr.: Honshu, Shikoku (hab. nov.), Kyushu.
This is a common beautiful species which comes often flying to our lights, any host-plant of which is not made clear yet. It was not recorded from Shikoku, but in Matsuyama and its neighbourhood I examined not a few specimens which came to lights.

27. Stenocranus nigrifrons Muir, 1917

1917 *Stenocranus nigrifrons* Muir, Proc. Haw. Ent. Soc., 3: 322, pl. 4, f. 42 (♂ ♀. Formosa—Kanshirei. male genitalia figured).
1943 *Stenocranus nigrifrons* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 14.

Habitat: Formosa.

Host-plant: *Phragmites* sp.?

This is a very characteristic species of the genus as related in the specific key. Judging by the fact that both sexes of the type-specimens were got by sweeping reeds, *Phragmites* sp. is presumed to be a host-plant.

28. Stenocranus hopponis Matsumura, 1935

1935 *Stenocranus hopponis* Matsumura, Ins. Matsum., 9: 129 (♂♀. Formosa—Hoppo).
1940 *Stenocranus hopponis* Matsumura, Ins. Matsum., 15: 36 (Botel—Tobago).
1943 *Stenocranus hopponis* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 16.

Distr.: Formosa, Botel-Tobago.

Host-plant: Unknown.

29. Stenocranus takasagonis Matsumura, 1935

Figs. 49 - 51.

1935 *Stenocranus takasagonis* Matsumura, Ins. Matsum., 10: 72 (♂♀. Honsiu—Takasago).
1943 *Stenocranus takasagonis* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 18.
1945 *Stenocranus takasagonis* Matsumura et Ishihara, Mushi, 16: 69, f. 37 (male genitalia figured).

Habitat: Honshu.

This is not so common species and the host-plant is unknown.

30. Stenocranus formosanus Matsumura, 1935

1935 *Stenocranus formosanus* Matsumura, Ins. Matsum., 9: 128 (♂♀. Formosa—Kagi, Heito).
1943 *Stenocranus formosanus* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 16.

Habitat: Formosa.

The host-plant is not known yet.

31. Stenocranus elongatus Matsumura, 1935

1935 *Stenocranus elongatus* Matsumura, Ins. Matsum., 6: 127. (♀. Kyusiu—Jono).
5943 *Stenocranus elongatus* Esaki et Ishihara, Cat. Araeopid Imp. Jap., 15.

Habitat: Kyushu.

One female only has been known till now, basing upon which the present species was described.

32. Stenocranus nijimai Matsumura, 1935

1935 *Stenocranus niijimai* Matsumura, Ins. Matsum., 9: 130 (♀ Hokkaido—Teshio).
1943 *Stenocranus niijimai* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 16.

Habitat: Hokkaido.

Host-plant: Unknown.

This is a species which was described also basing upon one female specimen but which may be easily recognized by the characteristic coloration. The host-plant is unknown.

33. Stenocranus? taiwanensis Muir, 1917.

1917 *Stenocranus? taiwanensis* Muir, Proc. Haw. Ent. Soc., 3: 323 (♂ ♀. Formosa—Kanshirei).
1943 *Stenocranus? taiwanensis* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 14.

Habitat: Formosa.

Host-plant: Poaceae—*Phragmites* sp.

This is a peculiar species of the genus, and has *Delphacodes*-like carination on vertex and Tropidocephalini-like spur at each apex of tibiae, but I shall leave it in the present position until I shall have obtained some specimens to be examined in detail.

8. Genus Chloriona Fieber, 1866

Logotype: *Chloriona unicolor* (Herrich-Schäffer, 1835)

1866 *Chloriona* Fieber, Verh. zool.-bot. Ges. Wien, 16: 519, pl. 8, f. 5.
1875 *Chloriona* Fieber, Rev. Mag. Zool., 3: 372.
1896 *Chloriona* Melichar, Cicad. v. Mit.-Eur., 62.
1908 *Chloriona* Oshanin, Verz. Paläark. Hem., 2: 307.
1912 *Chloriona* Oshanin, Kat. Paläark. Hem., 118.
1915 *Chloriona* Muir, Canad. Entomol., 47: 261, 302.
1924 *Chloriona* Muir et Giffard, Haw. Sugar Pl. Ass., Bull. 15: 6, 8.
1935 *Chloriona* Matsumura, Ins. Matsum., 9: 135.
1943 *Chloriona* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 24.
1945 *Chloriona* Matsumura et Ishihara, Mushi, 16: 71.

Body mostly green- or greenish-coloured. Vertex clearly converging anteriorly, about as long as the width, with apex which is truncate; mediolateral carinae occurring from lateral carinae near base, converging anteriorly, meeting at vertex and being continued on to face as a single carina, Y-shaped carina present. Eyes comparatively prolonged posteriorly. Face widest about at the middle, between lower margin of eyes and frontal apex, nearly twice as long as the largest width, with apex which is narrower than base of clypeus. Antennae moderate in length, passing over frontal apex, with second segment which is about twice as long as the first. Pronotum longer than vertex including eyes, with lateral carinae which are divergent posteriorly and vanish before reaching the hind margin. Scutellum fairly large, longer than the length of vertex and pronotum put together, apex fairly acutely produced posteriorly, lateral carinae placed very near median carina. Tegmina much protruding abdominal apex in the macropterous form

but not in the brachypterous one. Legs simple, comparatively large, hind tibia with two small spines, one about at the middle, the other near base, hind basitarsus about 1-1/2 times the other two tarsal segments put together. Spurs thin, with about twenty teeth along the hind margin. Genitalia facing dorsally, peculiar as shown in Figures.

Key to the species

Species of this genus closely resemble one another and the interspecific differences which may be recognized in the features of face, coloration of body, especially of abdomen, characters of genitalia, etc. are very small, even in the male genitalia. From Japan and Formosa six species had hitherto been recorded, the type-specimens of four species of which I could directly examine, and found one of them to be synonimic. Accordingly I dealt in this specific key five species, of which two species, *Chloriona arakawai* Matsumura, 1935, and *C. tosaensis* Matsumura, 1935, were cited from the original descriptions. To my regret, however I could not find out any clearer differences among them, and to the females I cannot give any reliable identification until I have further knowledge of them.

1 (2) Face conspicuously swollen laterally at about 1/3 from apex, of length which is less than 1-1/2 times the largest width. Genae in the male somewhat infuscated. Male genitalia with paramere which is dark brown except for brown apical 1/3, gradually tapering towards apex, where it is slightly furcate. Length ♂ 5 mm. (includ. teg.), ♀ 4.5 mm. (brachypt. f.).....**Chloriona japonica** Matsumura, 1917.

2 (1) Face not so swollen laterally, of length which is about equal to twice the largest width. Genae in both sexes concolorous with the face.

3 (4) Abdomen entirely concolorus with other parts of body except ventral side of pygopher which is darkened. Male genitalia with paramere which is mostly light brown, slightly darkened basally, comparatively slender, with subtruncate apex. Length includ. teg. ♂ 4.5 mm. ..... **C. shikokuana** Matsumura, 1935.

4 (3) Abdomen conspicuously different in coloration from other parts of body.

5 (6) Abdomen chrome-yellow, dorsally somewhat darkened. Male parameres testaceous, at base dark, linear, hornlike upturned and widely divergent upwardly, nearly of the same dimension as apices. Length ♀ 4.4 mm. (brachypt. f.) .....**C. tosaensis** Matsumura, 1935.

6 (5) Abdomen dark brownish or black.

7 (8) Abdomen dark brownish, conspicuously deeper in hue. Male genitalia with paramere which is dark brownish except for brownish apical one-third, with nearly same dimention as apex which is truncate. Length includ. teg. ♂ ♀ 4.5 mm.....**C. tateyamana** Matsumura, 1935

8 (7) Abdomen black with greenish base. Male genitalia with parameres

pages 30 & 31 missing...

which are obtusely divergent upwardly and incurved, and at the apical one-fourth brownish. Length includ. teg. ♂ 4.5 mm.....
..... **C. arakawai** Matsumura, 1935.

34. Chloriona japonica Matsumura, 1917

Figs. 56 - 59.

1917 *Chloriona japonica* Matsumura, Applied Ent., form. ser., 382 (Japan, on reeds).
1932 *Stenocranus japonicus* Esaki, Iconogr. Ins. Jap., 1783, f. 3524 (Hokkaido, Honshu, Kyushu).
1935 *Chloriona japonica* Matsumura, Ins. Matsum., 9: 136.
1943 *Stenocranus japonicus* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 14.
1943 *Chloriona japonica* Esaki et Ishihara, Ibid., 24.
1945 *Chloriona japonica* Matsumura et Ishihara, Mushi, 16: 71 (male genitalia figured).

Distr.: Hokkaido, Honshu, Kyushu.
Host-plant: Poaceae—*Phragmites communis*.
This is a common species of the genus, which is found on the reed of Japan.

35. Chloriona arakawai Matsumura, 1935

1935 *Chloriona arakawai* Matsumura, Ins. Matsum., 9: 136 (♂ Shikoku—Sukumo).
1943 *Chloriona arakawai* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 24.

Habitat: Shikoku.
Host-plant: Poaceae—*Phragmites communis*.
The female of this species is not known yet.

36. Chloriona tosaensis Matsumura, 1935

1935 *Chloriona tosaensis* Matsumura, Ins. Matsum., 9: 137 (♂ ♀. Shikoku—Sukumo, on the reed).
1943 *Chloriona tosaensis* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 24.

Habitat: Shikoku.
Host-plant: Poaceae—*Phragmites communis*.
So far as I examined the description, I could not find any definite difference between the present species and the previous species except for the coloration and I have some doubt in making this species an independent one.

37. Chloriona shikokuana Matsumura, 1935

Figs. 95 - 96.

1935 *Chloriona shikokuana* Matsumura, Ins. Matsumura., 9: 137 (♂ Honshu—Tateyama, Shikoku—Sukumo; on the reed).

1935 *Chloriona sukumonis* Matsumura, Ibid., 138 (♂♀. Shikoku—Sukumo, on the reed. syn. nov.).
1943 *Chloriona shikokuana* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 25.
1943 *Chloriona sukumonis* Esaki et Ishihara, Ibid., 25.

Distr.: Honshu, Shikoku.
Host-plant: Poaceae—*Phragmites communis*.

After my careful investigations of both *Chloriona shikokuana* and *C. sukumonis*, I found that the latter species is nothing bnt the former one.

38. Chloriona tateyamana Matsumura, 1935

Figs. 60 - 63.

1935 *Chloriona tateyamana* Matsumura, Ins. Matsum., 9: 138 (♂♀. Honshu—Tateyama, on the reed).
1943 *Chloriona tateyamana* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 25.
1945 *Chloriona tateyamana* Matsumura et Ishihara, Mushi, 16: 71, f. 48 (male genitalia figured).

Habitat: Honshu.
Host-plant; Poaceae—*Phragmites communis*.

I could examine the type-specimens and also fairly many specimens collected in Nara, Honshu by Masayoshi Kuwahara.

9. Genus Euidella Puton, 1886

Logotype: *Euidella basilinea* (Germar, 1819)

1866 *Euides* Fieber, Verh. zool-bot. Ges. Wien, 16: 519 (nom. praeocc.).
1871 *Euides* Sahlberg, Not. Sällsk. Faun. Fenn. Förh., 12: 402.
1875 - 1876 *Euides* Fieber, Rev. Mag. Zool. (1875), 373; (1876), pl. 7.
1886 *Euidella* Puton, Cat., 72.
1896 *Euides* Melichar, Cicad. v. Mit.-Eur., 66.
1908 *Euidella* Oshanin, Verz. Paläark. Hem., 2: 308.
1912 *Euidella* Oshanin, Kat. Paläark. Hem., 118.
1915 *Euidella* Muir, Canad. Entomol., 47: 253, 300.
1924 *Euidella* Muir et Giffard, Haw. Sugar Pl. Ass., Bull. 15: 6, 10.
1935 *Epunka* Matsumura, Ins. Matsum. 10: 77 (syn. nov.).
1935 *Toyoides* Matsumura, Ins. Matsum., Ibid., 78 (syn. nov.).
1945 *Epunka* Matsumura et Ishihara, Mushi, 16: 70.

Usually large species. Head comparatively wide, as wide or nearly as wide as pronotum. Vertex almost equilateral-quadrate, or slightly longer than the width, carinae fairly distinct except for the disappeared median carina, medio-lateral carinae meeting lateral carinae before base. Eyes moderate in size. Face oblong, widest about at the middle, of length about 2.5 times the largest width, apex slightly narrower than base, medio-longitudinal carina furcate a little superior to the middle. Clypeus also oblong, with base which is somewhat wider than apex of face. Antennae very long, protruding apex of face and almost reaching apex of clypeus, with

first segment which is clearly longer than half the length of the second. Pronotum shorter than the length of vertex, with lateral carinae which vanish a little posterior to the middle, before reaching the hind margin. Scutellum comparatively large, longer than vertex and pronotum put together, tricarinate, with apex which is comparatively acutely projecting posteriorly. Tegmina large, much protruding abdominal apex. Legs slender, simple, spur thin, tectiform, with almost thirty teeth along the hind margin, hind basitarsus clearly longer than second and third segments placed together.

Several species are recorded from the Hollarctic Region, but in Japan following two species, *Euidella bilineata* (Matsumura, 1935) and *E. albipennis* (Matsumura, 1935) are known now.

Key to the species

1 (2) Vertex testaceous, with an oblong black spot at apex, inside of mediolateral carinae. Body mostly testaceous. Scutellum along lateral carinae somewhat darkened, with a black spot in each lateral side near tegula. Tegmina subhyaline, with a brownish tinge, with two blackish lines near the hind margin, of which one is in clavus, the other along the suture between corium and clavus. Length ♂ 6 mm., ♀ 7 mm. (includ. teg.) ..... **Euidella bilineata** (Matsumura, 1935)

2 (1) Vertex without black spot at apex. Body mostly pale testaceous, face somewhat darker in colour. Pronotum with a whitish tint. Tegmina subhyaline, with a whitish testaceous tinge, somewhat infuscated along the anterior and the posterior margins. Length ♀ 6 mm. (includ. teg.) ..... **E. albipennis** (Matsumura, 1935)

39. **Euidella bilineata** (**Matsumura, 1935**) comb. nov.

Figs. 76–80.

1935 *Epanka bilineata* Matsumura Ins., Matsum., 10: 77 (♂ ♀. Hokkaido—Sapporo).
1943 *Epanka bilineata* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 48.
1945 *Epanka bilineata* Matsumura et Ishihara, Mushi, 16: 70, f. 38 (male genitalia figured).

Habitat: Hokkaido.

This large conspicuous species is found only in Hokkaido and no host-plant is made clear yet.

40. **Euidella albipennis** (**Matsumura, 1935**) comb. nov.

1935 *Toyoides albipennis* Matsumura, Ins. Matsum., 10: 78 (♀ Formosa—Kanshirei).
1943 *Toyoides albipennis* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 48.

Habitat: Formosa.

This is a fairly large species which was described basing upon one female specimen. Although I have not examined any specimen of this species, it

belongs, judging by the description of the Genus *Toyoides* Ma sumura, 1935, of which orthotype is the present species, to the Genus *Euidella* Puton, 1886.

10. Genus Numata Matsumura 1935

Orthotype: *Numata sacchari* (Matsumura, 1910)

1935 *Numata* Matsumura, Ins. Matsum., 9: 139.
1943 *Numata* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 18.
1945 *Numata* Matsumura et Ishihara, Mushi, 16: 70.

Vertex about as long as the width, somewhat convergent apically, meagerly produced in front of eyes, medio-laterai carinae converging to apex but clearly not meeting on vertex and continued on to face where they meet ebout at $^1/_3$ point from base. Face subparallel-sided except narrowed part between eyes, about $2-^1/_2$ times as long as the largest width, with apex which is distinctly narrower than base of clypeus. Antennae moderate in length, slightly passing beyond frontal apex, of which second segment is less than twice the length of the first. Pronotum about as long as vertex, wider than vertex including eyes, with three carinae, lateral ones of which divergingly curved posteriorly and vanish before reaching the hind margin. Scutellum large, about $1-^1/_2$ times as long as vertex and pronotum placed together, with apex which is fairly acutely projecting posterioly. Tegmina long, much protruding apex of abdomen. Legs all simple, hind tibia furnished with two small spines outside, one about at the middle and the other near base, hind basitarsus a little longer than the length of other two tarsal segments put together. Spurs thin, tectiform, with more than twenty minute teeth along the hind margin. Male genitalia with large sward-shaped parameres like in the *Stenocranus*-group.

This genus is allied to the Genus *Stenocranus* Fieber, 1866, in some respects, but from the fairly characteristic features in vertex, face, antennae, hind tarsi, spurs, etc., it may be adequate to be separated from the latter and taken as an independent one. The following one Formosan species is known now.

Body mostly ashy brown, carinae on pronotum and on scutellum somewhat lighter in colour. Tegmina subhyaline, with fairly obscure fuscous tint along the fifth apical vein, apical veins dark brownish near base, tipped with dark brown at their apices. Length ♂♀ 5 mm. (includ. teg.) ..... **Numata sacchari** (Matsumura, 1910)

41. Numata sacchari (Matsumura, 1910)

Figs. 71 – 75.

1910 *Stenocranus sacchari* Matsumura, Schäd. u. nütz. Ins. Zuckerrohr Formosas, 16 (in German), 28 (in Japanese), pl. 16, fs. 3 – 4 (Formosa: Ako, Ryukyu Is., on sugar-canes).
1911 *Stenocranus sacchari* Matsumura, Mém. Soc. Ent. Belg., 18: 135.

1915 *Stenocranus sacchari* Schumacher, Mitt. zool. Mus. Berlin, 8: 133.
1917 *Stenocranus sacchari* Matsumura, Applied Ent., former ser., 382 (redescript.).
1920 *Stenocranus sacchari* Matsumura, Dainippon Gaichu Zensho, rev. and addit. ed., form. ser., 382 (redescript.).
1932 *Stenocranus sacchari* Matsumura, Dainippon Gaichu Zusetsu, 230 (redescript.).
1935 *Namata sacchari* Matsumura, Ins. Matsum., 9: 139.
1935 *Unkana sacchari* Matsumura, Ibid., 10: 73.
1935 *Unkana sakaguchii* Matsumura, Ibid., 10: 73 (♂. Ryukyu Is.—Naha).
1943 *Namata sacchari* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 18.
1945 *Namata sacchari* Matsumura et Ishihara, Mushi, 16: 70, f. 42 (male genitalia figured).

Distr.: Ryukyu, Formosa.

Host-plant: Poaceae—*Saccharum officinarum*.

Of this species, I have some points to be revised in future, when some fresh specimens are obtained, for the type-specimen which I could examine was in an incomplete condition, especially in its genital parts, and no other specimen was available for me. Although this species was at first described as an injurious species to sugar-canes, it seems, so far as I known, to be not so very serious one.

11. Genus Kakuna Matsumura 1935

Orthotype: *Kakuna kuwayamai* Matsumura, 1935

1935 *Kakuna* Matsumura, Ins. Matsum., 10: 76.
1943 *Kakuna* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 36.
1945 *Kakuna* Matsumura et Ishihara, Mushi, 16: 68.

Comparatively large-formed. Vertex large, of length which is about equal to the width or a little longer than it; carinae on which all distinct, being placed like in the *Stenocranus*-group, but medio-lateral carinae meet near base of face, rather like in the *Delphacodes*-group. Face fairly long, a little more than twice the width at the middle, where it is broadest. Clypeus somewhat long, with base which is wider than frontal apex. Antennae very long, almost reaching apex of clypeus, with second segment which is about twice as long as the first. Pronotum shorter than vertex, a little wider than vertex including eyes, with three carinae, lateral ones of which vanish indistinctly before reaching the hind margin. Scutellum very large, fairly acutely tapering posteriorly, clearly longer than vertex and pronotum placed together, with three carinae, median one of which vanish on apex. Tegmina very large, much protruding abdominal apex. Legs all simple, with hind basitarsus which is very long, almost twice as long as the other two tarsal segments put together. Spurs thin, with about thirty teeth along each hind margin.

This genus is a peculiar one which allies somewhat to such genera as *Stenocranus*, *Delphacodes*, *Euidella*, etc. but may be clearly differenciated are from them by the related conspicuous characters. Only two species, which usually macropterous, belong to it.

Key to the species

1 (4) Vertex as long as the width. Body mostly pale brown with whitish median line,

2 (3) Tegmina opaque, brownish black except for broad hyaline portion along the anterior margin and narrow hyaline portion along the posterior margin, and with conspicuously white posterior margin of clavus and black pterostigma. Length ♂ 7 mm. (includ. teg.) ..... **Kakuna kuwayamai** Matsumura, 1935 ♂

3 (2) Tegmina subhyaline, with a faint brownish tinge, a broad oblique fuscous stripe running from about at the middle of tegmen to the tip of its hind margin, apical margin somewhat infuscated, pterostigmas black, veins white, with numerous concolorous granules along veins on them. Length ♀ 8 mm. (inculd. teg.) ..... **K. kuwayamai** Matsumura, 1935 ♀

4 (1) Vertex a little longer than the width. Body including median line mostly light brown. Lateral side of thorax somewhat darkened and apex of first segment of antennae narrowly darkened. Tegmina subhyaline, with a brownish tinge, veins with granules brownish. Pterostigmas absent. The female often lighter throughout in colour. Length ♂ 6 mm., ♀ 7 mm. (includ. teg.) ..... **K. sapporonis** (Matsumura, 1935)

42. Kakuna kuwayamai Matsumura, 1935

Fig. 81 – 85.

1935 *Kakuna kuwayamai* Matsumura, Ins. Matsum., 10: 76 (♂ ♀. Hokkaido—Sapporo).
1943 *Kakuna kuwayamai* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 37.
1945 *Kakuna kuwayamai* Matsumura et Ishihara, Mushi, 16: 68, f. 58 (Honshu, Kyushu. male genitalia figured).

Distr.: Hokkaido, Honshu, Kyushu.

The present species, large and fairly fine, is found only in mountainous regions except in Hokkaido. No host-plant of it is known yet.

43. Kakuna sapporonis (Matsumura, 1935)

Figs. 142 – 144.

1935 *Toya sapporonis* Matsumura, Ins. Matsum., 10: 78 (♂ ♀. Hokkaido—Sapporo).
1943 *Toya sapporensis* (!) Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 47.
1945 *Delphacodes sapporensis* (!) Matsumura et Ishihara, Mushi, 16: 62 (Honshu, Kyushu. male genitalia figured).

Distr.: Hokkaido, Honshu, Kyushu.

Judging by the features—the large form; the medio-longitudinal carina of the face which is furcate very near the base; the long antennae which are protruding the apex of clypeus; the large hind basitarsus which is sufficiently twice as long as the other two tarsal segments put together; etc.,

it seems proper to be placed under neither the Genus *Delphacodes* Fieber, 1866, nor the Genus *Euidella* Puton, 1886, but under the present genus. Any host-plant is not known yet. Often many individuals come to lights flying.

12. Genus Hosunka Matsumura, 1935

Orthotype: *Hosunka pallidula* Matsumura, 1935

1935 *Unkana* Matsumura, Ins. Matsum., 9 : 132 (nom. praeocc.).
1935 *Unkana* Matsumura, Ibid., 72.
1935 *Hosunka* Matsumura, Ibid., 10 : 76.
1943 *Unkanella* Esaki et Ishihara, Cat. Araeopid. Imp., Jap., 20 (syn. nov.).
1945 *Unkanella* Matsumura et Ishihara, Mushi, 16 : 69.

It is clear that the Genus *Unkana* Matsumura, 1935, contained such several generi as *Delphacodes* Fieber, 1866, *Sogata* Distant, 1906, *Himeunka* Matsumura et Ishihara, 1945, etc. But when I carefully examined the genotype, *Unkana hakonensis* Matsumura, 1935, I found the Genus *Unkana* Matsumura, 1935, nom. praeocc.=Genus *Unkanella* Esaki et Ishihara, 1943, should be remained as an independent genus in view of the characters given below. But now I found also the Genus *Hosunka* Matsumura, 1935, is nothing but the present genus and then the Genus *Unkanella* Esaki et Ishihara, 1943, is synonymized with this Genus *Hosunka* Matsumura, 1935.

Vertex fairly oblong, about twice as long as the width, somewhat narrowed about at the middle, with medio-lateral carinae which occur from lateral carinae comparatively apically, meeting each other on apex and continue on to face as a single carina. Face oblong, widest under eyes, about 2-1/2 times as long as the broadest width. Antennae fairly long, clearly protruding frontal apex, with first segment which is very short, distinctly less than half the length of the second. Pronotum nearly as long as vertex or a little shorter than it, with three longitudinal carinae, lateral ones of which divergent posteriorly and reach the hind margin. Scutellum about as long as vertex and pronotum put together, with three carinae. Tegmina, in macropterous form, very slender, passing far beyond abdominal apex. Legs simple, hind basitarsus longer than the other two tarsal segments put together. Spurs thin, with many minute teeth along the hind margin.

Key to the species

1 (4) Body above without a conspicuously light-coloured longitudinal stripe along median line.

2 (3) Face between carinae filled with black lines. Body mostly testaceous, carinae whitish. Tegmina with apical veins which are robust, strongly granulated and are fuscated at apices. Male genitalia with parameres which are wavy, at bases broader, gradually tapering towards apices and excurved. Length ♂ 5.5 mm., ♀ 6 mm. (includ. teg.) ..... **Hosunka arisana** (Matsumura, 1935)

3 (2) Face between carinae not filled with black lines. Body mostly pale testaceous. Tegmina with narrow veins and with very small granules. Length ♀ 3.8 mm. (includ. teg.) ·····**H. heitonis** (Matsumura, 1935)

4 (1) Body above with a conspicuous light-coloured longitudinal stripe along the median line.

5 (8) Face black with whitish carinae except for basal ¼ which is brownish and narrow.

6 (7) Tegmina subhyaline, in the male, with an ochreous tinge, membrane entirely fuscous except costa, in the female, with a fuscous tinge, paler at costal part, with a hyaline triangular patch near apex of costa, third apical vein infuscated. Body mostly ochro-testaceous in the male, fuscous brown in the female. Male genitalia with parameres which are long, upturned horn-like, at bases broader, from the middle slenderer, at apices pointed, somewhat outwardly upturned. Length ♂ 5 mm., ♀ 5.5 mm. (includ. teg.)·····**H. nigrifacies** (Matsumura, 1935)

7 (6) Tegmina entirely hyaline, with fuscous apical veins. Body mostly testaceous. Length ♀ 5.5 mm. (includ. teg.). ····· ····· **H. nigrifacies** (Matsumura), forma **hyalipennis** (Matsumura, 1935)

8 (5) Face not black, concolorous with body.

9 (10) Body mostly dark brown except vertex and the narrow central stripe running from pronotnm to scutellum which are both whitish testaceous. Male genitalia with parameres which are nearly as in *H. hakonensis* (Matsumura, 1935). Length ♂ 4.5 mm., ♀ 3.5 mm. (brachypt. f.) ····· **H. taiwanella** (Matsumura, 1935)

10 (9) Body light-coloured, mostly light brown or dull yellow.

11 (12) Tegmina subhyaline, uniformly with a light brownish tinge, veins with granules concolorous with the body. Body mostly pale testaceous, with a broad white longitudinal stripe from vertex to scutellum. Length ♂ 4.5 mm., ♀ 5 mm. (includ. teg.) ·····**H. hakonensis** (Matsumura, 1935)

12 (11) Tegmina not uniform in coloration.

13 (14) Body mostly dull-yellow (♂) or yellowish brown (♀). Face similar to body in colour, with two blackish brown longitudinal stripe. Tegmina hyaline, tinted with brown towards apices, veins dull yellow, with brown granules. Male genitalia with parameres which are divergently curved upwards, each with a yellowish brown small spine in each lateral side near base, and also a small spine outside near apex. Length ♂ ♀ 4–4.8 mm. (includ. teg.)····· **H. testacea** (Matsumura, 1900)

14 (13) Body mostly pale testaceous. Face somewhat darker in hue. Tegmina at the hind margin concolorous, the granules along the veins obsolete and the veins concolorous with tegmina. Length ♀ 3.2 mm. (includ. teg.)····· **H. pallidula** (Matsumura, 1935)

44. Hosunka hakonensis (Matsumura, 1935) comb. nov.

Figs. 99 - 103.

1935 *Unkana hakonensis* Matsumura, Ins. Matsumura., 9: 133 (♂ ♀. Hokkaido, Honshu, Kyushu).
1943 *Unkanella hakonensis* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 20.
1945 *Unkanella hakonensis* Matsumura et Ishihara, Musii, 16: 69, f. 10 (male genitalia figured).

Distr.: Hokkaido, Honshu, Kyushu.
This is a comparatively common species but no host-plant is known yet.

45. Hosunka taiwanella (Matsumura, 1935) comb. nov.

1935 *Unkana taiwanella* Matsumura, Ins. Matsum., 10: 74 (♂ ♀. Formosa—Arisan).
1943 *Unkanella taiwanella* Esaki et Ishihara, Cat, Araeopid. Imp. Jap., 22.

Habitat: Formosa.
Any host-plant of this Formosan mountainous species is not known yet.

46. Hosunka testacea Matsumura, 1900 comb. nov.

Figs. 97 - 98.

1900 *Chiorionidea testacea* Matsumura, Ent. Nachr., 26: 257 (♂ ♀. Honshu—Akashi, Gifu).
1908 *Chlorionidea testacea* Oshanin, Verz. Paläark. Hem., 2: 308.
1912 *Chlorionidea testacea* Oshanin, Kat. Paläark. Hem., 118.
1935 *Unkana testacea* Matsumura, Ins. Matsum., 10: 75.
1943 *Unkanella testacea* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 22.

Habitat: Honshu.
I have examined only one destroyed female type-specimen which was destitute of antennae and tegmina. Figures of which are shown in this paper. It seems not common and no host-plant is known yet.

47. Hosunka heitonis (Matsumura, 1935) comb. nov.

1935 *Unkana heitonis* Matsumura, Ins. Matsum., 9: 134. (♀. Formosa—Heito, Tainan).
1943 *Unkanella heitonis* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 21.

Habitat: Formosa.
The male and the host-plant of this species are unknown.

48. Hosunka nigrifacies (Matsumura, 1935) comb. nov.

1935 *Unkana nigrifacies* Matsumura, Ins. Matsum., 9: 134 (♂ ♀. Formosa—Hoppo).
1943 *Unkanella nigrifacies* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 21.

Habitat: Formosa.

No host-plant of this species is known yet. Following one form which has remarkably different coloration from ordinary individuals may be found in association with them.

Hosunka nigrifacies (Mtsumura, 1935) form. hyalipennis (Matsumura, 1935) comb. nov.

1935 *Unkana nigrifacies* form. hyalipennis Matsumura, Ins. Matsum., 9: 134 (♂. Formosa—Hoppo).
1943 *Unkanella nigrifacies* form. *hyalipennis* Esaki et Ishihara Cat. Araeopid. Imp. Jap., 21.

Habitat: Formosa.
Only one female specimen is known now.

49. Hosunka arisana (Matsumura, 1935) comb. nov.

1935 *Unkana arisana* Matsumura, Ins. Matsum., 9: 133 (♂ ♀. Formosa—Arisan).
1943 *Unkanella arisana* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 20.

Habitat: Formosa.
No ecological information of this species is known at present.

50. Hosunka pallidula Matsumura, 1935

1935 *Hosunka pallidula* Matsumura, Ins. Matsum., 10: 76 (♀. Formosa—Tainan).
1943 *Hosunka pallidula* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 23.

Habitat: Formosa.
This species was described basing upon two female specimens. I have not examined the type-specimens, and the description is not perfect to show the characteristic details but at least this species seems surely to be congeneric with the genotype of the Genus *Unkana* Matsumura. 1935, viz. *Unkana hakonensis* Matsumura. 1935. Its host-plant is unknown.

13. Genus Himeunka Matsumura et Ishihara, 1945

Orthotype: *Himeunka tateyamaella* (Matsumura. 1935)

1935 *Unkana* Matsumura, Ins. Matsum., 9: 132 (partim. nom. praeocc.).
1935 *Unkana* Matsumura, Ibid., 0: 72 (Partim).
1943 *Unkanella* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 20 (partim).
1945 *Himeunka* Matsumura et Ishihara, Mushi, 16: 70.

Small-formed. Vertex about twice as long as the width, subparallel- sided, with apex which is rounded and slightly produced in front of eyes; carinae on vertex obscure except for medio-lateral carinae which occur from about the middle of the lateral margin, converge to apex where they meet each other and continue on to face as a single carina. Eyes comparatively

large, projecting postero-laterally. Face about 2-1/2 times the width about at the middle, where it is broadest. Clypeus meagrely wider in base than frontal apex. Antennae fairly short, hardly protruding frontal apex, with second segment which is about twice as long as the first. Pronotum a little shorter than the length of vertex, wider than vertex including eyes, with lateral carinae which are divergent posteriorly and reaching the hind margin. Scutellum with length which is about equal to the length of vertex and pronotum put together, with fairly acutely projecting apex and with three longitudinal carinae, median one of which vanishes on apex. Tegmina comparatively short, being protruding abdominal apex not so much as in the usual macropterous forms of the family, while just reaching the abdominal apex in the brachypterous form which is known only in the female. Legs simple, with hind basitarsus which is a little longer than the other two tarsal segments placed together. Spurs thin, with ten or more teeth along the hind margin. Male genitalia peculiar to the genus, with very small parameres.

This genus resembes such genera as *Stenocranus* Fieber, 1866, *Hosunka* Matsumura, 1935, etc. in several respects, but may be separated from them by the characteristic features in antennae, tegmina, male genitalia, etc. The following one species, the genotype, is known now.

Body fairly light brown, a longitudinal whitish stripe from vertex to scutellum along median line. Tegmina subhyaline, slightly furnished with brownish tinge, with or without a fairly indistinct brownish stripe near each hind margin towards apex. Length ♂ 3 - 3.5 mm., ♀ 4 mm. (includ. teg.), ♀ 2.5 mm. (brachypt. f.) ·····**Himeunka tateyamaella** (Matsumura, 1935)

31. Himeunka tateyamaella (Matsumura, 1935)

Figs. 104 - 109.

1935 *Unkana tateyamaella* Matsumura, Ins. Matsum., 9: 135 (♂ ♀. Honshu—Tateyama, Kyushu—Kushi near Kagoshima).

1935 *Unkana kushiana* Matsumura, Ibid., 10: 72 (♂ ♀. Kyushu—Kushi near Kagoshima), (syn. nov.).

1943 *Unkanella tateyamaella* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 21.

1943 *Unkanella kushiana* Esaki et Ishihara, Ibid., 22.

1945 *Himeunka kushiana* Matsumura et Ishihara, Mushi, 16: 70, f. 8.

1945 *Himeunka tateyamaella* Matsumura et Ishihara, Ibid., 71, f. 7.

Distr.: Honshu, Kyushu.

Host-plant: Unknown.

When I cautiously examined several specimens which were determined to *Unkana tateyamaella* Matsumura, 1935, and also some to *U. kushiana* Matsumura, 1935, by Dr. Shonen Matsumura, including the type-specimens of both species, examining their original descriptions carefully, I could not find any decisive specific difference between them and now I concluded that the both

species are nothing but the same species. In this genus, therefore, only this one species, the genotype, becomes to be known at present.

14. Genus Delphacodes Fieber, 1866

Logotype: *Delphacodes mulsanti* Fieber, 1866

1798 *Delphax* Fabricius, Suppl. Ent. Syst., 511 (partim).
1803 *Delphax* Fabricius, Syst. Rhyng., 83 (partim).
1826 *Delphax* Fallén, Hem. Suec. Cicad., 73 (partim).
1835 Burmeister, Handb. d. Ent., 2: 150 (partim).
1839 *Delphax* Spinola, Ann. Soc. Ent. France, ser. 3, 8: 329.
1854 *Delphax* Stål, Oefv. Ak. Förh., 11: 189 (partim).
1861 *Delphax* Flor, Rhynch. Livl., 2: 25 (partim).
1865 *Liburnia* Stål, Hem. Afr., 4: 179 (partim).
1866 *Delphacodes* Fieber, Verh. zool.-bot. Ges. Wien, 16: 524.
1868 *Delphax* Kirschbaum, Cicad. Geg. v. Wieb. Frankf., 19 (partim).
1870 *Liburnia* Scott., Entomol. Month. Mag., 7: 22 (partim).
1871 *Calligypona* Sahlberg, Faun. Fenn. Förh., 12: 408 (syn. nov.).
1871 *Liburnia* Sahlberg, Ibid., 422 (partim).
1875 *Liburnia* Fieber. Rev. Mag. Zool., 3: 376 (partim).
1896 *Liburnia* Melichar, Cicad. v. Mit.-Eur., 69 (partim).
1896 *Liburnia* Edward, Hem. Hom. Brit. Isl., 6: 31 (partim).
1903 *Liburnia* Melichar, Hom. Faun. Ceylon, 97 (partim).
1906 *Toya* Distant, Faun. Brit. Ind., Rhynch., 3: 472.
1906 *Liburnia* Distant, Ibid., 430 (partim).
1908 *Delphax* Oshanin, Verz. Paläark. Hem., 2: 312.
1912 *Delphax* Oshanin, Kat. Paläark. Hem., 119.
1915 *Toya* Schumacher, Suppl. Ent., 4: 142.
1915 *Delphacodes* Muir, Canad. Entomol., 47: 262.
1915 *Toya* Muir, Ibid., 267, 297.
1915 *Toya* Schumacher, Mitt. zool. Mus. Berlin, 8: 132.
1915 *Delphacodes* Schumacher, Ibid., 133.
1917 *Liburnia* Matsumura, Applied Ent., form. ser., 379.
1917 *Delphacodes* Muir, Proc. Haw. Ent. Soc., 3: 332.
1918 *Delphacodes* Muir, Proc. Haw. Ent. Soc., 4: 427.
1924 *Delphacodes* Muir et Giffard, Haw. Sugar Pl. Ass. Bull. 15: 18.
1926 *Delphacodes* Muir, Ann. Mag. Nat. Hist., ser. 9, 17: 34.
1927 *Delphacodes* Muir, Ins. Samoa, 2: 13.
1935 *Liburnia* Wu, Cat. Ins. Sin., 2: 119.
1935 *Delphacodes* Osborn, New York, Acad. Sci., 14: 248.
1938 *Delphacodes* Metcalf, Bull. Mus. Comp. Zoöl., 82: 301.
1939 *Liburnia* Van Duzee, Pan-Pac. Entomol., 15: 66.
1943 *Delphacodes* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 29.
1945 *Delphacodes* Matsumura et Ishihara, Mushi, 16: 60.

Vertex comparatively short, with length which is about same as the width, or a little longer than it, hardly produced in front of eyes, with truncate apex which is about as wide as base. Carinae on vertex mostly distinct;

medio-lateral carinae occurring from lateral carinae, converging apically and meeting each other on apex or very near base of face, Y-shaped carina in most species fairly obscurely present. Eyes moderate in size. Fac meagrely longer than twice the width at the middle, where it is broadest. Clypeus with basal width which is mostly wider than frontal apex. Antennae usual in length, somewhat protruding frontal apex, with second segment which is twice as long as the first. Pronotum as long as, or a little shorter than, vertex, wth three longitudinal carinae, lateral ones of which are divergingly curved posteriorly and vanish before reaching the hind margin. Scutellum generally longer than vertex and pronotum put together, as is often shorter in the brachypterous form. Tegmina in the macropterous form, long, much protruding apex of abdomen, in the brachypterous form, clearly not reaching it. Legs simple, often with two small spines outside each hind tibia, one near base and the other about at the middle; hind basitarsus a little longer than the other two tarsal segments placed together. Spurs thin, with from fifteen to thirty teeth along the hind margin.

The generic names, *Delphax* Fabricius, 1798, (nom. praeocc.)=*Araeopus* Spinola, 1839, and *Liburnia* Stål, 1865, have been often substituted for the present genus and discussed by several persons of their uses. Of the generi, *Araeopus Spinola*, 1839, and *Liburnia* Stål, 1865, however, *Araeopus crassicornis* (Panzer, 1796) is the genotype of the former, while *Liburnia vitticollis* Stål ,1865, is the one of the latter, so that they are quite other groups different from the present genus, *Delphacodes* Fieber, 1866, and clearly it is not proper to use them instead of the generic name *Delphacodes* Fieber, 1866. The Genus *Delphacodes* Fieber, 1866, is a large and complex group, and no specimen of the genotype, *Delphacodes mulsanti* (Fieber, 1866), having been available, one of the commonest leaf-hopper of Japan, *Delphacodes striatella* (Fallén, 1826), as well as many congeneric species were made to belong to it.

Key to the species

1 (8) Scutellum light brownish, with a conspicuous large black or brownish marking in each outside of lateral carinae.

2 (3) Face entirley yellowish brown. Clypeus and antennae concolorous with face. Genae brownish black. Pronotum pale brown. Tegmina subhyaline, uniformly pale brownish, viens and granules on veins concolorous with tegmina. Pterostigmas slightly opaque. Length ♂ 3.8 mm., ♀ 4.5 mm. (includ. teg.) ·····**Delphacodes panicicola** sp. nov.

3 (2) Face black or blackish brown, with light brownish carinae.

4 (5) Clypeus conspicuously lighter than face in colour. Face blackish brown, with light brownish carinae. Vertex, antennae and clypeus light brown. Genae blackish brown. Pronotum brownish white. Tegmina subhyaline, slightly tinted with brown, veins and granules on veins light brown. Length ♂ 3.2 mm., ♀ 3.9 mm. (includ. teg.) ·····
·····**D. longifurcifera** Esaki et Ishihara, 1947.

5 (4) Face and clypeus equally black or brownish black.

6 (7) Vertex comparatively wide, with length which is shorter than the width. Vertex yellowish brown except apical half which is somewhat dark between yellowish brown carinae. Face, clypeus and genae dark brown, with light yellowish brown carinae. Antennae yellowish brown. Pronotum whitish brown, with carinae which are yellowish brown, somewhat darkened outside lateral carinae. Tegmina subhyaline, with a milky whitish tinge, veins and granules brownish. Pterostigmas absent. Male genitalia with parameres which arc lyrate as figured. Length ♂ 1.6 mm., ♀ 2 mm. (includ. teg.)……**D. lyraeformis** (Matsumura, 1900)

7 (6) Vertex a little longer than the width. Vertex brown, with yellowish browish brown carinae, each portion between lateral carina and medio-lateral carina black. Face, clypeus and genae with yellowish brown carinae. Pronotum whitish brown, with blackish tint outside lateral carinae, Tegmina subhyaline, with light brownish tint, especially on clavus, Veins and granules light brown, Pterostimas dark brown. Length ♂ 4 mm. (macropt. f. includ. teg.), ♀ 2.2 mm. (brachypt. f. includ. teg.) … …… **D. striatella** (Fallén, 1826) ♀

8 (1) Scutellum without a conspicuous large black marking in each outside of lateral carinae.

9 (10) Body including tegmina mostly shiny brownish black. Vertex, face and clypeus brownish black, with brown carinae. Antennae brown except for brownish black apical parts of the first segment. Pronotum and scutellum brownish black. Tegmina black with brown surrounding borders. Length ♂ 1.6 mm., ♀ 2.4 mm. (brachypt. f.) ……**D. nigerrima** sp. nov.

10 (9) Body including tegmina not mostly blackish.

11 (22) Body above with a conspicuous light-coloured longitudinal stripe along median line.

12 (13) Tegmina opaque, black except for the basal white portion and the apical margin which is tinted also with white. Pterostigmas deeper in black. Vertex light brown except for each black portion between lateral and medio-lateral carinae. Pronotum and scutellum brown, from vertex to scutellum with a fairly wide white longitudinal stripe along median line. Face and clypeus blackish, with the white longitudinal stripe along median carina. Genae blackish, with brown lateral carinae. Antennae light brown. Length ♂ 1.8 mm., ♀ 2.4–2.5 mm. (brachypt. f.) …… …… **D. albifascia** (Matsumura, 1900)

13 (12) Tegmina not opaque but hyaline or subhyaline.

14 (15) Tegmina mostly brownish; with conspicuously whitish anterior margin of corium, clavus light brownish except for brownish base, membrane light brownish, with a distinct brownish stripe a little posterior to the middle. Pterostigmas brown. Vertex square, mostly light brown except whitish yellow longitudinal stripe along median carina. Antennae mostly light brown, with a brownish tinge at apex of first segment and base of the second. Clypeus and genae light brown. Length ♂ 4.4 mm. (includ.

teg.) ..... **D. esakii** Matsumura et Ishihara, 1945

15 (14) Anterior margin of tegmina not white.

16 (21) Tegmina with the hind margin of clavus which is conspicuously white.

17 (18) Antennae pale brown only except for somewhat infuscated apex of basal segment. Body mostly pale brown with a white line along median line from vertex to scutellum. Tegmina hyaline, along the hind margin broadly brownish, veins in apical 1/3 somewhat infuscated. Length ♂ 4.5 mm., ♀ 4.7 mm. (includ. teg.), ♀ 3 mm. (brachypt. f. includ. teg.) ..... **D. sapporona** (Matsumura, 1935)

18 (17) Antennae mostly blackish brown or entirely black.

19 (20) Antennae mostly brackish brown, second segment a little lighter in colour except base. Body mostly blackish brown, except for each black portion between lateral and medio-lateral carina on vertex, a fairly wide whitish longitudinal stripe along median line from vertex to scutellum and whitish brown carinae. Tegmina subhyaline, with a grayish tint, hind margin white. veins mostly light brown. Length ♂♀ 3 mm. (includ. teg.) ..... **D. albovittata** (Matsumura, 1900)

20 (19) Antennae entirely black. Vertex including carinae dark brown except for black outsides of medio-lateral carinae. Face and genae black, with brown carinae. Clypeus dark brown, with brown carinae. Pronotum and scutellum brown, carinae somewhat lighter in hue, with a fairly wide light brownish dorsal stripe along median line. Tegmina subhyaline, slightly tinted with brown, veins brownish, hind margin conspicuously white. Length ♂ 2.7 mm. (includ. teg.) ..... **D. fukuokae** sp. nov.

21 (16) Hind margin of tegmina not white. Head mostly brown except for pale vertex and fuscous clypeus and fuscous antennae. Pronotum and scutellum black, each with a broad white longitudinal stripe which becomes broader towards apex of scutellum. Tegmina subhyaline, hind half of membrane tinted with pale brown, veins brownish, those of membrane broadly suffused with smoky gray, all the veins very obsoletely granulated. Male parameres fuscous, lamellate, with suddenly pointed apices, Length ♂ 3.5mm., ♀ 4 mm. (includ. teg.) ..... **D. kotonis** (Matsumura, 1940)

22 (11) Body above without conspicuous light coloured longitudinal stripe along median line.

23 (26) Scutellum mostly black or brownish black except for apex.

24 (25) Genae black with yellowish brown lateral carinae. Length ♂ 3.5 mm. (includ. teg.), ♂ 2 mm. (brachypt. f. includ. teg.) ..... **D. striatella** (Fallén, 1826) ♂

25 (24) Genae light brown, each with a conspicuous large black round marking about at the middle. Vertex, face and clypeus entirely light brown. Pronotum dirty white except outsides of lateral carinae which are brownish black. Scutellum mostly brownish black. Tegmina almost hyaline, with conspicuously dark pterostigmas, veins light brown with concolorous granules. Length ♂ 4.4 mm., ♀ 4.9 mm. (includ. teg.) ..... **D. nigrigena** Matsumura et Ishihara, 1945

26 (23) Scutellum not mostly black.

27 (36) Face black or brownish black.

28 (29) Vertex piceous with brownish ochreous ridges. Face and clypeus black, with dull ochreous carinae. Pronotum and scutellum piceous brown, carinae dull ochreous. Tegmina hyaline, with an ochreous tint, veins pale fuscous. Length 3 mm. (includ. teg.)……**D. attenuata** (Distant, 1906)

29 (28) Vertex mostly brownish or grayish yellow.

The following four species are comparatively similar in appearance, so it is especially essential to examine their male genitalia for their decided indentification.

30 (31) Pronotum and scutellum almost entirely ochreous. Vertex ochreous, as long as the width. Face, clypeus and genae brownish black with ochreous carinae. Antennae ochreous. Macropterous tegmina subhyaline, with a light brownish tinge, veins on corium light brownish, on membrane brown, with very minute concolorous granules. Brachypterous tegmina ochreous buff, with fuscous round apex, veins mostly concolorous. Length ♂ ♀ 3.8 mm. (includ. teg.) ♂ 1.8 mm., ♀ 2.5 mm. (brachypt. f.) …… **D. terryi** Muir, 1917

31 (30) Pronotum and scutellum light-coloured, pale brown, light dirty brown or grayish white.

32 (33) Body above with orange-coloured tinge. Vertex brownish black in anterior half, orange-coloured in the other, with carinae which are all pale brown. Face, clypeus and genae brownish black with pale carinae. Antennae light brown, with a light brownish black tint at apex of first segment. Pronotum and scutellum pale brown, with orange-coloured tint between carinae on them. Tegmina subhyaline, pale brownish, veins and granules pale brown on corium, white brown on membrane. Pterostigmas deeper in hue. Length ♂ 3.3 mm., ♀ 3.5 mm. (includ. teg.) ……**D. shirozui** sp. nov.

33 (32) Body above without any orange tinge.

34 (35) Pronotum and scutellum light dirty brown, scutellum a little darker and blackish outside lateral carinae. Vertex light dirty brown, somewhat darkened in anterior half, carinae dirty yellowish. Face, clypeus and genae black with dirty yellowish carinae. Tegmina subhyaline, with a light brownish tinge, veins light brown, without granules. Male genitalia as figured. Length ♂ 1.5 mm., ♀ 1.7 mm. (brachypt. f.) ……**D. exigua** (Roheman, 1847)

35 (34) Middle part of pronotum and entire scutellum grayish white. Vertex grayish yellow. Face and genae black. Tegmina subhyaline, with a grayish yellow tinge, with concolorous veins which have indistinct granules. Male genitalia with parameres which are yellow, large, forked apically, and inner branches of which are small and short. Length 3 mm. (includ. teg.) …… **D. graminicola** (Matsumura, 1910)

36 (27) Face brown or dark brown.

37 (38) Antennae nearly black. Vertex light brown, a little wider than the

length. Face dark brown, carinae at base lighter in colour, twice as long as the largest width. Pronotum in anterior portion dark brown, in posterior portion white, creamy white, or dirty yellow. Scutellum light brown. Macropterous tegmina subhyaline, opaquely white, veins yellowish. Brachypterous tegmina orange buff. Male genitalia with parameres which have each a round projection in the outside near apex. Length ♂ 1.4 mm., ♀ 1.6 mm. (exclud. teg.), tegmen ♂ 2 mm., ♀ (brachypt. f.) 0.6 mm. ..... **D. lacteipennis** Muir, 1917

38 (37) Antennae brownish or nearly so.

39 (40) Tegmina shiny black or dark chocolate, veins concolorous, without granules. Body mostly light brown or ochreous buff. Male genitalia with parameres which are convergingly divergent and each thicker towards apex which turns postero-laterally and tapers. Length ♂ 2 mm. (exclud. teg,), tegmen ♂ 1 mm. ..... **D. nigripennis** Muir, 1917

40 (39) Tegmina subhyaline, with a concolorous tinge with body.

41 (44) Body including face, clypeus, genae and antennae mostly concolorously light brown.

42 (43) Scutellum light brown, with faint net-shaped pattern, with length which is about equal to the length of vertex and pronotum put together. Length ♂ 2.8 mm. (includ. teg.), 2.6 mm. (exclud. teg.), ♀ 3 mm. ..... **D. kuwaharai** sp. nov.

43 (42) Scutellum pale brown, without the net-shaped pattern, with length which is a little longer than vertex and pronotum put together. Length ♂ 1.7 mm., ♀ 2 mm. (branchypt. f.) ..... **D. sameshimai** (Matsumura et Ishihara, 1945)

44 (41) Body including face, clypeus, genae, antennae and tegmina not uniformly pale brown.

45 (46) Pronotum and scutellum whitish, sometimes with a orange-yellowish tinge at the middle of scutellum between whitish lateral carinae. Vertex, face and antennae dirty yellow. Clypeus and genae fuscous. Macropterous tegmina subhyaline, with a slight brownish tinge, veins especially apical veins brown-coloured. Pterostigmas brown. Brachypterous tegmina ochreous, with apex which is slightly darkened, veins concolorous, without granules. Male genitalia with brownish parameres which are convergingly divergent apically, each projecting roundly inwards, truncate at apex. Length ♂ 3.8 mm., ♀ 4 mm. (includ. teg.), ♂ 1.7 mm. (brachypt. f.) ..... **D. propinqua** (Fieber, 1866)

46 (45) Pronotum and scutellum shiny brown, or shiny dark brown.

47 (48) Face widest about at the middle. Body, including face, clypeus and genae, mostly shiny brown. Antennae shiny brown except apex of first segment and base of the second which are black. Tegmina subhyaline, entirely concolorous with body, without pterostigmas. Length ♂♀ 2.5 - 2.7 mm. (includ. teg.) ..... **D. agropyri** sp. nov.

48 (47) Face widest below eyes. Body, including face, clypeus and genae, mostly shiny brown. Antennae also shiny brown except for somewhat darkened

apex of first segment and base of the second. Tegmina subhyaline, with a brownish tinge, veins and granules on veins brownish which are comparatively darker towards apices. Length ♂ 4 mm., ♀ 4.5 mm. (includ. teg.) ..... **D. yezoana** (Matsumura, 1900)

52. Delphacodes striatella (Fallén, 1826)

Figs. 113 - 116.

1826 *Delphax striatella* Fallén, Hem. Suec. Cicad., 75 (Sweden).
1842 *Liburnia striatella* Sahlberg, Acta. Soc. Sci. Fenn., 1: 435.
1854 *Delphax notula* Stål, Oefv. Ak. Förh., 11: 192.
1861 *Delphax striatella* Flor, Rhynch. Livl., 2: 54, 54.
1866 *Delphax* (*Delphacodes*) *striatella* Fieber, Verh. zool.-bot. Ges. Wien., 16, pl. 8, f. 21.
1870 *Liburnia striatella* Scott, Entomol. Month. Mag., 27: 27.
1879 *Liburnia striatella* Fieber, Rev. Mag. Zool., 26: 128.
1886 *Liburnia striatella* Edward, Trans. Ent. Soc. London, 1: 84.
1890 *Liburnia striatella* Buckton, Mon. Brit. Cicad. Tettigid., 76, pl. 5, fs. 51-53.
1896 *Liburnia striatella* Edward, Hem. Hom. Brit. Isl., 65, pl. 7, fs. 7-8, pl. 29, f. 10.
1896 *Liburnia striatella* Melichar, Cicad. v. Mit.-Eur., 71, pl. 5, fs. 51-53.
1900 *Liburnia devastans* Matsumura, Ent. Nachr., 26: 262 (♂ ♀ Hokkaido—Sapporo, Honshu—Niigata, injurious to rice-plants and to wheats).
1900 *Liburnia nipponica* Matsumura, Ibid., 262 (♂ Hokkaido—Sapporo, injurious to rice-plants and wheats).
1900 *Liburnia minonensis* Matsumura, Ibid., 263 (♂ Honshu—Gifu, among weeds).
1900 *Liburnia gifuensis* Matsumura, Ibid., 264 (♂ Honshu—Gifu, among weeds).
1900 *Liburnia akashiensis* Matsumura, Ibid., 266 (♂ Honshu—Akashi, among seashore-plants).
1900 *Liburnia maikoensis* Matsumura, Ibid., 266 (♂ Honshu—Akashi, Gifu, among weeds).
1901 *Delphax* sp. Onuki, Spec. Rep. Jap. Agr. Exp. Stat., 10: 60, pl. 12, f. 1.
1902 *Liburnia striatella* Melichar, Ann. Mus. Zool. St. Petersburg, 7: 89 (Süd-Ussuri).
1906 *Delphax striatella* Matsumura, List Injur. Ins. Jap., 14.
1907 *Delphax striatella* Matsumura, Ins.-Taxonomy, form. vol., 104, f. 99.
1908 *Delphax striatella* Oshanin, Verz. Paläark. Hem., 2: 315.
1908 *Delphax nipponica* Oshanin, Ibid., 314.
1908 *Delphax minonensis* Oshanin, Ibid., 330.
1908 *Delphax gifuensis* Oshanin, Ibid., 264.
1908 *Delphax akashiensis* Oshanin, Ibid., 330.
1908 *Delphax maikoensis* Oshanin, Ibid., 330.
1910 *Delphax striatella* Matsumura, Dainippon Gaichu Zensho, form. ser., 115, f. 111.
1912 *Delphax striatella* Oshanin, Kat. Paläark. Hem., 119.
1912 *Delphax nipponica* Oshanin, Ibid., 119.
1912 *Delphax minonensis* Oshanin, Ibid., 120.
1912 *Delphax gifuensis* Oshanin, Ibid., 120.
1912 *Delphax akashiensis* Oshanin, Ibid., 120.
1912 *Delphax maikoensis* Oshanin, Ibid., 120.
1915 *Delphax striatella* Suzuki, List Spec. Hanazono Ent. Inst., 9.
1915 *Delphax striatella* Schumacher, Mitt. zool. Mus. Berlin, 8: 134 (Formosa).
1917 *Delphacodes striatella* Muir, Proc. Haw. Ent. Soc., 3: 334 (Mindanao—Davao).
1920 *Liburnia* (*Delphax*) *striatella* Matsumura, Dainippon Gaichu Zensho, rev. and addit ed.,

form. ser., 262, f. 110.

1924 *Liburnia striatella* Okamoto, Kwangyo-mohanjo Kenkyu-hokoku no. 12: 22, pl. 3. f. 2 (Korea, injurious to rice-plants).

1930 *Liburnia striatella* Esaki et Hashimoto, Rep. Leaf-hopp. injur. Rice-pl. and Nat. Enem., 1: 4, etc.

1931 *Delphacodes striatella* Esaki et Hashimoto, Ibid., no. 2: 5, etc.

1931 *Liburnia striatella* Matsumura, 6000 Illustr. Ins. Jap. Emp., 1269, f.

1932 *Delphacodes striatella* Esaki, Iconogr. Ins. Jap., 1785, f. 3527.

1932 *Liburnia* (*Delphax*) *striatella* Matsumura, Dainippon Gaichu Zusetsu, 223, f. 110.

1943 *Delphacodes striatella* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 31.

1945 *Delphacodes striatella* Matsumura et Ishihara, Mushi, 16: 60, f. 56 (synonymy).

Distr.: Hokkaido, Honshu, Shikoku, Kyushu, Ryukyu Is., Formosa, Philippines —Mindanao, Korea, Usuri, Siberia, Europe.

Host-plants: Poaceae—*Oryza sativa*, *Saccharum officinarum*, *Triticum aestivum*, *Hordeum vulgare*, *Andropogon sorghum*, etc.

In Japan this species is very well-known as an injurious leaf-hoppers to rice-plants, which in the larval stages, hibernates among weeds, under leaf-sheaths, etc., emerges in the warmth of spring and gives some damages to such several crops as mentioned above, especially to young rice-plants grown in beds. Both the two forms of wings are commonly found except the male brachypterous one which is comparatively rare.

53. Delphacodes longifurcifera Esaki et Ishihara, 1947

Figs. 123 – 125.

1947 *Delphacodes longifurcifera* Esaki et Ishihara, Mushi, 17: 41, f. (♂ ♀. Kyushu—Fukuoka, Sobosan, Hikosan, on rice-plants).

Habitat: Kyushu.

Though this species closely resembles *Sogata furcifera* (Herváth. 1899) in general appearance, they may be easily separable from each other by the generic characters in each face or by distinct differences on parameres of the male genitalia.

54. Delphacodes lyraeformis (Matsumura. 1900)

Figs. 126 – 127.

1900 *Liburnia lyraeformis* Matsumura, Ent. Nachr., 26: 267 (♂ ♀. Honshu—Gifu, among weeds).

1908 *Delphax lyraeformis* Oshanin, Verz. Paläark. Hem., 2: 330.

1912 *Delphax lyraeformis* Oshanin, Kat. Paläark. Hem., 120.

1943 *Delphacodes*? *lyraeformis* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 35.

1945 *Delphacodes lyraeformis* Matsumura et Ishihara, Mushi, 16: 61, f. 51 (Kyushu, male genitalia figured).

Distr.: Honshu, Kyushu.

This species is not rarely collected by sweeping weeds but any decisive host-plant is not made clear yet.

55. Delphacodes panicicola sp. nov.

Figs. 151 - 153.

♂ (macropt. f.). Vertex yellowish brown. Eyes blackish. Face yellowish brown. Genae brownish black except for yellowish brown lateral carinae. Ocelli black. Clypeus concolorous with face. Antennae yellowish brown. Pronotum and tegulae pale brown. Scutellum yellowish brown with pale apex, tinted with brownish black in contant with tegulae and furnished with a large brownish black marking in each outside of lateral carinae, border of this brownish black marking being obscure. Tegmina uniformly pale brownish, subhyaline, with concolorous veins and also concolorous granules which are coarsely placed on veins. Pterostigmas obsolete. Legs pale brown, apices of spines and of tarsi tipped with black. Of genitalia, pygopher mostly dark brownish, parameres light brownish, slightly darkened in the middle, anal tube and anal style light brownish.

Vertex somewhat longer than the width, with distinct medio-lateral carinae and fairly distinct traverse carina. Face subparallel-sided, narrowed above eyes, nearly three times as long as the middle width. Base of clypeus wider than apex of face. Antennae moderate as for the genus. Pronotum a little shorter than vertex, lateral carinae of which do not distinctly reach the hind margin. Scutellum longer than vertex and pronotum put together. Tegmina, in the macropterous form, very well-developed, much protruding abdominal apex somewhat varying individually, in the brachypterous form, however, mostly not reaching abdominal apex, though slightly protruding it as in case of some individuals. Spurs thin, with twelve or thirteen minute teeth along the hind margin. Genitalia as figured, parameres divergent apically, with slightly outwards curved apices and each with a conspicuous large spine inwards, a little inferior to the middle.

♀ (macropt. and brachypt. f.). Coloured like in the male except for face and genae which are dark brownish and with pale brown carinae. As for several individuals, the brownish black marking on scutellum very lighter in hue, and body often mostly light brown. Pterostigmas of some brachypterous individuals faintly darkened.

Length ♂ 3.8 mm., ♀ 4.5 mm. (includ. teg,), ♂ 2 mm., ♀ 2.8 - 4 mm. (exclud. teg.), macropterous tegmen ♂ 3 mm., ♀ 3.5 mm., brachypterous tegmen ♀ 1.5 - 2.7 mm.

Width of head includ. eyes ♂ 0.6 mm., ♀ 0.7 mm,

Habitat: Honshu.

Host-plant: Poaceae—*Panicum Crusgalli*.

Holotype, ♂ (macropt. f.), Unebimachi, Takaichigun, Nara Pref., Honshu, IX, 1945, Masayoshi Kuwahara leg., allotopotype, ♀ (brachypt. f.), same as the holotype, 9 paratopotypes, 4 ♀♀ (macropt. f.), 5 ♀♀ (brachypt. f.), same as the holotype.

As this speceies much resembles *Delphacodes longifurcifera* Esaki et Ishihara, 1947, the former is separated from the latter by the brownish black marking placed on each outside of lateral carinae, the border of which is not distinct in the formor, but clear in the latter, and also by the differences in the male genitalia as shown in Figures. This species also looks like the famous injurious species to the rice-plant, *Sogata furcifera* (Horváth, 1899), so it may be not neglisible in recognizing the appearance of such injurious leaf hoppers, though this species is not parasitic on the rice-plant but on the weed in rice-fields, *Panicum Crusgalli*.

56. Delphacodes propinqua (Fieber, 1866)

1866 *Delphax (Delphacodes) propinqua* Fiebar, Verh. zool.-bot. Ges. Wien, 16: 525, pl. 8, f. 24 (♂. Italy—Triest, Austria—Malaga).
1875 *Liburnia propinqua* Fieber, Rev. Mag. Zool., 79, 135.
1896 *Liburnia propinqua* Melichar, Cicad. v. Mit.-Eur., 79, pl. 5, fs. 46 – 47.
1907 *Liburnia terminalis* Van Duzee, Bull. Buffalo Soc. Nat. Sci. 8: 49.
1908 *Delphax propinqua* Oshanin, Verz. Paläark. Hem., 2: 317.
1910 *Delphax propinqua* Matsumura, Schäd. u. nütz. Ins. Zuckerrohr Formosas, 29 (in Japanese), 17 (in German), pl. 16, f. 4 (Formosa, injurious to sugar-canes).
1912 *Delphax propinqua* Oshanin, Kat. Paläark, Hem., 119.
1912 *Liburnia tuckeri* Van Duzee, Bull. Buffalo Soc. Nat. Sci., 10: 506.
1915 *Delphax propinqua* Suzuki, List. Spec. Hanazono Ent. Inst., 10.
1917 *Liburnia propinqua* Matsumura, Applied Ent., form. ser., 38 (Honshu, on rice-plants, etc.).
1917 *Delphacodes neopropinqua* Muir, Proc. Haw. Ent. Soc., 7: 335, f. 38 (Philippines).
1919 *Delphacodes subfusca* Muir, Canad. Entomol., 51: 38, f. 12.
1920 *Liburnia (Delphax) propinqua* Matsumura, Dainippon Gaichu Zencho, rev. and addit. ed., form. ser., 263.
1923 *Delphacodes propinqua* Wolcott, J. Dept. Agric. Porto Rico, 8: 111.
1932 *Liburnia (Delphax) propinqua* Matsumura, Dainippon Gaichu Zusetsu, 224.
1935 *Delphacodes propinqua* Osborn, New York Acad. Sci., 14: 249.
1943 *Delphacodes propinqua* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 33.

Distr.: Honshu, Bonin Is., Formosa, China, Malaya, India, Philippines, Europe, Africa, Cent.America.

Host-plants: Poaceae—*Saccharum officinarum, Oryza sativa, Setaria italica, Panicum Crusglli*.

This is said to be a fairly common species which is injurious to some crops as related above in Japan and also in Formosa, but to my regret, I have had no chance to ascertain such records.

57. Delphacodes graminicola (Matsumua, 1910)

1910 *Delphax graminicola* Matsumura, Schäd. u. nütz. Ins. Zuckerrohr Formosas, 17 (in German), (Formosa—Ako, Tainan, etc., on sugar-canes).
1911 *Delphax graminicola* Matsumura, Mém. Soc. Ent. Belg., 18: 135.
1915 *Delphax graminicola* Schumacher, Mitt. zool. Mus. Berlin, 8: 134. (list).

1920 *Liburnia* (*Dephax*) *graminicola* Matsumura, Dainippon Gaichu Zensho, rev. and addit. ed., 564 (on sugar-canes and rice-plants).
1932 *Liburnia* (*Delphax*) *graminicola* Matsumura, Dainippon Gaichu Zusetsu, 225.
1943 *Delphacodes*? *graminicola* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 35.

Habitat: Formosa.
Host-plants: Poaceae— *Saccharum officinarum*, *Oryza sativa*.
This is recorded as an injurious species to sugar-canes and also to rice-plants, but it does not seem to be so serious to them.

58. Delphacodes shirozui sp. nov.

Figs. 120 - 122.

♂ (macropt. f.). Vèrtex brownish black in anterior half, orange-coloured in the other, with carinae which are all pale brown. Eyes black. Face, clypeus and genae brownish black, with pale carinae. Antennae light brown, meagrely tinted with brownish black at apex of first segment. Ocelli sanguineous. Pronotum and scutellum pale brown, with an orange-coloured tint between carinae on them. Tegmina subhyaline, pale brownish, with pterostigmas which are faintly deeper in hue. Veins and granules scattered on them pale brown on corium, white brown on membrane. Of genitalia, pygopher brownish black, except ventral distal parts which are pale brown, parameres dark brown, tinted marginally with black, anal segment light brown, anal style pale brown. Legs light brown.

Vertex about as long as the width, slightly divergent apically. Face widest between eyes, a little more than twice as long as the largest width, with apex which is meagrely narrower than base of clypeus. Antennae moderate in length, protruding apex of face, with second segment which is about twice as long as the first. Pronotum very short, clearly shorter than vertex. Scutellum comparatively large, nearly twice as long as vertex and pronotum put together. Tegmina usual as the macropterous form. Genitalia as figured. Spurs thin, each with about fifteen teeth along the hind margin.

♀ (macropt. f.). Somewhat lighter in coloration. Eyes reddish-brown. Slightly larger than the male.

Length ♂ 3.3 mm., ♀ 3.5 mm. (includ. teg.), ♂ 2 mm., ♀ 2.1 mm. (exclud. teg.), macropt. teg. ♂♀ 3 mm.

Width of head includ. eyes ♂ 0.7 mm., ♀ 0.8 mm.

Habitat: Kyushu.

Host-plant: Unknown.

Holotype, ♂, Minami-Oita, N. W. Kyushu, 5. VIII. 1945, Kazuo Yasutomi leg., allotype, ♀, Fukuoka, Kyushu, 20. VIII. 1945, Takashi Shirozu leg.

The present new species may be separated by the characteristic coloration of body, or by the conspicuous features in the male genitalia from other allied species of the genus. The allotype is what came into the house, flying

to a light together with other species of this family. The specific name is dedicated to Mr. Takashi Shirozu.

59. Delphacodes sameshimai (Matsumura et Ishihara, 1945) comb. nov.

Fig. 141.

1945 *Kakuna sameshimai* Matsumura et Ishihara, Mushi, 16: 69, f. 19 (♂ ♀. Kyushu—Fukuoka).

Habitat: Kyushu.

After my careful examination of this species, I have come to the conclusion that it is natural to make it belongto the present genus, *Delphacodes*. The only brachypterous form is known. Its host-plant is not known yet.

60. Delphacodes exigua (Boheman, 1847)

Figs. 140, 154 - 155.

1847 *Delphax exigua* Beheman, Oefv. K. Vet. Arad. Handl., (1847), 65.
1861 *Delphax exigua* Flor, Rhynch. Livl., 39 & 61.
1868 *Delphax exigua* Kirschbaum, Cicad. Wiesbad. Frankf., 34.
1870 *Liburnia exigua* Scott, Ent. Month. Mag., 7: 28.
1879 *Liburnia exigua* Fieber, Rev. Mag. Zool., (1879), 109, 141.
1886 *Liburnia exigua* Edward, Trans. Ent. Soc. London, 1: 82.
1890 *Liburnia exigua* Buckton, Mon. Brit. Cicad., 52, pl. 15, fs. 3 - 4.
1896 *Liburnia exigua* Edward, Hem. Hom. Brit. Isl., 62, pl. 7, f. 4.
1908 *Delphax exigua* Oshanin, Verz. Paläark. Hem., 2: 324.
1912 *Delphax exigua* Oshanin, Kat. Paläark. Hem., 119.
1945 *Delphacodes exigua* Matsumura et Ishihara, Mushi, 16: 61, f. 17 (Honshu—Tokyo).

Distr.; Honshu, Europe.

This is a widely distributed species in Europe. I examined several brachypterous specimens of one species of this genus which were captured in Tokyo, Honshu, and which Prof. Shonen Matsumura and I identified to the present species as reported in 1945 (loc. cit.).

61. Delphacodes terryi Muir, 1917

Figs. 134 - 136.

1917 *Delphacodes terryi* Muir. Proc. Haw. Ent. Soc., 3: 334 (Formosa, Java).
1945 *Delphacodes terryi* Matsumura et Ishihara, Mushi, 16: 62, f. 16 (S. Kyushu, on Panicum repense).

Distr.: S. Kyushu, Formosa, Java.

Host-plant: Poaceae—*Panicum repense*.

This species is found in Japan, only from S. Kyushu, where it is parasitic on *Panicum repense*.

62. Delphacodes yezoana (Matsumura, 1900)

Figs. 131 - 133.

1900 *Liburnia yezoana* Matsumura, Ent. Nachr., 26: 265 (♀. Hokkaido—Sapporo).
1908 *Delphax yezoana* Oshanin, Verz. Paläark. Hem., 2: 330.
1912 *Delphax yezoana* Oshanin, Kat. Paläark. Hem., 120.
1924 *Delphax pellucida* Muir et Giffard, (nec Fabricius), Haw. Sugar Pl. Ass., Bull. 15, 20 (partim).
1943 *Delphacodes pellucida* Esaki et Ishihara (nec Fabricius), Cat. Araeopid. Imp. Jap., 29 (partim).
1945 *Delphacodes yezoana* Matsumura et Ishihara, Mushi, 16: 61 (male genitalia figured).

Distr.: Hokkaido, Honshu (hab. nov.).

Although this species was known only from Hokkaido, I examined many specimens of it, which were collected in Fujishima, Yamagata Pref., Honshu by Mr. Katsutaro Okazaki. It comes often to our lights and so closely resembles the serious species injurious to the rice-plant, *Nilaparvata lugens* (Stål, 1854), that, to identify the latter, it is essential, especially when collected by lights, to pay attention to the former, of which host-plant is not known yet.

63. Delphacodes agropyri sp. nov.

Figs. 128 - 130.

♂ ♀ (macropt. f.). Body mostly shiny brown, except lateral edges of vertex, eyes, ocelli, apex of the first antennal segment and base of the second, which are all black. Tegmina subhyaline, entirely concolorous with body, being destitute of pterostigmas, veins scattered with granules. Legs light brown. Of male genitalia, pygopher blackish brown, parameres blackish brown, with brown apices, anal segment brown, anal style brownish black.

Vertex a little longer than the width, subparallel-sided, medio-lateral carinae and traverse carina comparatively distinct. Face widest about at the middle, being about twice as long as the largest width. Base of clypeus wider than frontal apex. Antennae fairly long, much protruding apex of face, with second segment which is twice as long as the first. Pronotum a little shorter than vertex. Scutellum comparatively short, of length which is about equal to vertex and pronotum put together. Tegmina short as the macropterous form, meagrely protruding abdominal apex. Hind basitarsus a little longer than the other two tarsal segments put together. Spurs thin, somewhat slender, about as long as hind basitarsus, with more than twenty minute teeth along the hind margin. Male genitalia with parameres which are thick in apical halves and of which tips are bluntly pointed.

Length ♂ ♀ 2.5 - 2.7 mm. (includ. teg.), ♂ ♀ 2.2 - 2.3 mm. (exclud. teg.), tegmen ♂ 1.8 mm., ♀ 1.8 - 2.7 mm.

Width of head includ. eyes ♂ ♀ 0.6 mm.

Habitat: Honshu.

Holotype, ♂, Unebimachi, Takaichigun, Nara Prof., Honshu, 15. IV. 1947,

Masayoshi Kuwahara leg., allotopotype, ♀, same as the holotype, 7 paratopotypes. 2 ♂♂, 3 ♀♀, 2 larvae, same as the holotype.

Host-plant: Poaceae—*Agropyrum semicostatum*.

The present new species has the conspicuous coloration and characteristic male genital features and then it may be easily differentiated from other species of the genus.

64. Delphacodes esakii Matsumura et Ishihara, 1945

Fig. 162.

1945 *Delphacodes esakii* Matsumura et Ishihara, Mushi, 16: 63, f. 15 (♂ Formosa—Tattaka-Torok).

Habitat: Formosa.

This seems to be a rare mountainous species of Formosa, no ecological information of which is not known yet.

65. Delphacodes albovittata (Matsumura, 1900)

Figs. 159 - 161.

1900 *Dicranotropis albovittata* Matsumura, Ent. Nachr., 26: 269 (♂. Honshu—Gifu).
1901 Anonym, Onuki, Spec. Rep. Jap. Agric. Exp. Stat., no. 10: 62, pl. 13, f. 1 (Honshu—Gunma).
1908 *Dicranotropis albovittata* Oshanin, Verz. Paläark. Hem., 2: 333.
1912 *Dicranotropis albovittata* Oshanin, Kat. Paläark. Hem., 120.
1915 *Delphax albovittata* Suzuki, List Spec. Hanazono Ent. Inst., 10.
1917 *Liburnia albovittata* Matsumura, Applied Ent., form. ser., 379, pl. 15, f. 3 (Japan except Hokkaido, Formosa, etc.).
1920 *Liburnia* (*Delphax*) *albovittata* Matsumura, Dainippon Gaichu Zensho, rev. and addit. ed., form. ser., 265.
1924 *Liburnia albovittata* Okamoto Kwangyo-mohanjo Kenkyu-hokoku, no. 12, 23, pl. 3, f. 3 (Korea).
1931 *Liburnia albovittata* Matsumura, Nippon Konchu Daizukan, 1268, f.
1932 *Sogota* (!) *albovittata* Esaki, Iconogr. Ins. Jap., 1784, f. 3526.
1932 *Liburnia* (*Delphax*) *albovittata* Matsumura, Dainippon Gaichu Zusetsu, 226.
1940 *Liburnia albolineata* (!) Matsumura, Ins. Matsum., 15: 36 (Botel-Tobago).
1943 *Sogata albovittata* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 28.
1945 *Delphacodes albovittata* Matsumura et Ishihara, Mushi, 16: 61, f. 52 (male genitalia figured).

Distr.: Honshu, Shikoku, Kyushu, Korea, Formosa, Botel-Tobago, China, Malaya, India.

Host-plants: Poaceae—*Oryza sativa*, *Panicum Crusgalli*, etc.

As this species is collected from among rice-plants, it seems to be more fond of the barn-yard millet (*Panicum Crusgalli*) than the rice-plant and it is also found not rarely on the lawn, so the turf (*Zoysia japonica*) may be perhaps a host-plant of it, too.

66. Delphacodes fukuokae sp. nov.

Figs. 156 - 158.

♂ (macropt. f.). Vertex including carinae dark brown except outsides of medio-lateral carinae which are black. Eyes dark brownish. Ocelli dark sanguineous. Face and genae black, with brown carinae. Clypeus dark brown, with brown carinae. Antennae entirely black. Pronotum and scutellum brown, carinae a little lighter in hue, with fairly wide light brownish dorsal line along median line. Tegmina subhyaline, slightly tinted with brown, veins and granules on them both brownish, hind margins conspicuously white. Pterostigmas absent. Legs light brownish. Genitalia light brown, except bases of pygopher and of parameres which are all somewhat darkened.

Vertex about as long as the width, carinae very distinct except for vanishing median carina. Face widest below eyes, twice as long as the largest width, apex slightly narrower than base of clypeus. Antennae a little protruding apex of face, second segment about 1 1/2 times the length of the first. Pronotum about as long as vertex, lateral carinae divergingly curved posteriorly and vanish before reaching the hind margin. Scutellum longer than vertex and pronotum put together, with median carina which vanishes on vertex. Spurs thin, a little longer than hind basitarsus, with about twenty teeth along the hind margin. Male genitalia as figured, with parameres which are remarkably V-shaped.

♀. Unknown.

Length ♂ 2.7 mm. (includ. teg.), 1.4 mm. (exclud. teg.), tegmen ♂ 2.3 mm.

Width of head includ. eyes ♂ 0.7 mm.

Habitat: Kyushu.

Holotype ♂ (macropterous f.), Hirao, Fukuoka, Kyushu, 2. VII. 1929, Teiso Esaki, etc. leg.

The present new species is allied to *Delphacodes albovittata* (Matsumura, 1900) in some respects but it may be identified either by the special coloration of body and of tegmina or by characteristic features in the male genitalia. No ecological information is known yet.

67. Delphacodes sapporona (Matsumura, 1935) comb. nov.

Figs. 110 - 112.

1935 *Unkana sapporona* Matsumura, Ins. Matsum., 10: 74 (♂ ♀. Hokkaido—Sapporo).
1945 *Unkanella sapporona* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 22.
1945 *Unkanella sapporona* Matsumura et Ishihara, Mushi, 16: 60 (Kyushu, male genitalia figured).

Distr.: Hokkaido, Kyushu.

From the following remarkable characters—comparatively short antennae, the first segment of which is not less than half the length of the second, the lateral carinae of pronotum which are not reaching the hind margin—it may be proper that this species is placed under the present genus. Although it is not so rare species, the host-plant is not known yet.

68. Delphacodes lacteipennis Muir, 1917

1917 *Delphacodes lacteipennis* Muir, Proc. Haw. Ent. Soc., 3: 337, pl. 6, fs. 53, 53 a (♂ ♀. Formosa, Java, Fiji).

Distr.: Formosa, Java, Fiji.
No information is known yet of the host-plant of this species.

69. Delphacodes nigripennis Muir, 1917

1917 *Delphacodes nigripennis* Muir, Proc. Haw. Ent. Soc., 3: 338, pl. 6, f. 55 (♂. Formosa—Daimokko).

Habitat: Formosa.
Any host-plant of the present species is unknown.

70. Delphcodes kotonis (Matsumura, 1940)

1940 *Liburnia kotonis* Matsumura, Ins. Matsum., 15: 49 (♂ ♀. Botel-Tobago).

Of the present species no ecological information has been known yet.

71. Delphacodes attenuata (Distant, 1906)

1906 *Toya attenuata* Distant, Faun. Brit. Ind., Rhyncha., 3: 472 (Ceylon).
1915 *Toya attenuata*? Schumacher, Sappl. Ent., 4: 142 (Formosa).
1915 *Toya attenuata* Schumacher, Mitt. zool. Mus. Berlin, 8: 132 (list).

Distr.: Formosa?, Ceylon.
Host-plant: Unknown.

72. Delphacodes kuwaharai sp. nov.

Figs. 145 - 147.

♂ (brachypt. f.). Body mostly light brown, moderate-sized species. Vertex, face and clypeus light brown, their lateral ridges bordered with black. Eyes blackish brown. Antennae light brown, except apical 1/5 of first segment which is black and base of the second which is tinted with black. Ocelli blackish. Pronotum light brown. Scutellum also light brown, with faint net-shaped pattern. Tegmina subhyaline, light brownish, with concolorous veins, which are somewhat darkened in apical halves of tegmina, veins placed coarsely with concolorous granules on them. Pterostigmas entirely absent. Of genitalia, mostly brownish black, except for anal segment which is brown and apices of parameres which are tinted with brown. Legs light brown.

Vertex clearly longer than the width, with fairly round apex, carinae indistinct except medio-lateral ones which are somewhat clearly recognizable. Face subparallel-sided, slightly narrowed above eyes, of length which is about $2\text{-}^1/_2$ times the width. Antennae comparatively long, nearly reaching apex of clypeus, with second segment which is slightly less than twice the length of the first. Pronotum a little shorter than vertex. Scutellum small, with length which is less than vertex and pronotnm put together. Tegmina comparatively short, a little protruding abdominal apex. Of posterior legs, tibia with a small spine near base and the other about at the middle, basitarsus clearly longer than the other two tarsal segments put together. Spurs thin, with about seventeen distinct teeth along the hind margin. Genitalia as figured.

♀ (brachypt. f.). Somewhat lighter in hue than in the male. Tegmina not reaching the middle of abdomen.

Length ♂ 2.8 mm. (includ. teg.), ♂ 2.6 mm. (exclud. teg.), ♀ 3 mm.

Width of head includ. eyes ♂ ♀ 0.7 mm.

Habitat: Honshu.

Host-plant: ? Polygonaceae—*Polygonum Thunbergii*.

Holotype, ♂ (brachypt. f.), Unebimachi, Takaichigun, Nara Pref., Honshu, Masayoshi Kuwahara leg., allotopotype, ♀, (brachypt. f.), same as the holotype, 1 paratopotype, 1♀ (brachypt. f.), same as the holotype.

This new species may be differentiated from other species of the genus by the characteristic coloration and features on vertex, face, scutellum and tegmina, or by the conspicuous male genitalia. Although the type-specimens were captured among the vegetation of *Polygonum Thunbergii*, I cannot now regard this Dicotyledoneae-plant as the host-plant, for no host-plant of this class has not been known yet. The specific name is dedicated to the collector, to Mr. Masayoshi Kuwahara, to whom I am much indebted in collecting specimens.

73. Delphacodes nigerrima sp. nov.

Figs. 148 – 150.

♂ (brachypt. f.). Body including tegmina furnished with dull lustre, mostly brownish black except following parts—carinae on vertex, on face and on clypeus, second segments and basal parts of the first of antennae, surrounding borders of tegmina and basal tergites covered by tegmina which are all brown and middle portion of each posterior margin in several tergites neighbouring genitalia which is tinted with brown. Legs brown except for blackish longitudinal ridges on tibiae.

Vertex parallel-sided, meagrely longer than the width, with distinct carinae. Face widest below eyes, with length which is more than twice the largest width, apex as wide as base of clypeus, medio-longitudinal carina clearly furcate at base. Antennae comparatively thick, with second segment which is about twice as long as the first. Pronotum nearly as long as vertex, with

lateral carinae which are clearly not reaching the hind margin. Scutellum very short, much shorter than vertex and pronotum put together, bluntly projecting posteriorly. Tegmina very short, a little protruding the middle of abdomen. Tibiae, especially posterior ones somewhat quadrate in the cross section, posterior tibiae each with a small spine near base and the other small one about at the middle. Spurs slender, with about fifteen fairly large teeth respectively.

♀ (brachypt. f.). Generally coloured like in the male but surrounding borders of tegmina also mostly brownish black. Body much larger than in the male.

Length ♂ 1.6 mm., ♀ 2.4 mm., tegmen ♂ 0.8 mm., ♀ 1 mm.

Width of head includ. eyes ♂ 0.4 mm., ♀ 0.8 mm.

Habitat: Honshu.

Host-plant: Commelinaceae—*Aneilema Kaisak.*

Holotype, ♂ (brachypt. f.), Unebimachi, Takaichigun, Nara Pref., Honshu, 23. VI. 1947, Masayoshi Kuwahara leg., allotopotype, ♀ (brachypt. f.) same as the holotype.

The present new species may be separated by the remarkable coloration and by the male genitalia from other species of the genus. Being captured among *Aneilema Keisak*, it is presumed to be parasitic on the plant.

74. Delphacodes albifascia (Matsumura, 1900)

Figs. 117 - 119.

1900 *Liburnia albifascia* Matsumura, Ent. Nachr., 26: 268 (♂ ♀. Honshu—Gifu, among weeds).
1908 *Delphax albifascia* Oshanin, Verz. Paläark. Hem., 2: 330.
1912 *Delphax albifascia* Oshanin, Kat. Paläark. Hem., 120.
1943 *Delphacodes? albifascia* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 35.

Habitat: Honshu.

This is a very fine and rare species, of which host-plant is not made clear yet. Now I could examine only several specimens of this species which were collected in Nara, Honshu.

75. Delphacodes nigrigena Matsumura et Ishihara, 1943

Figs. 137 - 139.

1945 *Delphacodes nigrigena* Matsumura et Ishihara, Mushi, 16: 62, f. 5 (♂ ♀. Kyushu—Ongagawa, male genitalia figured).

♂ (macropt. f.). Vertex light brown. Eyes dark brown. Face, clypeus and genae light brown, with a conspicuous black round marking about at the middle of each gena. Ocelli black. Antennae yellowish brown. Pronotum dark white, outside of lateral carinae brownish black. Scutellum mostly

brownish black, hind margin and apex tinted with brown. Tegulae light brown. Tegmina almost hyaline, with distinct dark pterostigmas, veins and granules on veins light brownish. Legs yellowish brown. Genitalia mostly light brown, except anterior half which is dark brown and lateral sides which are remarkably yellow.

Vertex almost square or slightly shorter than the width, medio-lateral carinae clear, meeting each other at apex of vertex and each posteriorly meeting lateral carina a little before base, traverse carina not so clear, Y-shaped median carina obsolete. Face widest about at the middle, about 2-1/2 times as long as the largest width, medio-longitudinal carina comparatively clearly furcate near base. Base of clypeus wider than apex of face. Antennae moderate in length, slightly protruding apex of face, first segment clearly shorter than half the length of the second. Pronotum as long as vertex, with lateral carinae which are divergingly curved posteriorly and vanish before reaching the hind margin. Scutellum comparatively large, with length which is very longer than vertex and pronotum put together. Tegmina well-developed, much protruding abdominal apex. Ratio of hind tarsal segments I : II : III=5 : 2 : 3. Spurs thin, foliaceous, with about fifteen teeth along the hind margin. Genitalia com paratively complex as shown in Fig. 139.

♀ (macropt. f.). Generally coloured like in the male except scutellum which is brownish inside lateral carinae, brownish black outside them.

Body larger than in the male, ratio of hind tarsal segments I : II : III=6 : 2 : 3.

Length ♂ 4.4 mm., ♀ 4.9 mm. (includ. teg.), tegmen ♂ 4 mm., ♀ 4.2 mm.

Width of head includ. eyes 0.6 mm, ♀ 0.7 mm.

Habitat : Kyushu.

Host-plant : Unknown.

This species has the following special features—the first segment of antennae which is shorter than half the length of the second, the complex male genitalia, etc. and then I am doubtful of the genus to which the present species belongs. This species may properly be placed under the other genus between the generi, *Delphacodes* and *Megamelus*, but now I want to retain as above, until I have further information of the genotype of the genus, *Delphacodes*. No ecological information of this species has been known yet.

15. Genus Sogata Distant, 1906

Orthotype : *Sogata dohertyi* Distant, 1906

1906 *Sogata* Distant, Fann. Brit. Ind., Rhynch, 3 : 471.
1915 *Sogata* Schumacher, Suppl. Ent., 4 : 142.
1915 *Sogata* Schumacher, Mitt. zool. Mus. Berlin, 8 : 132.
1915 *Sogata* Muir, Canad. Entomol., 47 : 267, 301.
1916 *Sogata* Distant, Faun. Brit. Ind., Rhynch., 6 : 139.
1917 *Opiconsiva* Distant, Trans. Linn. Soc. London, Zool., 17 : 301.
1924 *Sogata* Muir et Giffard, Haw. Sugar Pl. Ass., Bull. 15 : 6, 12.

1926 *Sogata* Muir, Ann. Mag. Nat. Hist., ser. 9, 17: 32.
1927 *Sogata* Muir, Ins. Samoa, 2: 12.
1935 *Sogata* Osborn, New York Acad. Sci., 14: 234, 242.
1933 *Liburnia* Metcalf, Bull. Mus. Comp. Zoöl., 82: 300.
1943 *Sogata* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 25.
1945 *Sogata* Matsumura et Ishihara, Mushi, 16: 64.

Although this genus is very allied to the related Genus *Delphacodes* Fieber, 1866, the former is separated from the latter by the shape of face, which is widest in the formor, not in the middle but at the apex or nearly so. Medio-lateral carinae have often so indistinct inner margins that these carinae often look as if an anteriorly produced tongue-shaped elevation. Lateral carinae of pronotum clearly vanish before reaching the hind margin except for several species in which they obscurely reach the hind magin. I feel some hesitation, in regarding Genus *Sogata* Distant, 1906, as an independent genus, but I want to follow the present knowledge, till I can get specimens which should be identified to the genotype.

Key to the species

Some species of this genus have somewhat extensive colour-variations, so in the usual coloration of each species, the following specific key is given.

1 (2) Length of scutellum much shorter than the length of vertex and pronotum put together (♂), or nearly equal to it (♀).

♂. Body including vertex, face and genae mostly dirty brown, with light brown carinae, meagrely darkened outside lateral carinae. Tegmina subhyaline, light brownish, except for white hind margins and blackish pterostigmas. Length 2.6 mm. (includ. teg.).

♀. Body mostly light brown. Length 4 mm. (includ. teg.)..... **Sogata kyusyuensis** Matsumura et Ishihara, 1945

2 (1) Length of scutellum clearly longer than vertex and pronotum put together.

3 (8) Scutellum with conspicuous blackish markings.

4 (5) Face mostly black with white medio-longitudinal carina and ochreous lateral carinae. Head, pronotum and scutellum testaceous, with a pale grayish central longitudinal fascia running through them. Tegmina mostly pale brownish gray, the colour deeper in membrane, with a broad inner longitudinal pale fuscous fascia. Length 4.5 mm. (includ. teg.)..... **S. dohertyi** Distant, 1906.

5 (4) Face and genae blackish brown with carinae which are all whitish brown.

6 (7) Pronotum whitish brown, darkened only on the outsides of lateral carinae. Tegmina almost hyaline, with conspicuous blackish pterostigmas and often with brownish tinge along the hind margin of membrane. Male genitalia as figured. Length ♂ 4 mm., ♀ 4.5mm. (includ. teg.), ♂

2.5 mm., ♀ 3 mm. (exclud. teg.)..... **S. furcifera** (Horváth, 1899).

7 (6) Ptonotum whitish brown, darkened in both sides of each lateral carina. Tegmina subhyaline, with conspicuous blackish pterostigmas and each more or less remarkably brown pattern in the posterior half of membranes. Male genitalia as figured. Length ♂ 3.2 mm., ♀ 3.5 mm. (includ. teg.), ♂ 1.8 mm., ♀ 2.3 mm. (exclud. teg.)..... **S. formosella** (Matsumura, 1935.)

8 (3) Scutellum mostly uniformly coloured.

9 (10) Tegmina subhyaline, with a pale brownish tinge, veins and granules on veins concolorously brown. Body mostly fuscous, carinae on face scarsely paler, carinae on pronotum and on scutellum concolorous with body. Length ♀ 3.5 mm. (includ. teg.)..... **S. jamiana** Matsumura, 1940.

10 (9) Tegmina scarsely hyaline, but brown or blackish.

11 (12) Body inculding vertex, face, genae and tegmina mostly uniformly chocolate brown, carinae and hind margins of pronotum and of scutellum meagrely lighter in hue. Length ♂ ♀ 3 mm. (includ. teg.), ♂ ♀ 2.2 mm. (exclud. teg.)..... **S. heitensis** Matsumura et Ishihara, 1945.

12 (11) Vertex, face and clypeus brownish black, with light brown carinae. Pronotum whitish except anterior half which is darkened. Scutellum brownish black except for the hind margin which is tinted with brown. Length ♂ ♀ 3.7 mm. (includ. teg.), ♂ 2 mm., ♀ 2.5 mm. (exclud. teg.)..... **S. sirokata** Matsumura et Ishihara, 1945.

76. Sogata dohertyi Distant, 1906

1906 *Sogata dohertyi* Distant, Faun. Brit. Ind., Rhynch., 3: 471, f. 258. (Tenasserim).
1915 *Sogata dohertyi* Schumacher, Suppl. Ent., 4: 142 (Formosa).
1915 *Sogata dohertyi* Schumacher, Mitt. zool. Mus. Berlin, 8: 132 (list).
1943 *Sogaia dohertyi* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 26.

Distr.: Formosa, Tenasserim.
Host-plant: Unknown.

I have not examined the present species, which seems, however, for me to be a from which often appears in the female of the following species, but I want to retain the present species as above till I can actually obtain such a specimen as this form.

77. Sogata furcifera (Horváth, 1899)

Figs. 169 - 171.

1899 *Delphax furcifera* Horváth, Termes. Füzetek, 22: 372 (Hokkaido).
1899 *Delphax furcifera* Matsumura, Nippon-gaichuhen, 406, f. 206.
1900 *Liburnia furcifera* Matsumura, Ent. Nachr., 26: 262 (Honshu, Kyushu).
1901 *Delphax furcifera* Onuki, Spec. Rep. Jap. Agric. Station, 10: 58, pl. 11, f. 3.
1903 *Liburnia furcifera* Melichar, Hom. Faun. Ceylon, 104, pl. 2, f. 16.

1905 *Liburnia albolineosa* Fowler, Biol. Cent.-Amer. Hom., 1: 135, pl. 13, f. 14.
1906 *Liburnia furcifera* Distant, Faun. Brit. Ind., Rhynch., 3: 487.
1906 *Delphax furcifera* Matsumura, List. Injur. Ins. Jap., 13.
1907 *Delphax furcifera* Matsumura, Ins.-Taxonomy, form. vol., 104, f. 100.
1907 *Delphax kolophon* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 3: 159, pl. 15, fs. 9 – 11.
1908 *Delphax furcifera* Oshanin, Verz. Paläark. Hem., 2: 315.
1910 *Delphax furcifera* Matsumura, Dainippon Gaichu Zensho, form. ser., 114, f. 110.
1910 *Delphax furcifera* Matsumura, Schäd. u. nütz. Ins. Zuckerrohr Formosas, 17 (in German), 30 (in Japanese), pl. 16, f. 5.
1912 *Sogata distincta* Distant, Ann. Mag. Nat. Hist., 8th ser., 9: 191.
1912 *Sogata pallescens* Distant, Ibid., 192.
1912 *Delphax furcifera* Oshanin, Kat., Paläark. Hem., 119.
1915 *Delphax furcifera* Schumacher, Mitt. zool. Mus. Berlin, 8: 134.
1915 *Delphax furcifera* Suzuki, List Spec. Hanazono Ent., Inst., 9.
1917 *Megamelus? furcifera* Muir, Proc. Haw. Ent. Soc., 3: 328.
1917 *Liburnia* (*Delphax*) *furcifera* Matsumura, Applied Ent., form. ser., 380, pl. 15, f. 1.
1917 *Opiconsiva colorata* Distant, Trans. Linn. Soc. London, Zool., 17: 301, pl. 50, f. 11 (Seychelles).
1917 *Opiconsiva balteata* Distant, Ibid., 302, pl. 51, f. 8 (Seychelles).
1917 *Opiconsiva gloriosa* Distant, Ibid., 302, f. 3 (Seychelles).
1917 *Opiconsiva insularis* Distant, Ibid., 303, pl. 50, f. 12 (Seychelles).
1917 *Opiconsiva derelicta* Distant, Ibid., 303, pl. 50, f. 13 (Seychelles).
1920 *Liburnia* (*Delphax*) *furcifera* Matsumura, Dainippon Gaichu Zensho, rev. and addit. ed., form. ser., 259, f. 109.
1921 *Megamelus furcifera* Muir, Proc. Haw. Ent. Soc., 4: 486.
1924 *Sogata furcifera* Muir et Giffard, Haw. Sugar Pl. Ass., Bull. 15: 13.
1924 *Liburnia furcifera* Okamoto, Kwngyo-mohanjo Kenkyu-hokoku, 12: 23, pl. 3, fs. 4 – 5 (Korea, on rice-plants).
1925 *Opiconsiva colorata* Singh-Pruthi, Trans. Ent. Soc. London, 1925, 229, pl. 30, f. 226 (of genitalia).
1926 *Sogata furcifera* Muir, Ann. Mag. Nat. Hist., ser. 9, 17: 34.
1926 *Sogata pallescens* Gater et Corbett, Feder. Malay Stat. Str. Settlm., Bull. 38: 5.
1928 *Sogata furcifera* Myers, Studies on Cuban Ins., 1: 22.
1929 *Delphacodes albolineosa* Osborn, J. Dept. Agric. Porto Rico, 13; 111.
1929 *Sogata pallescens* Dammerman, Agric. Zool. Malay Archipel., 235 (on rice-plants).
1930 *Sogata furcifera* Muir, Treubia, 12: 31 (Sebesi).
1930 *Liburnia furcifera* Esaki et Hashimoto, Rep. Leafh. injur. Rice-pl. Nat. Enem., 1: 4, etc.
1931 *Delphacodes furcifera* Esaki et Ishihara, Ibid., 2: 5, etc.
1931 *Liburnia furcifera* Matsumura, 6000 Illustr. Ins. Jap.-Emp., 1268, f.
1932 *Sogota* (!) *furcifera* Esaki, Iconogr. Ins. Jap., 1784, f. 3525.
1932 *Liburnia* (*Delphax*) *furcifera* Matsumura, Dainippon Gaichu Zusetsu, 221, f. 109.
1933 *Sogota* (!) *furcifera* Kato, Three-col. Illustr. Ins. Jap., 4: pl. 15, f. 2.
1933 *Sogota* (!) *furcifera* Kato, Entom. Wor., 1: 19.
1935 *Liburnia furcifera* Wu, Cat. Ins. Sin., 2: 119.
1935 *Sogata furcifera* Osborn, New York Acad. Sci., 14; 242.
1938 *Sogota* (!) *furcifera* Takano et Yanagihara, Spec. Rep. Togyo Exp. Stat. Formosa, 2; 120, pl. 5, f. 20 (Fosmosa, on sugar-canes).
1938 *Liburnia furcifera* Metcalf, Bull. Mus. Comp. Zool., 82: 300.
1940 *Sogata furcifera* Esaki, Bot. Zool., 8: 277 (Micronesia).
1943 *Sogata furcifera* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 26.
1945 *Sogata furcifera* Matsumura et Ishihara, Mushi, 16: 64, f. 49.

Distr.: Hokkaido, Honshu, Shikoku, Kyushu, Ryukyu Is., Korea, Formosa, Micronesia (Ponape), Siberia, Manchuria, China, Indo-China, India, Ceylon, Seychelles N. Africa, Philippines, Sumatra, Amboina, Fiji, South parts of N. America, W. Indies, Brazil.

Host-plants: Poaceae—*Oryza sativa*, *Saccharum officinarum*, *Zizania latifolia*. According to Mr. I. Hirano (1942), in Japan it is only temporarily on the following plants—*Hordeum vulgare*, *Setaria italica*, *Panicum miliaceum*, *Zea Mays*, *Saccharum officinarum*, *Poa annua*, *Phalaria arundinacea*, *Alopeculus aequalis*.

This specie is considered as a tropicopolitan, which is found in Japan very commonly from the beginning of summer to the end of autumn and is one of the most serious pests injurious to rice-plants there, the life-cycle of which, however, now remains unexplained so far as in the winter season, like in *Nilaparvata lugens* (Stål, 1854).

The former species is more popular than the latter and it is noteworthy that the type-locality of the former, which is so widely distributed and is considered as a tropicopolitan, is the northern part of Japan, Hokkaido.

78. Sogata formosella (Matsumura. 1935)

Fig. 175.

1935 *Unkana formosella* Matsumura, Ins. Matsum., 10: 72 (♀ Formorsa—Heito).
1943 *Unkanella formosella* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 21.
1945 *Sogata formosella* Matsumura et Ishihara, Mushi: 16: 64, f. 50 (male genitalia figured).

Habitat: Formosa.

This species was described first basing upon the female specimens and on the male no information is obtained till now except for the figure of genitalia (Matsumura and Ishihara, 1945, loc. cit.). The male, compared to the female, is somewhat deeper in hue, with more distinct markings on tegmina, and smaller in size.

This species is not rare in Formosa but any host-plant is not reported at present.

79. Sogata jamiana Matsumura, 1940

1940 *Sogata jamiana* Matsumura, Ins. Matsum., 15: 36, 38 (♀ Botel-Tobago).

Habitat: Botel-Tobago.
Host-plant: Unknown.

80. Sogata sirokata Matsumura et Ishihara,

Figs. 179 - 181.

1942 *Delphacodes albicollis* Hirano (nec. Motschulsky vel Sahlberg), Byochugai-zasshi, 29: 38 (Japan, on rice-plants).

1945 *Sogata sirokata* Matsumura et Ishihara, Mushi, 16: 64, f. 55 (♂ Kyushu—Fukuoka, genitalia figured).

Distr.: Honshu (hab. nov.), Kyushu.

Host-plant: Poaceae—*Oryza sativa*.

This species was collected in Honshu (Niigata, Yamagata, etc.) often by sweeping the rice-plants and then this crop seems a host-plant of it but it does not seem now a serious pest to the crop. *Delphacodes albicollis* Hirano, 1942 (nom. nud., loc. cit.) perhaps seems to be the present species.

This species resembles *Delphax albicollis* Motschulsky, 1863, or *Calligypona albicollis* Sahlberg, 1871, but by the coloration of body, especially of tegmina, or by the shape of the face (the generic character of *Sogata*), it may be separated from them,

Both generic names, *Delphax* Fabricius, 1798 (nom. praeocc.) and *Calligypona* Sahlberg, 1871 (syn. nov.) have to be replaced with *Delphacodes* Fieber, 1866, and then specific name, *albicollis* Sahlberg, 1871, becomes to be preoccupied with *albicollis* Motschlsky, 1863, and I want to give *sahlbergiana* as the substitute for it. In short it becomes as follows.

Delphacodes albicollis (Motschulsky, 1863) comb. nov.

1863 *Delphax albicollis* Motschulsky, Bull. Soc. Nat. Moscou, 36: 110 (Ceylon).
1903 *Liburnia albicollis* Melichar, Hom. Faun. v. Ceylon, 99, pl. 2, f. 23.
1906 *Liburnia albicollis* Distant, Faun. Brit. Ind., Rhynch. 3: 483.
1913 *Liburnia albicollis* Melichar, Notes Leyden Mus., 36: 110 (Java).

Distr.: Ceylon, Java.

Delphacodes sahlbergiana nom. nov.

1871 *Calligypona albicollis* Sahlberg, Not. Sällsk. Faun. Fenn. Förh., 12: 409 (Sweden, etc., nom. praeocc.).
1908 *Calligypona albicollis* Oshanin, Verz. Paläark. Hem., 2: 398.
1912 *Calligypona albicollis* Oshanin, Kat. Paläark. Hem., 118.

Distr. Sweden, Hungary, Turkestan.

81. Sogata heitensis Matsumura et Ishihara, 1945

Figs. 176 - 178.

1945 *Sogata heitensis* Matsumura et Ishihara, Mushi, 16: 66, f. 20. (♂ ♀. Formosa—Heito, male genitalia figured).

Habitat: Formosa.

At present any ecological information of this species is not known yet.

82. Sogata kyusyuensis Matsumura et Ishihara, 1945

Fig. 172 - 174.

1945 *Sogata kyusyuensis* Matsumura et Ishihara, Mushi, 16: 65, f. 23 (♂ ♀. Kyushu-Fukuoka, Hikosan; male genitalia figured).

Habitat: Kyushu.

This species seems to be rare and now any host-plant is unknown.

16. Genus Nilaparvata Distant, 1906

Orthotype: *Nilaparvata lugens* (Stål, 1854)=*Nilaparvata greeni* Distant, 1906

1906 *Nilaparvata* Distant, Faun. Brit. Ind., Rhynch., 3: 473.
1906 *Kalpa* Distant, Ibid., 474.
1915 *Nilaparvata* Muir, Canad. Entomol., 47., 266, 302.
1916 *Nilaparvata* Distant, Faun. Brit. Ind., Rhynch., 6: 141.
1917 *Nilaparvata* Distant, Trans. Linn. Soc. London, Zool., 17: 303.
1924 *Nilaparvata* Muir et Giffard, Haw. Sugar Pl. Ass., Bull. 15: 5, 16.
1926 *Nilaparvata* Muir, Ann. Mag. Nat. Hist., 17: 30.
1935 *Nilaparvata* Osborn, New York Acad. Sci., 14: 234, 255.
1935 *Hikona* Matsumura, Ins. Matsum., 9: 139.
1945 *Nilaparvata* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 42.
1945 *Nilaparvata* Matsumura et Ishihara, Mushi, 16: 64.

The present genus is very near to the Genus *Delphacodes* Fieber, 1866, in many respects, but the former is easily differentiated from the latter by the following conspicuous character; that is, the former has from one to several small spines on each hind basitarsus, which are not found in the latter. Both forms, macropterous and brachypterous, are known. Two species are recorded from the Japanese Islands.

Key to the species

As the two known species of the genus very resemble each other, the identification is hardly possible before examining the male genitalia.

1 (2) Parameres of the male genitalia simple, with apex which is very shallowly furcate. Length 4.5 - 5 mm. (includ. teg.), 3.3 mm. (brachypt. f.) ..... **Nilaparvata lugens** (Stål, 1854)

2 (1) Parameres of the male genitalia complex, with apex which is fairly exceedingly furcate. Length same as in the previous species .... **N. bakeri** (Muir, 1917)

83. Nilaparvata lugens (Stål, 1854)

Figs. 163 - 166.

1854 *Delphax lugens* Stål, Oefv. Ak. Förh., 11. (Java).
1863 *Liburnia sordescens* Motschulsky, Bull. Soc. Nat. Moscou, 36: 109 (Ceylon).

1901 *Delphax* sp. Onuki, Spec. Rep. Agric. Exp. Stat., no. 10: 57, pl. 11, f. 1 (Japan—Honshu, Shikoku, Kyushu; injurious to rice-plants).
1903 *Liburnia sordescens* Melichar, Hom. Faun. v. Ceylon, 102, pl. 2, f. 24.
1906 *Delphax Oryzae* Matsumura, List Injur. Ins. Jap., 13 (nom. nud.).
1906 *Liburnia sordescens* Distant, Faun. Brit. Ind., Rhynch., 3: 486.
1906 *Nilaparvata greeni* Distant, Ibid., 473, f. (Ceylon).
1906 *Kalpa aculeata* Distant, Ibid., 474, f. (Ceylon).
1907 *Dicranotropis anderida* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 3: 133 (Fiji, Queensland).
1907 *Delphax ordovix* Kirkaldy, Ibid., 152 (Queensland).
1907 *Delphax parysatis* Kirkaldy, Ibid., 153 (Queensland).
1910 *Delphax oryzae* Matsumura, Dainippon Gaichu Zensho, form. ser., 115.
1913 *Liburnia sordescens* Melichar, Notes Leyd. Mus., 36: 111 (Java).
1915 *Delphax oryzae* Suzuki, List Spec. Hanazono Ent. Inst., 10.
1917 *Liburnia oryzae* Matsumura, Applied Ent., form. ser., 381. pl. 15, f. 2.
1917 *Delphacodes anderida* Muir, Proc. Haw. Ent. Soc., 3: 335 (Philippines—Luzon & Mindanao, S. China, Java, Ceram Is.).
1920 *Liburnia* (*Delphax*) *oryzae* Matsumura, Dainippon Gaichu Zensho, form. ser., rev. and addit. ed., 261.
1924 *Liburnia oryzae* Okamoto, Kwangyo-mohanjo Kenkyu-hokoku, no. 12: 22, pl. 3, fs. 7–8 (Korea, injurious to rice-plants).
1924 *Nilaparvata lugens* Muir et Giffard, Haw. Sugar Pl. Ass., Bull. 15: 16.
1929 *Liburnia* (*Delphacodes*) *sordescens* Dammerman, Agric. Zool. Malay Archipel., 235 (Java, injurious to rice-plants).
1930 *Nilaparvata lugens* Muir, Treubia, 12: 31 (Sebesi).
1930 *Liburnia oryzae* Esaki et Hashimoto, Rep. Leafh. injur. Rice-pl. Nat. Enem., no. 1: 4, etc.
1931 *Delphacodes oryzae* Esaki et Hashimoto, Ibid., no. 2: 5, etc.
1931 *Liburnia oryzae* Matsumura, Nippon Konchu Daizukan, 1268, f.
1932 *Liburnia* (*Delphax*) *oryzae* Matsumura, Dainippon Gaichu Zusetsu, 223.
1932 *Nilaparvata oryzae* Esaki et Hashimoto, Rep. Leafh. injur. Rice-pl. Nat. Enem., no. 3: 4, etc.
1933 *Nilaparvata oryzae* Kato, Entom. Wor., 1: 19 (Kwantoshu?).
1934 *Liburnia oryzae* Fukuda, Bull. Dept. Agric. Formosa, no. 99: pp. 1–19, fs.
1935 *Hikona formosana* Matsumura, Ins. Matsum., 9: 139 (Formosa—Toroen, on sugar-canes).
1938 *Nilaparvata oryzae* Takano et Yanagihara, Spec. Rep. Togyo Exp. Stat. Formosa, no. 2: 120, pl. 5, f. 18 (on sugar-canes).
1940 *Liburnia oryzae* Matsumura, Ins. Matsum., 15: 36 (Botel-Tobago, India, Philippines).
1940 *Nilaparvata lugens* Swezey, Hawaii. Plant. Rec., 44: 142 (Guam, on rice-plants).
1943 *Nilaparvata oryzae* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 42.
1943 *Hikona formosana* Esaki et Ishihara, Ibid., 37.
1945 *Nilaparvata sordescens* Kuwayama, Agric. Hortic., 20: 35 (Hokkaido).
1945 *Nilaparvata lugens* Matsumura et Ishihara, Mushi, 16: 64, f. 54.

Distr.: Hokkaido, Honshu, Shikoku, Kyushu, Korea, Manchuria—Kwantoshu?, Formosa, Botel-Tobago, S. China, Malaya, India, Ceylon, Java, Sebesi, Philippines—Luzon & Mindanao, Micronesia—Guam, New Guinea, Fiji, Ceram, Australia—Queensland.

Host-plants: Poaceae—*Oryza sativa, Saccharum officinarum, Zizania longifolia.*

This is one of the most serious pests of the rice-plant in Japan, where how to hibernate is, however, even now a question with several presumptions on it; the imagoes of the species abruptly appear there in the period from

June to, August and rapidly multiply often to such an enormous number that the rice-plants usually undergo formidable damages. Since the first apperance about in June, it takes usually five of six generations a year. When severely infested with the present species, rice-plants decay and fall to the ground and the degree of the damage is usually more serious than in the case attacked by *Sogata furcifera* (Horváth, 1899), whereas the former is ordinarily not so common as the latter. This species injurious to the rice-plants was till recently considered as an endemic one to Japan, being known by the name, *Nilaparvata oryzae* (Matsumura, 1910), but as the result of our study, it was proved to be a very widely distributed species as mentioned above, attacking the rice-plants in Java, Philippines or in Guam, too. In Japan, the recognition of its appearance as early as possible, by attracting it to lights, by investigating the fields directly, etc., is essential to controlling it, and then the existence of several species which look like it, especially of the following *Nilaparvata bakeri* (Muir, 1917), etc. becomes inneglisible. Both forms, macropterous and brachypterous, commonly appear.

84. Nilaparvata bakeri (Muir, 1917)

Figs. 167 - 168.

1917 *Delphacodes bakeri* Muir, Proc. Haw. Ent. Soc., 3: 336, pl. 4, f. 47 (♂ Philippines—Luzon).
1924 *Nilaparvata bakeri* Muir et Giffard, Haw. Sugar Pl. Ass., Bull. 15: 17.
1947 *Nilaparvata bakeri* Esaki et Ishihara, Mushi, 17: 39, f. (Honshu, Kyushu).

Distr.: Honshu, Kyushu, Philippines.
Host-plant: Poaceae—*Leersia japonica*.

This is a common species much allied to the previous famous pest and then this is giving the recognition of the early appearance of the pest not small difficulty and even confusion. For the detection of the host-plant which I reported here first, I owe to the help of Mr. Masayoshi Kuwahara. Both, macropterous and brachypterous forms are collected in Japan.

17. Genus Dicranotropis Fieber, 1866

Logotype: *Dicranotropis hamata* (Boheman, 1847)

1866 *Dicranotropis* Fieber, Verh. zool.-bot. Ges. Wien, 16: 521, pl. 8, f. 17.
1871 *Dicranotropis* Sahlberg, Not. Sällsk. Faun. Fenn. Förh., 12: 469.
1875 - 1879 *Dicranotropis* Fieber, Rev. Mag. Zool., 26: 9 (1875); pl. 8 (1876); 87 (1879).
1878 *Dicranotropis* Ferrari, Ann. Mus. Stor. Mat. Genova, 18: 88.
1886 *Dicranotropis* Edward, Trans. Ent. Soc. London, 1: 92, pl. 1, f. 20.
1886 *Dicranotropis* Ashmead, Ent. Amer., 5: 27.
1896 *Dicranotropis* Edward, Hem. Hom. Brit. Isl., 72, pl. 1, f. 20.
1896 *Dicranotropis* Melichar, Cicad. v. Mit.-Eur., 96.
1897 *Dicranotropis* Van Duzee, Bull. Buffalo Soc. Nat. Sci., 5: 223, 240.
1907 *Dicranotropis* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 3: 132.
1908 *Dicranotropis* Oshanin, Verz. Paläark. Hem., 2: 332.

1912 *Dicranotropis* Oshanin, Kat. Paläark. Hem., 120.
1915 *Dicranotropis* Muir, Canad. Entomol., 47: 262, 300.
1915 *Dicranotropis* Schumacher, Mitt. zool. Mus. Berlin, 8: 134.
1917 *Dicranotropis* Van Duzee, Cat. Hem. Amer., 780.
1917 *Dicranotropis* Matsumura, Applied Ent., form. ser, 379.
1917 *Dicranotropis* Muir, Proc. Haw. Ent. Soc., 3. 317.
1924 *Dicranotropis* Muir, et Giffard, Haw. Sugar Pl. Ass., Bull. 15: 6, 7.
1926 *Dicranotropis* Muir, J. Malay Branch, Royal Asiat. Soc., 4: 399.
1926 *Dicranotropis* Muir, Ann. Mag. Nat. Hist., 18: 28.
1927 *Dicranotropis* Muir, Ins. Samoa, 2: 13.
1943 *Dicranotropis* Esaki et Ishihara, Cat. Araeopid Imp. Jap., 48.
1945 *Dicranotropis* Matsumura et Ishihara, Mushi, 16: 67.

This genus is very much allied, in many respects, to the genus already mentioned, *Delphacodes* Fieber, 1866, but the former is separated from the latter by the conspicuous character in the frontal medio-longitudinal carina, which is forked about at the middle in the former, while near the base in in the latter.

Key to the species

1 (2) Body mostly black, shining. Tegmina blackish, with an oblong round hyaline marking at the centre of the anterior margin and with black veins. Length 4 mm. (includ. teg.) ..... **Dicranotropis fumosa** Matsumura, 1910

2 (1) Body mostly brownish or grayish.

3 (6) Face scattered with light-coloured spots coarsely.

4 (5) Vertex about as long as the width. Body mostly light dirty brown. In the brachypterous form, tegmina subhyaline, light dirty brown, with a remarkably black marking at apex, while in the macropterous form, they are subhyaline, slightly brownish, with a conspicuously fuscous arcuate marking near the hind margin of the membrane, apical veins, especially their apices more or less infuscated. Male genitalia with parameres, apices of which are conspicuously forked. Length ♂ ♀ 5.3 mm. (includ. teg.), ♂ 3 mm., ♀ 3.5 mm. (exclud. teg.), macropterous tegmen ♂ ♀ 4.5 mm., brachypterous tegmen ♂ ♀ 2 mm. ..... **D. nagaragawana** (Matsumura, 1900)

5 (4) Vertex longer than the width. Body mostly light brown, hind margin of pronotum and of scutellum lighter in hue. Tegmina of the macropterous form with coloration like the previous species. Male genitalia with parameres, apices of which are nutant as figured. Length ♂ ♀ 4.6 - 5.2 mm. (includ. teg.), ♂ ♀ 3 mm. (exclud. teg.), macropterous tegmen ♂ ♀ 4 - 4.5 mm. ..... **D. esakii** sp. nov.

6 (3) Face without spots.

7 (8) Body mostly grayish except lateral carinae and anterior margin of pronotum which are fuscous. Face at the upper half somewhat darker in colour. Length ♀ 3.5 mm. (includ. teg.) ..... **D. jamiana** Matsumura, 1940

8 (7) Body concolorously grayish brown.

9 (10) Tegmina subhyaline, with light brownish tinge and no marking, veins concolorous with body. Male genitalia with characteristic parameres as figured. Length ♂ 3.3 mm. (includ. feg.), 2.1 mm. (exclud. teg.) ..... **D. tikuzenensis** Matsumura et Ishihara, 1945

10 (9) Tegmina subhyaline, with a pale testaceous tinge, veins brownish and on the membrane broadly suffused with grayish brown. Male genitalia with parameres which are broader at base, widely divergent apically to each other and at apices backwardly pointed and somewhat convergent to each other. Length ♂ 2.5 mm. (includ. teg.) ..... **D. botelensis** Matsumura, 1940

85. Dicranotropis nagaragawana (Matsumura, 1900)

Figs. 182 - 186.

1900 *Liburnia nagaragawana* Matsumura, Ent. Nachr., 26: 265 (♂ ♀ Honshu—Gifu).
1908 *Delphax nagaragawana* Oshanin, Verz. Paläark. Hem., 2: 330.
1912 *Delphax nagaragawana* Oshanin, Kat. Paläark. Hem., 120.
1917 *Dicranotropis cervina* Muir, Proc. Haw. Ent. Soc., 3: 318 (Luzon. syn. nov.).
1933 *Stenocranus japonicus* Kato (nec Matsumura), Three-col. Illustr. Ins. Jap., 4: pl. 17, f. 2.
1943 *Delphacodes? nagaragawana* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 34.
1945 *Dicranotropis nagaragawana* Matsumura et Ishihara, Mushi, 16: 67, f. 30 (Kyushu, male genitalia figured).

Distr.: Honshu, Kyushu, Philippines (hab. nov.).
Host-plant: Poaceae—*Phragmites communis*.

This species, which was originally described basing upon the brachypterous form from Japan, is undoubtedly the same species to *Dicranotropis cervina* Muir, 1917, which was described basing upon the macropterous form from Luzon, Philippines. This is the commonest species of the genus in Japan and the reed seems probably to be the host-plant.

86. Dicranotropis esakii sp. nov.

Figs. 191, 199 - 201.

1945 *Perkinsiella sinensis* Matsumura et Ishihara (nec Kirkaldy), Mushi, 16: 80, f. 34.

♂ ♀. (Macropt. f.). Body mostly light brown, hind margin of pronotum and of scutellum lighter in hue. Face, clypeus and genae light brown, with whitish brown round spots on face coarsely. Carinae concolorously light brown on vertex and face, somewhat lighter in hue on pronotum and scutellum. Eyes dark brown. Ocelli and the neighbouring small portions blackish. Tegmina subhyaline, milky-whitish, veins and granules concolorous, with a brown arcuate marking near the hind margin of membrane and more or less brownish tinge along the veins, R_1 and R_2 (also in some individuals

R_2+M_1). Antennae light brown, slightly tinted with brown at apex of first segment. Of genitalia, pygopher brown except ventral surface which is very light brown, parameres black with brown apices, anal segment and aedeagus light brown, anal style whitish brown.

Vertex a little longer than the width, subparallel-sided, all carinae distinct. Face widest below eyes, narrowed above eyes a little longer than twice the largest width, medio-longitudinal carina furcate somewhat above the lower margins of eyes. Clypeus with base which is wider than apex of face. Antennae moderate in length, reaching the middle of clypeus, with second segment which is twice as long as the first. Pronotum much shorter than vertex, with lateral carinae which vanish before reaching the hind margin. Scutellum longer than vertex and pronotum put together. Tegmina much protruding abdominal apex. Male genitalia as figured.

Length ♂♀ 4.6 - 5.2 mm. (includ. teg.), ♂♀ 3 mm. (exclud. teg.), macropterous tegmen ♂♀ 4 - 4.5 mm.

Width of head includ. eyes ♂ 1 mm., ♀ 1.2 mm.

Habitat: Kyushu.

Holotype: ♂ (macropt. f.), Hirao, Fukuoka, Kyushu, 11. VII. 1929, Teiso Esaki, etc. leg; allotopotype, ♀ (macropt. f.), 28. VI. 1930, Shiro Hashimoto etc. leg.; 3 paratypes (macropt. f.). 1♂, Sobosan, Bungo, Kyushu, 3. VII. 1932, Hiroshi Hori, etc. leg., 1♂, Kusaba-kosen near Fukuoka, Kyushu, 6 - 7. VII. 1935, Teiso Esaki, etc. leg., 1♀, Hirao, Fukuoka, 28. VI. 1930, Shiro Hashimoto, etc. leg.

This new species resembles the macropterous form of *Perkinusiella sinensis* Kirkaldy, 1907, or of *Dicranotropis nagaragawana* (Matsumura, 1900), in some respects, but it may be separated from them by the characteristic features both on the face and on the male genitalia.

87. Dicranotropis fumosa Matsumura, 1910

1910 *Dicranotropis fumosa* Matsumura, Schäd. u. nütz. Ins. Zuckerrohr Formosas, 18 (in German), 30 (in Japanese), pl. 16, f. 6 (♀ Formosa, on sugar-canes).

1911 *Dicranotropis fumosa* Matsumura, Mém. Soc. Ent. Belg., 18: 136.

1915 *Dicranotropis fumosa* Schumacher, Mitt. zool. Mus. Berlin, 8: 134.

1917 *Dicranotropis fumosa* Matsumura, Applied Ent., form. ser., 381.

1920 *Dicranotropis fumosa* Matsumura, Dainippon Gaichu Zenscho, rev. and addit. ed., form. ser., 266.

1932 *Dicranotropis fumosa* Matsumura, Dainippon Gaichu Zusetsu, 227.

Habitat: Formosa.

Host-plant: Poaceae—*Saccharum officinarum.*

This species may be captured on sugar-canes and is deemed to be injurious, but not so serious to them. In this work, I could not examine any specimen of this species, the male of which has not been described till now.

88. Dicranotropis tikuzenensis Matsumura et Ishihara, 1945

Figs. 187 – 189.

1945 *Dicranotropis tikuzenensis* Matsumura et Ishihara, Mushi, 16: 67, f. 23 (N. Kyushu—Wakiyama).

Habitat: Kyushu.

This species was described basing upon one male specimen and seems to be rare, the host-plant of which is not known yet.

89. Dicranotropis jamiana Matsumura. 1940

1940 *Dicranotropis jamiana* Matsumura, Ins. Matsum., 15: 48 (♀ Botel-Tobago).
=*Dicranotropis jamiensis* (!) Matsumura, Ibid., 36 (list).

Habitat: Botel-Tobago.

The male of this species is unknown and no ecological information has been reported till now.

90. Dicranotropis botelensis Matsumura, 1940

1940 *Dicranotropis botelensis* Matsumura, Ins. Matsum., 15: 49 (♂ Botel-Tobago).

Habitat: Botel-Tobago.

This species was described basing upon one male specimen and, like the previous species, any ecological knowledge is entirely unknown.

18. Genus Phyllodinus Van Duzee, 1897

Haplotype: *Phyllodinus nervatus* Van Duzee, 1897

1897 *Phyllodinus* Van Duzee, Bull. Buffalo Soc. Nat. Sci., 5: 240.
1903 *Dicranotropis* Melichar (nec Fieber), Hem. Hom. v. Ceylon, 106.
1913 *Phyllodinus* Muir, Proc. Haw. Ent. Soc., 2: 246.
1914 *Phyllodinus* Crawford, Proc. U. S. Mus., 46: 583.
1915 *Phyllodinus* Muir, Canad. Entomol., 47: 266, 297.
1915 *Pundaluoya* Schumacher, (nec Kirkaldy), Suppl. Ent., 4: 141.
1915 *Pundaluoya* Schumacher (nec Kirkaldy), Mitt. zool. Mus. Berlin, 8: 132.
1917 *Phyllodinus* Van Duzee, Cat. Hem. Amer., 769.
1917 *Phyllodinus* Muir, Proc. Haw. Ent. Soc., 3: 319.
1924 *Phyllodinus* Muir et Giffard, Haw. Sugar Pl. Ass., 15: 5, 8.
1927 *Phyllodinns* Muir, Ins. Samosa, 2: 11.
1940 *Jamiphax* Matsumura, Ins. Matsum., 15: 36, 50 (syn. nov.).
1943 *Phyllodinus* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 43.

Vertex about as long as the the width, meagrely produced anteriorly in front of eyes, somewhat divergent apically, with truncate apex, carinae all

distinct, medio-lateral carinae of which slightly divergent apically, not meeting at apex and continued on to face. Face widest about at the middle, twice as long as the largest width, usually scattered with light-coloured spots. Clypeus with base which is wider than frontal apex. Antennae long, protruding the middle of clypeus, second segment of which is about $1\text{-}^1/_2$ times as long as the first. Pronotum as long, or shorter than vertex, slightly wider than head including eyes, lateral carinae divergingly curved posteriorly and vanish before reaching the hind margin of pronotum. Scutellum in the macropterous form longer, while in the brachypterous form shorter than vertex and pronotum put together. Tegmina remarkably scattered with fairly large blackish granules. Anterior and intermediate femora and tibiae compressed and foliaceous. Posterior legs simple, each tibia of which is possessed with two small spines, one near base the other about at the middle, basitarsus a little longer than the other two tarsal segments put together, spurs thin, with nearly twenty teeth along the hind margin.

Both forms, macropterous and brachypterous, commonly appear.

Key to the species

Most species of this genus generally are similar in appearance to one another and some species were described basing upon only one of the male or the female, either macropterous or brachypterous, so the decisive determination of the species, especially in this genus, may be impossible before examining the male genitalia.

1 (2) Antennae with both segments which are entirely fuscous. Vertex, light brown, thorax between carinae and along lateral margins light brown, in the outsides of lateral carinae dark brown, face and clypeus fuscous, face with light spots. Length ♂ 2 mm. (brachypt. f.) ..... **Phyllodinus punctatus** Muir, 1917.

2 (1) Of antennae, both segments or the second light-coloured, not fuscous.

3 (8) Antennae with both segments which are light-coloured, pale brown or yellow.

4 (5) Body conspicuously large, macropterous female including tegmina 9 mm. Body mostly dark brown, face brownish, carinae and antennae pale. Middle carina of pronotnm and of scutellum, with hind margin of the latter white. Tegmina subhyaline, at the anterior margin brownish, membrane slightly yellowish, along the cross veins with a broad black band, which continues as a bow-band along the hind margin to apex, and together presenting there a semicircular ring, and also with two black bands on second apical vein and on the outer branch of the third, veins concolorous with tegmina, scattered with black granules..... **P. kotoshonis** (Matsumura, 1940)

5 (4) Body of moderate size, macropterous female including tegmina about or less than 5 mm.

6 (7) Face with traverse whitish yellow band. Vertex and face brown, with

yellow spots in the latter. Clypeus black. Antennae yellow. Tegmina subhyaline, with blackish brown markings almost like in the previous species, veins with brown granules densely. Length 5 mm. (includ. teg.) ....**P. affinis** (Schumacher, 1915)

7 (6) Face without any traverse band.

8 (3) Antennae with second segment which is lighter than the first in colour, brown or yellow.

9 (10) First segment of antennae black, second segment yellow. Vertex brown, with light brown carinae. Face blackish brown, with light-coloured carinae and with four small light-coloured spots on each side. Clypeus black at apex. Pronotum and scutellum blackish brown, carinae light-coloured. Tegmina usual for this genus, with blackish brown markings, entirely similar to those in *P. nigromaculosus* Muir, 1917, which are figured, veins with black granules densely, pterostigmas black. Length 4 mm. (includ. teg.) .....**P. aritainoides** (Schumacher, 1915)

10 (9) First segment of antennae dark brown, the second brown or yellowish. The following three species will be quite impossible to be separated one another without relying upon the male genitalia.

11 (12) Each paramere of the male genitalia with a small prong on the outer edge near apex, i. e. with apex which is furcate. Body mostly dark brown except lateral parts of pronotum, carinae of head and thorax, second segment of antennae, spots on face, which are all lighter brown or yellowish. Length ♂ 2 mm. (brachypt. f.) .....**P. sauteri** Muir, 1917.

12 (11) Parameres of the male genitalia without any prong.

13 (14) Parameres of the male genitalia slender, tapering to apex, slightly sinuate. Coloured quite similarly to the previous species, *P. sauteri* Muir, 1917, or a little paler. Length ♂ 3 - 4 mm., ♀ 4 mm. (includ. teg.); ♂ 2 mm., ♀ 2.7 mm. (brachypt. f.) .....**P. nigromaculosus** Muir, 1917.

14 (13) Parameres of the male genitalia broad from base toward the middle, with apical half which is slender and nutant outwards. General appearance as above related species. Length ♂ ♀ 4 - 5 mm. (includ. teg.) ; ♂ 2 mm., ♀ 2.5 mm. (brachypt. f.).....**P. nigropunctatus** (Motschulsky. 1863)

91. **Phyllodinus nigropunctatus** (**Motschulsky, 1863**) comb. nov.

Figs. 210 - 214.

1863 *Mestus ? nigropunctatus* Motschulsky, Bull. Soc. Nat. Moscou, 36 : 112 (Ceylon).
1903 *Dicranotropis nigropunctatus* Melichar, Hem. Hom. v. Ceylon, 106, pl. 3, f. 12.
1940 *Dicranotropis nigropunctatus* Distant, Faun. Brit. Ind., Rhynch., 3 : 480, f. 265.
1940 *Jamiphax nigropunctatus* Matsumura (nec Motschulsky), Ins., Matsum., 15 : 36 (Botel-Tobago. nom. praeocc., syn. nov.).

Distr.: Honshu (hab. nov.), Kyushu (hab. nov.) Formosa (hab. nov.), Ceylon.

I could not see the original description (Motschulsky, 1863, loc. cit.) and

for the identification of the present species I referred Melichar's description and his figure (Melichar, 1903, loc. cit.). His figure has the black granules only along veins but these seems somewhat different individually and of the male genitalia he did not show any figure but described as follows: "Griffel stielartig, gleichmässig gerundet, gelb, mit gelben Härchen besetzed.....", with which the Japanese inhabitant generally coincide, and then, I identified it to the present species for the time being until I shall have further many specimens of each species to be compared to one another.

Dicranotropis granulipennis Matsumura, nom. nud. which was known from Honshu corresponds to the present species.

92. Phyllodinus aritainoides (Schumacher, 1915) comb. nov.

1915 *Pundaluoya aritainoides* Schumacher, Suppl. Ent., 4: 141 (Formosa—Anping, Taihorin).
1915 *Pundaluoya aritainoides* Schumacher, Mitt. zool. Mus. Berlin, 8: 132.
1943 *Pundaluoya aritainoides* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 46.

Habitat: Formosa.

This species undoubtedly belongs to the present Genus *Phyllodinus* Van Duzee, 1897, and closely resembles *P. nigromaculosus* Muir, 1917, or *P. sauteri* Muir, 1917, and there is some possibility that one of the latter two species is synonymized with the present species. The description of this species, haw-ever, has touched neither the sexality nor the genitalia, so decisive identification of this species may be hardly possible now.

93. Phyllodinus nigromaculosus Muir, 1917

Figs. 206 - 209.

1917 *Phyllodinus nigromaculosus* Muir, Proc. Haw. Ent. Soc., 3: 319 (♂ ♀. Philippines—Luzon; Papua).

Distr.: Honshu (hab. nov.), Kyush (hab. nov.), Formosa (hab. nov.), Philippines, New Guinea.

This is fairly common species of the genus which may be captured by sweeping weeds. I examined not a few specimens collected in various places of Honshu, Kyushu and Formosa.

94. Phyllodinus sauteri Muir, 1917

1917 *Phyllodinus sauteri* Muir, Proc. Haw. Ent. Soc., 3: 319 (♂ Formosa—Daimokko).
1943 *Phyllodinus sauteri* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 44.

Habitat: Formosa.

Only male brachypterous form is known now. This species may be captured by sweeping grass.

95. Phyllodinus punctatus Muir, 1917

Fig. 215 (from Muir, 1917)

1917 *Phyllodinus punctata* Muir, Proc. Haw. Ent. Soc., 3: 320 (♂. Formosa—Daimokko).
1943 *Phyllodinus punctatus* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 44.

Habitat: Formosa.
The female and also the macropterous form are not known yet.

96. Phyllodinus affinis (Schumacher, 1915) comb. nov.

1915 *Pundaluoya affinis* Schumacher, Suppl. Ent., 4: 141 (Formosa—Taihorinsho).
1915 *Pundaluoya affinis* Schumacher, Mitt. zool. Mus. Berlin, 8: 132.
1943 *Pundaluoya affinis* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 46.

Habitat: Formosa.
From the original description of this species, I could not find decisive generic characters and I have some doubt whether this species may belong to the Genus *Dicranotropis* Fieber, 1866, or to the Genus *Perkinsiella* Kirkaldy, 1903.

97. Phyllodinus kotoshonis (Matsumura, 1940) comb. nov.

1940 *Jamiphax kotoshonis* Matsumura, Ins. Matsum., 15: 50 (♀. Botel-Tobago).

Habitat: Botel-Tobago.
This species was described basing upon only one female specimen but by the large form it may be easily separated from other species of the genus. No host-plant is known yet.

19. Genus Megamelus Fieber, 1866

Haplotype: *Megamelus notula* (Germar, 1830)

1866 *Megamelus* Fieber, Verh. zool.-bot. Ges. Wien., 16: 519, pl. 8, f. 2.
1871 *Megamelus* Sahlberg, Not. Sällsk. Faun. Fenn. Förh., 12: 74, 411.
1889 *Megamelus* Ashmead, Ent. Amer., 5: 26.
1896 *Megamelus* Melichar, Cicad. v. Mit,-Eur., 55.
1897 *Megamelus* Van Duzee, Bull. Buffalo Soc. Nat. Sci., 5: 229, 233.
1907 *Megamelus* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 3: 147.
1908 *Megamelus* Oshanin, Verz. Paläark. Hem., 2: 300.
1912 *Megamelus* Oshanin, Kat. Paläark. Hem., 117.
1914 *Megamelus* Van Duzee, Psyche, 21: 165.
1914 *Megamelus* Crawford, Proc. U. S. Mus., 46: 602.
1915 *Megamelus* Muir, Canad. Entomol., 47: 265, 299, 301.
1917 *Megamelus* Van Duzee, Cat. Hem. Amer., 766.
1924 *Megamelus* Muir et Giffard, Haw. Sugar Pl. Ass., Bull. 15: 6, 10.

1927 *Megamelus* Muir, Ins. Samoa, 2: 10.
1943 *Megamelus* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 19.
1945 *Megamelus* Matsumura et Ishihara, Mushi, 16: 71.

Vertex slightly convergent anteriorly, fairly produced before eyes, with subtruncate apex; medio-lateral carinae occurring from lateral carinae, about in their central points, convergent to apex and continued on to face, where they meet each other between eyes. Clypeus with base which is nearly as as wide as of face. Antennae comparatively long, clearly passing beyond frontal apex, with second segment which is less than twice the length of the first. Pronotum much wider than vertex including eyes, almost as long as vertex, with convergingly curved lateral carinae which are clearly reaching the hind margin and are often in line with carinae on scutellum. Scutellum comparatively small, shorter than vertex and pronotum put together, with posteriorly obtusely projecting apex and with three longitudinal carinae. Tegmina passing beyond abdominal apex in the macropterous form and clearly not reaching it in the brachypterous form. Legs simple, with hind basitarsus which is about twice as long as the other two tarsal segments put together. Spurs fairly large, thin, with fifty or more teeth along the hind margin. Male genitalia complex, with well-developed basal plate.

Both forms, macropterous and brachypterous, are known.

In this genus the following fairly famous species injurious to the taro in tropics is distributed in Formosa.

Body including tegmina mostly shiny brownish black except vertex and dorsal surface within lateral carinae of pronotum and of scutellum, which are both yellow, and hind margin of tegmina and dorsal parts of distal several abdominal segments which are tinted with yellow. Face dark brown. Antennae dirty light brown. Length ♂ ♀ 4 - 5 mm. (brachypt. f.)..... **Megamelus proserpina** Kirkaldy, 1907

98. Megamelus proserpina Kirkaldy, 1907

Figs. *216 - 219.*

1907 *Megamelus proserpina* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 3: 147, pl. 10, fs. 5 - 7; pl. 12, fs. 19 - 21 (Fiji).
1917 *Megamelus proserpina* Muir, Proc. Haw. Ent. Soc., 3; 327 (Queensland, Amboina, Java, Luzon).
1920 *Liburnia* (*Delphax*) *colocasiae* Matsumura, Dainippon Gaichu Zensho, form. ser., rev. and addit. ed., 564 (Formosa, syn. nov.).
1921 *Megamelus proserpina* Muir, Proc. Haw. Ent. Soc., 4: 576.
1924 *Megamelus proserpina* Swezey, Proc. Haw. Ent. Soc., 5: 392.
1927 *Megamelus proserpina* Muir, Ins. Samoa, 2: 10 (Samoa).
1927 *Megamelus proserpina* Muir, Ann. Mag. Nat. Hist., ser. 9, 20: 87 (Society Is.).
1932 *Liburnia* (*Delphax*) *colocasiae* Matsumura, Dainippon Gaichu Zusetsu, 225.
1937 *Megamelus proserpina* Fullaway, Proc. Haw. Ent. Soc., 9: 405.
1940 *Megamelus proserpina* Swezey, Haw. Plant. Rec., 44: 166.

1940 *Megamelus proserpina* Esaki, Bot. Zool., 8: 278 (Micronesia).
1943 *Megamelus proserpina* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 19.
1943 *Delphacodes? colocasiae* Esaki et Ishihara, Ibid., 36.
1945 *Megamelus proserpina* Matsumura et Ishihara, Mushi, 16: 71, f. 12.

Distr.: Formosa (hab. nov.), Micronesia—Marianas (Guam), Palaus (Palau), Carolines (Yap, Ponape, Ksay), Philippines—Luzon, Amboina, Java, Fiji, Samoa, Australia, Hawaii.

Host-plant: Araceae—*Colocasia Antiquorum*.

This is a fairly famous species injurious to the taro in tropics. Now I found that *Liburnia colocasiae* Matsumura, 1920, which was described from Formosa is nothing but the present species. Most of individuals are brachypterous, and rarely macropterous ones are found among them.

20. Genus Peregrinus Kirkaldy, 1904

Orthotype: *Peregrinus maidis* (Ashmead, 1890)

1897 *Dicranotropis* Van Duzee (nec Fieber), Bull. Buffalo Soc. Nat. Sci., 5: 228.
1904 *Peregrinus* Kirkaldy, Entomologist, 37: 175.
1906 *Peregrinus* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 1: 407.
1907 *Peregrinus* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 3: 133.
1908 *Peregrinus* Kirkaldy, Pro. Haw. Ent. Soc., 1: 201.
1910 *Peregrinus* Kirkaldy, Faun. Haw., 2: 577.
1914 *Peregrinus* Crawford, Proc. U. S. Mus., 46: 593.
1915 *Peregrinus* Muir, Canad. Entomol., 47: 299.
1917 *Peregrinus* Van Duzee, Cat. Hem. Amer., 762.
1924 *Peregrinus* Muir et Giffard, Haw. Sugar Pl. Ass., Bull. 15: 6, 11.
1926 *Peregrinus* Muir, J. Malay Branch. Royal Asia. Soc., 4: 399.
1935 *Peregrinus* Osborn, New York Acad. Sci., 14: 234, 240.
1943 *Peregrinus* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 39.
1945 *Peregrinus* Matsumura et Ishihara, Mushi, 16: 71.

Vertex almost as long as the width, somewhat converging towards apex where it is truncate, medio-lateral carinae convergent apically but clearly not meeting on vertex but continued on to face where they meet a little superior to the middle, Y-shaped median carina clearly present. Face fairly wide, of length nearly twice the width at the middle where it is broadest. Clypeus fairly long, with base which is clearly wider than apex of face. Antennae comparatively long, clearly protruding base of face, with first segment which is much longer than half of the second. Pronotum nearly as long as vertex, much wider than vertex including eyes, with three carinae, lateral ones of which are convergingly curved posteriorly and entirely reaching the hind margin. Scutellum large, much longer than vertex and pronotum placed together. Legs simple, with hind basitarsus which is clearly longer than the other two tarsal segments put together. Spurs with numerous minute teeth along the hind margin. Male genitalia peculiar and characteristic as shown in the Figure.

To this genus, the following famous maize leaf-hopper belongs as the genotype. Both forms, macropterous and brachypterous, appear.

Body mostly light brown or yellowish brown, face, clypeus, genae, first antennal segments and often the outside of pronotum and of scutellum, etc. darker in hue. Tegmina subhyaline, with a brownish tinge, each with a semicircular fuscous marking along the inner margin of membrane and with a fuscous tint at each apex of apical veins. Length ♂ ♀ 4.5 - 5mm. (includ. teg.), ♂ ♀ 2.5 mm. (brachypt. f.) .....**Peregrinus maidis** (Ashmead, 1890)

99. Peregrinus maidis (Ashmead, 1890)

Figs. 90 - 94.

1890 *Delphax maidis* Ashmead, Psyche, 5: 323, fs. (N. America—Floride, injurious to corns).
1896 *Delphax psylloides* Lethierry, Ind. Mus. Notes, 3: 105, f.
1897 *Dicranotropis maidis* Van Duzee, Bull. Buffalo Soc. Nat. Sci., 5: 240 (Hawaii).
1903 *Liburnia psylloides* Melichar, Hom. Faun. v. Ceylon, 104.
1904 *Peregrinus maidis* Kirkaldy, Entomologist, 37: 176 (N. America, Hawaii).
1906 *Pundaluoya simplicia* Distant, Faun. Brit. Ind., Rhynch., 3: 463, f. 255 (Ceylon).
1906 *Liburnia psylloides* Distant, Ibid., 484 (Ceylon).
1907 *Peregrinus maidis* Kirkaldy, Entomologist, 40: 283 (destructive to corns).
1907 *Peregrinus maidis* Distant, Ann. Soc. Ent. Belg., 51: 221.
1907 *Peregrinus maidis* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 3: 132, pl. 10, f. 14; pl. 12, fs. 7 - 8.
1908 *Peregrinus maidis* Kirkaldy, Proc. Haw. Ent. Soc., 1: 205.
1909 *Peregrinus maidis* Van Duzee, Bull, Buffalo Soc. Nat. Sci., 9: 197.
1910 *Peregrinus maidis* Kirkaldy, Faun. Haw., 2: 577.
1913 *Pundaluoya simplicia* Melicher, Notes Leyd. Mus., 36: 109 (Java - Banjuwangi).
1913 *Liburnia psylloids* Melichar, Ibid., 111 (Java—Banjuwang).
1913 *Peregrinus maidis* Melichar, Ibid., 111 (Java—Semarang).
1914 *Dicranotropis maidis* Crawford, Proc. U. S. Mus., 46: 595.
1914 *Delphax psylloides* Lethierry, Ind. Mus. Notes, 3: 105.
1915 *Peregrinus maidis* Metcalf, J. Elisha Mitsch. Soc., 31: 12.
1917 *Peregrinus maidis* Van Duzee, Cat. Hem. Amer., 769.
1922 *Peregrinus maidis* Giffard, Proc. Haw. Ent. Soc., 5: 109, 110, 116, 118.
1923 *Peregrinus maidis* Wolcott, J. Dept. Agric. Porto. Rico, 7: 273.
1926 *Peregrinus maidis* Muir, J. Malay Branch Royal Asiat. Soc., 4: 399.
1926 *Peregrinus maidis* Muir, Ann. Mag. Nat. Hist., ser. 9, 17: 80.
1926 *Peregrinus maidis* Gater et Corbett, Fed. Malay Stat. Settlem., Bull. 38: 5 (Malaya,—on maize).
1927 *Peregrinus maidis* Muir, Ins. Samoa, 2: 10 (Samoa).
1927 *Peregrinus maidis* Muir, Ann. Mag. Nat. Hist., ser. 9, 20: 87 (Tahiti).
1928 *Peregrinus maidis* Myers, Studies on Cuban Ins., 1: 22.
1929 *Peregrinus maidis* Osborn, J. Dept. Agric. Porto Rico, 13: 110.
1929 *Peregrinus maidis* Dammerman, Agric. Zool. Malay Archipel., 235.
1935 *Peregrinus maidis* Osborn, New York Acad. Sci., 14: 234, 240.
1940 *Peregrinus maidis* Esaki, Bot. Zool., 8: 276 (Micronesia).
1940 *Peregrinus maidis* Swezey, Haw. Plant. Rec., 44: 158.

1943 *Peregrinus maidis* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 39.
1945 *Peregrinus maidis* Matsumura et Ishihara, Mushi, 16: 71 (Formosa).

Distr.: Formosa, India, Java, Micronesia—Marianas (Tenian, Guam), Palaus (Angaur), Carolines (Yap), Hawaii, Africa, Tahiti, Australia, N. America, W. India.

Host-plants: *Zea Mays, Saccharum officinarum, Bromus unicoloides, Sorghum vulgare, Cynodon Dactylon.*

This is a well-known cosmotropical species injurious to maizes (corns). The so-called 'corn hopper' indicates the present species.

21. Genus Saccharosydne Kirkaldy, 1907

Orthotype: *Saccharosydne saccharivora* (Westwood, 1833)

1907 *Saccharosydne* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 3: 139.
1915 *Saccharosydne* Muir, Canad. Entomol., 47: 267, 300.
1917 *Saccharosydne* Matsumura, Applied Ent., form. ser., 378.
1924 *Saccharosydne* Muir et Giffard, Haw. Sugar Pl. Ass., Bull. 15: 5, 9.
1935 *Saccharosydne* Osborn, New York Acad. Sci., 14: 234, 242.
1943 *Saccharosydne* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 37.
1945 *Saccharosydne* Matsumura et Ishihara, Mushi, 16: 74.

Vertex long, more than twice the width between eyes, gradually tapering anteriorly, conspicuously produced in front of eyes, with round apex. Mediolateral carinae meeting together in some distance before apex, median carina invisible or obsolete. Face convergent towards apex, where it is excavated superiorly, of length which is more than twice the apical width. Antennae short, not reaching frontal apex, with first segment which is less than half the length of the second. Pronotum a little shorter than vertex, much wider than the width of head including eyes, with three carinae, lateral ones of which are convergingly curved posteriorly and are clearly reaching the hind margin. Scutellum about as long as vertex and pronotum put together, with three carinae, median one of which vanishes on apex. Tegmina very well-developed, slender, much protruding abdominal apex. Legs simple, slender, almost unarmed, with hind basitarsus which is about twice as long as the remaining two tarsal segments placed together. Spurs laminate, with more than twenty minute teeth along the hind margin. Male genitalia, with parameres which are slender, sward-shaped like in the *Stenocranus*-group, and with short anal segment and also short anal style.

The present conspicuous genus is a small group, in which only one fairly well-known species, as given below, injurious to rice-plants is recorded from the Japanese Islands. I have not examined any brachypterous form in the genus.

Body including antennae mostly light green. Tegmina subhyaline, with a light greenish tinge, often with more or less blackish tint at apex, veins light

green. Length ♂ ♀ 6 mm. (includ. teg.) .....
.....**Saccharosydne procerus** (Matsumura, 1910)

100. Saccharosydne procerus (Matsumura, 1910)

Figs. 86 – 89.

1901 Anonym Onuki, Rep. Jap. Agr. Exp. Stat., no. 10: 63, pl. 13, f. 3 (Honshu—Tokyo, Shiga, on rice-plants, etc.).
1906 *Oxycranus procerus* Matsumura, List Injur. Ins. Jap., 14 (nom. nud.).
1910 *Oxycranus procerus* Matsumura, Dainippon Gaichu Zensho, form. ser., 120 (Japan).
1915 *Oxycranus procerus* Suzuki, List Spec. Hanazono Ent. Inst., 10.
1917 *Saccharosydne procerus* Matsumura, Applied Ent., form. ser., 332, pl. 14, f. 9.
1920 *Saccharosydne procerus* Matsumura, Dainippon Gaichu Zensho, rev. and addit. ed., form. ser., 270.
1931 *Saccharosydne procerus* Matsumura, Nippon Konchu Daizukan, 1273, f.
1932 *Saccharosydne procerus* Esaki, Iconogr. Ins. Jap., 1782, f. 3522. (Korea).
1922 *Saccharosydne procerus* Matsumura, Dainippon Gaichu Zusetsu, 231, pl. 8, f. 11.
1933 *Saccharosydne procerus* Kato, Ent. Wor., 1: 12 (Manchuria).
1933 *Saccharosydne procerus* Kato, Three-col. Illustr. Ins. Jap., 4: pl. 17, f. 1 (Formosa).
1943 *Saccharosydne procerus* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 38.
1945 *Saccharosydne procerus* Matsumura et Ishihara, Mushi, 16: 74, f. 9 (male genitalia figured).

Distr.: Honshu, Kyushu, Shikoku, Korea, Manchuria, Formosa.
Host-plants: Poaceae—*Zizania latifolia*, *Oryza sativa*.

Not rarely as this is found on rice-plants, it seems not so very injurious to them and often comes to our lights flying.

22. Genus Sardia Melichar, 1903

Haplotype: *Sardia rostrata* Melichar, 1903

1903 *Sardia* Melichar, Hom. Faun. v. Ceylon, 96.
1906 *Sardia* Distant, Faun. Brit. Ind., Rhynch., 3: 475.
1906 *Hadeodelphax* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 1: 410.
1907 *Hadeodelphax* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 3: 140.
1913 *Sardia* Muir, Proc. Haw. Ent. Soc., 2: 246.
1915 *Sardia* Muir, Canad. Entomol., 47: 267, 301.
1916 *Sardia* Distant, Faun. Brit. Ind. Rhynch., 6: 141.
1917 *Sardia* Muir, Proc. Haw. Ent. Soc., 3: 328.
1927 *Sardia* Muir, Ins. Samoa, 2: 11.
1943 *Sardia* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 38.
1945 *Sardia* Matsumura et Ishihara, Mushi, 16: 75.

Vertex long, more than twice the width, comparatively acutely and much produced in front of eyes, suparallel-sided; medio-lateral carinae occurring from lateral carinae, conspicuously convergent anteriorly, meeting each other at apex and continued on to face as a single carina. Face long, more than three times the apical width, conspicuously narrowed between eyes and broadest

at apex. Clypeus fairly long, narrowed from the middle towards apex. Antennae comparatively short, meagrely longer than frontal apex, with first segment which is less than half the length of the second. Pronotum short, less than half the length of vertex, wider than vertex including eyes, with three, carinae, lateral ones of which are clearly reaching the hind margin. Scutellnm nearly as long as vertex and pronotum placed together, fairly acutely projecting posteriorly. Tegmina much protruding abdominal apex. Legs simple, with hind basitarsus which is a little longer than the other two tarsal segments put together. Spurs large, thin, tectiform, with about fifteen or more teeth along the hind margin.

In the present genus, no species is found in Japan but the following two species are distributed in Formosa. So far as I examined, all individuals are macropterous.

Key to the species

I could not get any specimen of *Sardia pluto* (Kirkaldy, 1906), which is known to have a so extensive variation in coloration, that I cannot find now any decisive specific character of each species except in the male genitalia.

1 (*2*) Parameres of the male genitalia gradually tapering towards their apices. Length ♂♀ 3.8 - 4.5 mm. (includ. teg.) ..... **Sardia rostrata** Melichar, 1903.

2 (1) Parameres of the male genitalia shallowly furcate at their apices. Length ♂♀ 3.8 - 4.5 mm. (includ. teg.) ..... **S. pluto** (Kirkaldy, 1906)

101. Sardia rostrata Melichar, 1903

Figs. 64 - 69.

1903 *Sardia rostrata* Melichar, Hom. Faun. v. Ceylon, 96, pl. 2, f. 4 (Ceylon).
1906 *Sardia rostrata* Distant, Faun. Brit. Ind., Rhynch., 3: 475, f. 262.
1913 *Sardia rostrata* Muir, Proc. Haw. Ent. Soc., 2: 246 (Java, Malaya).
1915 *Sardia rostrata* Schumacher, Suppl. Ent. 4: 142 (Formosa—Anping).
1915 *Sardia rostrata* Melichar, Mitt. zool. Mus. Berlin, 8: 132.
1916 *Sardia rostrata* Distant, Faun. Brit. Ind., Rhynch., 6: 141 (India—Bombay, Culcutta).
1917 *Sardia rostrata* Muir. Proc. Haw. Ent. Soc., 3: 329 (Philippines—Luzon, Borneo.).
1943 *Sardia rostrata* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 38.
1945 *Sardia rostrata* Matsumura et Ishihara, Mushi, 16: 75, f. 39 (male genitalia figured).

Distr.: Formosa, S. China—Canton (hab. nov.), Malaya, India, Ceylon, Philippines, Borneo, Java.

Host-plant: Unknown.

It comes into question that the present species was described first without touching on the male genitalia, for the following allied species has an excessive range of variation. With the former I identified a Formosan species, which differs from the latter and coincides entirely with the description of

the former except for the venation of tegmina. But the venation on tegmina of this species is very different individually, so far as in several specimens which were available for me.

I could examine several specimens of both sexes which were collected in Formosa and in South China (Canton), the latter habitat being a new record.

102. Sardia pluto (Kirkaldy, 1906)

Fig. 70. (from Kirkaldy, 1907)

1906 *Hedeodelphax pluto* Kirkaldy, Haw. Sugar Pl. Ass., Bull. 1: 410 (Australia—Queensland).
1907 *Hedeodelphax pluto* Kirkaldy, Ibid., 3: 140, pl. 17, f. 12 (Fiji, male genitalia figured).
1908 *Sardia pluto* Kirkaldy, Ann. Soc. Ent. Belg., 1908, 14 (Ceylon).
1917 *Sardia pluto* Muir, Proc. Haw. Ent. Soc., 3: 328 (Formosa).
1927 *Sardia pluto* Muir, Ins. Samoa, 2: 11. (Samoa).
1927 *Sardia pluto* Muir, Ann. Mag. Nat. Hist., ser. 9, 20: 87 (Tahiti).

Distr.: Formosa, Ceylon, Fiji, Samoa, Tahiti, Australia.
Host-plant: Unknown.

To my regret, I have not yet seen this species, which was recorded from Formosa, so showed here a copy of the male genitalia taken from the figure by Kirkaldy, 1907.

23. Genus Terauchiana Matsumura, 1915

Haplotype: *Terauchiana singularis* Matsumura, 1915

1915 *Terauchiana* Matsumura, Trans. Sapporo Nat. Hist. Soc., 5: 178.
1943 *Terauchiana* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 50.
1945 *Terauchiana* Matsumura et Ishihara, Mushi, 16: 75.

Large-formed, Dictyopharid-shaped genus. Vertex spatulate, very long, with length more than four times the width; fairly conspicuously narrowed between eyes, round at apex; medio-lateral carinae occurring a little anterior to base and convergent anteriorly but not meeting together at apex, median carina simple, placed between eyes. Face very long, more than five times the width, lateral margins almost parallel to each other, base rounded, apex somewhat narrowed and about as wide as base of clypeus. Antennae short, hardly reaching apex of face, with first segment which is short, less than half the length of the second. Pronotum moderate in length, tricarinate; lateral carinae somewhat divergingly curved posteriorly and distinctly reaching the hind margin, hind margin slightly excavated anteriorly. Scutellum a little longer than pronotum, acutely projecting posteriorly, tricarinate. Tegmina large, much protruding abdominal apex, with very distinct veins. Femora and tibiae simple, hind tibia furnished with two small spines, one near base, another at the middle. Hind basitarsus nearly twice the length of the other two tarsal segments put together. Spurs foliaceous, with

comparatively coarse teeth (less then twenty) along the hind margin. Male genitalia with well-developed basal plates and fairly stout parameres, of which each apex is tapering to a point and each inner margin is furnished with a small spine.

This genus is a curious one, in which only two species have been recorded from Japan and Korea till now. So far as I know, only macropterous form appear.

Key to the species

1 (*2*) Vertex, pronotum and scutellum entirely light brown. Apices of parameres of the male genitalia tending each other inward. Length ♂♀ 6.2 - 6.9 mm. (includ. teg.)·····**Terauchiana singularis** Matsumura, 1915.

2 (1) Vertex, pronotum and scutellum, especially base of vertex, each outside of lateral carinae of pronotum and of scutellum and also most portion of each tegmen tinted with dark brown. Apices of parameres of the male genitalia tending posteriorly. Length ♂♀ 7 mm. (includ. teg.) ····· ····· **T. nigripennis** Kato, 1934.

103. Terauchiana singularis Matsumura, 1915

Figs, 15 - 19.

1915 *Terauchiana singularis* Matsumura, Trans. Sapporo Nat. Hist. Soc., 5: 177, pl. 1, f. 1 (Korea —Mt. Kongo).

1931 *Terauchiana singularis* Matsumura, Nippon Konchu Daizukan, 1273, f.

1933 *Terauchiana singularis* Kato, Three-col. Illustr. Ins., Jap., 4: pl. 15, f. 3 (Honshu).

1934 *Terauchiana singularis* Baba, Ent. Wor., 2: 2 - 7 (ecological notes).

1943 *Terauchiana singularis* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 50.

1945 *Terauchiana singularis* Matsumura et Ishihara, Mushi, 16: 75, f. 32 (Kyushu, male genitalia figured).

Distr.: Honshu, Kyushu, Korea.

Host-plants: Poaceae—*Phragmites communis, Poa annua, Miscanthus sinensis, Imperata cylindrica.*

The present species is not rarely found among Poaceae-weeds in Japan.

104. Terauchiana nigripennis Kato, 1933

Figs. 20 - 21.

1933 *Terauchiana nigripennis* Kato, Ent. Wor., 1: 470, pl. 14, f. 12 (Honshu—Tokyo).

1933 *Terauchiana nigripennis* Kato, Three-col. Illustr. Ins. Jap., 4: pl. 15, fs. 4 - 5.

1943 *Terauchiana nigripennis* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 50 (Kyushu, on *Imperata cylindrica*).

1945 *Terauchiana nigripennis* Matsumura et Ishihara, Mushi, 16: 75, f. 33 (male genitalia figured).

Distr.: Honshu, Kyushu.
Host-plant: Poaceae—*Imperata cylindrica*,
This is a rare species which may be found on the above related plant.

24. Genus Eurysa Fieber, 1866

Logotype: *Eurysa lineata* (Signoret, 1857)

1866 *Eurysa* Fieber, Verh. zool.-bot. Ges. Wien, 16: 520, pl. 8, f. 9.
1875 *Eurysa* Fieber, Rev. Mag. Zool., 3: 374.
1878 *Eurysa* Ferrari, Ann. Mus. Stor. Nat. Genova, 18: 88.
1896 *Eurysa* Melichar, Cicad. v. Mit.-Eur., 67.
1900 *Epeurysa* Matsumura, Ent. Nachr., 26: 261.
1908 *Eurysa* Oshanin, Verz. Paläark. Hem., 2: 309.
1908 *Epeurysa* Oshanin, Ibid., 311.
1912 *Eurysa* Oshanin, Kat. Paläark. Hem., 118.
1912 *Epeurysa* Oshanin, Ibid., 118.
1915 *Eurysa* Muir, Canad. Entomol., 47: 263, 298.
1915 *Epeurysa* Muir, Ibid., 263.
1917 *Eurysa* Matsumura, Applied Ent., form. ser., 379.
1924 *Eurysa* Muir et Giffard, Haw. Sugar Pl. Ass., Bull. 15: 5, 8.
1926 *Eurysa* Muir, Ann. Mag. Nat. Hist., ser. 9, 17: 20.
1943 *Eurysa* Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 41.
1943 *Epeurysa* Esaki et Ishihara, Ibid., 42.
1945 *Eurysa* Matsumura et Ishihara, Mushi, 16: 72.

Vertex very short, clearly wider than the length, lateral margins more or less divergent apically and also basally, carinae comparatively indistinct. Eyes fairly flat in the dorsal view. Face very wide, more than half the length of it, apex about as wide as base of clypeus, with one longitudinal carina, which is indistinct, especially in base. Antennae simple, protruding apex of face, second segment fairly swollen, about twice as long as the first. Pronotum longer than the length of vertex, wider than vertex including eyes, hind margin conspicuously deeply excavated anteriorly, tricarinate, lateral carinae divergingly curved posteriorly and vanishing before reaching the hind margin. Scutellum large, longer than vertex and pronotum placed together, apex triangularly projecting posteriorly, Tegmina ordinary, passing beyond abdominal apex. Legs simple, spurs thin, tectiform, with minute teeth or very minute hair-like ones at apex. Male genitalia constituted like in the Genus *Delphacodes*, Fieber, 1866, except basal plate which is usually well-developed.

From Japan or from Formosa only the following one species has been known till now. Brachypterous form is unknown.

Body mostly grayish yellow, slender in form. Tegmina subhyaline, with a tinge which is concolorous with body, veins grayish yellow. Length ♂♀ 4.7 – 5 mm. (includ. teg.), ♂ 2.5 mm., ♀ 3 mm. (exclud. teg.) ..... **Eurysa nawaii** (Matsumura, 1900)

105. Eurysa nawaii (Matsumura, 1900)

Figs. *229 – 232.*

1900 *Epeurysa nawaii* Matsumura, Ent. Nachr., 26: 261. (♀. Honshu—Gifu).
1908 *Epeurysa nawaii* Oshanin, Verz. Paläark. Hem., 2: 311.
1912 *Epeurysa nawaii* Oshanin, Kat. Paläark. Hem., 118.
1915 *Eurysa nawae* (!) Suzuki, List Spec. Hanazono Ent. Inst., 10.
1917 *Eurysa nawae* (!) Matsumura, Applied Ent., form. ser., 381, pl. 14, f. 11.
1920 *Eurysa* (*Epeurysa*) *nawae* (!) Matsumura, Dainippon Gaichu Zensho, rev. and addit. ed., form. ser., 260, pl. 8, f. 10.
1931 *Eurysa nawae* (!) Matsumura, Nippon Konchu Daizukan, 1266, f.
1932 *Eurysa* (*Epeurysa*) *nawae* (!) Matsumura, Dainippon Gaichu Zusetsu, 230, pl. 8, f. 10.
1943 *Eurysa nawae* (!) Esaki et Ishihara, Cat. Araeopid. Imp. Jap., 41.
1943 *Epeurysa nawaii* Esaki et Ishihara, Ibid., 42.
1945 *Eurysa nawaii* Matsumura et Ishihara, Mushi, 16: 72 (male genitalia figured).

Distr.: Honshu, Shikoku, Kyushu, Formosa, China.

This species is a fairly common species, often comes flying to our lights and is recorded to be parasitic on a bamboo, though not been observed by me yet.

25. Genus Zuleica Distant, 1912

Orthotype: *Zuleiea bengalensis* Distant, 1912

1912 *Zuleica* Distant, Ann. Mag. Nat. Hist., ser. 8, 9: 193.
1915 *Zuleica* Muir, Canad. Entomol., 47: 268.
1916 *Zuleica* Distant, Faun. Brit. Ind., Rhynch., 6: 144.
1945 *Zuleica* Matsumura et Ishihara, Mushi, 16: 72.

Body oval. Vertex narrow, somewhat produced in front of eyes, nearly twice as long as the width, subparallel-sided, with apex which is truncate; medio-latetal carinae, occurring a little posteriorly to the middle of lateral carinae, convergent to apex but hardly meeting on vertex and continued on to face where they meet each other very near base, Y-shaped carina mostly vanishing except for its branches, forming a traverse carina. Face comparatively long, amplicated towards apex, widest near apex, with largest width which is about twice as long as the basal width and with length which is more than twice the largest width, lateral edges of face laminate, conspicuously projecting laterally. Clypeus with base which is almost as wide as frontal apex. Antennae somewhat protruding frontal apex, with first segment which is less than half the length of the second. Pronotum nearly as long as vertex, much wider than vertex including eyes, with lateral carinae which are divergingly curved posteriorly and are obscurely reaching the hind margin. Scutellum nearly as long, or shorter than vertex and pronotum put together. Tegmina not reaching abdominal apex. (Macropterous form is unknown). Legs simple, slender, with very long hind basitarsus which is nearly twice as

long as the other two tarsal segments placed together. Spurs comparatively large, thin, sharply tapering apically, each with numerous minute teeth along the hind margin. Male genitalia simple as figured.

Only the following one species is known in Japan. Although this species does not coincide with the original description of the genus in the following respects: that it is destitute of spines on hind tibia which are often seen near the base and also at the middle of each hind tibia and that it has a small scutellum then in the genotype, *Zuleica bengalensis* Distant, 1912. These characters being fairly weak ones, it is so allied to the genotype in the general appearance and in many other respects, that I considered it proper to make it belong to the Genus *Zuleica* Distant, 1912. The macropterous form has not been known yet.

106. Zulecia nipponica Matsumura et Ishihara, 1945

Figs. *220 - 224*.

1945 *Zuleica nipponica* Matsumura et Ishihara, Mushi, 16: 72, f. 21. (Honshu, Kyushui on *Zizania longifolia*; male genitalia figured).

♂ (brachypt. f.). Body mostly light brown. Eyes dark brown. Ocelli reddish brown. Tegmina subhyaline, each with a large dark brown marking a little posterior to the middle. Legs light brown except for black apices of spines on them and of spurs. Scutellum comparatively short, a little longer than the length of pronotum. Male genitalia simple, with roundly inwards curved, hook-shaped parameres.

♀ (Brachypt. f.). Colorationl ike in the male but tegmina uniformly light brown, being destitute of the conspicuous dark brown marking on each tegmen of the male.

Length ♂ 2.8 mm., ♀ 3 mm.

Width of head including eyes ♂ ♀ 0.6 mm.

Distr.: Honshu, Kyushu.

Host-plant: Poaceae—*Zizania longifolia*.

This is a very conspicuous species, which is not rarely found in Honshu and in Kyushu.

VII. SUMMARY

In the second chapter I pointed out the fact that all the host-plants of the Japanese Araeopidae, except for a case in which the species feeds on plants of the Phylum Pterygophyta, belong to the Class Monocotyledoneae, and enumerated main host-plants of each species. The species which feeds on Pteridophyta may be presumed as primitive phylogenetically.

Characters of taxonomic importance of each genus and species adopted in the present work and the range of the individual variations are carefully examined. All genera and species known from Japan, Ryukyu Islands and Formosa are thoroughly revised. Further 7 new species were described, 6 genera and 6 species were synonymized and new generic combinations were proposed for 16 species as summarized as follows:

Species newly described:

Delphacodes panicicola sp. nov.……Honshu, on *Panicum Crusgalli*.
Delphacodes shirozui sp. nov.……Kyushu.
Delphacodes agropyri sp. nov.……Honshu, on *Agropyrum semicostatum*,
Delphacodes kuwaharai sp. nov.……Honshu, on ? *Polygonum Thunbergii*.
Delphacodes fukuokae sp. nov.……Kyushu.
Delphacodes nigerrima sp. nov.……Honsyu, on *Aneilema Kaisak*.
Dicranotropis esakii sp. nov.……Kyushu.

Genera and species newly synonymized:

Genus *Jugodina* Schumacher, 1915=Genus *Ugyops* Guérin, 1834, syn. nov.
Genus *Epunka* Matsumura, 1935=Genus *Euidella* Puton, 1886, syn. nov.
Genus *Toyoides* Masumura, 1935=Genus *Euidella* Puton, 1886, syn. nov.
Genus *Unkanella* Esaki et Ishihara, 1943=
Genus *Hosunka* Matsumura, 1935, syn. nov.
Genus *Calligypona* Sahlberg, 1871=Genus *Delphacodes* Fieber, 1866, syn. nov.
Genus *Jamiphax* Matsumura, 1940=
Genus *Phyllodinus* Van Duzee, 1897, syn. nov.
Jugodina dictyophoroides Schumacher, 1915=
Ugyops vittatus (Matsumura, 1915), syn. nov.
Stenocranus sapporensis Matsumura, 1934=
Stenocranus minutus (Fabricius, 1794), syn. nov.
Stenocranus vittatus Matsumura, 1935=
Stenocranus minutus (Fabricius, 1794), syn. nov.
Chloriona sukumonis Matsumura, 1935=
Chloriona shikokuana Matsumura, 1935, syn. nov.
Liburnia colocasiae Matsumura, 1920=
Megamelus proserpina Kirkaldy, 1907, syn. nov.
Dicranotropis cervina Muir, 1917=
Dicranotropis nagaragawana (Matsumura, 1900), syn. nov.

Species of new generic combination:

Euidella bilineata (Matsumura, 1935) comb. nov. (*Epunka*)
Euidella albipennis (Matsumura, 1935) comb. nov. (*Toyoides*)
Kakuna sapporonis (Matsumura, 1935) comb. nov. (*Toya*)
Hosunka hakonensis (Matsumura, 1935) comb. nov. (*Unkana*)
Hosunka taiwanella (Matsumura, 1935) comb. nov. (*Unkana*)
Hosunka testacea (Matsumura, 1900) comb. nov. (*Chlorionidea*)
Hosunka heitonis (Matsumura, 1935) comb. nov. (*Unkana*)
Hosunka nigrifacies (Matsumura. 1935) comb. nov. (*Unkana*)
Hosunka arisana (Matsumura, 1935) comb. nov. (*Unkana*)
Delphacodes albicollis (Motschulsky, 1863) comb. nov. (*Delphax*)
Delphacodes sameshimai (Matsumura et Ishihara, 1945) comb. nov. (*Kakuna*)
Delphacodes sapporona (Matsumura, 1935) comb. nov. (*Unkana*)
Phyllodinus affinis (Schumacher, 1915) comb. nov. (*Pundaluoya*)
Phyllodinus aritainoides (Schumacher, 1915) comb. nov. (*Pundaluoya*)
Phyllodinus kotoshonis (Matsumura, 1940) comb. nov. (*Jamiphax*)
Phyllodinus nigropunctatus (Motschulsky, 1863) comb. nov. (*Mestus*?)

In addition to above a new name, *Delphacodes sahlbergiana*, was proposed for *Delphacodes* (=*Calligypona*) *albicollis* (Sahlberg, 1871), preoccupied by *Delphacodes* (=*Delphax*) *albicollis* Motschulsky, 1863.

As the result of the present work, 106 species become to be known from Japan, Ryukyu Islands and Formosa at present.

V. INDEX TO GENERA (including subfamilies and tribes)

(*Italic names* denote synonyms)

VI. INDEX TO SPECIES (including formae)

(*Italic names* denote synonyms)

EXPLANATION OF THE FIGURES

The length given to each figure denotes 0.1 mm.; ×2, and ×10 0.2 mm. and 1 mm. respectively. The figures marked with * were drawn from the type-specimen of each species.

Pl. 1.

1 – 4	*Ugyops vittatus* (Matsumura, 1905)
5 - 9	*Purohita cervina* Distant, 1906
10 - 14	*Purohita taiwanensis* Muir, 1914

Pl. 2.

15 – 19	*Terauchiana singularis* Matsumnra, 1915
20 – 21	*Terauchiana nigripennis* Matsumura, 1933
22 – 25	*Tropidocephala brnnnipennis* Signorets, 1860
26	*Tropidocephala nigra* (Matsumura, 1900)
27	*Tropidocephala festiva* (Distant, 1906)

Pl. 3.

28 – 31	*Stenocranus tateyamanus* Matsumura, 1935
32 – 34*	*Stenocranus akashiensis* Matsumura, 1935
35 – 37*	*Stenocranus fallax* Matsumura, 1935
38 – 41	*Stenocranus minutus* (Fabricius, 1794)

Pl. 4.

42 – 45*	*Stenocranus breviceps* Matsumura, 1935
46 – 48	*Stenocranus harimensis* Matsumura, 1935
49 – 51*	*Stenocranus takasagonis* Matsumura, 1935
52 – 54*	*Stenocranus sukumonus* Matsumura, 1935

Pl. 5.

55*	*Stenocranus fallax* Matsumura, 1935
56 – 59*	*Chloriona japonica* Matsumura, 1917
60 – 63*	*Chloriona tateyamana,* Matsumura, 1935
64 – 69	*Sardia rostrata* Melichar, 1903.
70	*Sardia pluto* (Kirkaldy, 1906) (from Kirkaldy, 1907)

Pl. 6.

71 – 75	*Numata sacchari* (Matsumura, 1910)
76 – 80*	*Euidella bilineata* (Matsumura, 1935) comb. nov.

Pl. 7.

81 – 85	*Kakuna kuwayamai* Matsumura, 1935.
86 – 89	*Saccharosydne procerus* Matsumura, 1910
90 – 94	*Peregrinus maidis* (Ashmead, 1890)

Pl. 8.

95 – 96*	*Chloriona shikokuana* Matsumura, 1935
97 – 98*	*Hosunka testacea* (Matsumura, 1900) comb. nov.
99 – 103*	*Hosunka hakonensis* (Matsumura, 1935) comb. nov.
104 – 109*	*Himeunka tateyamaella* (Matsumura, 1935)
110 – 112	*Delphacodes sapporona* (Matsumura, 1935) comb. nov.

Pl. 9.

113 – 116	*Delphacodes striatella* (Fallén, 1826)
117 – 119	*Delphacodes albifascia* (Matsumura, 1900)
120 – 122*	*Delphacodes shirozui* sp. nov.
123 – 125	*Delphacodes longifurcifera* Esaki et Ishihara, 1947
126 - 127	*Delphacodes lyraefarmis* (Matsumura, 1900)

Pl. 10.

128 – 130*	*Delphacodes agropyri* sp. nov.
131 – 133	*Delphacodes yezoana* (Matsumura, 1900)
134 – 136	*Delphacodes terryi* Muir, 1917
137 – 139*	*Delphacodes nigrigena* Matsumura et Ishihara, 1945
140	*Delphacodes exigua* (Boheman, 1847)
141*	*Delphacodes sameshimai* (Matsumura et Ishihara, 1945) comb. nov.
142	*Kakuna sapporonis* (Matsumura, 1935) comb. nov.

Pl. 11.

143 – 144	*Kakuna sapporonis* (Matsumura, 1935) comb. nov.
145 – 147*	*Delphacodes kuwaharai* sp. nov.
148 – 150*	*Delphacodes nigerrima* sp. nov.
151 – 153*	*Delphacodes panicicola* sp. nov.

Pl. 12.

154 – 155	*Delphacodes exigua* (Boheman, 1847)
156 – 158*	*Delphacodes fukuokae* sp. nov.
159 – 161	*Delphacodes albovittata* (Matsumura, 1900)
162*	*Delphacodes esakii* Matsumura et Ishihara, 1945
163 – 166	*Nilaparvata lugens* (Stål, 1854)
167 – 168	*Nilaparvata bakeri* (Muir, 1917)

Pl. 13.

169 – 171	*Sogata furcifera* (Horváth, 1899)
172 – 174*	*Sogata kyusyuensis* Matsumura et Ishihara, 1945
175	*Sogata formosella* (Matsumura, 1935)
176 – 178*	*Sogata heitensis* Matsumura et Ishihara, 1945
179 – 181*	*Sogata sirokata* Matsumura et Ishihara, 1945

Pl. 14.

182 – 186	*Dicranotropis nagaragawana* (Matsumura, 1900)
187 – 189*	*Dicranotropis tikuzenensis* Matsumura et Ishihara, 1945
190*	*Hirozuunka japonica* Matsumura et Ishihara, 1945
191*	*Dicranotropis esakii* sp. nov.
192	*Perkinsiella saccharicida* Kirkaldy, 1903
193	*Perkinsiella sinensis* Kirkaldy, 1907 (from Kirkaldy, 1907)
194	*Perkinsiella vastatrix* (Breddin, 1896) (from Kirkaldy, 1907)

Pl. 15.

195 – 198*	*Hirozuunka japonica* Matsumura et Ishihara, 1945
199 – 201*	*Dicranotropis esakii* sp. nov.
202 – 205	*Perkinsiella saccharicida* Kirkaldy, 1903

Pl. 16.

206 – 209	*Phyllodinus nigromaculosus* Muir, 1917 (Fig. 209—from Muir, 1917)
210 – 214	*Phyllodinus nigropunctatus* (Moschulsky, 1863)
215	*Phyllodinus puncta* Muir, 1917 (from Muir, 1917)
216 – 219	*Megamelus proserpina* Kirkaldy, 1907

Pl. 17.

220 – 224*	*Zuleica nipponica* Matsumura et Ishihara, 1945
225 – 228	*Araeopus crassicornis* (Panzer, 1796)
229 – 232	*Eurya nawaii* (Matsumura, 1900)

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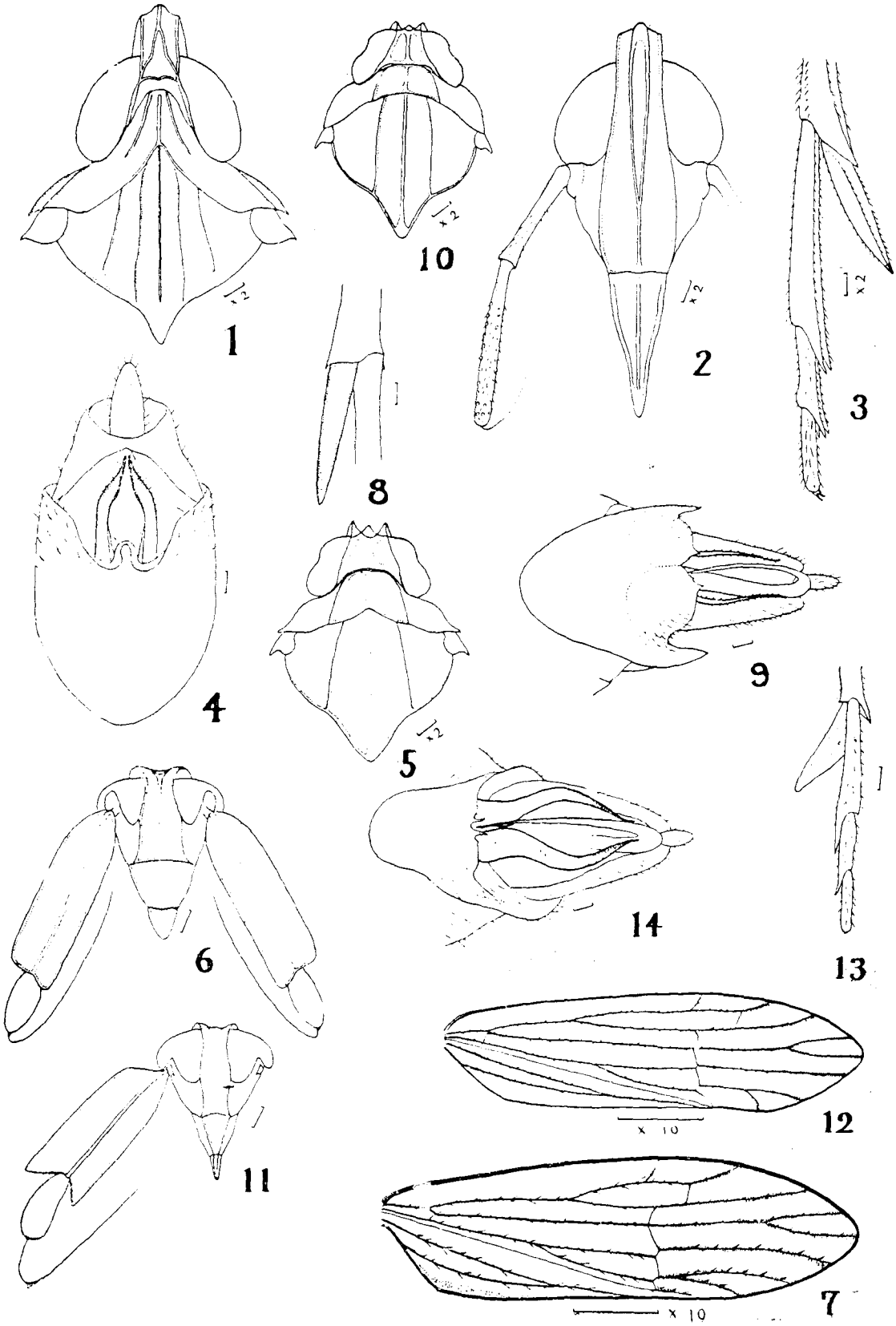
ERRATA

page	line	error	correct.
3	16, 25	Pterygophyta	Pteridophyta
10	11	Pterygophyta	Pteridophyta-
43	8	1835 Burmeister	1835 *Delphax* Burmeister
69	35	Matsumura et Ishihara,	Matsumura et Ishihara, 1945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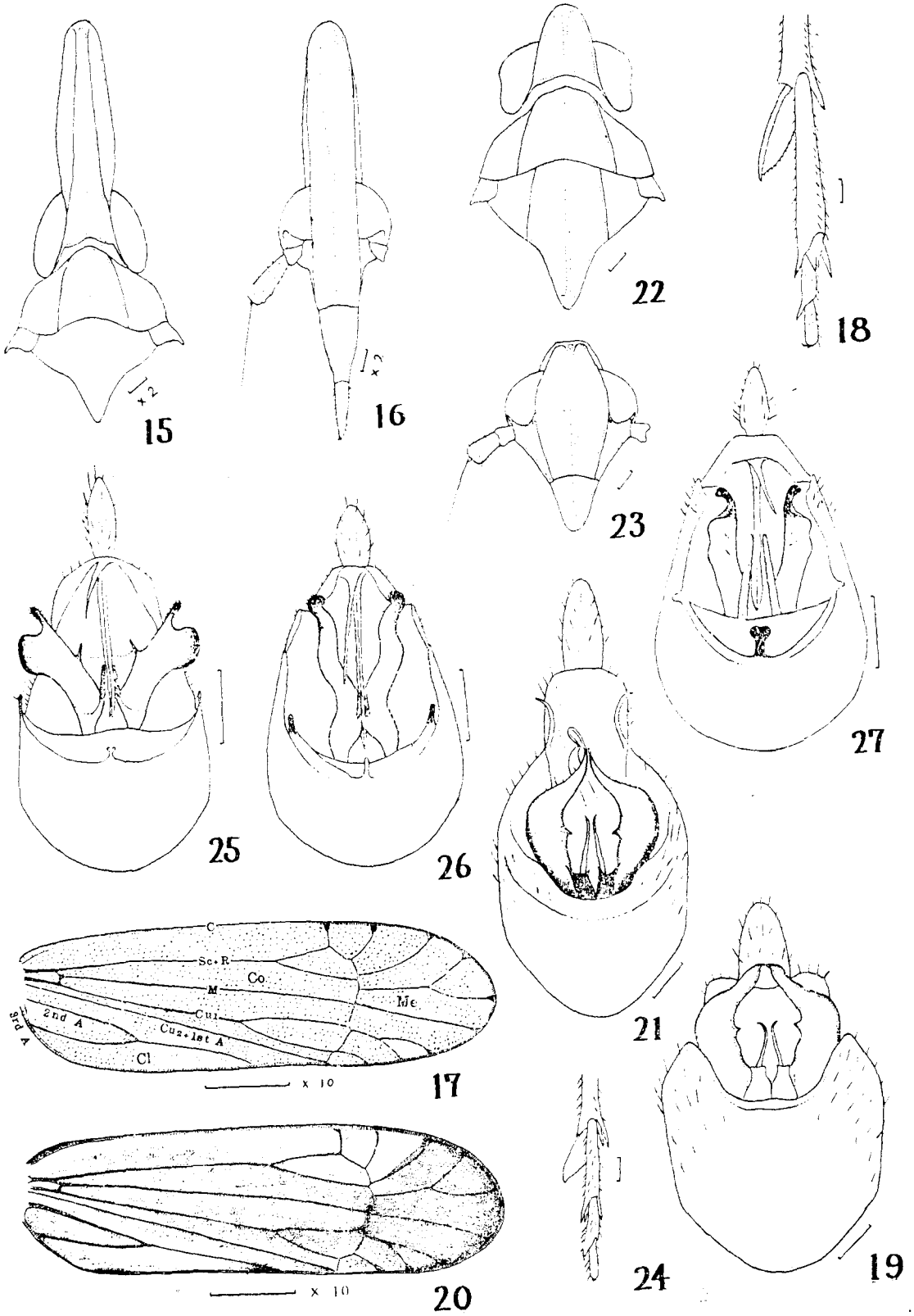
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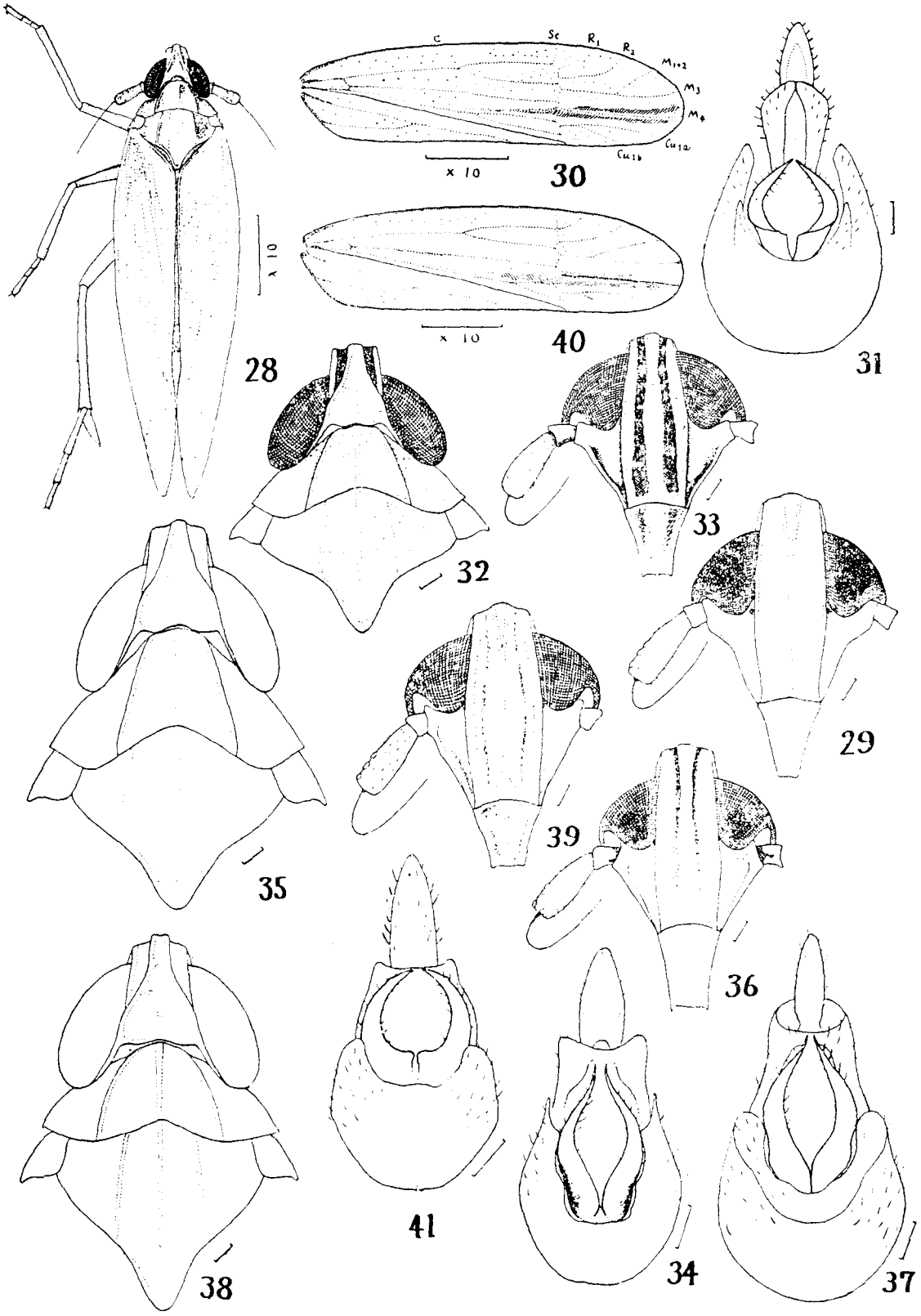
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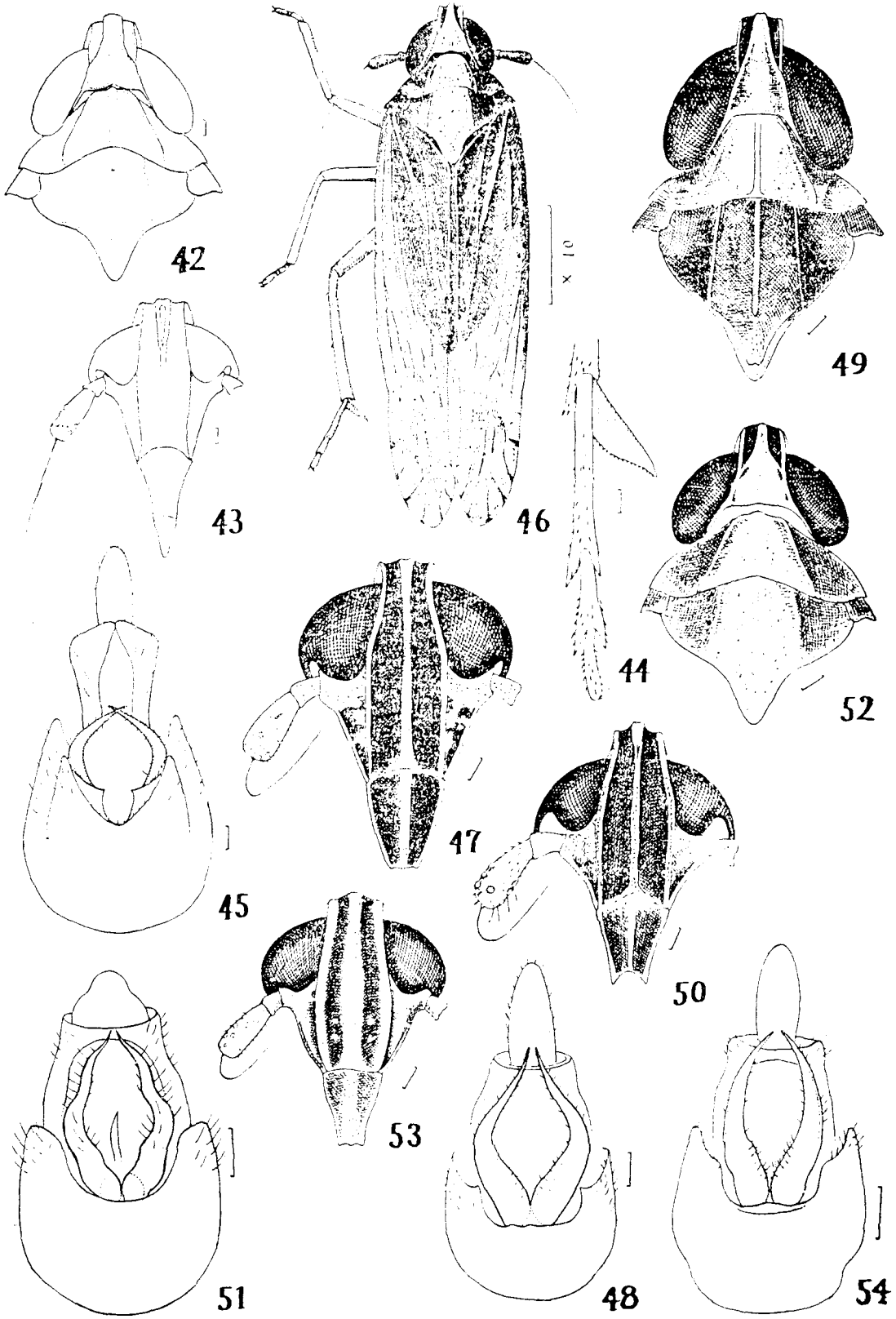

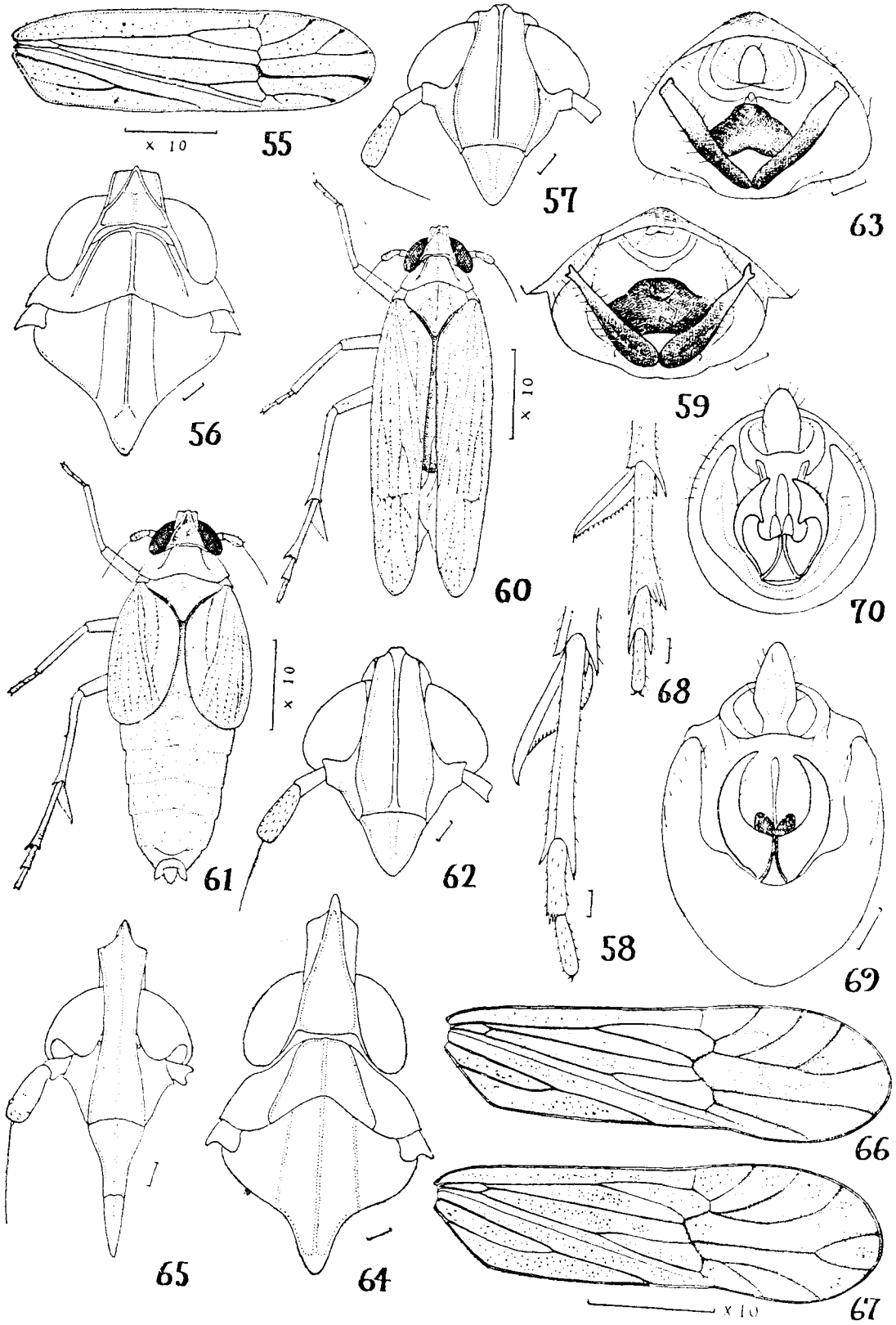
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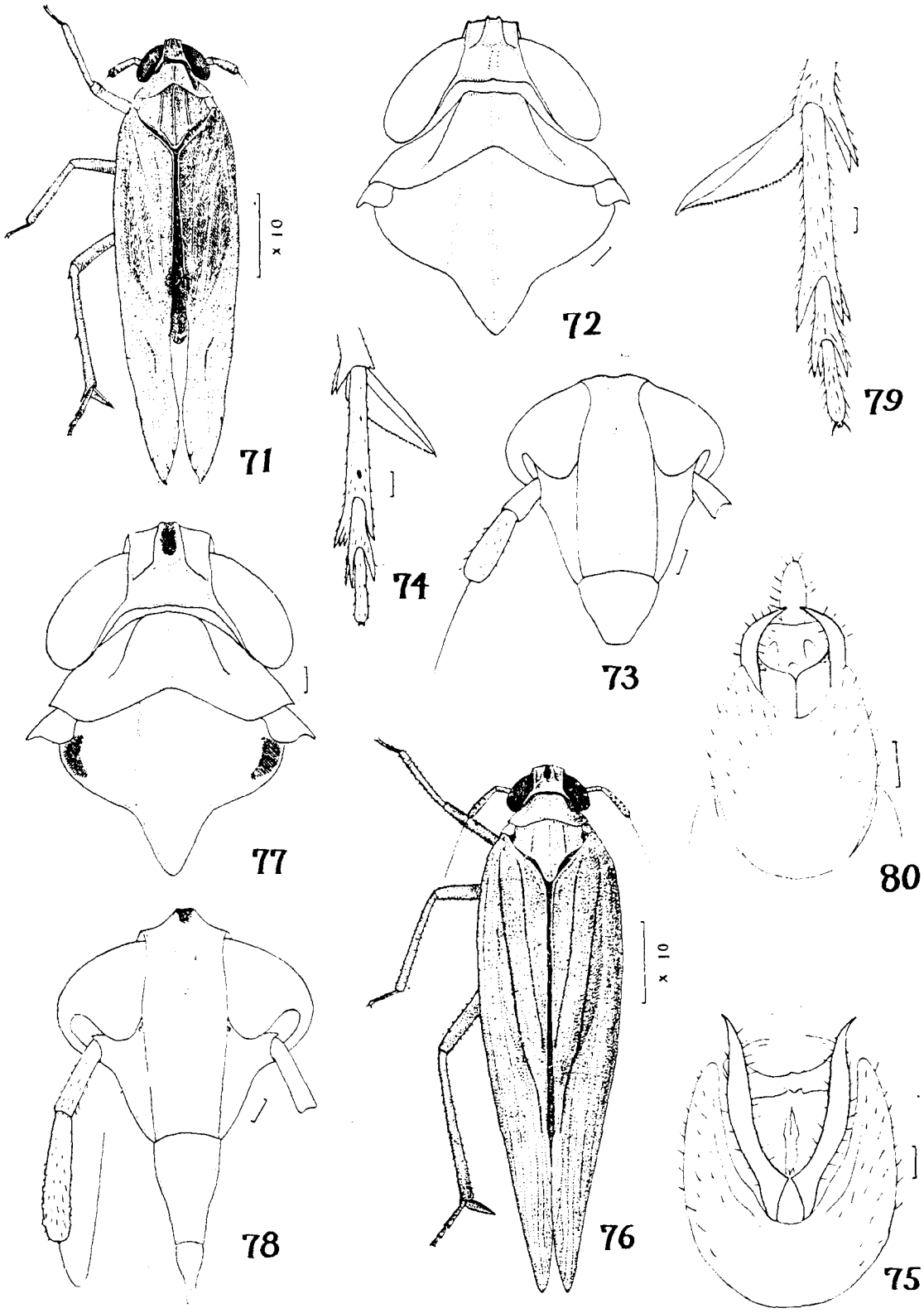

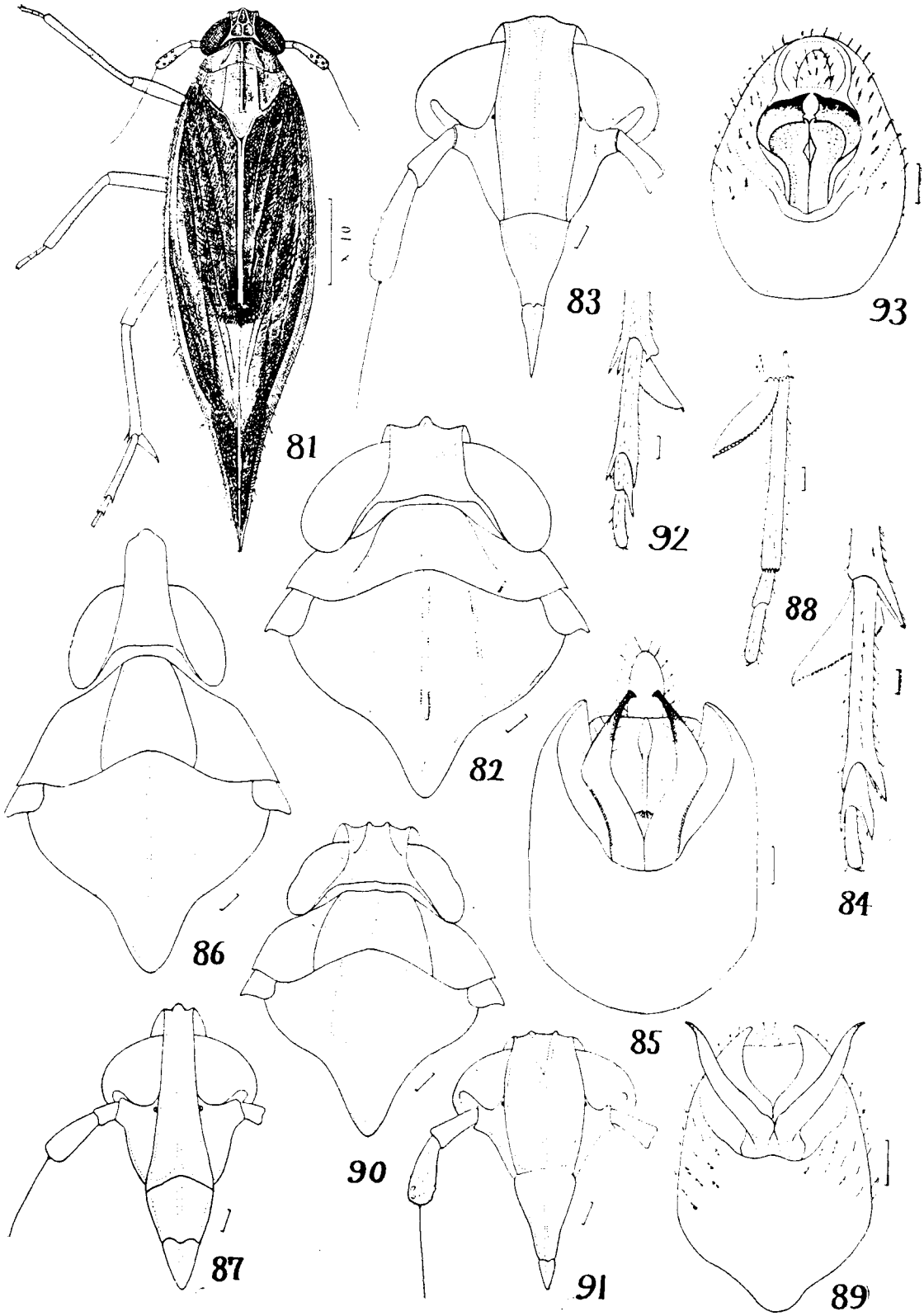
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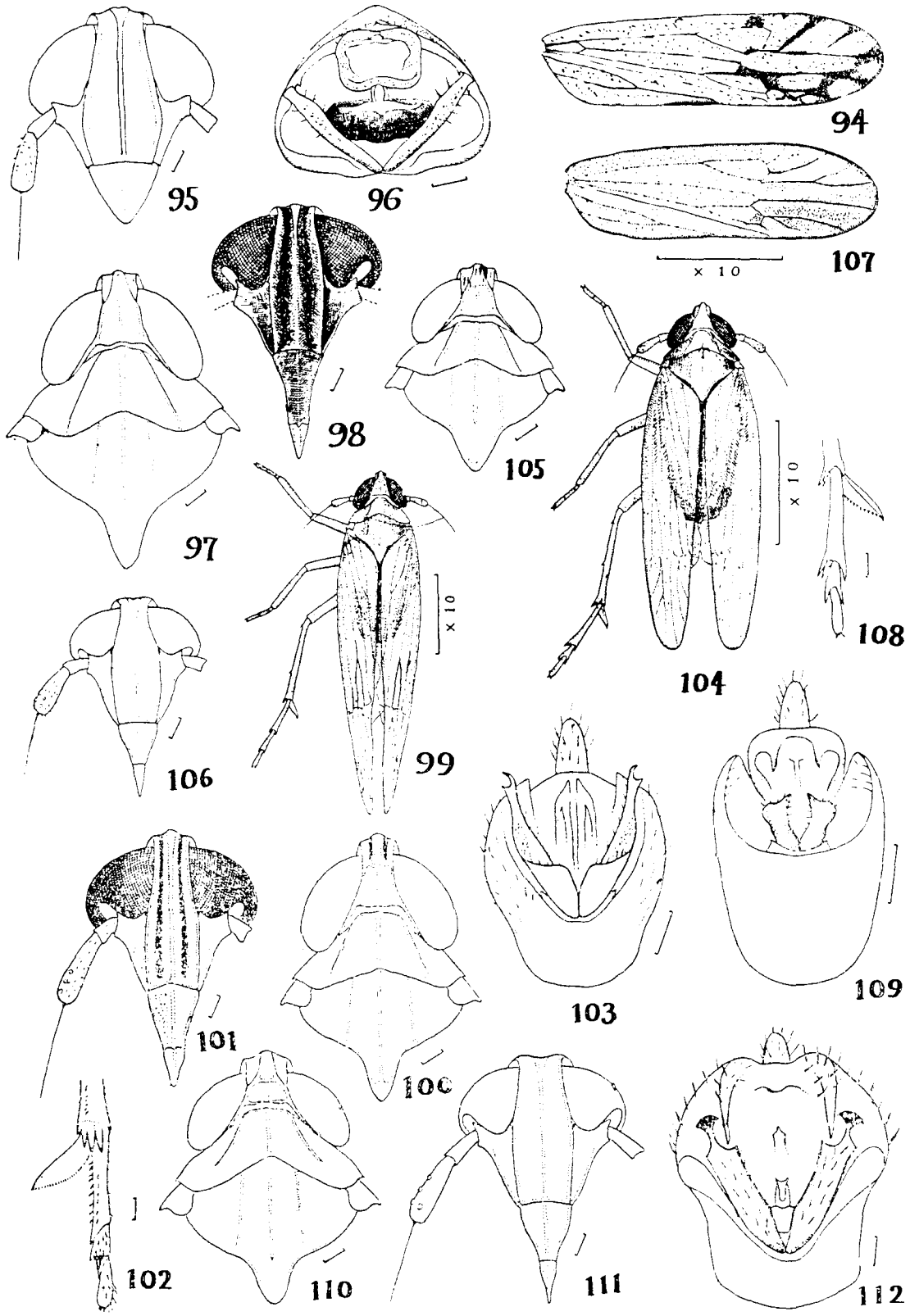
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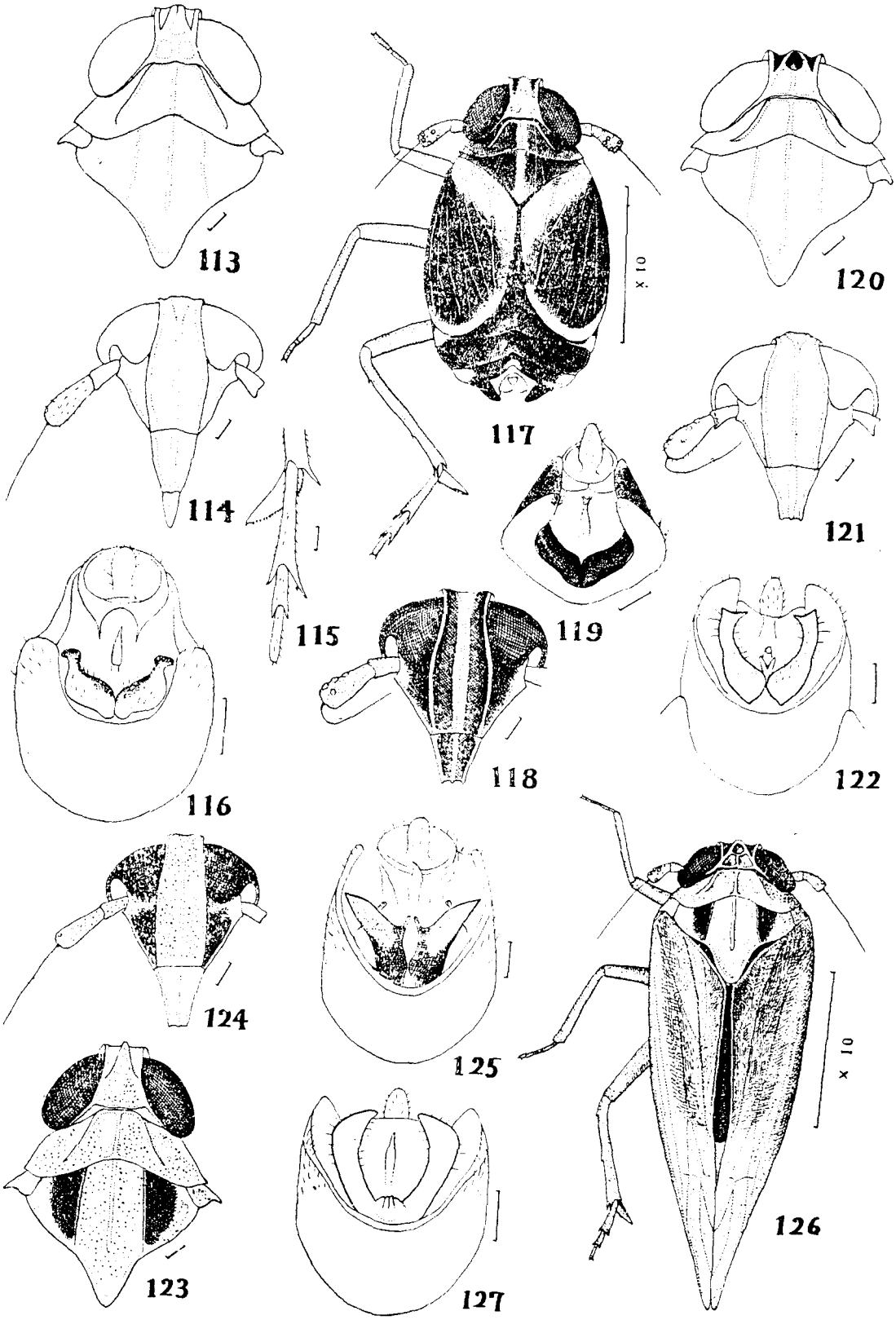
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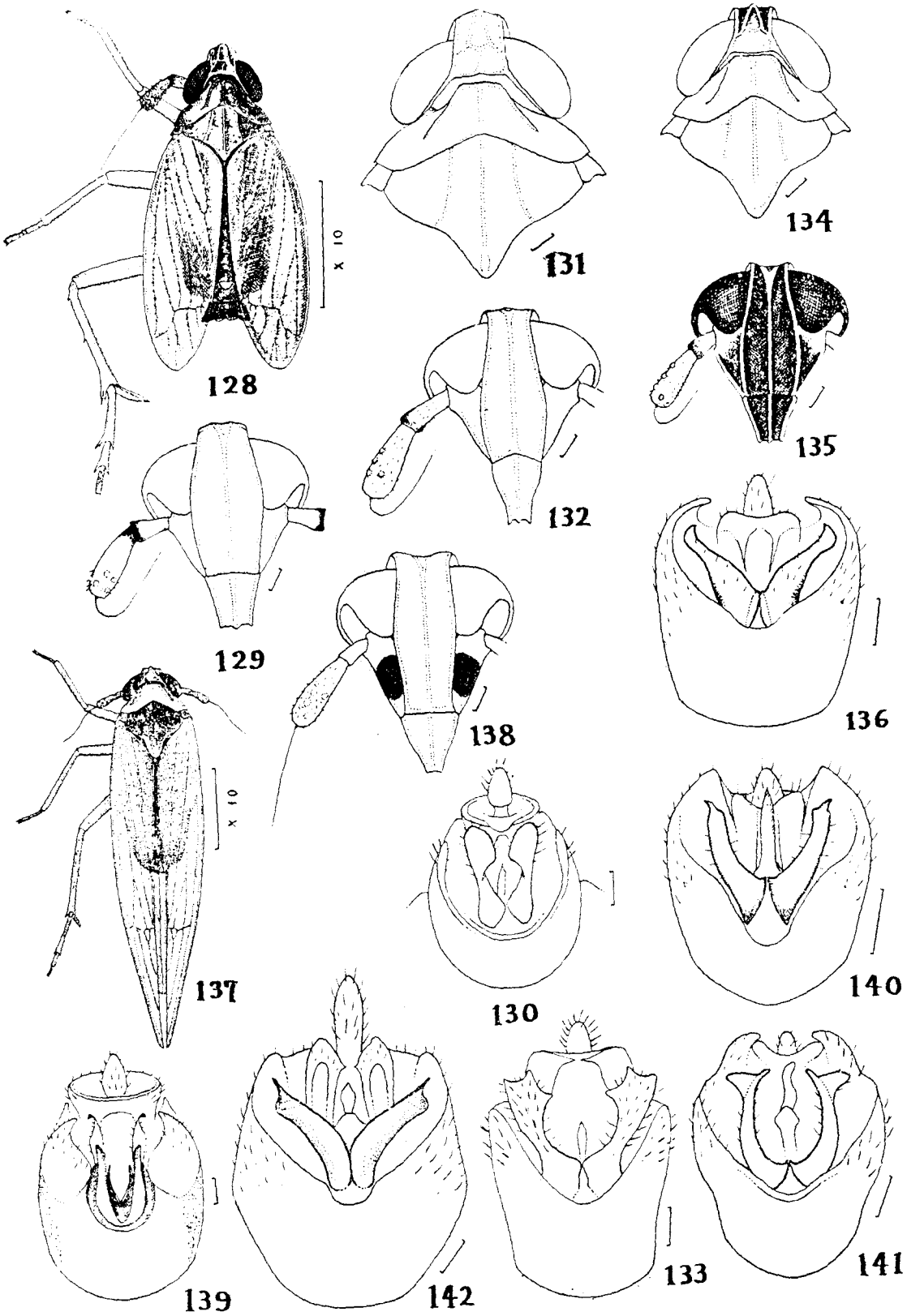
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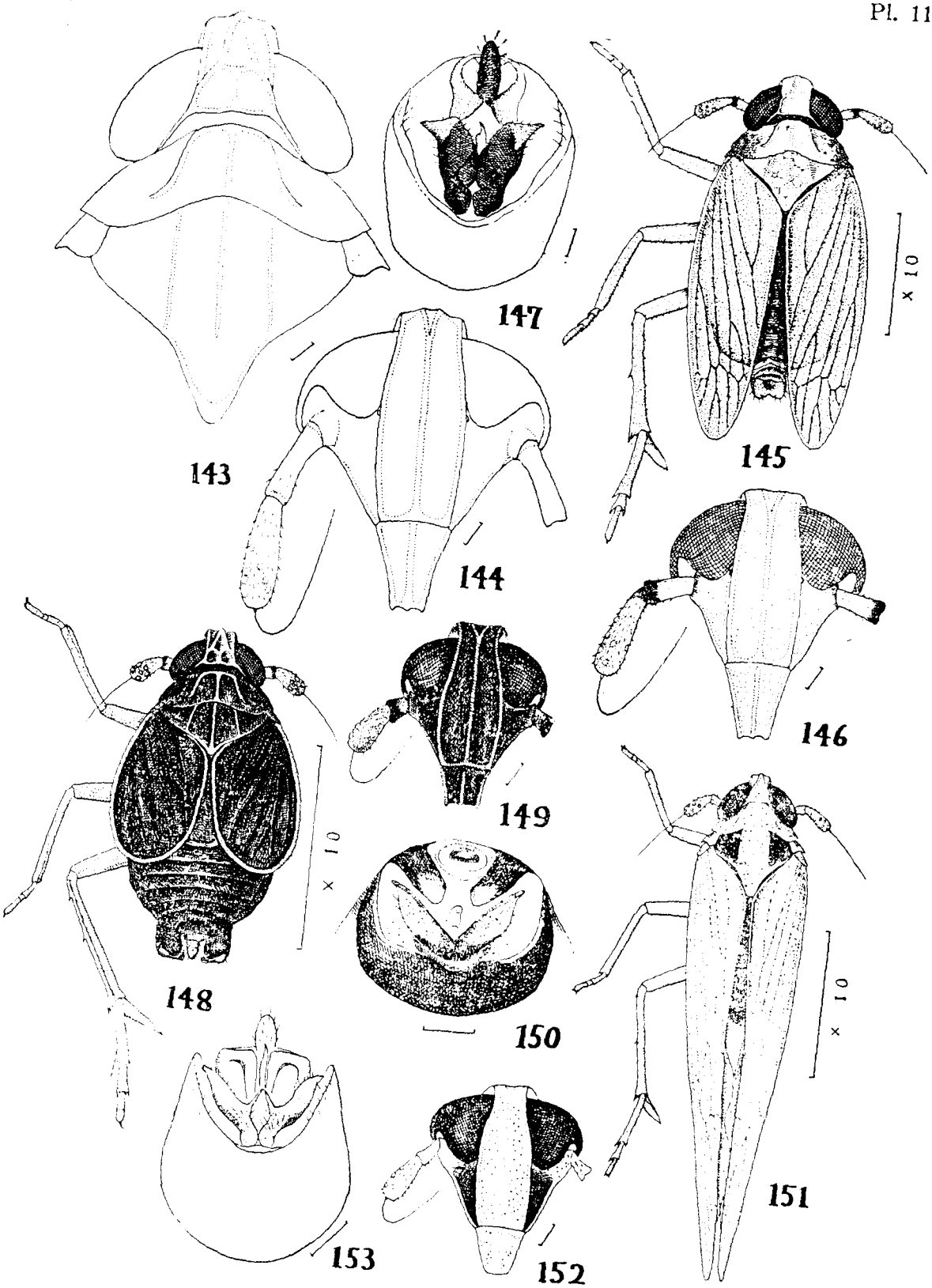
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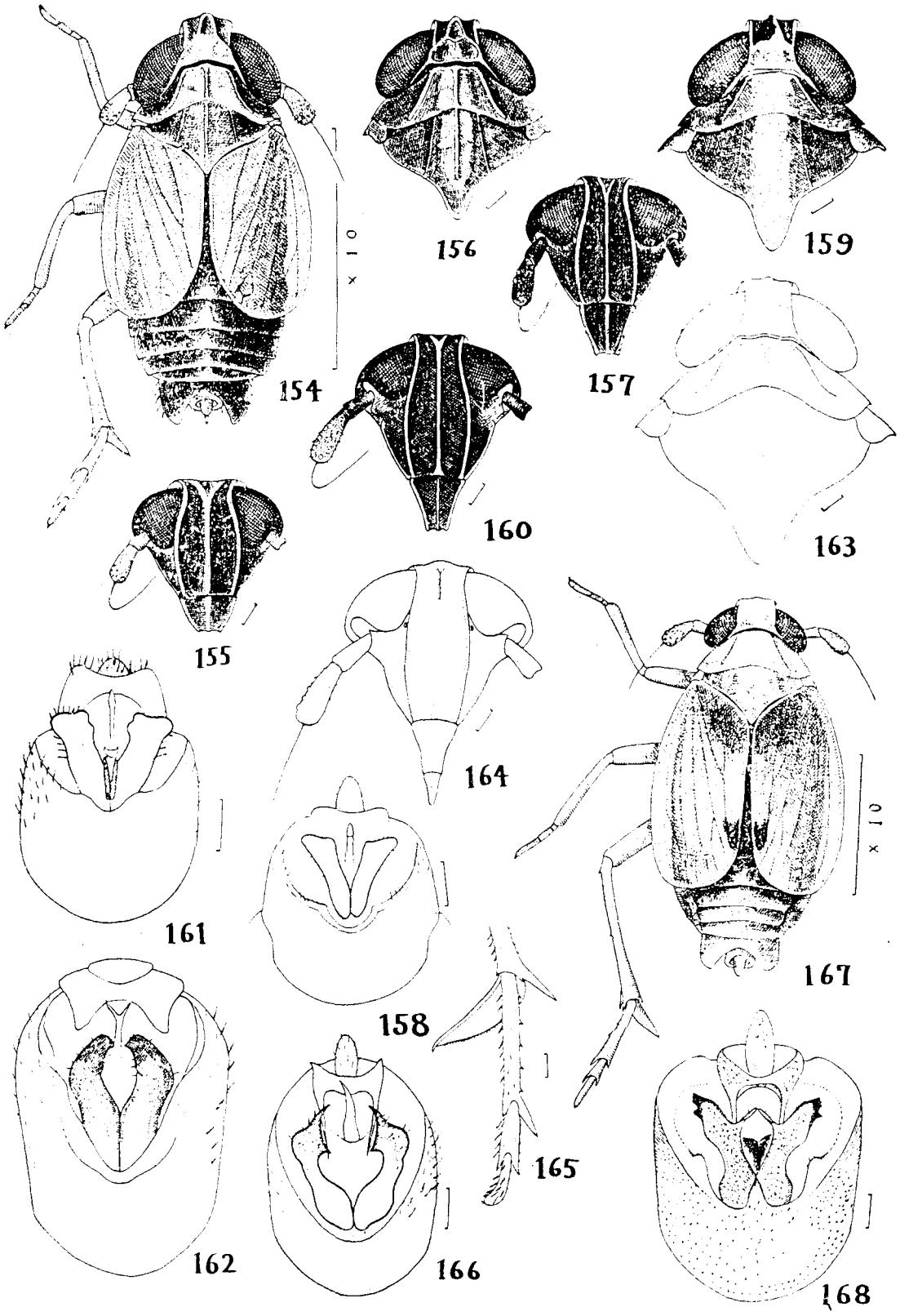
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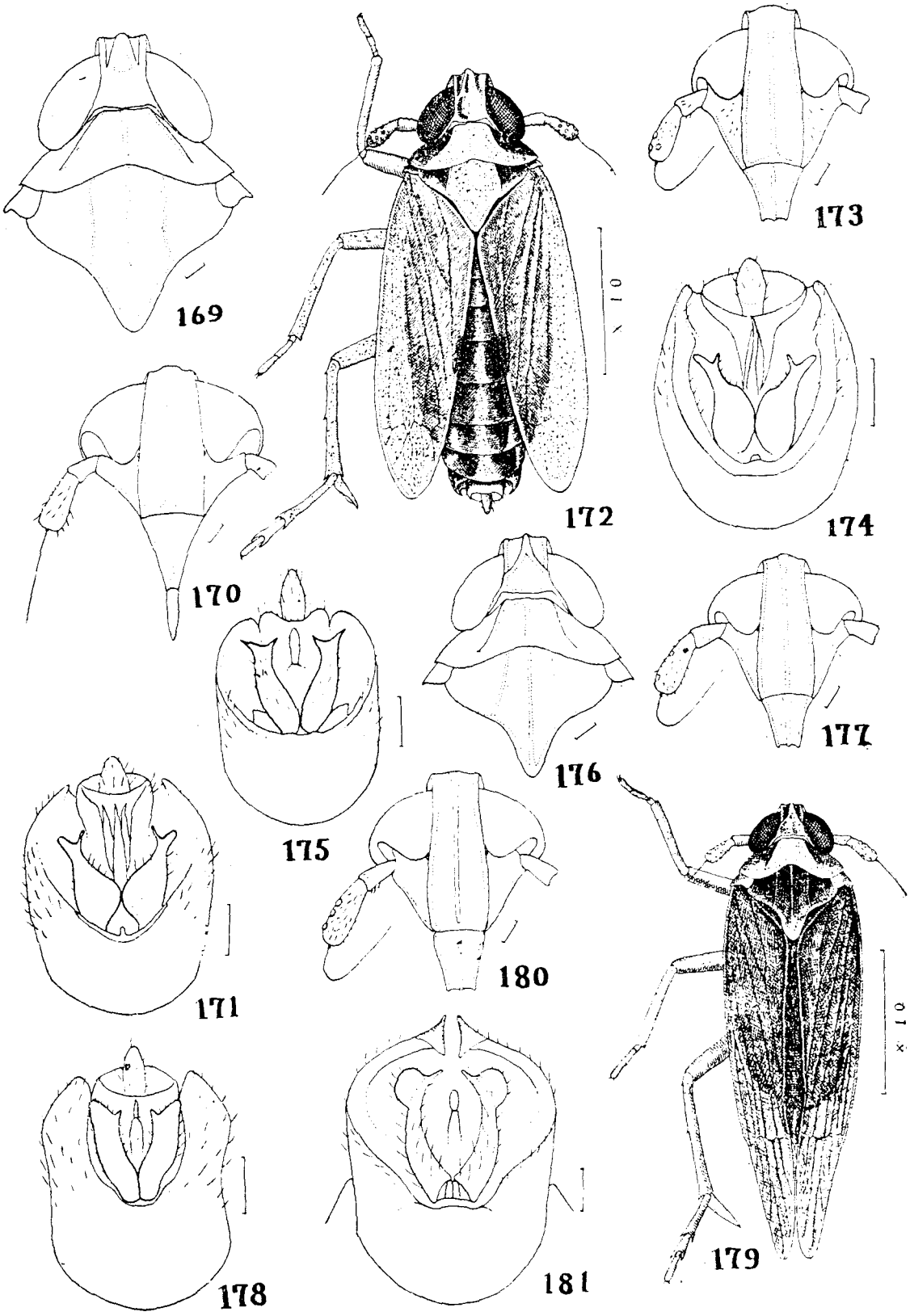
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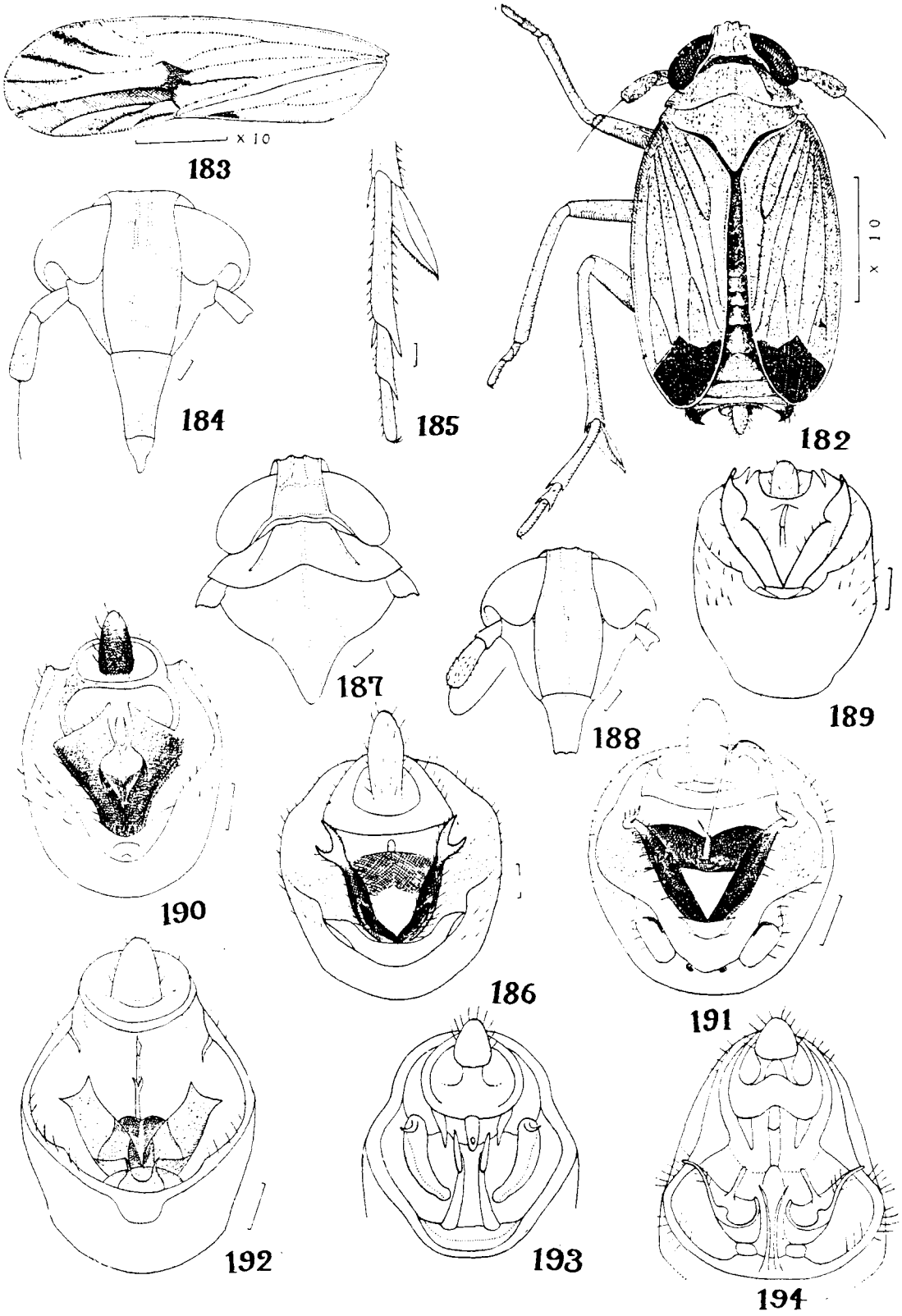

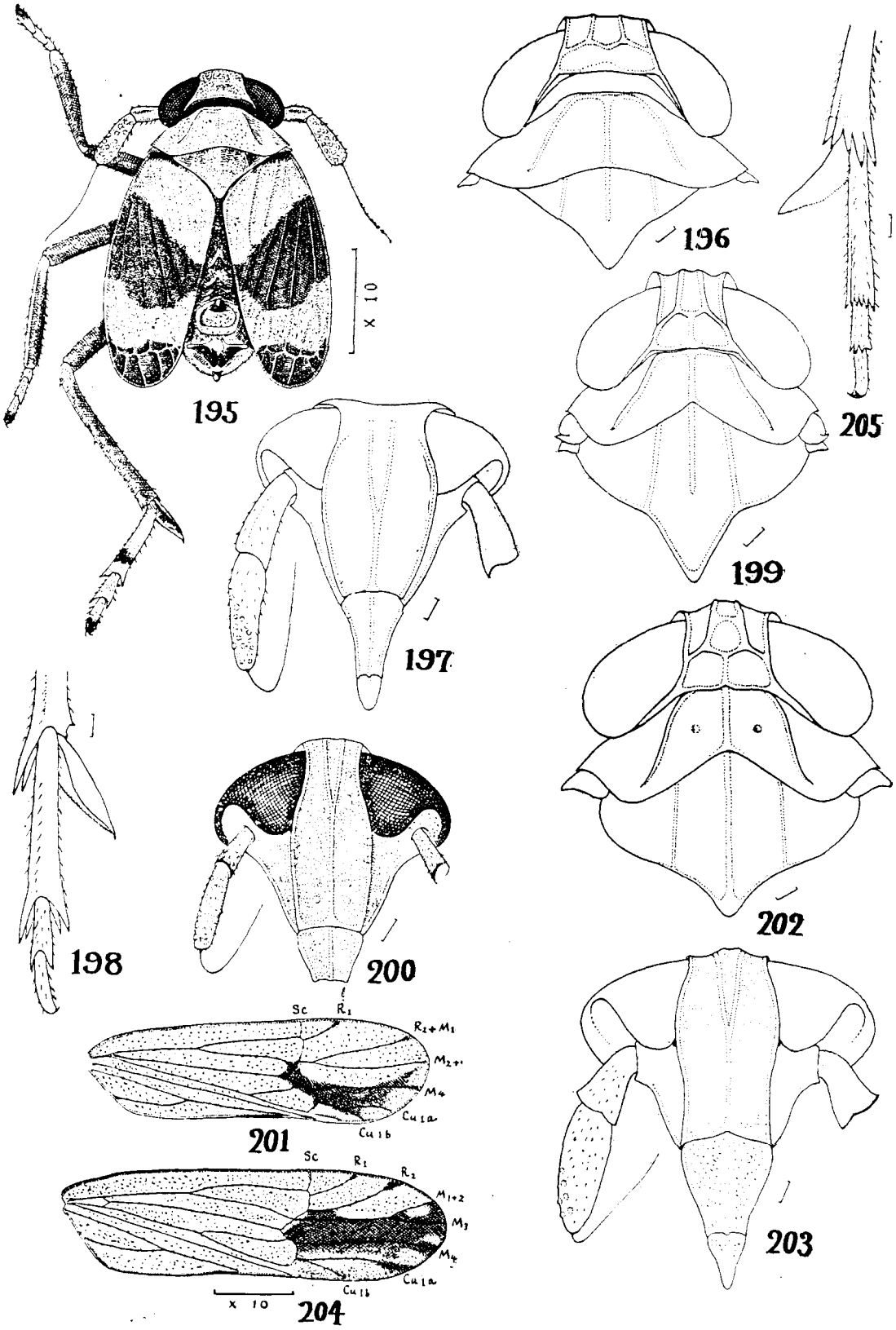
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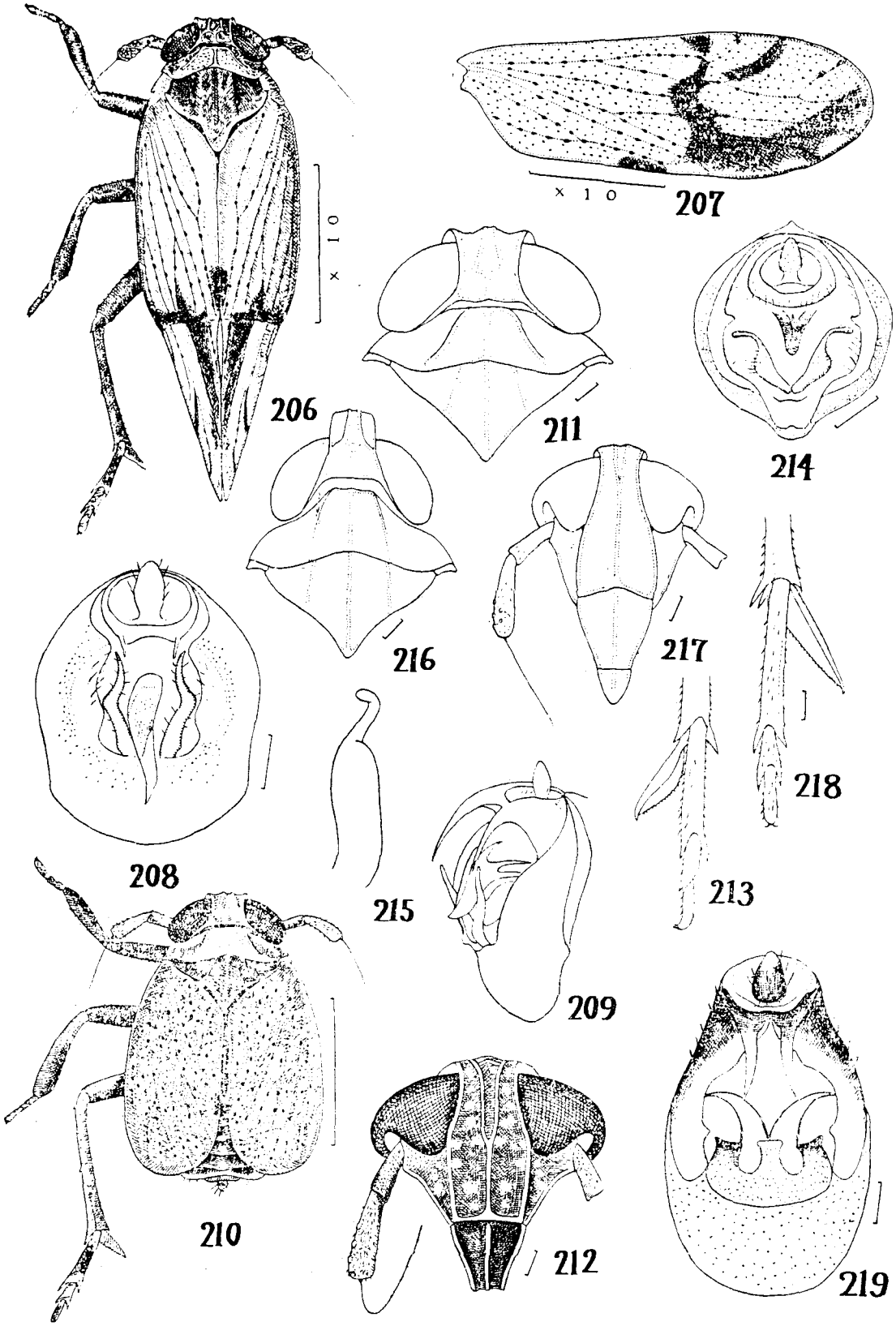

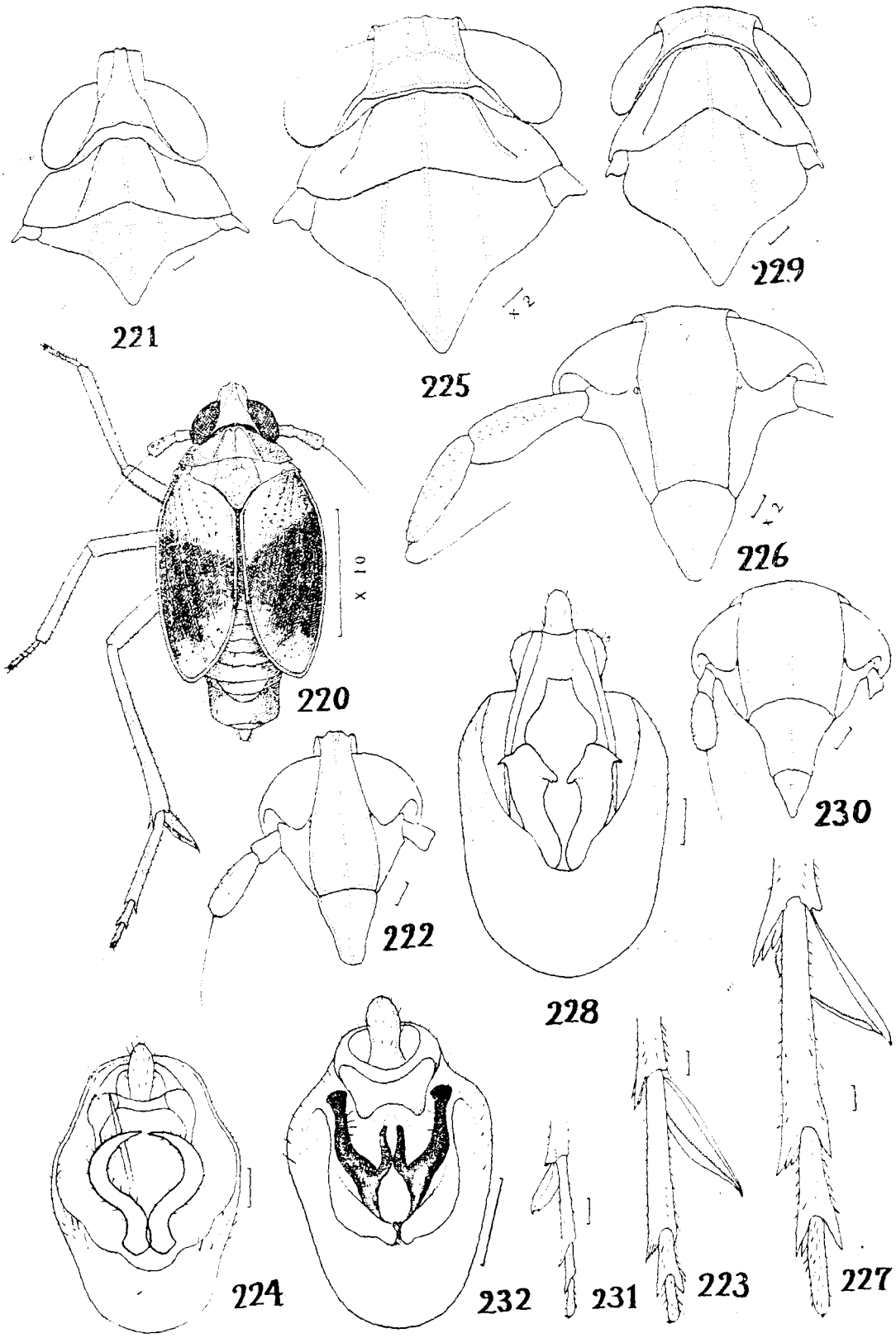
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