SOME SPECIES OF THE DELPHACIDAE NEW OR UNRECORDED FROM SHIKOKU, JAPAN (HEMIPTERA)

BY

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The present paper is based upon the Delphacid-specimens recently collected in Shikoku by Messrs. Toshiro Yano, Mutsuo Miyatake and others, to whom I want to express here my hearty thanks. I reported in it five new species including one new genus from, and nine species as unrecorded from, Shikoku, all specimens of which are preserved in the Entomological Laboratory, Matsuyama Agricultural College, Matsuyama.

Genus Yanunka nov.

Genotype: *Yanunka miscanthi* sp. nov.

Vertex somewhat longer than the width of the base, with distinct carinae. Face nearly three times as long as the middle width, where face is broadest and above eyes it is remarkably narrowed, with two conspicuous medio-longitudinal carinae which are contact each other near both base and apex of the face. Clypeus with base which is as wide as apex of the face. Antennae simple, reachieg apex of the face, with the second segment which is about twice as long as the first. Pronotum about as long as vertex, with lateral carinae which are convergingly curved posteriorly and clearly reach the hind margin of pronotum. Scutellum clearly tricarinate, of length about equal to vertex and pronotum put together. Tegmine comparatively acutely tapering apically, sufficiently protruding the abdominal apex. Veins fairly distinct except for some apical veins and cross veins which are obscure, scattered with a hair-bearing granules. Legs simple. Of posterior legs, tibia meagrely longer than the tarsus, furnished with two short spines outside, one at the middle, the other near the base; spur cultrate, inner surface concave, with about from seventeen to eighteen distinct teeth along the hind margin; basitarsus about as long as the other two tarsal segments put together.

Although this new genus is somewhat allied to the Genus *Macrotomella* Van Duzee, 1907, the former is separable from the latter by the characteristic features of face, pronotum, tegmina, etc.

1. Yanunka miscanthi sp. nov. (Fig. 1.)

♂♀. Vertex light brown except for pale carinae and black part between lateral carina and medio-lateral one on each side. Face, clypeus and genae

brownish black except carinae and the narrow area between medio-longitudinal carinae which are light yellowish brown. Eyes brownish black. Ocelli reddish black. Antennae light yellowish brown, with somewhat blackish tinge at about apical two-fifths of the second segment. Pronotum including carinae and lateral and posterior margins pale, with brownish black areas outside the lateral carinae. Scutellum coloured like in pronotum but darkened also inside the lateral carinae, near the posterior margin. Tegulae dark brownish. black, with conspicuously white surrounding margin except for apices of the two central apical veins (M_3 and M_4), where it is blackened. Veins mostly

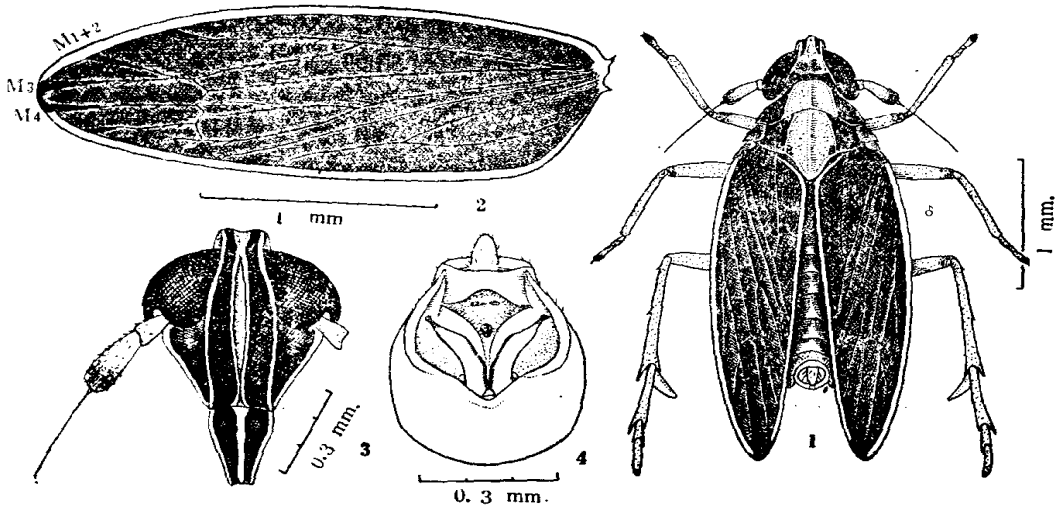

Fig. 1. *Yanunka miscanthi* sp. nov.

concolorous with tegmina except for apical veins which are suffused with black at their distal parts. Abdomen mostly light brownish with light tinge along the median line, at the posterior portion of each tergite. Genitalia mostly light brownish; inner margins and apices of male parameres somewhat blackened. Legs mostly pale, apex of each tarsus black, apex of each femur and base of each tibia somewhat darkened.

Length ♂ *2.7*, ♀ *2.8* (excluding tegmina); ♂ *3.2*, ♀ 3.3 (includ. teg.); tegmen ♂ *2.4*, ♀ *2.6* mm.

Habitat: Shikoku.

Holotype, ♂, Dogo, Matsuyama, Shikoku, 4. VII. 1950; **allotopotype** ♀, same as the holotype; *12* **paratopotypes**:— 1 ♂, 4. VII. 1950; 3 ♂♂, 1 ♀, 7. VII. 1950; 1 ♂, 1 ♀, 13. VII. 1950; 3 ♂♂, *23*. VII. 1950; 1 ♂, 5. IX. 1950; 1 ♂, *21*. IX. 1950. All Toshiro Yano leg.

All specimens were captured from a field of ***Miscanthus sinensis*** Anderson by Mr. Toshiro Yano, to whom the generic name is dedicated.

Genus Stenocranus Fieber, 1866

2. Stenocranus breviceps Matsumura, 1935

1935 *Stenocranus breviceps* Matsumura, Ins. Matsum. **9** (4): 127 (♂♀, Hokkaido).
1945 *Stenocranus breviceps* Matsumura et Ishihara, Mushi, **16** (10): 68, f. 45 (Honshu, Kyushu).
1949 *Stenocranus breviceps* Ishihara, Sci. Rep. Matsuyama Agr. Coll., **2**: 27, fs 42–45.
1950 *Stenocranus breviceps* Esaki et Ishihara, Mushi, **21** (5): 47 (China: Shansi).

Specimens examined: several specimens ♂♂ ♀♀ of bad conditions attracted by the light trap of the Tokushima Agricultural Experiment Station, Tokushima, Shikoku, on July 29th, 1951 and sent me for identification.

Distribution: Hokkaido, Honshu, Shikoku [new record], Kyushu, N. W. China.

Genus Kakuna Matsumura, 1935

3. Kakuna kuwayamai Matsumura, 1935

1935 *Kakuna kuwayamai* Matsumura, Ins. Matsum., **10** (1–2): 76 (♂♀, Hokkaido).
1943 *Kakuna kuwayamni* Metcalf, Gen. Cat. Hem., Araeopid., 158.
1945 *Kakuna kuwayamai* Matsumura et Ishihara, Mushi, **16** (10): 68, f. 58, (Honshu, Kyushu).
1949 *Kakuna kuwayamai* Ishihara, Sci. Rep. Matsuyama Agr. Coll., **2**: 37, fs. 81–85.
1950 *Kakuna kuwayamai* Ishihara, Iconogr. Ins. Jap., 314. f. 845.

Specimen examined: 1 ♂ (allured to the light trap), Matsuyama, Shikoku, 9. VII. 1951, Mutsuo Miyatake leg.

Distr.: Hokkaido, Honshu, Shikoku [new record], Kyushu.

Genus Dicranotropis Fieber, 1866

4. Dicranotropis nagaragawana (Matsumura, 1900)

1900 *Liburnia nagaragawana* Matsumura, Ent. Nachr., **26**: 265 (♂♀ Honshu).
1917 *Dicranotropis cervina* Muir, Proc. Haw. Ent. Soc., **3**: 318 (Philippines—Luzon).
1943 *Delphacodes nagaragawana* Metcalf, Gen. Cat. Hem., Araeopid., 471.
1943 *Dicranotropis cervina* Metcalf, ibid., 232.
1945 *Dicranotropis nagaragawana* Matsumura et Ishihara, Mushi, **16** (10): 67, f. 30 (Kyushu).
1949 *Dicranotropis nagaragawana* Ishihara, Sci. Rep. Matsuyama Agr. Coll., **2**: 70–71, fs. 182–186.
1950 *Dicranotropis nagaragawana* Ishihara, Iconogr. Ins. Jap., 319, f. 860.

Specimen examined: 1 ♂ (macropt, f.), Zenzuji, Shikoku, 19. VI. 1951, Takashi Kobayashi leg.

Distr.: Honshu, Shikoku [new record], Kyushu, Philippines.

5. Dicranotropis tikuzenensis (Matsumura et Ishihara, 1945)

1945 *Dicranotropis tikuzenensis* Matsumura et Ishihara, Mushi, **16**: 67, f. 18 (♂, Kyushu).
1949 *Dicranotropis tikuzenensis* Ishihara, Sci. Rep. Matsuyama Agr. Coll., **2**: 71, 73, fs. 187–189.

Specimens examined: 1 ♂ 1 ♀ (macropt. f.), Kono-mura near Matsuyama, Shikoku 6. VIII. 1948, Teruo Koyama leg. (The female specimen is the **allotype.**)

♀ (macropt. f.). Body including genitalia mostly light grayish brown except for ovipositor which is somewhat brownish. Tegmina subhyaline, with light grayish brown tinge, veins light grayish brown, coarsely scattered with concolorous granules like in the male. Somewhat larger than the male.

Length 2.8 (exclud. teg.); 4 (includ. teg.); tegmen 3.4 mm.

Distr.: Shikoku [new record], Kyushu.

Genus Phyllodinus Van Duzee, 1897

6. Phyllodinus nigropunctatus (Motschulsky, 1863)

1863 *Mestus ? nigropunctatus* Motschulsky, Bull. Soc. Nat. Moscou, **36**: 112 (Ceylon).
1943 *Dicranotropis nigropunctatus* Metcalf, Gen. Cat. Hem., Araeopid., 240.
1949 *Phyllodinus nigropunctatus* Ishihara, Sci. Rep. Matsuyama Agr. Coll., **2**: 75 (Honshu, Kyushu, Formosa).
1950 *Phyllodinus nigropunctatus* Ishihara, Iconogr. Ins. Jap., 320, f. 861, 3.

Specimens examined: 5 ♂♂ 2 ♀♀ (macropt. f.), Dogo, Matsuyama, Shikoku, Toshiro Yano leg. (1 ♂, 26. IX. 1945; 1 ♂, 6. X. 1945; 1 ♂, 11. X. 1945; 1 ♀, 8. X. 1945; 2 ♂♂ 1 ♀, 21. IX. 1950).

Distr.: Honshu, Shikoku [new record], Kyushu, Formosa, Ceylon.

Genus Sogata Distant, 1906

7. Sogata yanoi sp. nov. (Fig. 2:— 1~3)

♂ (macropt. f.). Body above light brownish, shining, with pronotum which is a little paler. Face, clypeus, genae and antennae somewhat darkened except for light carinae. Eyes black. Ocelli reddish brown. Tegmina pale brownish, semihyaline with light brownish veins which are scattered with with concolorous granules. Abdomen light brownish, somewhat darkened above. Genitalia mostly light brownish, with paramere which is tinted with brown from the middle to the apex.

Vertex parallel-sided, a little longer than the width, with distinct carinae. Face widest near apex, gradually narrower towards the base. Clypeus with base which is slightly wider than the frontal apex. Antennae somewhat protruding the frontal apex, with the second segment which is twice as long as the first. Pronotum a little shorter than vertex, with lateral carinae which are divergingly divergent posteriorly and vanish clearly before reaching the hind margin. Scutellum longer than vertex and pronotum put together, all the three carinae of which vanish before reaching the hind margin. Of posterior legs, tibia furnished with two small spines, one near the base and the other about in the middle of the outer side, spur with fourteen teeth along the hind margin, basitarsus about equal in length to the other tarsal segments put together.

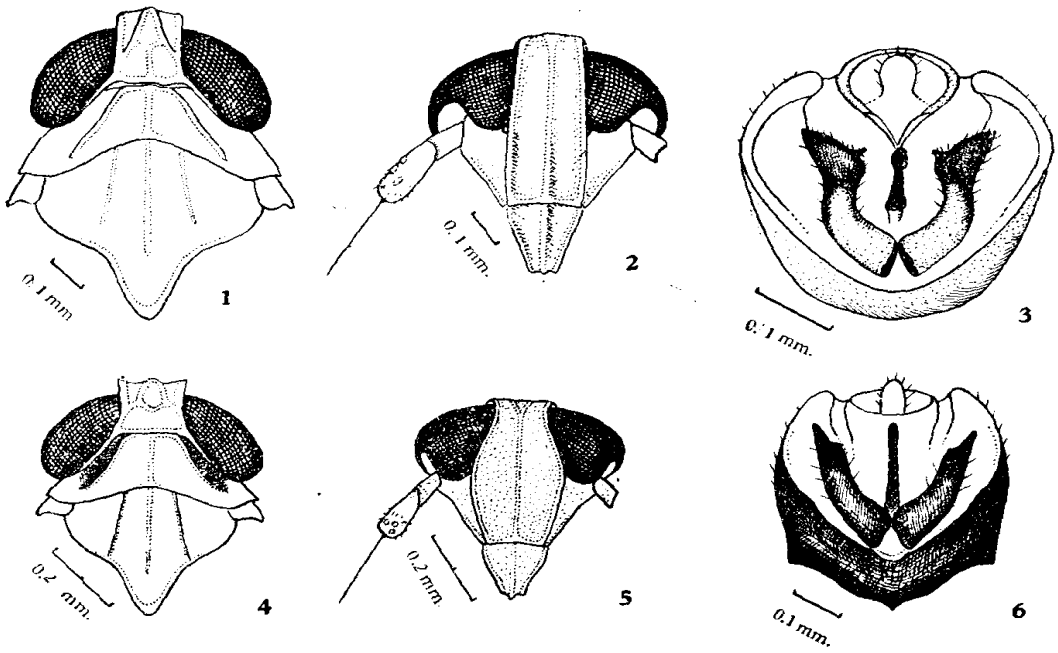

Fig. 2. 1–3, *Sogata yanoi* sp. nov.
4–6, *Delphacodes matsuyamensis* sp. nov.

♀. Unknown.

Length ♂ 1.8 (exclud. teg.) ; 3 (includ. teg.) ; tegmen 2.6 mm.

Habitat: Shikoku.

Holotype, ♂ (macropt. f.), Dogo, Matsuyama, Shikoku, 8. X. 1949, Toshiro Yano leg.

This new species may be identified by the characteristic features of the vertex, face, pronotum and of the genitalia.

Genus Delphacodes Fieber, 1866

8. Delphacodes lyraeformis (Matsumura, 1900)

1900 *Liburnia lyraeformis* Matsumura, Ent. Nachr., **26**: 267 (♂ ♀, Honshu).
1943 *Delphacodes lyraeformis* Metcalf, Gen. Cat. Hem., Araeopid., 467.
1945 *Delphacodes lyraeformis* Matsumura et Ishihara, Mushi. **16** (10): 61, f. 51 (Kyushu).
1949 *Delphacodes lyraeformis* Ishihara, Sci. Ret. Matsuyama Agr. Coll., **2**: 45, 50, fs. 126–127.
1950 *Delphacodes lyraeformis* Ishihara, Iconogr. Ins. Jap., 317, f. 854.

Specimens examined: 1 ♂ (macropt. f.), Dogo, Matsuyama, Shikoku, 7. VII. 1950, Toshiro Yano leg.; 2 ♂♂ (macropt. f.), Kita-yoshii-mura near Matsuyama, Shikoku, 23. VIII. 1950, Toshiro Yano leg.; 4 ♂♂ (macropt. f.), 31. VIII. 1950, Yoshidahama, Matsuyama, Shikoku, Mutsuo Miyatake leg.

Distr.: Honshu, Shikoku [new record], Kyushu.

9. Delphacodes matsuyamensis sp. nov. (Fig. 2:— 4~6)

♂ (macrpt. f.). Body mostly light sooty brown, but pronotum somewhat paler and often tinted with orange on scutellum. Face, clypeus, genae and the first segment of antennae often dark brownish. Eyes brownish black. Ocelli sanguineous. Tegmina milky white, semihyaline, with brownish veins which are scattered with a hair-bearing granules. Pterostigmas absent, but along their portions veins a little darkened. Abdomen including genitalia mostly blackish. Legs mostly pale brown.

Vertex about as long as the width, with distinct carinae. Face short and wide, more than half the length, medio-longitudinal carina furcate at base. Clypeus with base which is wider than the frontal apex. Antennae almost reaching the frontal apex, with the second segment which is about twice as long as the first. Pronotum about as long as vertex, with lateral carinae which are divergingly divergent posteriorly and clearly vanish before reaching the hind margin. Scutellum a little longer than vertex and pronotum put together. Spurs each with nine or ten teeth along the hind margin. Of posterior legs, basitarsus about as long as the other two tarsal segments put together. Genitalia with fairly stout parameres as figured.

♀ (macropt. and brachypt. f.). Body including face, clypeus, genae as well as abdomen mostly light brownish, especially in the brachypterous form, body almost entirely light brownish. Eyes not so projecting laterally as in the male, but rather flattened.

Length ♂ 1.2 - 1.4, ♀ about 2 (exclud. teg.); ♂ 2.4 - 2.8, ♀ about 2.6 (includ. teg.) mm. Tegmen ♂ 1.8 - 2, ♀ 2.3 - 2.6 (in the macropt. f.); ♀ 0.6 - 0.7 (in the brachypt. f.) mm.

Habitat: Shikoku.

Holotype, ♂ (macropt. f.), Iwazeki, Matsuyama, Shikoku, 23. IX. 1949, Toshiro Yano leg.; **allotype**, ♀ (macropt. f.), Yoshidahama, Matsuyama, Shikoku, 31. VIII, 1950, Mutsuo Miyatake leg.; 20 **paratypes** including 7 paratopotypes:— 7 ♂♂ (macropt. f.) same as the holotype, 7 ♂♂ (macropt. f.) same as the allotype, 2 ♂♂ (macropt. f.), Kita-yoshii-mura near Matsuyama, Shikoku, 23. VIII. 1950, Toshiro Yano leg.; 4 ♀♀ (brachypt. f.), same as the allotype.

Although this new species is closely allied to *Delphacodes lyraeformis* (Matsumura, 1900), it is differentiated from the latter by the coloration of scutellum (the blackish markings outside the lateral carinae are rather unrecognizable in the former but usually conspicuous in the latter), or by the male genitalia (the parameres are tapering in the former but typical-lyrate in the latter).

10. Delphacodes yezoana (Matsumura 1900)

1900 *Liburnia yezoana* Matsumura, Ent. Nachr., **26** 265 (♀, Hokkaido).
1943 *Delphacodes pellucida* Metcalf, Gen. Cat. Hem, Araeopid, 482 (partim).
1945 *Delphacodes yezoana* Matsumura et Ishihara, Mushi, **16** (10): 61, f. 53 (The male genitalia figured).

1949 *Delphacodes yezoana* Ishihara, Sci. Rep. Matsuyama Agr. Coll., **2**: 55, fs. 131–133. (Honshu).
1950 *Delphacodes yezoana* Ishihara, Iconogr. Ins. Jap., 318, f. 856.

Specimen examined: 1 ♂ (macropt. f.), Omogokei, Iyo, Shikoku, 21. VII. 1948, Mutsuo Miya- take leg.

Distr.: Hokkaido, Honshu, Shikoku [new record].

11. Delphacodes shirozui Ishihara, 1949

1949 *Delphacodes shirozui* Ishihara, Sci. Rep. Matsuyama Agr. Coll., **2**: 47, 53 (♂♀, Kyushu).

Specimens examined: 1 ♂ (macropt. f.), Konomura near Matsuyama, Shikoku, 6 VIII. 1948, Akio Koyama leg.; 1 ♂ 1 ♀ (macropt. f.), Baishinji, Matsuyama, Shikoku, 4. VII. 1949, Toshiro Yano leg.; 1 ♂ 1 ♀ (macropt. f.), Dogo, Matsuyama, Shikoku, 8. X. 1949, Toshiro Yano leg.; 1 ♂ 1 ♀ (macropt. f.), Okada-mura near Matsuyama, Shikoku, 21. X. 1949, Toshiro Yano leg.

Distr.: Shikoku [new record], Kyushu.

12. Delphacodes panicicola Ishihara, 1949

1949 *Delphacodes panicicola* Ishihara, Sci. Rep. Matsuyama Agr. Coll., **2**: 44, 51, f. 151–123 (♂♀, Honshu).
1950 *Delphacodes panicicola* Ishihara, Iconogr. Ins. Jap., 317, f. 852.

Specimens examined: 1 ♂ (macropt. f.), Iwazeki, Matsuyama, Shikoku, 23. IX. 1949, Toshiro Yano leg.; 2 ♂♂ 4 ♀♀, (macropt. f.), Dogo, Matsuyama, Shikoku, 8. X. 1949, Toshiro Yano leg.; 1 ♂ (macropt. f.), Okada-mura near Matsuyama, Shikoku, 21. X. 1949, Toshiro Yano leg.; many ♂♂ ♀♀ (macropt. and brachypt. f.), 20. IX. 1951, The farm of the Matsuyama Agricultural College, Tamotsu Ishihara leg.

Distr.: Honshu, Shikoku [new record].

13. Delphacodes elegantissima sp. nov. (Fig. 8:— 1~3)

♀ (macropt. f.). Vertex yellowish brown. Face, clypeus and genae concolorous with vertex but slightly darker except for carinae. Eyes sooty brown. Ocelli dark brownish. Pronotum yellowish brown. Scutellum yellowish brown except light reddish brown lateral surfaces outside the lateral carinae. Tegmina almost hyaline with dark tinge near apex, a little superior to the middle, viz. the cell M_3 as well as the posterior portion a little darkened. Pterostigmas adsent. Veins yellowish brown, darkened towards the apex of tegmen, furnished very coarsely with hardly recognizable granules. Abdomen mostly dark brownish. Anterior and intermediate legs mostly light brownish, tinted with black at he apex of each tarsus. Posterior legs mostly yellowish brown with blackish apex in each tarsus. Genitalia mostly light brownish, paramere darker especially on the lateral surface.

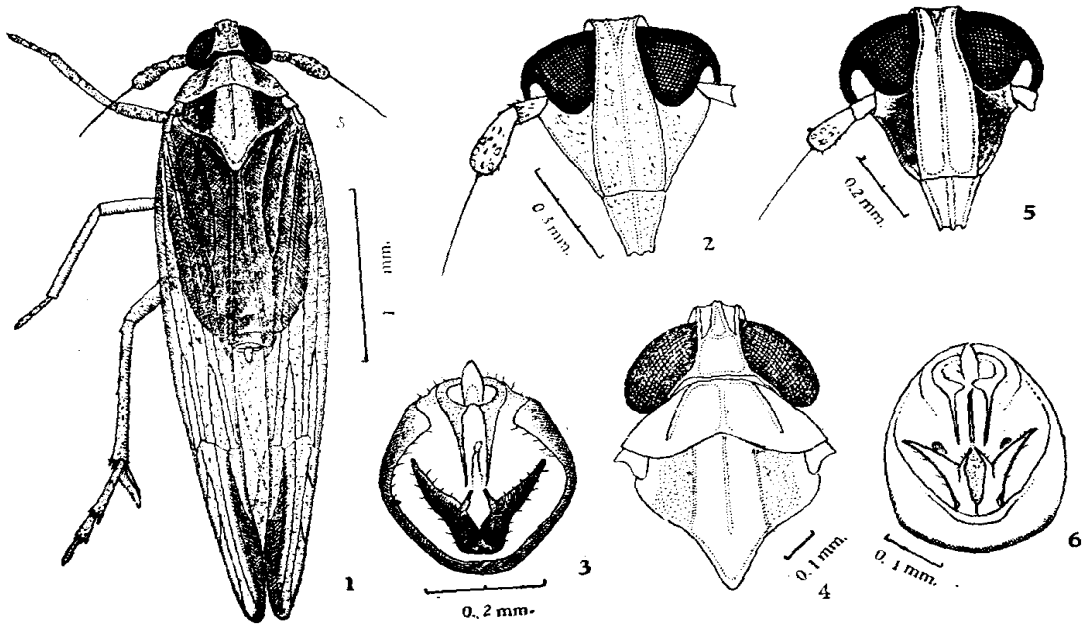

Fig. 3. 1–3, *Delphacodes elegantissima* sp. nov.
4–6, *Delphacodes dogensis* sp. nov.

Head comparatively small. Vertex gradually narrower towards the apex, with distinct carinae. Face widest near apex, narrowest above eyes, with length which is nearly three times the largest width; medio-longitudinal carina furcate between eyes. Frontal apex narrower than the base of clypeus. Antennae almost reaching the frontal apex, with the second segment which is about twice as long as the first. Pronotum about equal to vertex in length, very wider than head including eyes, with lateral carinae which are rather convergingly divergent posteriorly and clearly vanish before reaching the posterior margin. Scutellum a little longer than vertex and pronotum put together. Tegmina very well-developed, much protruding the abdominal apex as shown in the Figure. Of posterior legs, tibia furnished with two small spines outside, one near the base and the other in the middle, basitarsus about equal in length to the other tarsal segments put together, spur with about twenty teeth along the hind margin. Genitalia with parameres which taper apically and each with a blunt apex and a fairly blunt branch on the inner side.

♀ (macropt. f.). Mostly coloured like in the male but in some specimens lighter-coloured and the dark marking on the tegmen hardly recognizable. Body and tegmina larger than in the male.

Length ♂ 1.8, ♀ 2.4 – 3 (exclud. teg.); ♂ 3.5, ♀ 3.7 – 4.7 (includ. teg.); tegmen ♂ 3, ♀ 3.2 – 3.7 mm.

Habitat: Shikoku.

Holotype, ♂ (macropt. f.), **allotopotype** ♀ (macrpt. f.), Dogo, Matsuyama, Shikoku, 17. X- 1950; 8 **paratypes** (all macropt. f.) including 7 paratopotypes, 1 ♂, 1 ♀, same as the holotype, 1 ♂, 24. IX. 1950, 1 ♀, 17. X. 1950, 2 ♀♀, 8. X. 1949, 1 ♀, 21, X. 1949, 1 ♀, Okada-mura near Matsuyama, Shikoku, 21. X. 1949, all Toshiro Yano leg.

The present new species may be differentiable from other allied species by the remarkable coloration and many characteristic features of vertex, face, pronotum and of the male genitalia.

14. Delphacodes dogensis sp. nov. (Fig. 3:— 4~6)

♂ (macropt. f.). Vertex, antennae, face, clypeus as well as abdomen light brown. Genae blackish brown. Eyes black. Ocelli dark brownish, shining. Pronotum pale brown. Scutellum pale brown, with light brownish markings outside the lateral carinae. Tegmina pale brown, almost opaque, with light brownish veins, which are scattered with concolorous granules. Legs mostly pale brown. Genitalia pale brown, with somewhat brownish parameres.

Vertex about twice as long as the width, with distinct carinae. Face about three times as long as width in the middle, where it is broadest, conspicuously narrowed above eyes, medio-longitudinal carina of which is furcate near the base. Clypeus with base which is wider than the apex of the face. Antennae shorter than the frontal apex, with the second segment which is about twice the length of the first. Pronotum much shorter than vertex, lateral carinae of which are convergingly divergent posteriorly and clearly vanish before reaching the hind margin. Scutellum comparatively large, longer than vertex and pronotum put together. Of posterior legs, basitarsus about equal in length to the other tarsal segments put together, spur with about thirty minute teeth along the hind margin. Genitalia with parameres which are acute and each with a sharp branch on its inner side.

♀. Unknown.

Length 1.7 (exclud. teg.); 3 (includ. teg.); tegmen 2.5 mm.

Habitat: Shikoku.

Holotype, ♂ (macropt. f.), Dogo, Matsuyama, Shikoku, 12. IX. 1949, Toshiro Yano leg.

This new species may be identified by the characteristic features in the vertex, face, pronotum, scutellum and in the male genitalia.