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A REVISION OF THE PALAEARCTIC AND  
ORIENTAL *TYPHLOCYBID*-GENERA  
WITH DESCRIPTIONS OF  
NEW SPECIES AND NEW GENERA

BY

PROF. S. MATSUMURA

(With 6 Text-figures and Plate II, III)

According to a delicate structure of the *Typhlocybid*-insects any European Homopterologist worked out thoroughly. About thirty years ago, when the author was studying the *Homopterous* fauna in Europe, caught numerous specimens of these tiny insects in Germany, Austria and Hungary. This material remained till now unemployed. Now in order to complete an investigation of the insect-fauna of Japan, the author took an opportunity to study them fundamentally and the present paper is one of the reports carried out by him. As the Nearctic material is not at the author's disposal, so he will use now only the European, Asiatic and Oriental materials. *Dicraneura*, *Alebra*, *Empoasca*, *Zygina* (*Erythroneura*) and *Typhlocyba* seems to be cosmopolitan genera. But as the author has not seen any type-specimen of Nearctic region, so it may be safe here to systematize them with the Palaearctic and Oriental materials.

In the present study the author found that the Palaearctic and Oriental *Typhlocybid*-species may be classified under 31 genera, of which 6\* are not yet found in Japan, Formosa as well as in Korea.

In Japan we have now 126 species under 25 genera, of which 89 species and 13 genera are new. During the past fifteen years (1903-1918) the author has collected quite eagerly the *Typhlocybid*-species, but in the recent years he has devoted the time mostly to study the *Lepidopterous* insects.

This year Messrs. M. ISHIDA, H. KONO, M. TAKIZAWA and K. IGARASHI helped me in order to catch this group of insects, and not a few fresh specimens enriched me for the present investigation. Among the old specimens which were collected by the author twenty years ago, in them a many interesting ones are present, and very attractive for the present study, but on account

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\* *Aidola*, *Apheliona*, *Heliona*, *Homa*, *Motschulskia*, *Zyginella*.

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of a mould or bad preservation most of them can not be utilized now. In near future the author will collect this group of insects thoroughly and hope to continue the further investigation. To accomplish this thesis the author has had a special monetary help from our government, Bureau of Education, for which he must tender his heartily gratitude.

The following genera are not yet recognized well by the European Homopterologists:

*Erythroneura* FITCH (1851) was not designated until 1912, when Oshanin chose as the type *E. tricineta* FITCH. and which is considered by the American Homopterologists to be synonym with *Zygina* FIEB. (1866).

The true character of *Empoasca* WALSH is not well diagnosed. According to Distant the original description by WALSH (supra) is a combined generic and specific one and so he has depicted MELICHAR's description in his Homopterous Fauna of British India, Vol. IV, p. 401 (1908). The same author mentions the following paragraph in the named book: "Much difference of view is evinced by various workers as regards this genus. Oshanin, and doubt less with good reason, keeps *Chlorita* separate from *Empoasca* with which includes *Kybos*. VAN DUZÉE uses *Kybos* as distinct with which he includes *Chlorita*; PUTON and EDWARDS regard both *Kybos* and *Chlorita* as distinct genera; GILLETTE includes both *Chlorita* and *Kybos* with *Empoasca*", etc. According to my present investigation *Chlorita viridula* FALL., type of *Chlorita*, and *Kybos smaragdula* FALL. any how can not be treated in any single genus, may it be *Empoasca* or *Chlorita* or *Kybos*, and though the author has no typical *Empoasca*-species employed this genus momentarily to receive the *Chlorita*-like species with forked (1st and 2nd) apical sectors. MELICHAR's diagnosis of *Empoasca* is as follows:

"Tegmina with two terminal veins of which the inner one is simple and the outer one forked and forming a short triangular cell; in the wings the two front sectors are joined into a fork, the stalk of which runs into the peripheral vein, the appendage is absent, the third simple sector connected with the inner forked branch by a transverse vein." (Melichar translated by Distant).

The following Nearctic genera are not identified yet by the author.

|   |   |
|---|---|
| <i>Protalebra</i> BAKER (1899)          | Genotype <i>P. curvilinea</i> GILL.           |
| <i>Eualebra</i> BAKER (1899)            | " <i>E. smithii</i> BAK.                      |
| <i>Typhlocybella</i> BAKER (1903)       | " <i>T. minima</i> BAK.                       |
| <i>Aneono</i> KIRKALDY (1906)           | " <i>A. pulcherrima</i> KIRK.                 |
| <i>Kahono</i> KIRKALDY (1906)           | " <i>K. kanuata</i> KIRK.                     |
| <i>Dialecticopteryx</i> KIRKALDY (1907) | " <i>D. austriplaga</i> KIRK.                 |
| <i>Molopopterus</i> JAC. (1910)         | " <i>M. nigriplaga</i> JAC. (Ethiopian genus) |

In 1918, W. L. MCATEE published a paper about the Genera of the *Eupterygidae* (*Typhlocybidae*) in Proc. Biol. Soc. Washington, U. S. A. and he gave the synoptical table of the *Eupterygidae* as follows:

## Synopsis of the Genera of the Eupterygidae

- A. Membrane appendiculate.
- B. Wing with submarginal vein: apical wing cells 3 ... .. *Alebra*
- BB. Wing without submarginal vein; apical wing cells 3 ... .. *Protalebra*
- AA. Membrane not appendiculate.
- C. Wing with submarginal vein.
- \* Apical wing cells 3.
- D. Vertex shorter than pronotum ... .. *Eualebra*
- DD. Vertex twice as long as pronotum ... .. *Nirvana*
- \*\* Apical wing cells 2
- E. More than one apical vein arising from cross-veins of tegmen ... .. *Dikraneura*
- EE. Only one apical vein arising from cross-veins of tegmen, it 3-parted ... .. *Kahono*
- \*\*\* Apical wing cell 1.
- F. Margins of front not prominent ... .. *Empoasca*
- FF. Margins of front prominent, united above.
- G. Front not twice as long as wide, rounded above ... .. *Apheliona*
- GG. Front three times as long as wide, acute above ... .. *Heliona*
- CC. Wing without submarginal vein
- \* Apical wing cells 3; first two wing veins not confluent, joined by a cross-vein ... *Eupteryx*
- \*\* Apical wing cells 2; first 2 wing veins confluent
- H. Fourth apical vein of tegmen curving to radial margin; second apical triangular, usually stalked... .. *Typhlocyba*
- HH. Fourth apical vein of tegmen paralleling radial margin, ending in apical margin; second apical cell oblong, based on cross-vein
- I. Veins of tegmen thickened and conspicuous basally ... .. *Molopopterus*
- II. Veins of tegmen invisible basally ... .. *Erythroneura*
- \*\*\* Apical wing cell 1
- J. Tegmen rounded apically ... .. *Dialecticopteryx*
- JJ. Tegmen angulate apically; second apical cell diamond-shaped ... *Typhlocybella*

The following is the Synopsis of Genera of Middle-Europe by MELICHAR\*:

1. 3 sectors in wing or their union run to the marginal vein, which connects all veins ... 2
- 3 sectors in wing or their union run to the wing-margin, the marginal vein ends before the apex ... 6
2. 2 sectors of wing before their end connected by a cross-vein. Wing with no supernumerous cell. Elytron with a narrow marginal appendage. Ocelli visible. Vertex in the same breadth throughout, anterior margin curved... .. 1. *Alebra* FIEB.
- 2 sectors of wing before their end united into a fork, their stalk runs to the marginal vein. Elytron with no marginal appendage ... .. 3
3. Wing with 3 apical veins, supernumerous cell present, therefore with 3 apical cells ... 4
- Wing with 2 apical veins, building only one cell. Supernumerous cell wanting ... 5
4. Body short, compact ... .. 2. *Erythria* FIEB.
- Body elongated ... .. 3. *Dikraneura* HbV.
5. 2nd apical cell of elytron elongated. Ocelli scarcely visible. Vertex more or less obtuse-angularly, often rounded... .. 4. *Chlorita* FIEB.
- 2nd apical cell of elytron triangular, stalked. Ocelli visible. Vertex short, in the same breadth throughout, with the curved side building right angles... .. 5. *Kybos* FIEB.

\* MELICHAR—Cicadinen von Mittel-Europa, pp. 315-316 (1896).

6. 2 first apical sectors of wing near to each other parallel, before the end with a cross-vein and building an elongated rectangular cell. Wing with 4 apical veins (the end of marginal vein calculated) ... .. 6. *Eupteryx* Curt. FIEB.  
 - 2 first apical sectors of wing more separated from their end to form a stalk, their stalk going to the apex. Wing with 3 apical veins (the end of marginal nerve calculated) ... .. 7  
 7. 2nd apical cell of elytron triangular and commonly stalked. ... .. 7. *Typhlocyba* GERM.  
     8. *Zyginella* Löw\*  
 - Elytron with 3 apical cells, the middle apical cell rectangular and narrower than the rest ... ..  
     (After Melichar) ... .. 9. *Zygina* FIEB.

The following is the Author's Synopsis of Genera found in the Palaearctic and Oriental Regions:

- Hind wing with sectors ending in the wing margin ... .. II. *Typhlocyba*  
 Hind wing with sectors ending in a marginal vein ... .. I. *Empoascaria*

### Div. I. *Empoascaria*

- I. Frons at the apex closed, that is with a frontal suture.  
 A. Frontal suture at apex angulated.  
     a. 1st and 2nd apical sectors branched ..... 12. *Helionides* MATS. (n. g.)  
     b. 1st and 2nd apical sectors not branched ... 10. *Heliona* MELICH.  
 B. Frontal suture at apex not angulated.  
     a. Frontal suture at apex rounded ..... 11. *Apheliona* KIRK.  
     b. Frontal suture at apex straight ..... 9. *Akotettix* MATS. (n. g.)  
 II. Frons at apex open, that is with no frontal suture.  
 A. 1st and 2nd apical sectors of elytron with a stalk.  
     a. Hind wing with sector 3 branched.  
     a'. Vertex with a subglobular elevation ..... 16. *Sacapome* SCHUHM.  
     a''. Vertex with no subglobular elevation.  
     x. Vertex shorter than pronotum, body cylindrical ..... 2. *Alebroides* MATS. (n. g.)  
     y. Vertex longer than pronotum, body flat ..... 12. *Togaritettix* MATS. (n. g.)  
     b. Hind wing with sector 3 simple.  
     b'. Vertex in the middle with no keel at transit to frons.  
     x. Frons near top with 2 protuberances ..... 15. *Kybos* FIEB.  
     y. Frons near top with no protuberance ..... 14. *Empoasca* WALSH  
     b''. Vertex in the middle with a keel at transit to frons .....  
     ..... 7. *Sujitettix* MATS. (n. g.)  
 B. 1st and 2nd apical sectors with no stalk.

\* Author's Note—*Zyginella* differs from *Typhlocyba* in having only one cross-vein to wing, while in the latter 2.

1. Ocelli present (at least pseudocelli).
  - a. Vertex flat, with ocelli near lateral margin ... 18. *Nirvana* KIRK.
  - b. Vertex not flat, with ocelli at transit to frons.
    - b'. Hind wing with 2 cross-veins ..... 1. *Alebra* FIEB.
    - b''. Hind wing with 1 cross-vein.
  - x. Vertex with a central keel ..... 8. *Nikkotettix* MATS. (n. g.)
  - y. Vertex with no central keel ..... 17. *Chlorita* FIEB.
2. Ocelli absent.
  - a. Body cylindrical; head with eyes not broader than pronotum at base.
    - a'. Vertex shorter than broad at base ..... 5. *Dicraneura* HARDY
    - a''. Vertex much longer than broad at base .....  
..... 4. *Togaricrania* MATS. (n. g.)
  - b. Body flat; head with eyes broader than pronotum at base .....  
..... 6. *Naratettix* MATS. (n. g.)  
(13. *Homa* Distant is excluded in this table owing its doubtful venation)

## Div. II. Typhlocybaria

- A. 1st and 2nd apical sectors to elytron stalked or from a point.
  - I. 1st and 2nd apical sectors to elytron from a point .....  
..... 28. *Zyginoides* MATS.
  - II. 1st and 2nd apical sectors to elytron stalked.
    - a. Hind wing with one cross-vein ..... 21. *Zyginella* LÖW
    - b. Hind wing with 2 cross-veins.
      - b'. Vertex with ocelli, 2nd and 3rd sectors to hind wing incrassate ...  
..... 22. *Hiratettix* MATS. (n. g.)
      - b''. Vertex with no ocelli, 2nd and 3rd sectors to hind wing not in-  
crassate ..... 20. *Typhlocyba* GERM.
    - c. Hind wing with 3 cross-veins ..... 19. *Eupteryx* CURT.
- B. 1st and 2nd apical sectors to elytron not branched.
  - I. Vertex shorter than broad at base.
    - a. Hind wing with 2 cross-veins, body cylindrical ... 30. *Zygina* FIEB.
    - b. Hind wing with one cross-vein, body flat .....  
..... 25. *Platytettix* MATS. (n. g.)
  - II. Vertex longer than broad at base.
    - a. Vertex with no ocelli.
    - a'. Vertex pyramidally produced, not flat .....  
..... 26. *Pyramidotettix* MATS. (n. g.)
    - a''. Vertex not pyramidally produced, flat .....

- ..... 24. *Platygyba* MATS. (n. g.)  
 b. Vertex in disc with 2 oblong ocelli .....  
 ..... 23. *Nesopteryx* MATS. (n. g.)  
 (*Aidola* MELICH. and 36 *Motschulskia* KIRK. are excluded in this  
 table being not known to the author)

# A LIST OF *TYPHLOCYDID*-SPECIES FOUND IN JAPAN AND FORMOSA

## A. *Empoascaria*

- 1 *Alebra albostriatella* FALL. (Pl. II, f. 1. a. b.)  
*Cicada albostriatella* FALL., Hem. Suec. 2, p. 54 (1826).  
 f. *costatella* MATS. (n. f.)  
 Hab.—Honshu.
- 2 *Alebroides shokanus* MATS. (n. sp.)  
 Hab.—Formosa.
- 3 " *marginatus* MATS. (n. sp.)  
 Hab.—Honshu.
- 4 " *flavifrons* MATS. (n. sp.)  
 Hab.—Honshu.
- 5 " *iwatensis* MATS. (n. sp.)  
 Hab.—Honshu.
- 6 " *toroënsis* MATS. (n. sp.)  
 Hab.—Formosa.
- 7 " *akashianus* MATS. (n. sp.) (Pl. III, f. 1, 2, a, b)  
 Hab.—Honshu.
- 8 " *boninensis* MATS. (n. sp.)  
 Hab.—Bonin Isles.
- 9 " *hachijonis* MATS. (n. sp.)  
 Hab.—Hachijo Isles.
- 10 *Togaritettix* (n. g.) *serratus* MATS. (n. sp.) (Pl. II, f. 11, 12, a, b)  
 Hab.—Honshu.
- 11 *Togaricrania* (n. g.) *rubrovitta* MATS. (n. sp.)  
 Hab.—Honshu, China (Hongkong).
- 12 *Dicraneura sachalinensis* MATS. (Pl. II, f. 2, a, b)  
*Dicraneura sachalinensis* MATS., Jour. Coll. Agr. 4, p. 31 (1911).  
 Hab.—Saghalien, Hokkaido, Honshu.
- 13 *Naratettix* (n. g.) *zonatus* MATS.  
*Erythria zonata* MATS., Trans. Sapporo Nat. Hist. Soc. 5, p. 159 (1915).  
 Hab.—Honshu, Shikoku, Kiushu.  
 a. f. *koreana* MATS.  
 Hab.—Korea.  
 b. f. *bizonata* MATS.  
*Erythria zonata* var. *bizonata* MATS., Dainippon Gaichu Zensho Vol. 1, p. 305 (1919).  
 Hab.—Hokkaido.  
 c. f. *inornata* MATS.

- Erythria zonata* var. *inornata* MATS., l. c. p. 305.  
Hab.—Hokkaido, Honshu.
- d. f. **fallax** MATS. (n. f.)  
Hab.—Honshu.
- e. f. **rubrovitta** MATS.  
*Erythria zonata* MATS. *rubrovitta* MATS., l. c. p. 305  
Hab.—Honshu.
- f. f. **L-nigrum** MATS. (n. f.)  
Hab.—Hokkaido.
- g. f. **sapporensis** MATS. (n. f.)  
Hab.—Hokkaido.
- h. f. **beppuensis** MATS. (n. f.)  
Hab.—Kiusu.
- i. f. **ibukiana** MATS. (n. f.)  
Hab.—Honshu, Kiusu.
- j. f. **lata** MATS. (Pl. III, f. 7, 8, a, b)  
*Erythria zonata* var. *lata* MATS., l. c. p. 305.  
Hab.—Hokkaido, Honshu.
- k. f. **issikii** MATS. (n. f.)  
Hab.—Honshu.
- l. f. **discigutta** MATS.  
*Erythria zonata* var. *discigutta* MATS., l. c. p. 305.  
Hab.—Honshu.
- 14 **Sujitettix** (n. g.) **ferrugineus** MATS. (n. sp.) (Pl. II, 11, 12, a, b)  
Hab.—Honshu, Kiusu.
- 15 **Nikkotettix** (n. g.) **galloisi** MATS. (n. sp.) (Pl. II, f. 13, 14, a, b)  
Hab.—Honshu.
- 16 **Akotettix** (n. g.) **akonis** MATS. (n. sp.) (Pl. II, f. 9, 10, a, b)  
Hab.—Formosa.
- 17 **Helionides** (n. g.) **singularis** MATS. (n. sp.)  
Hab.—Honshu, China (Hongkong)
- 18 **Dicraneura abietis** MATS., l. c. p. 303.  
Hab.—Hokkaido.
- 19 **Empoasca arisana** MATS. (n. sp.)  
Hab.—Formosa.
- 20 " **bipunctata** SCHUHLM.  
Hab.—Formosa.
- 21 " **koshunensis** SCHUHLM.  
Hab.—Formosa.
- 22 " **limbifera** MATS. (n. sp.)  
Hab.—Hokkaido.
- 23 " **aino** MATS. (n. sp.)  
Hab.—Hokkaido.
- 24 " **shirakiella** MATS. (n. sp.)  
Hab.—Formosa.
- 25 " **ogikubella** MATS. (n. sp.)  
Hab.—Honshu.
- 26 " **rubrifrons** MATS. (n. sp.)
- 27 " **polyphemus** MATS. (n. sp.)



- Hab.—Hokkaido, Honshu, Europe (Caucasus).
- 28 **Empoasca rufa** MELICH.  
*Empoasca rufa* MELICH., Hom. Faun. Ceylon, p. 212, pl. VI, f. 2, a, b (1903).  
 Hab.—Formosa.
- 29 " **rubriceps** MATS. (n. sp.) (Pl. II, f. 15, 16, a, b)  
 Hab.—Honshu.
- 30 " **buzensis** MATS. (n. sp.)  
 Hab.—Kiushu.
- 31 **Kybos smaragdula** FALL. (Pl. III, f. 9, 10, a, b)  
*Cicada smaragdula* FALL., Hem. Suec. 2, p. 53 (1826).
- 32 **Chlorita biguttula** SHIRAKI  
*Chlorita biguttula* SHIRAKI, Cotton Ins., Special Rep. Formosan Exp. Station, 5, p. 96 (1910).  
 Hab.—Formosa.
- 33 " **pyrisuga** MATS. (n. sp.)  
 Hab.—Hokkaido.
- 34 " **hakonella** MATS. (n. sp.)  
 Hab.—Honshu.
- 35 **Chlorita todo** MATS. (n. sp.)  
 Hab.—Hokkaido.
- 36 " **flavescens** F.  
*Cicada flavescens* F. S. R. p. 79 (1803); MATS., Syst. Ent. Tokyo, p. 113 (1907).  
 Hab.—Hokkaido, Honshu, Shikoku, Kiushu, Korea, Formosa, Europe, N. America.
- 37 **Chlorita flaxinicola** MATS. (n. sp.)  
 Hab.—Hokkaido, Honshu.
- 38 " **nopporensis** MATS. (n. sp.)  
 Hab.—Hokkaido.
- 39 " **hiromichii** MATS. (n. sp.)  
 Hab.—Hokkaido.
- 40 " **kisuji** MATS. (n. sp.)  
 Hab.—Honshu.
- 41 " **flavovittella** MATS. (n. sp.)  
 Hab.—Honshu.
- 42 " **koreana** MATS. (n. sp.)  
 Hab.—Korea.
- 43 " **shokella** MATS. (n. sp.)  
 Hab.—Formosa.
- 44 " **boninensis** MATS. (n. sp.)  
 Hab.—Bonin Isles.
- 45 " **vittata** LETH.  
*Chlorita vittata* LETH., Rev. d'Ent. p. 65 (1884); MATS., Trans. Sapporo N. H. S. p. 154 (1915).  
 Hab.—Honshu, Korea.
- 46 " **tessellata** LETH.  
*Chlorita tessellata* LETH., l. c. p. 65.  
 Hab.—Honshu, Shikoku, Kiushu, Hachijo, Formosa, Europe.
- 47 " **formosicola** MATS. (n. sp.)  
 Hab.—Formosa.
- 48 **Chlorita okubonis** MATS. (n. sp.)

- Hab.—Honshu.
- 49 **Sacapome formosana** SCHUHM.  
Hab.—Formosa.  
*Sacapome formosana* SCHUHM., Suppl. Ent., p. 128 (1915).
- 50 **Nirvana pallida** MELICH.  
*Nirvana pallida* MELICH., Hom. Fauna Ceyl. p. 155, pl. V. f. 3, (1903); MATS., Jour., Coll. Agr. IV, p. 282 (1912).  
Hab.—Kiushu, Formosa, China, India.
- 51 " **suturalis** MELICH.  
*Nirvana suturalis* MELICH., l. c. p. 166, pl. V. f. 5; MATS., l. c. p. 282.  
Hab.—Formosa, Ceylon.
- 52 **Nirvana orientalis** MATS.  
*Nirvana orientalis* MATS., l. c. p. 282.  
Hab.—Formosa.

## B. Typhlocybaria

- 53 **Eupteryx triangularis** MATS. (n. sp.)  
Hab.—Honshu.
- 54 " **U-nigrum** MATS. (n. sp.)  
Hab.—Honshu.
- 55 " **takasagonis** MATS. (n. sp.)  
Hab.—Honshu.
- 56 " **niisimae** MATS. (n. sp.)  
Hab.—Hokkaido.
- 57 " **pulchella** FALL. (Pl. II, f. 4, a, b)  
*Cicada pulchella* FALL., Hem. Succ. 2, p. 55 (1826); MATS., Appl. Ent., Vol. I, p. 394 (1916).  
Hab.—Hakkaido, Honshu, Shikoku, Europe.
- 58 **Eupterpx stellulata** BURM.  
*Typhlocyba stellulata* BURM. Gen. Ins. f. 1. (1838-46).  
Hab.—Honshu (Iwate).
- 59 " **quercus** MATS.  
*Eupteryx quercus* MATS., Appl. Ent. Vol. I, p. 394 pl. XIV, f. 4 (1916); Dainippon Gaichu Zensho, Vol. 1, p. 297; 6000 Ill. Ins. Jap. p. 1255, f. 367 (1931).  
Hab.—Honshu, Shikoku, Kiushu, Europe.
- 60 " **artemisiae** KBM.  
*Typhlocyba artemisiae* KBM. Cicad. p. 190 (1868).  
*Eupteryx artemisiae* MATS., Trans. Sapporo N. H. S. p. 154 (1915).  
Hab.—Hokkaido, Honshu, Shikoku, Kiushu, Europe.
- 61 **Typhlocyba nitobella** MATS. (n. sp.)  
Hab.—Formosa.
- 62 " **lyraeformis** MATS. (n. sp.)  
Hab.—Formosa.
- 63 " **aino** MATS. (n. sp.)  
Hab.—Hokkaido, Honshu.
- 64 " **centrorubida** MATS. (n. sp.)  
Hab.—Hokkaido.
- 65 " **giranna** MATS. (n. sp.)

- Hab.—Honshu, Formosa.
- 66 " **hoso** MATS. (n. sp.)  
Hab.—Honshu.
- 67 " **subtilis** MATS. (n. sp.)  
Hab.—Honshu.
- 68 " **internalis** MATS. (n. sp.)  
Hab.—Kiushu.
- 69 " **ishidai** MATS. (n. sp.)  
Hab.—Hokkaido.
- 70 " **koreacola** MATS. (n. sp.)  
Hab.—Korea.
- 71 " **punecea** MATS. (n. sp.)  
Hab.—Hokkaido, Honshu.
- 72 " **nopporensis** MATS. (n. sp.)  
Hab.—Saghalien, Hokkaido, Honshu, Kiushu.
- 73 " **nakanensis** MATS. (n. sp.)  
Hab.—Honshu.
- 74 " **kiiensis** MATS. (n. sp.)  
Hab.—Honshu.
- 75 " **rosae** L.  
*Cicada rosae* L., Faun. Suec. p. 902 (1761); Trans. Sapporo N. H. S. 5, p. 154 (1915);  
Appl. Ent. Vol. 1, p. 394, pl. XVI, f. 6 (1919); 6000 Ill. Ins. Jap. p. 1262, f. 406  
(1931).
- 76 **Hiratettix** (n. g.) **arisanellus** MATS. (n. sp.)  
Hab.—Formosa.
- 77 **Nesopteryx** (n. g.) **kuyania** MATS. (n. sp.)  
Hab.—Formosa.
- 78 " **arisana** MATS. (n. sp.) (pl. II, f. 5, 6, a, b)  
Hab.—Formosa.
- 79 **Platytettix** (n. g.) **pulchrus** MATS. (n. sp.) (Pl. III, f. 13, 14, a, b).  
Hab.—Honshu, Shikoku, Kiushu.
- 80 **Pyramidotettix** (n. g.) **citri** MATS. (Pl. II, f. 17, 18, a, b)  
*Conometopius citri* MATS., Syst. Ent. Vol. 1, p. 113 (1907).  
*Motschulskia citri* MATS., Appl. Ent. Vol. 1, p. 397 (1916); Dainippon Gaichu Zensho  
Vol. 1, p. 305 (1919); 6000 Ill. Ins. Jap. p. 1268 f. 381 (1931).
- 81 **Igutettix** (n. g.) **pulverosus** MATS. (n. sp.) (Pl. II, f. 7, 8, a, b)  
Hab.—Honshu.
- 82 **Zyginoides** (n. g.) **taiwanus** SHIRAKI (Pl. III, f. 5, 6, a, b)  
*Eupteryx taiwanus* SHIR., Cotton Ins. Spec. Rep. Formosa Ex. St. 5, p. 95 (1910);  
MATS., Dainippon Gaichu Zensho Vol. 1, p. 297 (1919).  
Hab.—Okinawa, Formosa.
- 83 **Zygina basiflava** MATS. (n. sp.) (Pl. III, f. 20, 21, a, b)  
Hab.—Formosa.
- 84 " **arachisi** MATS.  
*Zygina arachisi* MATS., Appl. Ent. Vol. I, p. 397 (1916); Dainippon Gaichu Zensho Vol.  
I, p. 294 (1919).  
Hab.—Formosa.
- 85 " **multipunctella** MATS.

*Zygina multipunctella* MATS., Dainippon Caichu Zensho Rev. ed. Vol. 1, p. 293 (1919);  
6000 Ill. Ins. Jap. p. 1263, f. 409 (1931).

Hab.—Honshu, Kiushu.

86 *Zygina mori* MATS.

*Typhlocyba (Zygina) mori* MATS., Dainippon Caichu Zensho Vol. 1, p. 121 (1909).

Hab.—Honshu, Kiushu.

87 " *yamashiroensis* MATS.

*Zygina yamashiroensis* MATS., Appl. Ent. Tokyo, Vol. 1, p. 396 (1916).

Hab.—Hokkaido, Honshu, Shikoku, Kiushu.

88 " *cerasi* MATS. (n. sp.)

Hab.—Hokkaido.

89 " *moiwana* MATS. (n. sp.)

Hab.—Hokkaido.

90 " *iguchiella* MATS. (n. sp.)

Hab.—Honshu.

91 " *nigricans* MATS. (n. sp.)

Hab.—Formosa.

92 " *albisoma* MATS. (n. sp.)

Hab.—Formosa.

93 " *alneti* DAHLB.

*Cicadula alneti* DAHLB., K. V. A. Handl. p. 181 (1850); *Zygina alneti* MATS., Dainippon Caichu Zensho, Rev. ed. Vol. 1, p. 296 (1919).

Hab.—Hokkaido, Honshu, Europe.

94 " *onukii* MATS.

*Zygina onukii* MATS., Appl. Ent. Vol. 1, 396 (1916); Dainippon Caichu Zensho Vol. 1, p. 292 (1916).

*Zygina harimensis* MATS., l. c. p. 292.

Hab.—Honshu, Shikoku, Kiushu, Okinawa.

95 " *akashiella* MATS. (n. sp.)

Hab.—Honshu, Kiushu, Hachijo.

96 " *subrufa* MOTSCH.

*Thamnotettix subrufus* MOTSCH., Bull. Mosc. 36, p. 100 (1863).

*Typhlocyba subrufa* MELICH., Hom. Faun. p. 218 (1903); Distant, Faun. Br. Ind. 4, p. 413 (1908).

*Zygina subrufa* MATS., Zuckerrohr Formosas, p. 19, pl. XVI, f. 9 ♀ (1910); SCHUHLM., Mit. Zool. Mus. Berlin, 8, p. 109 (1915).

Hab.—Formosa, India (Ceylon, Java, etc.)

97 " *shinshana* MATS. (n. sp.)

Hab.—Formosa.

98 " *sachalina* MATS. (n. sp.)

Hab.—Saghalien.

99 " *sapporensis* MATS. (n. sp.)

Hab.—Hokkaido.

100 " *satsumana* MATS. (n. sp.)

Hab.—Kiushu.

101 " *bokctonis* MATS. (n. sp.)

Hab.—Formosa.

102 " *fumosa* MOTSCH.

*Thamnotettix fumosus* MOTSCH., Bull. Soc. N. Mosc., p. 101 (1863).

- Typhlocyba fumosa* MELICH., Hom. Ceyl. p. 218 (1903); DISTANT, Faun. Br. Ind. 4, p. 412 (1908).  
*Thamnotettix nigrobimaculatus* MOTSCH., l. c. p. 101.  
*Typhlocyba nigrobimaculata* MELICH., l. c. p. 218.  
*Zygina fumosa* SCHUHM., Mit. Zool. Mus. Berlin, 8, p. 109 (1915).  
 Hab.—Formosa, India.
- 103 *Zygina circumscripta* MATS.  
*Zygina circumscripta* MATS., Zuckerrohr Formosas, Tokyo, p. 18, pl. XXVI, f. 10 (1910);  
 Mem. Soc. Ent. Belg., XVIII, p. 136 (1911); SCHUHM., l. c. p. 109 (1915).  
 Hab.—Formosa.
- 104 " *maculifrons* MOTSCH.  
*Typhlocyba maculifrons* MOTSCH., Bull. Soc. Mosc. 36, p. 103 (1863); MELICH., Hom. Faun. Ceylon, p. 219 (1903); DISTANT, Faun. Br. Ind. 4, p. 413 (1908).  
*Zygina maculifrons* MATS., Zuckerrohr Formosas, p. 19, pl. XVI, f. 8 ♀ (1910); SCHUHM., l. c. 8, p. 109 (1915).  
 Hab.—Formosa, India, Ceylon, Java, Singapore.
- 105 " *fumigata* MELICH.  
*Typhlocyba fumigata* MELICH., Hom. Faun. Ceylon, p. 217 (1903); DISTANT, Faun. Br. Ind. 4, p. 410 (1908).  
*Zygina fumigata* SCHUHM., Mit. Zool. Mus. Berlin, 8, p. 109 (1915); Suppl. Ent. Dahlem, 4, p. 129 (1915).  
 Hab.—Formosa, Ind.
- f. *sonani* MATS. (n. f.) (at the apex of vertex with 2 independent black dots)  
 Hab.—Formosa.
- 106 " *formosana* MATS. (n. sp.)  
 Hab.—Formosa.
- 107 " *takasagonis* MATS. (n. sp.)  
 Hab.—Honshu.
- 108 " *jonella* MATS. (n. sp.)  
 Hab.—Kiushu.
- 109 " *suzukii* MATS.  
*Zygina suzukii*, MATS., Dainippon Gaichu Zensho, Vol. 1, p. 296 (1919).  
 Hab.—Honshu, Kiushu, Korea.
- 110 " *kakogawana* MATS. (n. sp.)  
 Hab.—Kiushu.
- 111 " *akazu* MATS. (n. sp.)  
 Hab.—Honshu.
- 112 " *hirayamella* MATS. (n. sp.)  
 Hab.—Honshu.
- 113 " *okamotonis* MATS. (n. sp.)  
 Hab.—Korea.
- 114 " *yanonis* MATS. (n. sp.)  
 Hab.—Kiushu.
- 115 " *iwatensis* MATS. (n. sp.)  
 Hab.—Honshu.
- 116 " *okinawella* MATS. (n. sp.)  
 Hab.—Okinawa.
- 117 " *sawashibae* MATS. (n. sp.)  
 Hab.—Hokkaido.

- 118 " **kagina** MATS. (n. sp.)  
Hab.—Formosa.
- 119 **Zygina shokensis** MATS. (n. sp.)  
Hab.—Formosa.
- 120 " **limbata** MATS.  
*Zygina limbata* MATS., Syst. Ent. Japan. p. 113 (1907); Appl. Ent. Vol. 1, p. 395, f. 194 (1916); Trans. Sapporo N. H. S. 5, p. 159 (1915); Dainippon Gaichu Zensho Vol. 1, p. 295 (1919).  
Hab.—Honshu, Shikoku, Kiushu, Korea.
- 121 " **bisignatella** MATS. (n. sp.)  
Hab.—Formosa.
- 122 " **apicalis** MATS.  
*Zygina apicalis* MATS., Appl. Ent. Vol. 1, p. 896 (1916); Dainippon Gaichu Zensho Vol. 1, p. 295 (1919); 6000 Ill. Ins. Jap., p. 1263 f. 407 (1931).  
Hab.—Hokkaido, Honshu, Shikoku, Kiushu, Korea.
- 123 " **rubriclavus** MATS. (n. sp.)  
Hab.—Honshu.
- 124 " **takaonella** MATS. (n. sp.)  
Hab.—Formosa.
- 125 " **teizonis** MATS. (n. sp.)  
Hab.—Honshu.

## DESCRIPTIONS OF GENERA WITH NEW SPECIES

### Div. I. *Empoascaria*

#### Gen. 1. *Alebra* FIEB.

*Alebra* FIEB., Cicad. p. 472, Gen. 101 (1875).

*Compsus* FIEB., Verh. Zool.-Bot. Ges. p. 507 (1866) (Praeoc).

"Body with the elytron slender, elongated. Vertex short, in the same length throughout, front and anterior margin of pronotum nearly parallel, scarcely curved, somewhat more than half as long as at the hind margin broad. Ocelli distinct, at transit to frons more separated from each other than from the eyes. Antennae depressed, protruding beyond the clypeus, the 2nd joint twice as long as the 1st. Rostrum longer than the clypeus. Pronotum at the hind margin straight, at the sides rounded. Scutellum triangular, in the middle excavated. Elytron with a narrow appendage and 3 marginal cells. Two first apical sectors of wing by a cross-vein build a elongated apical cell, the 2nd sector with the 3rd connected by a angular nerve, from its angle emits a apical nerve to the marginal vein, so that building 3 apical cells, the supernumerous cell wanting." (MELICHAR).

Genotype—*Alebra albostriatella* FALL.

We have in Japan one species and one new form of *Alebra albostriatella* FALL.

#### *Alebra albostriatella* f. *costatella* n. f. (Pl. II, f. 1, a, b)

♂. Differs from the typical species as follows:

Corium at the costal margin broadly, and clavus at the hind margin as well as at the apex orange-yellow; posterior tibial spines at the bases with no fuscous speck.

Length—4 mm.

Hab.—Gifu (Honshu); one male specimen was collected on the 14th, July, 1906, by the author.

Gen. 2. ***Alebroides*** MATS. (n. g.)

Closely allied to *Alebra* FIEB., but differs from it in lacking the membranous appendiculate and having the 1st and 2nd apical sectors to elytron long stalked, the hind wing being nearly similar to that of *Dicraneura* HARDY.

Genotype—*Alebroides marginatus* MATS.

This resembles also *Alconeura* BALL et DELONG, but differs from it in having ocelli as in *Alebra*, the hind wing having 3 closed cells at the apex, the 4th cell to elytron the largest and of a trapezoidal form. This is not highly ornamented as in *Alconeura* and resembling in colour much *Alebra* FIEB., to which this genus is most closely allied. We have in Japan 8 species belonging to this genus.

***Alebroides marginatus*** n. sp.

Pale testaceous. Vertex blunt conish produced, in the middle distinctly shorter than at the hind margin. Pronotum in the middle with a large triangular fuscous patch which, connected with the concolorous scutellum, builds a large fusiform marking on the notum. Elytron subhyaline, grayish white, at the hind margin along the clavus with a broad fuscous stripe. Abdomen at the dorsal part except both sides black, being whity at the hind margin of each segment.

♂. Genital plate whity, linear, long, at the apex upturned and somewhat conical in shape, with long hairs; pygofer on each side with an upturned lobe, anal tube at the base fuscous.

♀. Last ventral segment long, at the hind margin straight; coleostrom nearly twice as long as the last segment; vagina somewhat protruded beyond the apex of coleostrom and where is fuscous in colour.

Length—4.5 mm.

Hab.—Honshu, Kiushu, Hachijo, Formosa; numerous specimens were collected by S. YANO, M. SUZUKI, J. ARAKAWA and the author.

***Alebroides boninensis*** n. sp.

♂. Testaceous white. Vertex blunt conically produced, in the middle about as long as broad at the hind margin, in the middle with 2 obsolete grayish patches, a white central stripe eminent, ocelli somewhat darker. Pronotum somewhat longer than the vertex in the middle. Elytron subhyaline, nearly colourless, the 1st and 2nd sectors only visible at the inner sides of

cross-veins, the 1st and 2nd apical sectors with a short stalk which is as long as the contiguous cross-vein.

♀. Last ventral segment about twice as long as the foregoing segment, at the hind margin somewhat rounded; coleostron about twice as long as the breadth at base, vagina by about 1/4 protruding beyond the apex of coleostron.

Length—3.2 mm.

Hab.—Bonin Isles (Ogasawarajima); one female specimen was collected on August 30, 1905, at Chichijima by the author.

***Alebroides flavifrons* n. sp.**

White. Vertex rounded, in the middle somewhat shorter than broad at the hind margin between the eyes, 2 dots on the disc and the ocelli grayish, face somewhat yellowish. Pronotum much longer than the vertex. Elytron subhyaline, membrane scarcely suffused.

♂. Genital valvula short, about 1/3 the length of the last ventral segment, genital plate filamentous, obliquely upturned, at the apex somewhat curved upwardly, with long hairs, being about twice as long as the pygofer which is conical seen from the sides, at the tip scarcely brownish.

♀. Last ventral segment straight at the hind margin, coleostron about twice as long as the breadth at the base, vagina distinctly protruding beyond the apex of coleostron, at the tip being infuscated.

Length—3.5 mm.

Hab.—Honshu; one male specimen was collected by M. SUZUKI at Kyoto, and one female at Hakone in August by the author.

***Alebroides hachijonis* n. sp.**

Closely allied to *A. flavifrons* MATS., but differs from it as follows:

♂. Thorax, except pronotum, and abdomen at the apex fulvous; elytron hyaline, at the middle of costa with a long white patch, the 1st and 2nd apical sectors with a longer stalk; genital plate longer, at the apex rounded but not broader.

Length—4 mm.

Hab.—Hachijo Isle; one male was collected in August, 1905, by the author.

***Alebroides akashianus* n. sp. (Pl. III, f. 12, a, b)**

Whitish. Vertex in the middle somewhat shorter than at the hind margin broad, pale purplish brown, with 2 short whitish bars in the middle, also 4 similar markings being visible on the top; face whitish, clypeus and genae largely purplish brown. Elytra subhyaline, grayish white, the 1st and 2nd apical sectors with a short stalk.



Body beneath and legs testaceous, all the claws brownish.

♂. Last ventral segment somewhat longer than the foregoing segment, genital plates short, about as long as the last segment, much longer than the pygofer, at the apex being rounded.

♀. Last ventral segment somewhat longer than the breadth, coleostrom about  $2\frac{1}{2}$  times as long as the breadth at base, vagina protruded distinctly beyond the apex and where is black.

Length—4–4.5 mm.

Hab.—Honshu; 3 (2 ♂, 1 ♀), specimens were collected in June and July at Harima by S. IGUCHI and the author.

***Alebroides shokanus* n. sp.**

♂. Closely allied to *D. akashianus* MATS., but differs from it as follows:

Vertex pale purplish gray, at the top purplish brown, with 3 oblong whitish spots and in the middle with a concolorous stripe, clypeus and labrum concolorous with the face; pronotum with 2 large pale brownish spots. Elytron at the clavus somewhat infuscated, veins whitish in a certain light; abdomen on the dorsum, except the lateral sides, black; genital plates long, about 2 times as long as the last ventral segment, when they are closed being long conical, with long hairs, at the apices upturned, pygofer and anal tube at the base infuscated.

Length—4.2 mm.

Hab.—Formosa; one male specimen was collected on July 20, 1906, by the author.

***Alebroides toroënsis* n. sp.**

Yellowish testaceous. Vertex somewhat obconically rounded, in the middle somewhat shorter than at the hind margin broad; ocelli dark grayish. Pronotum about as long as at the hind margin of vertex between eyes broad. Scutellum at the hind margin dark grayish. Elytren subhyaline, concolorous with the body. Abdomen on the dorsum, except the sides, black.

♂. Last ventral segment somewhat longer than the foregoing segment, genital plates with long hairs, together gradually tapering towards the apices,  $1\frac{1}{2}$  times as long as the last segment, at the apices being upturned and blunt.

♀. Last ventral segment at the hind margin straight; coleostrom long, about 4 times as long as at the base, vagina by about  $1/4$  protruding beyond the apex, at the extreme apex being infuscated.

Length—4 mm.

Hab.—Formosa; 7 (5 ♂, 2 ♀) specimens were collected on April 19, 1907, at Toroën near Arisan by the author.

***Alebroides iwatensis* n. sp.**

Closely allied to *A. toroënsis* MATS.

♀. Mesonotum in the middle with 2 brownish stripes which are to be seen through the pellucid pronotum. Scutellum also in the middle and apex brownish. Last ventral segment about half the length of the breadth, at the hind margin straight, coleostron long, about  $2\frac{1}{2}$  as long as the breadth at the base, vagina distinctly protruding beyond the coleostron and where is infuscated.

Length—4 mm.

Hab.—Honshu; one female specimen was collected at Iwate by T. OGASAWARA.

**Gen. 3. *Togaritettix* MATS. (n. g.)**

*Togaritettix* n. g.—Venation nearly similar to *Alebroides* MATS., but the vertex flat, sharp conically produced and longer than the pronotum, having no ocelli, antenna not longer than the head, pronotum and scutellum combined; the 3rd sector to the hind wing long stalked.

Genotype—*Togaritettix serratus* MATS.

We have in Japan only one species.

***Togaritettix serratus* n. sp. (Pl. II, f. 11, 12, a, b)**

Above pale yellowish. Vertex and pronotum white, in the middle black, this colour continues to the tip of scutellum, and gradually broadening towards the hind margin of pronotum, the extreme lateral margins of scutellum white. Elytron yellow, at the hind margin till to the tip fuscous, defined by black anteriorly and on its margin distinctly zigzag, at the costa near the base with an oblong white ring-spot, the costal cross-vein being fuscous. Hind wing hyaline, iridescent. Abdomen in some individuals at the middle of dorsum infuscated.

♂. Last ventral segment about as long as the valvula which is rounded at the hind margin, both being whity gray in colour; genital plates gradually slenderer towards the apices which are upturned and rounded, pygofer large, anal tube constricted at the base.

♀. Last ventral segment at the hind margin produced blunt conically, on each side distinctly incised; coleostron about  $2\frac{1}{2}$  times as long as at the base broad, vagina scarcely protruding beyond the apex of coleostron.

Length—3 mm.

Hab.—Honshu, Shikoku, Kiushu; numerous specimens were collected by T. OTSUKA, T. OGASAWARA and the author.

Gen. 4. *Togaricrania* MATS. (n. g.)

*Togaricrania* n. g.—Closely allied to *Dicraneura*, but differs from it in having an acute triangular vertex, being longer than at the hind margin between the eyes broad, face rhomboidal, frons much longer than the maximum width, pronotum about as long as the vertex in the middle; antenna longer than the head, pronotum and scutellum combined.

Genotype—*Togaricrania rubrovitta* MATS.

We have in Japan only one species.

*Togaricrania rubrovitta* n. sp. (Text fig. 1.)

♀. White. Vertex triangularly rounded, with 2 orange-yellowish stripes which continue to the similar stripes on pronotum, in the middle about as long as at the hind margin between the eyes broad. Pronotum much longer than the vertex in the middle. Scutellum with no marking. Elytron nearly hyaline, with 2 longitudinal orange-yellow stripes, one of the clavus longer and the other in the middle of corium, near the apex of clavus with a fuscous dot, membrane being scarcely infuscated. Last ventral segment at the hind margin broadly rounded; coleostron about  $2\frac{1}{2}$  times as long as at the base broad, vagina distinctly protruding beyond the apex of coleostron.

Length—3 mm.

Hab.—Honshu; 2 female specimens were collected on July 17, 1908, at Okubo in Tokyo by the author.

The author has 3 other female specimens collected at the Hongkong (Happy Valley) on October 12, 1902.

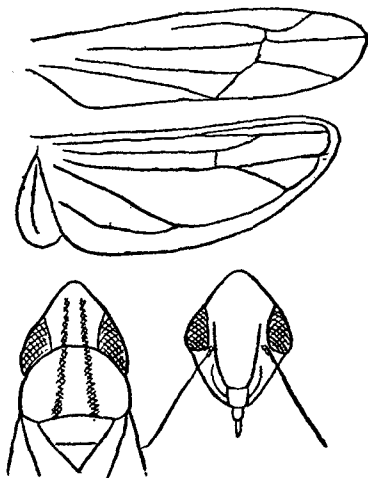


Fig. 1.

*Togaricrania rubrovitta* MATS.

Gen. 5. *Dicraneura* HARDY

*Dicraneura* HARDY, Trans. Tynes. F. C. 1, p. 423 (1850).

*Erythria* FIEB., Verh. K.-K. Zool. Bot. Gess. p. 507, pl. VII, f. 23 (1865).

*Notus* FIEB., l. c. p. 508 (1866).

"Body elongated, slender. Vertex about right angularly produced, more than half the length between the eyes broad, its hind margin deeply excavated. Eyes long, inverted oval, ocelli wanting, or only visible as a puncture-pit. Gena from the clypeus excavated, to the posterior part of eyes where is strongly excavated. Clypeus protruding beyond the gena,  $\frac{1}{3}$  the length of frons. Anterior margin of

pronotum between the eyes strongly produced, at the hind margin excavated, on the side rounded. Elytron longer than the abdomen, with no marginal appendage, with 3 narrow apical cells. First two sectors of wing before the end connected by a fork, the 2nd and 3rd sectors connected by an angular vein, from its apex emitting an apical vein to the marginal. Supernumerous cell present." (MELICHAR)\*

Genotype—*Dicraneura flavipennis* ZETT.

We have in Japan only one species as in the list.

Gen. 6. *Naratettix* MATS. (n. g.) (Pl. III, f. 7, 8, a, b)

Body flat; vertex seen from sides distinctly sloping downwardly, scarcely vaulted, face somewhat excavated; frons somewhat longer than the maximum width, with a row of distinct grooves on each side; no ocelli; pronotum somewhat vaulted, longer than the vertex, much broader at the base than the head with eyes; scutellum in the middle with 2 pits and a transverse groove, being much shorter than pronotum; elytron with 3 apical sectors, any of them not stalked, all sectors in corium obsolete except very near the inner side of cross-veins, the costal cross-vein obsolete; hind wing similar with that of *Dicraneura* HARDY. (*Erythria* FIEB.)

Genotype—*Naratettix zonatus* MATS.

*Erythria zonata* MATS., Trans. Sapporo N. H. S. V, p. 157 (1915).

We have only one species in Japan, but 12 forms in the list are thought by the author to belong to this species, of which the following 6 are new.

*Naratettix zonatus* MATS. f. *beppuana* n. sp.

♂. Differs from f. *issikii* MATS. in having a vermilion-red diamond-patch, defined inwardly by a zigzag black band, decorated with a large black dot near the apex of clavus.

Hav.—Beppu (Kiushu); one male specimen was collected on February 10, 1916, by the author.

*Naratettix zonatus* MATS. f. *ibukisana* n. f.

♂. In the middle of venter at the base with a large fuscous spot which extends to the middle of abdomen; elytra in the middle with a vermilion-red diamond patch, being not defined above by a zigzag black band, lacking a black speck near the apex of clavus. 1st ventral segment in the middle with a fuscous spot.

Hab.—Honshu (Ibukisan), Kiushu (Kagoshima); 2 male specimens were collected by Y. NAWA and the author.

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\* The German description of MELICHAR (*Cicadinen von Mittel-Europa*, p. 320, 1896) translated by the author into English slightly changed.

***Naratettix zonatus* MATS. f. *fallax* n. f.**

Differs from f. *sapporensis* MATS. in lacking a black dot at the costal margin, with a pale rosy colour on corium, and a black patch at the base of venter.

Hab.—Tokyo; 2 female specimens were collected on November 12, 1910, at Nakano by the author.

***Naratettix zonatus* MATS. f. *discigutta* MATS.**

*Erythrura zonata discigutta* MATS., Dainippon-Gaichu-Zensho Vol. 1, p. 305 (1919).

Vertex and pronotum except at the lateral sides, the clavus and a triangular patch in the middle of corium dark coppery brown, at the middle of costa with a black longitudinal bar, a triangular patch defined posteriorly by a fuscous serrated line. In the male the venter fuscous, each segment at the hind margin pale yellow.

Hab.—Hakone (Honshu); 2 (1 ♂, 1 ♀) specimens were collected on July 4, 1913, at Mt. Soun, by the author.

***Naratettix zonatus* MATS. f. *issikii* n. f.**

A diamond-shaped irregularly margined fuscous patch to elytron, which is black at the costa, is conspicuous near the apex of clavus, decorated with each a black dot; venter black, connexivum and each hind margin of the segments concolorous with the pectus.

Hab.—Yamato (Honshu); one male specimen was collected on August 10, 1913, at Odaigahara by S. ISSIKI.

***Naratettix zonatus* MATS. f. *L-nigrum* n. f.**

Closely allied to f. *lata* MATS., but differs from it as follows:

♂. Body sulphur-yellow, elytron pale yellow, beneath at the middle of costa with a cuneate black patch which seen from the upperside L-shaped, being obliterated by an oblong whitish patch; in clavus with 2 black dots, one of which situated near the middle by suture and the other near the apex, 3 similar dots at the outside of cross-veins, lacking it in the 3rd cell. Abdomen on the 3 dorso-basal segments with each a black band and on the 3 ventro-basal with each a similar band, one of the 1st being obsolete, at the 4th and 5th with each a short upwardly curved fuscous band.

Hab.—Hokkaido; 2 male specimens were collected in September and October, 1931, by M. ISHIDA and H. KONO at Maruyama (Sapporo) on *Quercus glandifolia*.

***Naratettix zonatus* MATS., f. *rubrovitta* MATS.**

*Erythria zonata* MATS. var. *rubrovittata* MATS., Dainippon-Gaichu-Zensho Vol. 1, p. 305 (1919).

♂. Vertex and pronotum with 2 vermilion-red stripes which broaden and expand outwardly at the hind margin of pronotum; elytron with 2 broad vermilion-red stripes, one of the inner not reaching to the apex of clavus and the other being longer and ends at the cross-veins, where building a concolorous net-shaped marking; near the middle at costa with an oblong reddish brown patch; venter dark fuscous, connexivum, and each hind margin of the segments narrowly, testaceous.

Hab.—Honshu (Kyoto); one male specimen was collected by M. SUZUKI at Kurama.

***Naratettix zonatus* MATS. f. *sapporensis* n. f.**

♀. Form is allied to f. *inornata* MATS., but differs from it as follows:

With 2 vermilion-red stripes on the head and pronotum, which are strongly incurved in the middle of pronotum and the interspace between these curved lines whitish opaque; elytra pale rosy red, near the middle at each costal margin with a black dot, just below it a whitish spot which is defined outwardly by a narrow black line and which entails towards the apex of clavus; cross-veins, and the sectors till the pale rosy coloured part reddish, with 3 black dots, respectively in the 1st, 2nd and 4th apical cells; ventral segment at the base black.

Hab.—Sapporo; one female specimen was collected on September 4, 1912, by the authour.

The different forms of *Naratettix zonatus* MATS. may be tabulated as follows:

- A. Elytron with bands or patches.
  - I. Elytron with one or 2 narrow bands.
    - 1. Elytron with one band.
      - a. Band straight ... .. *zonata* MATS. (str. s.)
      - b. Band zigzag ... .. *koreana* MATS.
    - 2. Elytron with 2 bands interrupted ... .. *bizonata* MATS.
  - II. Elytron with a broad, spindle-shaped band ... .. *lata* MATS.
  - III. Elytron with a rhomboidal patch.
    - 1. Elytron with marking carmine-red.
      - a. Margin defined internally by black ... .. *beppuana* MATS.
      - b. Margin defined not internally by black ... .. *ibukisana* MATS.
    - 2. Elytron with marking brownish.
      - a. Base of elytron brownish ... .. *discigutta* MATS.
      - b. Base of elytron not brownish. ... .. *issikii* MATS.
- B. Elytron with no band, or with a costal patch.
  - 1. Elytron with no band.
    - a. Elytron yellowish, membrane infuscated ... .. *inornata* MATS.
    - b. Elytron more or less pinkish.
      - b'. Elytron in clavus with a red stripe ... .. *fallax* MATS.

- b'. Elytron in corium with a red stripe ... .. *rubrovitta* MATS.  
 2. Elytron with a black patch at costa.  
 a. Elytron yellow, costal patch bluish black, L-shaped ... .. *L-nigrum* MATS.  
 b. Elytron reddish, costal patch brownish, triangular ... .. *sapporensis* MATS.

### Gen. 7. *Sujitettix* MATS. (n. g.)

Vertex with a central keel which runs down about to the middle of frons; head with the eyes distinctly broader than at the thorax; with distinct ocelli. Pronotum much longer than at the vertex; scutellum at the basal half with a central keel, not reaching to the middle transverse groove.

Venation to the elytron at the apical one-third only distinct, the 1st and 2nd sectors united to one point towards the apex and from where send the 1st and 2nd apical sectors which are short stalked at the base. Venation of the hind wing nearly the same with that of *Empoasca*, except the 3rd sector sending a branch (4th sector) towards the apex, the cross-vein opening into the 2nd cell, the apical marginal vein being obsolete.

Genotype—*Sujitettix ferrugineus* MATS.

We have in Japan only one species.

#### *Sujitettix ferrugineus* n. sp. (Pl. II, f. 11, 12, a, b)

Body reddish brown; at vertex with 2 fuscous and at the apex with 2 black spots; vertex in the middle somewhat longer than broad at the sides next eyes, about twice as long as the width. Pronotum in the middle and at the hind margin with each a transverse narrow fuscous band. Elytra subhyaline, grayish, the first apical 2 sectors with a stalk; veins of the hind wings infuscated. Abdomen yellowish testaceous, connexivum fuscous spotted at each joint. Legs testaceous, tarsi at the apices fuscous.

♂. Genital plate about twice as long as the last ventral segment, long pointed, with long bristles.

♀. Last ventral segment about twice as long as the foregoing, truncate at the hind margin, vagina distinctly protruding beyond the coleostron.

Length—4 mm.

Hab.—Honshu, Kiushu; numerous specimens were collected by S. YANO, G. MATSUMOTO, S. ISSIKI, E. GALLOIS and the author.

### Gen. 8. *Nikkotettix* MATS.

Closely allied to *Sujitettix* MATS., but differs from it as follows:

Vertex with the central keel not reaching to the top, on each side with

a roundish pit; ocelli distinct; 1st and 2nd sectors to the elytron separated at the apices, the 2nd opening into the 2nd apical cell, the 3rd sector obsolete only at the basal 1/3, the 1st and 2nd apical sectors separate; 3rd and 4th (branch of the 3rd) apical sectors to the hind wing with a long stalk beyond the cross-vein.

Genotype—*Nikkotettix galloisi* MATS.

We have in Japan only one species.

***Ntkkotettix galolisi* n. sp.** (Pl. II, f. 13, 13, a,b)

♂. Vermilion-red. Vertex at the top rounded, with 2 roundish black spots, in the middle as long as at the hind margin. Labrum with a brownish spot. Pronotum near the anterior margin in the middle with a fuscous spot. Scutellum at the apex broadly black. Elytron vermilion-red, membrane hyaline, somewhat infuscated, veins being reddish. Hind wing concolorous with the membrane, veins brownish. Abdomen largely black, each segment at the hind margin narrowly pale yellowish. Last ventral segment in the middle somewhat angularly incised, genital plate nearly twice as long as the last segment, pygofer somewhat protruded beyond the apex, at the last segment with whitish bristly hairs. Claws dark brown.

Length—5 mm.

Hab.—Honshu; one male specimen was collected on August, 7, 1916, at Chuzenji by E. GALLOIS.

Gen. 9. ***Akotettix* MATS.** (n. g.)

Closely allied to *Sujitettix* MATS., but differs from it as follows: Vertex in the disc with 2 protuberances, behind them 2 oblique grooves are visible; frons closed, the upper suture straight, building an obtuse angle on both sides, just above it each ocellus being situated; corium with only 2 sectors which are only distinct near the cross-veins, the costal cross-vein being obsolete, with 4 apical cells, the 1st and 2nd apical sectors separate at the bases, the 2nd and 3rd parallel to each other; venation of the hind wing similar to that of *Empoasca*.

Genotype—*Akotettix akonis* MATS.

We have only one species belonging to this genus in Japan.

***Akotettix akonis* n. sp.** (Pl. II, f. 9, 10, a, b)

Body reddish brown; frons in the middle with a black spot; on the vertex with 2 obsolete fuscous spots; pronotum at the hind margin broadly brownish; elytron much shorter, the 1st and 2nd apical sectors at the bases broadly sepa-



rated; pectus and venter largely fuscous.

♂. Genital plates long triangular, towards the apices pointed and upturned, the last ventral segment long, but shorter than the genital plates.

♀. Last ventral segment at the hind margin not truncated, but somewhat obtuse-angularly; vagina at the apex not infuscated.

Length—3.9 mm.

Hab.—Formosa; numerous specimens were collected on July 12, 1906, at Heito (Ako) by the author.

Gen. 10. *Heliona* MELICH. (Text fig. 2)

*Heliona* MELICHAR, Hom. Faun. Ceylon, p. 215 (1903).

"This genus is distinguished from *Empoasca*, with which it is very closely allied, by the long narrow face which is not open above as in *Empoasca*, but closed, because the frontal sutures are connected below by an acute angle, or bow-shaped with one another; otherwise as in *Empoasca*."

(MELICHAR translated by Distant).

Genotype—*Heliona constricta* MELICH.

In 1907, KIRKALDY in Bull. No. III, Division of Entomology Experiment Station Hawaiian Sugar Planters Association p. 67 separated *Apheliona* as type of *Heliona bioculata* MELICH.

We have no specimen belong to this genus in Japan.

Gen. 11. *Apheliona* KIRK. (Text fig. 3)

*Apheliona* KIRKALDY l. c.

"Frons closed basally. Vertex wider than an eye, not produced anteriorly, forming a curve with the eyes; frons not twice as long as maximum width."

Genotype—*Heliona bioculata* MELICH. (*biocula* KIRK.)

The author has not seen this specimen.

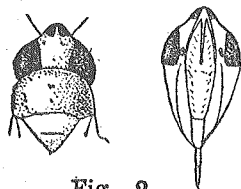


Fig. 2.

*Heliona constricta* MELICH.

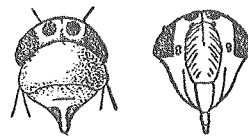


Fig. 3.

*Apheliona bioculata* MELICH.

Gen. 13. *Helionides* MATS. (n. g.)

Closely allied to *Heliona* MELICH., but differs from it as follows:

Vertex with ocelli, about as long as the hind margin between the eyes broad, eyes oblong, strongly diverging posteriorly, reaching beyond the middle of pronotum, with the eyes much broader than the pronotum at base; pronotum nearly twice as long as the vertex in the middle; scutellum somewhat shorter than the pronotum; 2nd and 3rd apical sectors of elytron with a short stalk.

Genotype—*Helionides singularis* MATS.

We have in Japan only one species belonging to this genus.

*Helionides* (n. g.) *singularis* n. sp. (Pl. III, f. 16, 17, a, b)

Body above olivaceous brown, beneath paler. Vertex with 4 spots and a narrow middle stripe paler, frons at the apex with a curved paler line along the frontal suture and a short medial stripe, at the lower half paler, with about 6 transverse lines on each side. Pronotum with 3 paler stripes which continue to the transverse groove of scutellum, the latter at the apex being also paler. Elytron subhyaline, olivaceous, membrane somewhat infuscated. Hind wing nearly hyaline, also being infuscated. Legs pale testaceous.

♂. Genital plates white, long conical, nearly twice as long as at the base broad, upturned, acutely pointed at the apices.

♀. Last ventral segment at the hind margin straight; coleostrom about  $2\frac{1}{2}$  times as long as at the base broad, vagina distinctly protruding beyond the apex of coleostrom.

Length—4.5 mm.

Hab.—Honshu; 3 female specimens were collected by the author at Takao and Ogikubo (Tokyo).

The author has collected one male specimen of this species at Hongkong (Happy Valley) on October 7, 1902, from which the male genitalia was described.

Gen. 13. *Homa* DIST.

*Homa* DISTANT, *Hom.* FAUN. Br. Ind. Vol. IV, p. 400 (1908).

"Vertex subquadrata, longer than breadth between eyes at base, rounded but very slightly produced in front of eyes, which are almost as long as the vertex and do not project over the anterior angles of the pronotum, face long, broad, narrowing to clypeus which is short and broad, pronotum shorter than vertex, transverse, a little rounded in front, the lateral margins nearly straight; scutellum broad, subtriangular; legs slender, posterior tibiae strongly spinulose and slightly curved; tegmina long, much longer than abdomen, apical cells three, large, and subequal in length." (DISTANT).

Genotype—*Homa insignis* DIST.

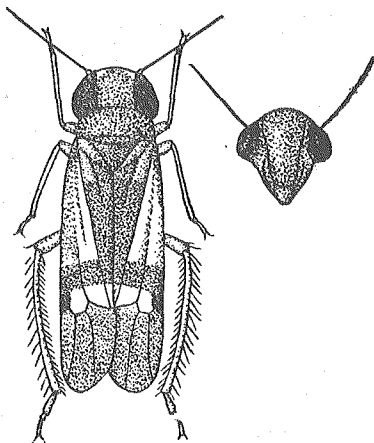


Fig. 4.

*Homa insignis* DIST.

Vertex of this insect is longer than the pronotum and rounded at front, which is the most conspicuous character of this genus. As DISTANT has not described the hind wing, so it is quite doubtful whether this belongs to Div. *Empoascaria* or *Tlyphocybaria*. But it is said to be a genus belonging to *Empoascaria*.

The present author has not seen any specimen belonging to this genus.

#### Gen. 14. *Empoasca* WALSH

*Empoasca* WALSH, Proc. Bost. Soc. Nat. Hist. p. 315 (1864).

The taxonomic character of this genus by MELICHAR is described elsewhere. We have in Japan as in the list 11 species, of which 9 are new.

Genotype—*Empoasca viridescens* WALSH.

#### *Empoasca abietis* MATS.

*Dicraneura abietis* MATS., Dainippon-Gaichu-Zensho, Vol. 1, p. 303 (1919).

Olivaceous green. Vertex obconical, in the middle scarcely shorter than broad at the hind margin between the eyes. Pronotum and scutellum with a yellowish shade. Elytra grayish, with an olivaceous tinge, membrane somewhat infuscated, 1st and 2nd sectors with a short stalk; wings hyaline, veins brownish. Underside paler, but legs deeper in colour. Abdomen at the dorsum largely black.

♂. The last ventral segment as long as the foregoing, genital plates conical, in the middle somewhat inflated, scarcely longer than pygofer, but distinctly longer than the last ventral segment.

♀. Coleostron  $2\frac{1}{2}$  times as long as the last ventral segment, with a few short bristles in a longitudinal row, vagina somewhat protruding beyond the apex of coleostron.

Length—4.2 mm.

Hab.—Hokkaido; numerous specimens were collected in August and September upon *Abies sachalinensis* at Jozankei near Sapporo, but the male seems to be rare.

#### *Empoasca aino* n. sp.

♂. Testaceous (in the life-time green?), with a shade of green. Vertex in the middle somewhat shorter than at the hind margin broad, with 2 spots and a central stripe whitish, a similar stripe being seen also at the frons. Pronotum and scutellum with some whitish markings. Elytra subhyaline, concolorous with the body, at the basal half on the costal region with about 3 rows of fine punctures, the 1st and 2nd apical sectors at the bases separate,

but strongly converged. Claws brownish. Last ventral segment  $1\frac{1}{2}$  times longer than the genital plates which are conish and at the apices somewhat upturned, with long whitish bristly hairs, pygofer short, blunt conical seen from the side.

♀. Last ventral segment somewhat shorter than the breadth, coleostrom about  $2\frac{1}{2}$  times as long as the last segment, with 2 rows of short hairs, vagina at the apex black, somewhat protruding beyond the apex of coleostrom.

Length—4–5 mm.

Hab.—Hokkaido; 5 (1 ♂, 4 ♀) specimens were collected at Sapporo by the author.

***Empoasca arisana* n. sp.**

Yellowish testaceous, no marking. Vertex obconical, in the middle a little shorter than the breadth between the eyes. Elytra concolorous with the body, at the apex somewhat infuscated, the apical sectors broadly whitish, the stalk of the 1st and 2nd sectors being short, at cross-veins with 3 fuscous patches, that of the inner being much larger.

♂. Genital plates linear, with a short hair-fringe, at the bases broader, upturned at the apices which are rounded, the last ventral segment about as broad as in the foregoing.

♀. Last ventral segment rounded at the hind margin, being obconical, coleostrom about twice as long as the last segment, vagina protruding somewhat beyond the apex of coleostrom.

Length—4 mm.

Hab.—Formosa; 10 (1 ♂, 9 ♀) specimens were collected on April 10, 1907, by the author at Mt. Arisan; the male seems to be rare.

***Empoasca buzensis* n. sp.**

Pale yellowish. Vertex blunt conish rounded. Pronotum at the anterior margin vermilion-red. Elytron white, near the base with 2 longitudinal stripes, respectively one at suture and the other in corium, being short and nearly parallel to each other. Last ventral segment at the hind margin somewhat rounded; coleostrom about  $2\frac{1}{2}$  times as long as the broad, vagina somewhat protruding beyond the apex of coleostrom and where is black in colour.

Length—3.8 mm.

Hab.—Kiusiu; one female specimen was collected at Jono (Buzen) on May 1, 1904, by S. YANO.

***Empoasca okubella* n. sp.**

Closely allied to *E. aino* MATS., but differs from it as follows:

♀. Body white testaceous, somewhat pruinous, head and pronotum with no whitish spot nor marking; last ventral segment much shorter, genital plate much longer, about 4 times as long as at the base broad, towards the apex becoming slenderer, very slender at the apex and where is black in colour, being distinctly curved.

Length—4 mm.

Hab.—Honshu; one male specimen was collected on July 17, 1908, at Okubo (Tokyo) by the author.

This is easily distinguishable from the other congeneric species in having very long, black tipped genital plates.

***Empoasca polyphemus* n. sp.**

♀. Yellowish brown, with a white pruinous covering. Vertex at the apex with a round black spot, nearly twice as long as the breadth, in the middle somewhat longer than on the sides. Pronotum and scutellum with no marking. Face whitish, in the middle yellowish brown, clypeus at the apex brown. Elytra grayish white, pruinous, nearly by half the length protruding beyond the apex of abdomen, the stalk of the 1st and 2nd sectors long, being nearly half the length of the upper branch, near the middle of costa with an oblong whitish spot. Wings hyaline, grayish, veins being brownish. Legs whitish, the hind tibia with fine rows of bristles. Abdomen at the venter white testaceous.

♂. Genital plates long triangular, at the apices rounded, genital valvula short triangular, somewhat shorter than the last segment.

♀. The last segment long, obconical, truncated at the end, being half the length of vagina, coleostron with white bristles.

Length—4.8 mm.

Hab.—Hokkaido, Honshu; 6 (3♂, 3♀) specimens were collected by M. SUZUKI and the author.

The author has one female specimen collected at Caucasus in Europe.

***Empoasca rubriceps* n. sp. (Pl. II, f. 15, 16, a, b)**

♀. Yellowish brown, beneath with the legs white. Vertex at the anterior margin vermilion-red. Pronotum at the hind margin and scutellum near the apex grayish. Elytron subhyaline, suffused, in the middle with a large hyaline patch, veins at the membrane white, at the costa paler, in the middle with a long brownish patch, near the base at costa narrowly vermilion-red. Last ventral segment at the hind margin somewhat rounded; coleostron about twice as long as at the base broad, near the apex with white short bristles, anal tube large and rounded, vagina not extending beyond the apex of coleostron.

Length—2.8 mm.

Hab.—Honshu; 3 female specimens were collected at Takoa (Prov. Mutsashi), Harima and Kyoto by S. IGUCHI, M. SUZUKI and the author.

***Empoasca rubrifrons* n. sp.**

Reddish brown. Vertex obconical, rosy red, in the middle with 2 paler spots, somewhat longer than the breadth between the eyes, face except the middle and the body beneath with the legs pale testaceous. Elytra at the apical one-third pale rosy red, membrane somewhat infuscated, subhyaline, veins rosy red, veins of the hind wings brownish. Body beneath with legs pale testaceous.

♀. The last ventral segment somewhat infuscated, at the hind margin paler and roundly somewhat excavated, coleostron narrow and long, vagina somewhat protruded beyond coleostron and where is dark brown in colour.

Length—4.2—4.5 mm.

Hab.—Honshu, Kiushu; two female specimens, one of which was collected on December 12, 1910, at Harima by S. IGUCHI and another on July 10, 1906, at Satsuma by the author.

***Empoasca shirakiella* n. sp.**

♀. Grayish whitish. Vertex yellowish, with 2 obsolete grayish dots in the disc, in the middle somewhat longer than on the sides, as long as at the hind margin broad, pronotum somewhat longer than vertex in the middle. Scutellum yellowish at the base, with 2 large brownish spots. Elytron subhyaline, whitish, the 1st and 2nd apical sectors with a long stalk, near the apex at the lower margin with a greenish shade.

♂. Genital plate about  $2\frac{1}{2}$  times as long as the foregoing segment, gradually becoming slenderer towards the apex, bow-like upturned, with long whitish bristly hairs; anal tube relatively broad.

♀. Last ventral segment about as long as broad, at the middle of the hind margin somewhat incised, coleostron about 3 times as long as the last segment, vagina distinctly protruding beyond the apex of coleostron.

Length—4—4.5 mm.

Hab.—Formosa; 6 (2 ♂, 4 ♀) specimens were collected in April at Arisan by Prof. T. SHIRAKI and the author.

Gen. 15. ***Kybos* FIEB.** (Pl. III, f. 9, 10, a, b)

*Kybos* FIEB, Verh. K.-K. Zool. Bot. Gessell. Wien. 16, p. 508, pl. VII, f. 26 (1866).

FIEBER's diagnosis is as follows:

"Ocellen vorhanden. Alle 3 Sektoren im Flügel laufen nur bis an die Umfangrippe und sind alle Rippen durch dieselbe untereinander verbunden. 3 Endrippen bilden 4 Endzellen in der Decke. Zwei

Endrippen von den Stufenrippen der Decken herab, die innere einfach, theilt 2 lange Endzellen, die äussere gabelig getheilt bildet eine kurze dreieckige Endzelle; die erste Stufenrippe zum Rande grenzt mit der gabeligen Endrippen eine fünfeckige Zelle ab; daher 4 ungleiche Endzellen. Augen gross, von der Seite fast viereckig. Die schmalen Wangen vom Clypeus fast gerade zu der Hinterecke der Augen, an denselben nur wenig geschweift. Pronotum quer viereckig, mit flach bogigem Vorderrand und geraden kurzen Seiten. Scheitel kürzer als das halbe Pronotum, der Rand mit dem Vorderrand des Pronotum gleichbogig."

Type—*Cicada smaragdula* FALL.

Both genera *Kybos* FIEB. and *Chlorita* FIEB. till now synonymized by GILLETTE and VAN DUZEE with *Empoasca* WALSH. As the author has a great many European *Typhlocybid*s-specimens which were collected by himself during the years from 1899–1902 in Germany and Austro-Hungary, and he has also many co-typical specimens of Dr. G. HORVÁTH and Dr. L. MELICHAR, so he has had a good chance to study them.

As FIEBER at that time had not observed many important points in establishing this new genus, so the author will redescribe it in this occasion. Vertex rounded at the anterior margin, nearly parallel with the hind margin, in the middle shorter than half the length at the hind margin broad, near the transit to frons with 2 subglobular protuberances, on each outside with a distinct large pit; frons near the apex with an obscure shallow transverse groove; ocelli distinct, each below the protuberance. Pronotum about twice as long as the vertex, at the hind margin on each side shallowly excavated. Scutellum near the base with a subglobular protuberance on each side, in the middle with a transvers groove. Elytron near the base and upon the sectors with numerous punctures; sectors in corium 2, near by the inner side of cross-veins only distinct, the 1st and 2nd apical sectors with a stalk,\* so that with 4 apical cells. Hind wing with a marginal nerve, all sectors open in it, the 1st sector end at the costa, the 2nd ends at the apex, being connected to the 1st by an oblique cross-vein. Genital plate with a long fringe of hairs along the edge.

We have in Japan only one species.

#### Gen. 16. *Sacapome* SCHUHM.

*Sacapome* SCHUHMACHER, Suppl. Ent. Dahlem, Vol. IV, p. 127 (1915).

"Vertex short, broadly rounded, in the middle shorter than pronotum, with large subglobular protuberance which extends on nearly the whole surface of vertex down to the frons. The protuberance near the eyes defined by a shallow groove. Ocelli are situated in the protuberance. Pronotum vaulted, smooth, on each side of the basal half with a deep oblique transverse groove, which nearly touches at the middle. Scutellum on the basal half deeply excavated, on each basal angle with a large knot

\* Very rarely the 1st and 2nd apical sectors not stalked, and still more rarely the same in parallel to each other with a supernumerous cross-vein between it. This may be only an example of variation.

protuberance, beyond the middle of scutellum runs a transverse keel, behind it with a puncture-like pit. Elytra with 3 sectors, of which the first 2 run near along the costa and these unite before the cross-veins with each other. 3 apical cells distinct, the 1st of which is triangular and short stalked. Hind wing with a complete marginal nerve, into which run all the sectors, the first two of which unite into a fork, its stalk ending at the marginal nerve." (SCHUHMACHER translated by the author).

Genotype—*Sacaponie formosana* SCHUH.

We have in Formosa only one species, but the author has not yet seen it.

### Gen. 17. *Chlorita* FIEB.

*Chloria* FIEB., Verh. K.-K. Zool. Bot. Gessell. Wien, 16, p. 508, pl. VII, f. 25 (1866).  
(Not *Chloria* of Schiner).

*Chlorita* FIEB., Katalog Cicadinen, p. 14 (1872).

According to FIEBER the diagnosis of *Chlorita* is as follows:

"Drei Endrippen von den Stufenrippen in den Decken herab, einfach, bilden 3 lange Endzellen; durch die äussere quere Stufenrippen zum Rande und die äussere Endrippe wird eine vierte Endzelle gebildet. Scheitel meist unter rechtem Winkel stumpf, oder stumpfeckig. Clypeus fast die Hälfte der Stirn lang, die Endhälfte über die Wangen ragend. Wangen aus spitzem Winkel vom Clypeus schmal, fast geradlinig aufwärts, unter den Augen winkelig geschweift, an den Stirnseiten wulstig. Pronotum fast nieren-förmig, hinten sanft geschweift, vorn zugerundet." (FIEBER).

Genotype—*Cicada viridula* FALL.

This differs from *Kybos* FIEB. as follows:

Vertex blunt conically produced, in the middle about as long as at the hind margin broad; near the transit to frons with no protuberance nor pit, frons at the apex with no transverse groove; pronotum less half the length of vertex. Scutellum with no protuberance; elytron with the 1st and 2nd apical sectors parallel or converging towards the cross-veins, not stalked\* as a rule; in corium with 3 sectors, of which the anterior 2 only distinct near the cross-veins, only the 3rd being distinct at base, with numerous punctures\*\* at the base, especially at the costa; structure of the genital plate of the male much differs, having no long fringe of hairs along the edge.

We have in Japan as in the list 17 species, of which the following 13 are new.

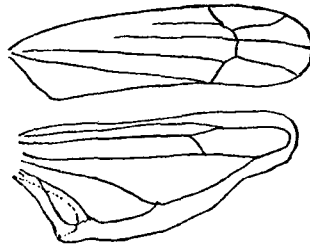


Fig. 5.

*Chlorita flavescens* FIEB.

\* The author has examined nearly all the European species of *Chlorita* FIEB., but he has not detected any stalked specimen (1st and 2nd apical sectors not stalked), and if there exists such case, he keeps in only as an abnormal variation.

\*\* MELICHAR has the same opinion with the author, so he has written as follows: "Die tief und grob punktierte Basis der Flügeldecken erinnert lebhaft an die paläarktische *Kybos*, welche mit *Empoasca* nicht vereinigt werden kann." (Notes from Leyden Museum Vol. XXXVI).



***Chlorita bimaculata* MATS.**

*Chlorita bimaculata* MATS., Appl. Ent. Vol. I, p. 393 (1916); Dainippon-Gaichu-Zensho Vol. I, p. 302 (1919).

Yellowish testaceous to pale rosy brown. Vertex with 2 black dots, their peripheries being whitish, in the middle about as long as at the hind margin, broad, frons in the middle with a whitish stripe, pronotum and scutellum with paler markings. Elytra subhyaline, just above the clavus at the base of the last ulnar cell with a black dot.

♂. Last ventral segment at the hind margin in the middle acute-angularly incised, the genital plates very long, linear, with a long fine fringe; pygofer also long and slender, but shorter than the genital plates, anal tube being relatively short.

♀. Last ventral segment long, at the hind margin narrowly rounded, about half the length of coleostron.

Length—3 mm.

Hab.—Okinawa, Formosa; numerous specimens were collected by M. ISHIDA, I. NITOE and K. KUROIWA. This is injurious to the egg-plant.

***Chlorita boninensis* n. sp.**

Closely allied to *C. flavescens* F., but differs from it as follows:

Elytra with the 1st and 2nd apical sectors nearly parallel with each other, being somewhat incurved; genital plates in the male much longer, gradually becoming broader towards the base, about 5 times as long as the last ventral segment, with a few fine hairs, pygofer slenderer, much shorter than the genital plates.

Length—3.5 mm.

Hab.—Bonin Islands; 3 (1 ♂, 2 ♀) specimens were collected on August 20, 1905, at Chichijima by the author.

***Chlorita flavovittella* n. sp.**

Yellowish (in the life-time greenish?). Vertex blunt conically produced, in the middle somewhat shorter than at the hind margin broad, pronotum a little longer than vertex in the middle. Scutellum in some individuals reddish yellow. Elytra long, about 6 times as long as the breadth, with 3 yellow longitudinal stripes, 2 in corium and the other in clavus.

♂. Last ventral segment at the hind margin straight, genital plates linear, about 3 times as long as the last segment, at the apices somewhat upturned, being much longer than the pygofer.

♀. Last ventral segment about as long as the breadth, coleostron about 3 times as long as the last segment, vagina somewhat protruding beyond the apex.

Length—3.5 mm.

Hab.—Honshu; 5 (1 ♂, 4 ♀) specimens were collected on December 11,

1906, by the author at Tokyo.

Elytra much longer than those of *C. vittata* FIEB., but the yellowish stripes somewhat resemble those of the latter.

***Chlorita formosicola* n. sp.**

♀. White. Vertex scarcely shorter than at the base broad, somewhat grayish, ocelli prominent. Pronotum and scutellum with no marking. Elytron subhyaline, membrane somewhat grayish, the costal marking being chalky white. Last ventral segment about as long as broad, at the hind margin straight, coleostron about 3 times as long as at the base broad, vagina much protruding beyond the apex of coleostron.

Hab.—Formosa; one female specimens was collected on July 7, 1909, at Taihoku by I. NITOBE.

***Chlorita fraxinella* n. sp.**

♀. Pale yellowish. Vertex rounded, in the middle distinctly shorter than at the hind margin broad, in the disc with 2 olivaceous dots; pseudocelli large. Pronotum shiny. Elytron hyaline, suffused with sulphur-yellow, the 2nd and 3rd apical sectors diverging strongly towards the apex. Last ventral segment in the middle of the hind margin with a shallow incision; coleostron about  $2\frac{1}{2}$  times as long as the last segment, vagina at the tip black, scarcely protruding beyond the apex of coleostron.

Length—5 mm.

Hab.—Hokkaido, Honshu; 5 female specimens in our museum, one of which was collected on October 5, 1931, at Sapporo by M. ISHIDA and H. KONO upon *Fraxinus mandchurica* and the other 4 were collected at Tokyo (Ogikubo) on July 17, 1908, by the author, but the food-plant being unknown.

***Chlorita hakonella* n. sp.**

Pale testaceous. Vertex somewhat longer than half the length of the hind margin, near the hind margin with 2 shallow grooves, ocelli somewhat darker. Pronotum somewhat shorter than the hind margin of vertex between the eyes. Elytron with about 3 rows of granules near the basal half.

♂. Last ventral segment somewhat shorter than broad, genital plate linear throughout, at the apex rightangularly upturned and rounded, pygofer small and much shorter than the genital plate.

♀. Last ventral segment at the hind margin rounded, about as long as the breadth, coleostron  $2\frac{1}{2}$  times as long as the breadth at the base, vagina strongly protruding beyond the apex of coleostron.

Length—4 mm.

Hab.—Honshu; 1 (1 ♂, 1 ♀) specimens were collected on July 27 at Hakone by the author.

***Chlorita hiromichii* n. sp.**

White, with a faint shade of green. Vertex blunt conically produced, scarcely shorter than at the hind margin broad. Elytron nearly hyaline, the 1st and 2nd sectors distinct only near the cross-veins, 3 apical sectors nearly in parallel, punctures on the 2nd and 3rd sectors very fine, being much finer than those of the basi-costal region.

Genital plates very long, more than half the length of abdomen, long conical when closed together, with long numerous white hairs.

Length—3.5 mm.

Hab.—Hokkaido; one male specimen was collected on October 9, 1931, at Nopporo near Sapporo by H. KONO upon *Quercus glandifolia*.

***Chlorita kisuji* n. sp.**

♀. Orange-yellow. Vertex rounded, in the disc with 2 paler oblique specks, antennae at the base and clypeus whitish. Pronotum with 3 obscure paler longitudinal lines; scutellum in the middle and near the costa with each a broad longitudinal yellow stripe; at the basi-costal region and on the 2nd sectors as well as in the clavus with some rows of very fine punctures, membrane paler. Legs whity yellow. Last ventral segment white, at the hind margin straight; coleostron about  $2\frac{1}{3}$  times as long as at the base broad, vagina concolorous, by about  $\frac{1}{3}$  protruding beyond the apex of coleostron where is deeper in colour.

Length—3.5 mm.

Hab.—Honshu; one female specimen was collected at Tokyo (?), the exact locality being not known.

***Chlorita koreana* n. sp.**

♀. Yellow (in the life-time perhaps green). Vertex short, rounded, about half the length of the hind margin; at the sides and 2 spots at the top as well as a frontal stripe whitish. Pronotum at the anterior margin with 5 whity spots, at the middle of scutellum also 2 similar spots. Elytron subhyaline, with a greenish shade, especially on the costal and hind margins, 3 or 4 longitudinal rows of minute punctures being visible. At the hind margin of the 6th dorsal segment with a black spot.

Last ventral segment at the hind margin with 3 incisions, that of the middle being narrower and shallower, about  $\frac{1}{4}$  the length of coleostron.

Length—4.5 mm.

Hab.—Korea; one female specimen was collected at Mt. Chohaku by Y. IKUMA.

***Chlorita limbifera* n. sp.**

Closely allied to *C. flavescens* F., but differs from it as follows:

Elytron at the apical  $\frac{1}{3}$  infuscated, along the apical sectors whity, building 5 fuscous patches, that of the 3rd ulnar area being most conspicuous; last ventral segment of the male somewhat shorter by  $\frac{1}{3}$  than the genital plate, the latter becoming gradually broader towards the base; pygofer blunt conical, much shorter than the genital plate; last ventral segment of the female about  $\frac{1}{3}$  the length of coleostron.

Length—4 mm.

Hab.—Hokkaido; 3 (1 ♂, 2 ♀) specimens were collected at Jozankei near Sapporo by the author.

***Chlorita nopporensis* n. sp.**

Pale yellow. Vertex blunt conish produced, scarcely shorter than at the hind margin. Elytron subhyaline, with a sulphur-yellowish shade, the first 2 sectors only near the cross-veins distinct, the 3rd sectors yellow, distinct, on the apical  $\frac{1}{3}$  infuscated, along the veins only paler.

♂. Genital plates long conical together, at the apices pointed and upturned, being much longer than the pygofer, scattering whity short hairs all over.

♀. Last ventral segment at the hind margin with a shallow fine notch in the middle, vagina distinctly protruding beyond the apex of coleostron.

Hab.—Hokkaido; 2 (1 ♂, 1 ♀) specimens were collected on October 9, 1931, at Nopporo near Sapporo upon *Pirus ussuriensis* and *Morus bombycis* by H. KONO.

***Chlorita okubonis* n. sp.**

♀. Body yellowish white; vertex somewhat shorter than at the hind margin broad; a costal oblong marking of elytron white, upon the 2nd sector with a row of punctures, sectors before the cross-veins only somewhat distinct; last ventral segment of abdomen somewhat shorter than breadth, at the hind margin in the middle scarcely incised, vagina at the apex fuscous.

Length—4 mm.

Hab.—Honshu; 4 female specimens were collected on September 17, 1908, at Tokyo (Okubo) by the author.

***Chlorita pirisuga* n. sp.**

Closely allied to *C. flavescens* F., but differs from it as follows:

Body yellow, with a greenish colour in the following parts: 2 dots on the disc of vertex, the peripheries of eyes, the basal part of costa to elytron, tarsi, genital plate at the apex, and coleostron largely; no whitish marking on the vertex and pronotum, scutellum in the middle and at the apex whitish; elytron light yellow, on the 1st and 2nd sectors with no puncture, membrane scarcely infuscated; genital plate long triangular, at the apex rounded and somewhat incurved, with very fine moderate hairs; vagina at the apex black.

Length—4 mm.

Hab.—Hokkaido; 2 (1 ♂, 1 ♀) specimens were collected on October 9, 1931, upon *Pirus ussuriensis* by H. KONO.

This resembles also *C. todo* MATS., but it may easily be distinguishable by the well separated 1st and 2nd apical sectors, longer, filiform, much longer pubescent genital plates, etc.

***Chlorita shokella* n. sp.**

Pale testaceous (in the life-time perhaps green). Vertex somewhat shorter than at the hind margin broad, with 2 obsolete darker spots. Pronotum and scutellum with no marking. Elytra subhyaline, concolorous with the body, the 1st and 2nd apical sectors separated, but distinctly converging at the bases.

♂. Genital plates long conical, longer than the pygofer, with 2 rows of bristly white hairs, closely contact with each other, at the apices upturned and seen from the side rounded, pygofer conical.

♀. Last ventral segment about twice as long as the foregoing segment, at the hind margin straight; coleostron about 3 times as long as the last segment, vagina distinctly protruded beyond the apex of coleostron.

Length—3.5 mm.

Hab.—Formosa; numerous specimens were collected on July 21, 1906, at Shoka by the author.

Closely allied to *C. flavescens* F., but the genital organs of both sexes differ.

***Chlorita todo* n. sp.**

Closely allied also to *C. flavescens* F., but differs from it as follows:

Body yellow with a light greenish shade, and the following parts are green; elytron at the basi-costal region, tarsi, and genital plate at the apex; vertex rounded, not conish produced, with on whitish marking, but with 2 paler pseudo-ocellar dots.

♂. Genital plate much longer, seen from the hind part filamentous, upturned, with much longer hairs, both the plates together enclosing a large ellipsoidal space; 1st and 2nd apical sectors arising from one point.

♀. Last ventral segment at the hind margin with a shallow notch, coleostron about twice as long as at the base broad, with whitish hairs, vagina distinctly protruding beyond the apex of coleostron, at the extreme apex being green.

Length—4 mm.

Hab.—Hokkaido; 2 (1 ♂, 1 ♀) specimens were collected on October 9, 1931, at Nopporo (near Sapporo) upon *Abies sachalinensis* by H. KONO.

Gen. 18. *Nirvana* KIRK.

KIRKALDY, the Entomologist XXXIII, p. 293 (1900).

"Head porrect, plane, nearly twice so long as pronotum, the lateral margins parallel as far as ocelli, subsequently very gently convergent, apex subangular. Eyes longer than wide, produced basally over the anterior margin of the pronotum, which is somewhat wider than the base of vertex; ocelli small, indistinct, situated on the lateral margins of vertex, at about half their length from the base. Posterior margin of head concave. Antennae simple, very long. Scutellum slightly shorter than pronotum. Anterior coxae free."

Genotype—*Nirvana pseudommatos* KIRK.

We have in Japan 4 species,\*\* all being well known.

All these species were described under Subf. *Accocephalinae* before, but the author want to arrange them in the Subf. *Typhlocybinae* as McATEE\* proposed.

\* Proc. Biol. Soc. Washington, U. S. A., p. 118 (1918).

\*\* In the foregoing List by the mistake of the author *Nirvana koreanus* MATS., Trans. Sapporo Nat. Hist. Soc. 5, Pt. 3, p. 171, Taf. 1, f. 12 (1915) is fallen.

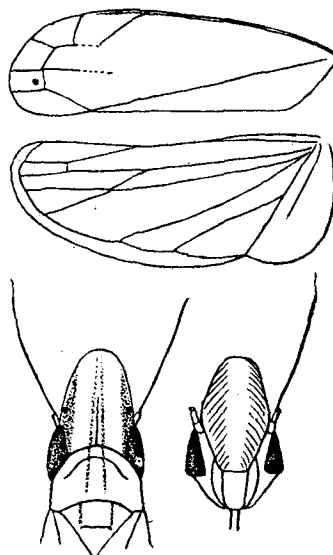
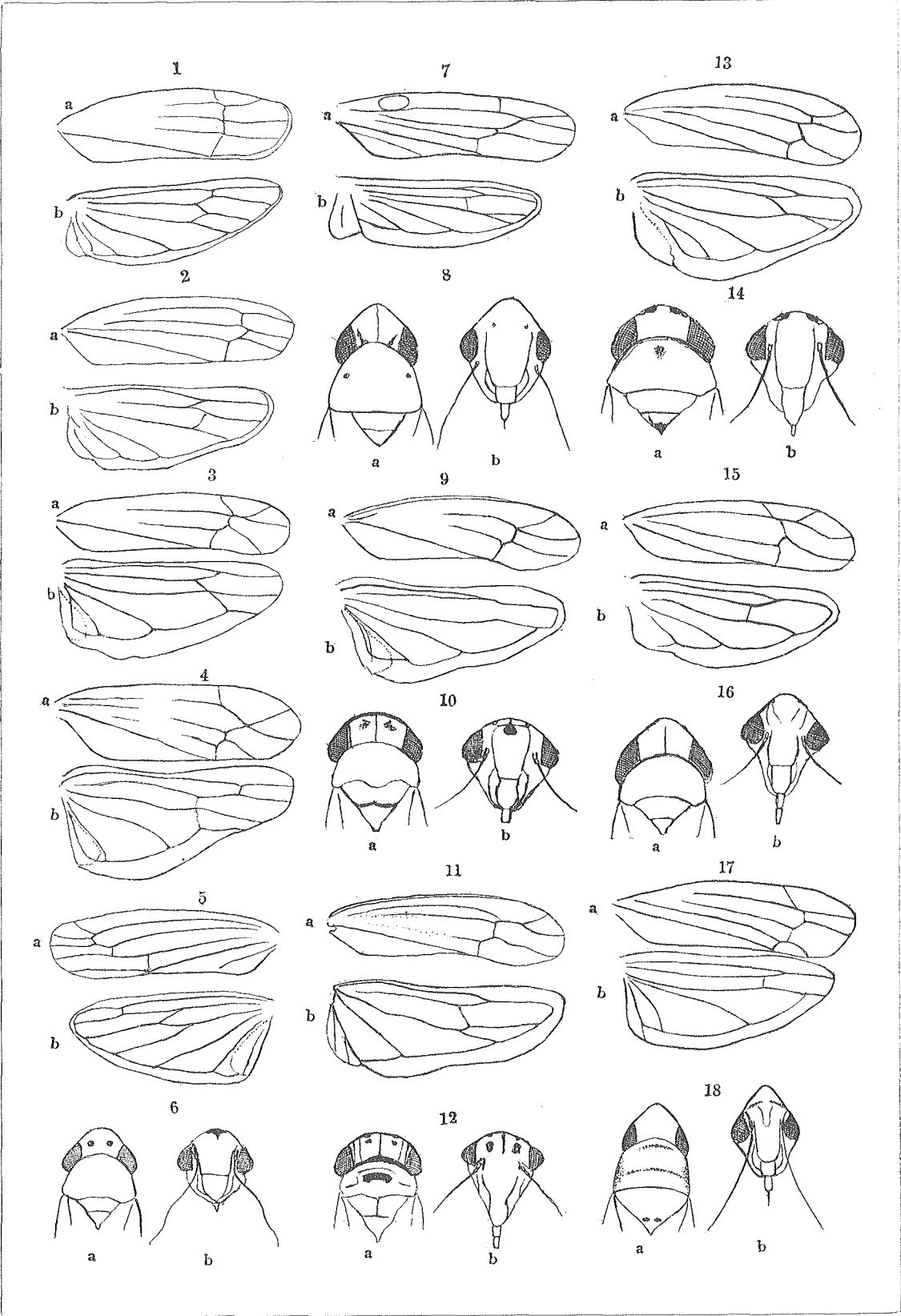


Fig. 6.

*Nirvana pallida* MELICH.

## Explanation of Plates II.

1. *Alebra albostriatella* FALL.  
a Elytron, b Hind wing
2. *Dicraneura sachalinensis* MATS.  
a Elytron, b Hind wing
3. *Typhlocyba ishidae* MATS.  
a Elytron, b Hind wing
4. *Eupteryx pulchra*  
a Elytron, b Hind wing
5. *Nesopteryx arisana* MATS.  
a Elytron, b Hind wing
6. *Nesopteryx arisana* MATS.  
a Vertex, b Face
7. *Igutettix pulverosus* MATS.  
a Elytron, b Hind wing
8. *Igutettix pulverosus* MATS.  
a Vertex, b Face
9. *Akotettix akonis* MATS.  
a Elytron, b Hind wing
10. *Akotettix akonis* MATS.  
a Vertex, b Face
11. *Sujitettix ferrugineus* MATS.  
a Elytron, b Hind wing
12. *Sujitettix ferrugineus* MATS.  
a Vertex, b Face
13. *Nikkotettix galloisi* MATS.  
a Elytron, b Hind wing
14. *Nikkotettix galloisi* MATS.  
a Vertex, b Face
15. *Empoasca rubriceps* MATS.  
a Elytron, b Hind wing
16. *Empoasca rubriceps* MATS.  
a Vertex, b Face
17. *Pyramidotettix citri* MATS.  
a Elytron, b Hind wing
18. *Pyramidotettix citri* MATS.  
a Vertex, b Face





### Explanation of Plates III.

1. *Alebroides akashianus* MATS.  
a Elytron, b Hind wing
2. *Alebroides akashianus* MATS.  
a Vertex, b Face
3. *Hiratettix arisanus* MATS.  
a Elytron, b Hind wing
4. *Hiratettix arisanus* MATS.  
a Vertex, b Face
5. *Zyginoides taiwanus* SHIR.  
a Elytron, b Hind wing
6. *Zyginoides taiwanus* SHIR.  
a Vertex, b Face
7. *Naratettix zonatus* MATS. f. *lata* MATS.  
a Elytron, b Hind wing
8. *Naratettix zonatus* MATS. f. *lata* MATS.  
a Vertex, b Face
9. *Kybos smaragdula* FALL.  
a Elytron, b Hind wing
10. *Kybos smaragdula* FALL.  
a Face, b Vertex
11. *Togaritettix serratus* MATS.  
a Flytron, b Hind wing
12. *Togaritettix serratus* MATS.  
a Face, b Vertex
13. *Platyettix pulchrus* MATS.  
a Elytron, b Hind wing
14. *Platyettix pulchrus* MATS.  
a Vertex, b Face
15. *Zyginella pulchra* Löw  
a Elytron, b Hind wing
16. *Helionides singularis* MATS.  
a Elytron, b Hind wing
17. *Helionides singularis* MATS.  
a Face, b Vertex
18. *Platycyba bistrata* MATS.  
a Elytron, b Hind wing
19. *Platycyba bistrata* MATS.  
a Vertex, b Face
20. *Zygina basiflava* MATS.  
a Elytron, b Hind wing
21. *Zygina basiflava* MATS.  
a Vertex, b Hind wing
22. *Zyginella pulchra* Löw  
a Vertex, b Face

