

## SYNONYMY OF THE MEMBRACIDÆ OF FORMOSA

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The study of a large number of Membracidæ from Formosa (Taiwan) which have accumulated in the author's collection over a period of many years, and especially some excellent collections made by Mr. J. Linsley Gressitt in 1932 and 1934, has made it possible to recognize most of the species which have been described or recorded from that island and to add a considerable number of new records.

According to Mr. Gressitt, the fauna and flora of the island of Formosa show a closer relationship to the forms on the eastern continental land mass of Asia than to those of the Philippines and this fact is indicated by the geographical distribution of the Membracidæ. Only two of the Formosan species have been recorded from the Philippine Islands while seventeen are found in China and on the island of Hainan.

The synonymy of the Membracidæ of Formosa has been in much confusion due largely to the work of Kato. Kato's descriptions are very unsatisfactory. Most of his descriptions of Membracidæ have been published only in the Japanese language, and while we have secured what we believe to be creditable translations of these papers, they leave much to be desired. His figures are practically worthless. Most of them are photographs which are very successful in concealing all of the important specific and most of the generic characters. Nevertheless, a careful study of these descriptions and figures, and particularly the comparison of these with what we consider to be a good representative series of the insects of the island, make it quite evident that he has placed species in the wrong genera, has described as new some species which are already well known, and has erected genera which are synonyms of previously established genera with which he apparently was not familiar.

More material would of course be desirable, but since it is unlikely that we shall see additional collections from this region for a number of years, this list is presented in the belief that it

represents a fairly accurate synonymy of the Formosan forms to date. This list includes all of the species of Membracidæ from Formosa which have been recorded in the literature of the family and all species from the island which we have observed in collections but which have not been previously recorded in publications. Most of these species we have seen; those which we have not seen are listed just as they were published.

Genus *Bulbauchenia* Schumacher

1. *Bulbauchenia tiawanensis* Schumacher  
1915. *Bulbauchenia tiawanensis* Schumacher, Saut. Form., 115.

Genus *Centrotoscelus* Funkhouser

1. *Centrotoscelus flava* Kato  
1928. *Arisangargara flava* Kato, Insect World, XXXII: 30.
2. *Centrotoscelus gracilis* Kato  
1928. *Arisangargara gracilis* Kato, Insect World, XXXII: 27.
3. *Centrotoscelus koshunensis* Matsumura  
1912. *Centrotus koshunensis* Matsumura, Cic. Jap., II: 19, 8.  
1912. *Gargara variegatus* Matsumura, Cic. Jap., II: 21, 10.  
1927. *Tricentrus koshunensis* Funkhouser, Cat. Memb., 501.  
1928. *Arisangargara matsumurai* Kato, Ins. World, XXXII: 30.  
1930. *Arisangargara montana* Kato, Zool. Soc. Jap., 300.
4. *Centrotoscelus marginatus* Kato  
1928. *Arisangargara marginata* Kato, Ins. World, XXXII: 29.
5. *Centrotoscelus nigra* Kato  
1928. *Arisangargara nigra* Kato, Ins. World, XXXII: 27.
6. *Centrotoscelus nigrifrons* Kato  
1928. *Arisangargara nigrifrons* Kato, Ins. World, XXXII: 29.

7. *Centrotoscelus nitida* Kato

1928. *Arisangargara nitida* Kato, Ins. World, XXXII: 28.

8. *Centrotoscelus shinchicuna* Kato

1928. *Gargara shinchicuna* Kato, Ins. World, XXXII: 22.

Genus **Evanchon** Goding1. *Evanchon variegatus* Funkhouser

1918. *Anchonoides variegatus* Funkhouser, Malayan Memb., 4, 8.

1927. *Maguva variegatus* Funkhouser, Cat. Memb., 440.

Genus **Gargara** Amyot and Serville1. *Gargara botanshana* Kato

1928. *Gargara botanshana* Kato, Ins. World, XXXII: 23.

2. *Gargara brunneidorsata* Funkhouser

1929. *Gargara brunneidorsata* Funkhouser, Phil. Journ. Sci., XL: 128.

1930. *Gargara dorsimaculata* Kato, Zool. Soc. Jap., 298.

3. *Gargara brunneifasciata* Funkhouser

1928. *Gargara brunneifasciata* Funkhouser, Ling. Sci. Journ., XVII: 204.

4. *Gargara castanea* Kato

1928. *Gargara castaneus* Kato, Ins. World, XXXII: 16.

5. *Gargara davidi* Fallou

1891. *Gargara davidi* Fallou, Rev. Ent., 354, 1.

6. *Gargara elegans* Kato

1928. *Gargara elegans* Kato, Ins. World, XXXII: 22.

7. *Gargara elongata* Kato

1928. *Gargara elongata* Kato, Ins. World, XXXII: 24.

8. *Gargara fumipennis* Kato

1930. *Gargara fumipennis* Kato, Zool. Soc. Jap., 299.

9. *Gargara hainanensis* Funkhouser

1937. *Gargara hainanensis* Funkhouser, Ling. Sci. Journ., XVI: 244.

10. *Gargara horishana* Matsumura

1912. *Centrotus horishanus* Matsumura, Cic. Jap., II: 25, 19.

1928. *Gargara horishana* Kato, Ins. World, XXXII: 25.
11. *Gargara hyalina* Kato  
1930. *Gargara hyalina* Kato, Zool. Soc. Jap., II: 299.
12. *Gargara kawakamii* Matsumura  
1912. *Centrotus kawakamii* Matsumura, Cic. Jap., II: 26, 20.  
1927. *Gargara kawakamii* Funkhouser, Cat. Memb., 402.
13. *Gargara laticapitata* Kato  
1928. *Gargara laticapitata* Kato, Ins. World, XXXII: 21.
14. *Gargara matsumurai* Kato  
1930. *Gargara matsumurai* Kato, Zool. Soc. Jap., II: 298.
15. *Gargara nigromaculata* Funkhouser  
1927. *Gargara nigromaculata* Funkhouser, Faun. Sumat., 10.
16. *Gargara nigronervosa* Kato  
1928. *Gargara nigronervosa* Kato, Ins. World, XXXII: 18.
17. *Gargara nitidipennis* Funkhouser  
1914. *Gargara nitidipennis* Funkhouser, Journ. Ent. and Zool., VI: 71.
18. *Gargara nodulata* Funkhouser  
1942. *Gargara nodulata* Funkhouser, Journ. N. Y. Ent. Soc., L: 1, 63.
19. *Gargara nokozana* Kato  
1928. *Gargara nokozana* Kato, Ins. World, XXXII: 21.
20. *Gargara picea* Kato  
1928. *Gargara picea* Kato, Ins. World, XXXII: 30.
21. *Gargara piceola* Melichar  
1903. *Gargara piceola* Melichar, Hom. Cey., 122, 1.  
1928. *Gargara minuta* (preoccupied) Kato, Ins. World, XXXII: 19.  
1928. *Gargara minuta pallida* Kato, Ins. World, XXXII: 19.
1928. *Gargara minuta lineata* Kato, Ins. World, XXXII: 20.
22. *Gargara sordida* Funkhouser

1918. *Gargara sordida* Funkhouser, Malayan Memb., 13, 26.
23. *Gargara taihokunis* Kato  
1928. *Gargara taihokunis* Kato, Ins. World, XXXII: 17.
24. *Gargara takihashi* Kato  
1940. *Gargara takihashi* Kato, Memb. East Asia, 17.
25. *Gargara tectiformis* Funkhouser  
1938. *Gargara tectiforma* Funkhouser, Ling. Sci. Journ., XVII: 2, 203.
26. *Gargara zonata* Matsumura  
1912. *Centrotus zonatus* Matsumura, Cic. Jap., II: 24, 16.  
1927. *Gargara zonata* Funkhouser, Cat. Memb., 410.

Genus *Imporcitor* Distant

1. *Imporcitor laticornis* Kato  
1928. *Imporcitor laticornis* Kato, Trans. Nat. Hist. Soc. Form., XIX: 541.

Genus *Kotogargara* Matsumura

1. *Kotogargara botelensis* Matsumura  
1938. *Kotogargara botelensis* Matsumura, Ins. Mat., XII: 4, 153.

Genus *Leptobelus* Stal

1. *Leptobelus sauteri* Schumacher  
1915. *Leptobelus sauteri* Schumacher, Saut. Form., 115.

Genus *Leptocentrus* Stal

1. *Leptocentrus albolineatus* Funkhouser  
1937. *Leptocentrus albolineatus* Funkhouser, Ling. Sci. Journ., XVI: 2, 238.
2. *Leptocentrus formosanus* Kato  
1928. *Leptocentrus formosanus* Kato, Trans. Nat. Hist. Soc. Form., XVIII: 32.
3. *Leptocentrus horizontalis* Kato  
1940. *Leptocentrus horizontalis* Kato, Memb. East Asia 2.

Genus *Lobocentrus* Stal

1. *Lobocentrus zonatus* Stal
  1870. *Lobocentrus zonatus* Stal, Hem. Phil., 728, 1.
  1939. *Acanthophes zonatus* Goding, Old World Memb., 346.

Genus *Machærotypus* Uhler

1. *Machærotypus coreanus* Kato
  1933. *Machærotypus coreanus* Kato, Ill. Ins. Jap., Pl. 43, fig. 8.

Genus *Maurya* Distant

1. *Maurya nodosa* Funkhouser
  1940. *Maurya nodosa* Funkhouser, Manch. Memb., 146.
2. *Maurya paradoxus* Lethierry
  1876. *Centrotus paradoxus* Lethierry, Ann. Soc. Ent. Belg., XIX: 80.
  1904. *Tricentrus paradoxus* Melichar, Memb. Cere., 13.
3. *Maurya siberica* Lethierry
  1876. *Gargara siberica* Lethierry, Ann. Soc. Ent. Belg., XIX: 80.
  1906. *Tricentrus sibericus* Oshanin, Pal. Hem., 44, 164.
  1912. *Centrotus sibericus* Matsumura, Cic. Jap., II: 16, 2.
  1928. *Maurya sibericus* Kato, Ins. World, XXXII: 12.
  1933. *Machærotypus sibericus* Kato, Ill. Ins. Jap., Pl. 40, fig. 4.
  1934. *Xanthosticta siberica* Goding, Old World Memb., 475.

Genus *Melicharella* Goding

1. *Melicharella incultus* Melichar
  1903. *Machærotypus incultus* Melichar, Hom. Cey., 124, 1.
  1930. *Melicharella incultus* Goding, Journ. N. Y. Ent. Soc., XXXVIII: 40.
  1940. *Acentrotus incultus* Kato, Memb. East Asia, 151.

Genus *Pantaleon* Distant

1. *Pantaleon bufo* Kato  
1928. *Eupantaleon bufo* Kato, Trans. Nat. Hidt. Soc. Form., XVIII: 33.

Genus *Sipylus* Stal

1. *Sipylus albifasciatus* Kato  
1928. *Sipylus albifasciatus* Kato, Ins. World, XXXII: 14.
2. *Sipylus guttulinervis* Matsumura  
1912. *Centrotus guttulinervis* Matsumura, Cic. Jap., II: 25, 18.  
1928. *Sipylus guttulinervis* Kato, Ins. World, XXXII: 12.  
1934. *Gargara guttulinervis* Goding, Old World Memb., 472.
3. *Sipylus latifasciatus* Kato  
1928. *Sipylus latifasciatus* Kato, Ins. World, XXXII: 14.
4. *Sipylus lineatus* Kato  
1928. *Sipylus lineatus* Kato, Ins. World, XXXII: 13.
5. *Sipylus minutus* Kato  
1928. *Sipylus minutus* Kato, Ins. World, XXXII: 14.
6. *Sipylus typicus* Kato  
1930. *Formocentrus typicus* Kato, Zool. Soc. Jap., 284.

Genus *Tricentrus* Stal

1. *Tricentrus albipennis* Kato  
1930. *Tricentrus albipennis* Kato, Zool. Soc. Jap., 287.
2. *Tricentrus allabens* Distant  
1916. *Tricentrus allabens* Distant, Faun. Brit. Ind., App. 166, 3367.
3. *Tricentrus basalis* Walker  
1851. *Centrotus basalis* Walker, List Hom. B. M., 626, 65.  
1912. *Tricentrus kuyanianus* Matsumura, Cic. Jap., II: 19, 6.  
1916. *Tricentrus basalis* Distant, Rhynch. Notes, 329.  
1940. *Orthobelus flavipes* Kato, Memb. East Asia, 9.

4. *Tricentrus biformis* Kato  
1930. *Tricentrus biformis* Kato, Zool. Soc. Jap., 288.
5. *Tricentrus castaneipes* Kato  
1940. *Tricentrus castaneipes* Kato, Memb. East Asia,  
15.
6. *Tricentrus fasciatus* Kato  
1928. *Tricentrus fasciatus* Kato, Ins. World, XXXII:  
5.
7. *Tricentrus fuscoapicalis* Kato  
1928. *Tricentrus fuscoapicalis* Kato, Ins. World,  
XXXII: 5.
8. *Tricentrus fuscolimbatus* Kato  
1928. *Tricentrus fuscolimbatus* Kato, Ins. World,  
XXXII: 8.
9. *Tricentrus gargariformis* Kato  
1928. *Tricentrus gargariformis* Kato, Ins. World,  
XXXII: 8.
10. *Tricentrus glochidionæ* Kato  
1930. *Tricentrus glochidionæ* Kato, Zool. Soc. Jap., 286.
11. *Tricentrus gracilicornis* Kato  
1928. *Tricentrus gracilicornis* Kato, Ins. World,  
XXXII: 3.
12. *Tricentrus gracilis* Kato  
1928. *Tricentrus gracilis* Kato, Trans. Nat. Hist. Soc.  
Form., 540.
13. *Tricentrus hyalinipennis* Kato  
1928. *Tricentrus hyalinipennis* Kato, Ins. World,  
XXXII: 1.
14. *Tricentrus kotoinsulanus* Kato  
1928. *Tricentrus kotoinsulanus* Kato, Ins. World,  
XXXII: 7.
15. *Tricentrus minuticornis* Kato  
1928. *Tricentrus minuticornis* Kato, Ins. World,  
XXXII: 4.
16. *Tricentrus mushænsis* Kato  
1928. *Tricentrus mushænsis* Kato, Ins. World, XXXII:  
2.



17. *Tricentrus naifunpoensis* Kato  
1930. *Tricentrus naifunpoensis* Kato, Zool. Soc. Jap.,  
289.
18. *Tricentrus pallipes* Kato  
1928. *Tricentrus pallipes* Kato, Ins. World, XXXII: 6.
19. *Tricentrus punctatus* Kato  
1928. *Tricentrus punctatus* Kato, Ins. World, XXXII:  
6.
20. *Tricentrus taipinensis* Kato  
1928. *Tricentrus taipinensis* Kato, Ins. World,  
XXXII: 3.
21. *Tricentrus takaoensis* Kato  
1930. *Tricentrus takaoensis* Kato, Zool. Soc. Jap., 290.
22. *Tricentrus xiphistes* Kato  
1928. *Tricentrus xiphistes* Kato, Ins. World, XXXII:  
9.

#### Genus *Xanthosticta* Buckton

1. *Xanthosticta akonis* Matsumura  
1912. *Centrotus akonis* Matsumura, Cic. Jap. II: 21, 10.  
1928. *Tricentrus akonis* Kato, Ins. World, XXXII: 10.

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