

A REVISION AND TAXOMETRIC ANALYSIS OF THE GENUS
AMIOTA LOEW OF JAPAN AND ADJACENT COUNTRIES
(DIPTERA, DROSOPHILIDAE)

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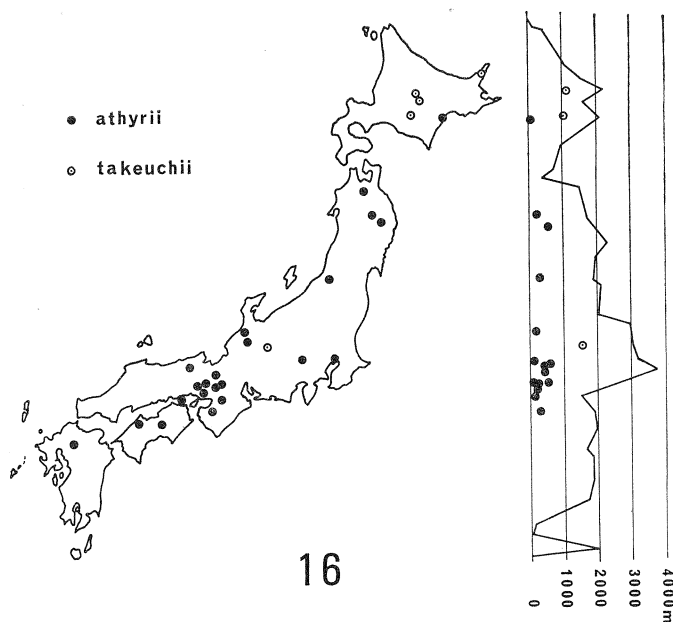


Fig. 16. Map showing horizontal and perpendicular distributions of close relatives in the *minomensis*-group.

in this genus, though the question arises whether or not any reproductive isolation mechanism to prevent their interbreeding has already been definitely established.

The facts described above seem to offer some interesting materials with regard to speciation. It is generally accepted that geographical isolation is a prerequisite for speciation, and the closely allied forms in the *paucipunctatus*- and *minomensis*-groups seem to be the very examples. Some consider that species can also evolve sympatrically, though this idea is not so widely accepted as allopatric speciation. In the close relatives of the *struthiopteridis*-group, there exists sufficient evidence that *sasayamensis* must have derived from *japonicus* sympatrically. *Japonicus* is an only oligophagous species in this genus, while the others are monophagous so far as known. At Sasayama of Hyogo Prefecture, the larvae of *japonicus* are simultaneously found on the leaves of *Polystichum tripterum*, *P. rectroso-paleacum*, *P. polyblepharum*, *Dryopteris lacera* and *Cyrtomium fortunei* in natural condition. In laboratory, it has been confirmed that the larvae show a rather strong preference for the same fern that they attack in nature, though the first two are also preferred to the rest by them. Such being the case *japonicus* may have a possibility to split into some ecological races. For further splitting into sympatric speciation such ecological races must be isolated in time, with interchange of genes between them interrupted. In the case of the two species *japonicus* and *sasayamensis* this mechanism is supplied by the difference of germination time of their host plants, for the adult females must lay eggs soon after ferns put forth leaves, and, therefore, their appearance depends entirely on germination of host plants. They appear in different time in their common range as already stated and are isolated from each other, though it is impossible, in this case, to find out the process of isolation.

The above-mentioned data suggest that sympatric speciation may have occurred in the genus. In general, many sawflies are monophagous and have rather strong host specificity. When they happen to diverge in their feeding habits and to attack different

plants, this may help them to split into ecological races. And it seems reasonable to take this as an essential prerequisite to sympatric speciation of sawflies.

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A REVISION AND TAXOMETRIC ANALYSIS OF THE GENUS AMIOTA LOEW OF JAPAN AND ADJACENT COUNTRIES (DIPTERA, DROSOPHILIDAE)

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Besides two major subgenera (*Amiota* Loew and *Phortica* Schiner), *Erima* Kertész, *Sinophthalmus* Coquillett, *Paraphortica* Duda, and even *Eostegana* Hendel have been included in the genus *Amiota* Loew. *Sinophthalmus* is thought synonymous with *Erima* by Duda (1924: 178), or with *Phortica* by Wheeler (1952: 166). Wheeler (1965: 761)

actually treats *Sinophthalmus* as a subgenus of *Amiota*. Again, *Erima* is treated by Duda (1926: 246) as a subgenus of *Phortica*, s. lat. (= *Amiota*, s. lat.). On the contrary, McAlpine (1968: 516-7) ranks *Sinophthalmus* and *Erima* as distinct genera. *Paraphortica* was established by Duda (1935: 36) as a genus and at the same time (1935: 30) as a subgenus of *Amiota*. Duda (1924) places *Eostegana* in his *Phortica* group, and later (1927) in the genus *Orthostegana* as a subgenus.

In the present study the genus *Amiota* is divided into five subgenera, *Amiota*, *Phortica*, *Erima* (= *Sinophthalmus*), *Paraphortica*, and a new subgenus, while *Eostegana* (= *Stegophortica*) is excluded from this genus, because of its having strong subbasal bristles of mid tibia and distally rather divergent R_{4+5} and M. Several new species are described and the phenetic relationships of the taxa in question are analysed by taxometric procedures.

Subgenus *Amiota* Loew

Amiota (Amiota) lanceolata sp. n. (Figs. 1-3)

♂. Body about 2.5 mm in length. Antenna dark brown, third joint darker and oval. Arista with five upper and five shorter lower branches, without prominent fork. Palpi greyish brown, slender. Ocellar triangle mat black; clypeus deep black. Front subshining deep black, anteriorly slightly narrower than length down middle. Face mat brownish black, lower half milky white. Carina undeveloped. Cheek narrow, greyish brown, black along insertion of orals. Anterior reclinate orbital two-thirds as long as others, twice as apart from posterior reclinate as from proclinate. Vibrissa long but thin, other orals fine. Mesonotum and scutellum subshining deep black. Thoracic pleura mat black, with distinct white spots on humerus and below wing base. Humeral one, prominent. Anterior dorsocentrals two-thirds as long as posteriors. Anterior scutellars somewhat divergent, slightly shorter than posteriors; posteriors divergent, nearer to each other than to anteriors. Sterno-index 0.9. Legs orange yellow, proximal half of fore femur fuscous. Wings hyaline, veins yellow, crossveins clear. R_{2+3} nearly straight; R_{4+5} and M distally convergent; posterior crossveins weakly sinuated. C-index 1.2; 4V-index 3.0; 5x-index 1.5; Ac-index 4.5; Cx-index (see Okada, 1960: 90) 0.6. C3-fringe on basal three-fourths or less. Halteres white. Abdominal tergites mat black; 1T caudally, 2T proximally, orange brown.

Periphallial organs (Fig. 1): Genital arch black, narrowing above, constricted at mid-dorsal line, truncate below. Anal plate yellow, lower tip black. Clasper globular, distally with about six black long teeth in a straight row. Phallic organs (Figs. 2, 3): Aedeagus* paired, lanceolate, orange brown. Anterior parameres small, fusiform, black, with a few sensilla. Apodeme of aedeagus fan-shaped. Posterior parameres fused, cap-like.

Holotype. ♂, Kitadake, Yamanashi Pref., 24 VII 1968 (Okada). Paratopotype. 1♂, 28 VII 1970 (Hihara).

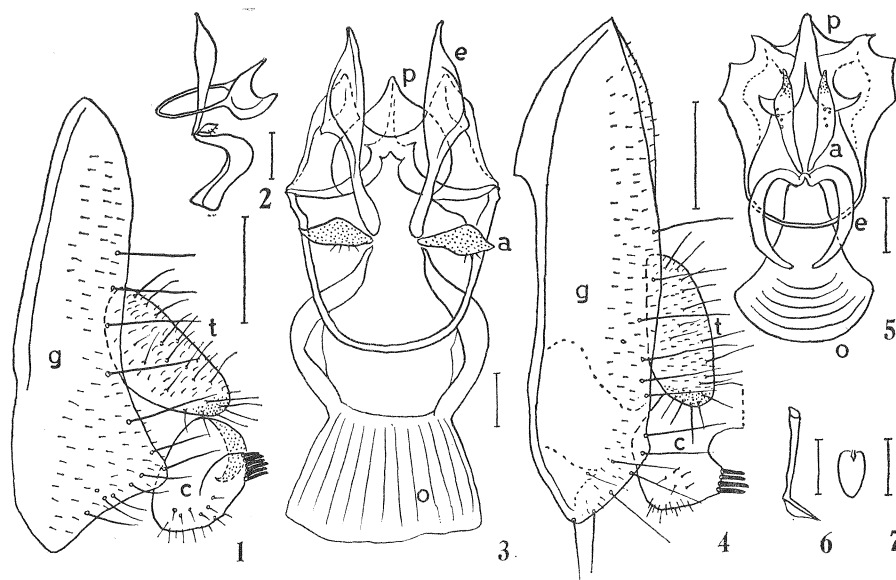
Distribution. Japan (Honshu).

Relationships. Resembles *A. albilabris* (Zetterstedt) of Japan in having aedeagus lobe and anterior paramere clearly separated, but differs in having nearly entirely yellow legs and much longer aedeagus.

Amiota (Amiota) sigma sp. n. (Figs. 4-7)

♂. Body about 2 mm in length. Antenna greyish brown, third joint reddish. Clypeus deep black. Front subshining black, anteriorly narrower than length down mid-

* The aedeagus is absent in the species of the subgenus *Amiota*, according to Dr. Steyskal's personal information. The use of the term *aedeagus* in the present work is therefore tentative.



Figs. 1-3. *Amiota (Amiota) lanceolata* sp. n. 1. Periphallial organs; 2. Phallic organs, lateral aspect; 3. *ibid.*, ventral aspect.

Figs. 4-7. *Amiota (Amiota) sigma* sp. n. 4. Periphallial organs; 5. Phallic organs, ventral aspect; 6, 7. Ejaculatory apodeme. a. anterior paramere; c. clasper; d. decasternum or bridge connecting claspers; e. aedeagus; g. genital arch; o. apodeme of aedeagus; p. posterior paramere; t. anal plate. Scales 0.1 mm.

dle. Face grey, without prominent white band below; carina undeveloped. Cheek narrow, greyish brown. Mesonotum and scutellum mat black, somewhat blue grey pollinose. Thoracic pleura black. Humeral one, prominent. Posterior scutellars nearer to each other than to anteriors. Legs yellow. Wings hyaline. C-index 1.7; 4V-index 3.3; 5x-index 1.5; Ac-index 7.0; Cx-index 0.4. C3-fringe on basal two-thirds. Halteres white. Abdominal tergites brownish black.

Periphallial organs (Fig. 4): Genital arch narrow, black, paler below. Anal plate oval, pale, lower tip black. Clasper pale, distally narrowing, with about five black teeth. Phallic organs (Fig. 5): Aedeagus pale yellowish brown, paired, slender, vertically looped. Anterior parameres lanceolate, separated from and nearly as long as aedeagus, pale yellowish brown, apically black, medially with a few sensilla. Ejaculatory apodeme as in Figs. 6, 7.

Holotype. ♂, Kitadake, Yamanashi Pref., 24 VII 1968 (Okada and Hihara).

Distribution. Japan (Honshu).

Relationships. Resembles the foregoing species, *lanceolata*, in having aedeagus lobe and anterior paramere separated, but differs in higher Ac-index, larger and sigmoid anterior parameres, and ventrally pale genital arch.

Amiota (Amiota) clavata sp. n.

Amiota (Amiota) alboguttata, forma *clavata* Okada, 1960: 94.

♂. Front anteriorly slightly silvery pollinose. C-index 1.9; 4V-index 2.5; 5x-index 1.4; Ac-index 3.0. Genital arch mid-dorsally constricted. Other features as described and figured by Okada (*op. cit.*).

Holotype. ♂, Sugadaira, Nagano Pref., 10 VIII 1965 (Okada).

Distribution. Japan (Honshu).

Relationships. Somewhat allied to the foregoing species, *sigma*, in having elongate aedeagus and anterior parameres, which are, however, not clearly separated.

***Amiota (Amiota) chungii* sp. n.**

Amiota (Amiota) alboguttata, forma *koreana* Okada and Chung, 1960. Akitu, 9:25.

♂. As described and figured by Okada and Chung (*op. cit.*).

Holotype. ♂, Mt. Sul-Ak, Kang-Won Province, 16 VII 1959 (Chung).

Distribution. S. Korea.

Relationships. Resembles the foregoing species, *clavata*, in having apparently fused aedeagus lobe and anterior paramere, but differs in having them apically pointed, not clavate.

***Amiota (Amiota) furcata* sp. n.**

Amiota (Amiota) alboguttata, forma *furcata* Okada (*part.*), 1960:96.

♂. Body about 2.5–3.0 mm in length. Front largely silvery pollinose in front view. Wing 2.0 mm or more in length. C-index 1.8; 4V-index 2.2; 5x-index 1.7; Ac-index 4.4; Cx-index 0.7. C3-fringe on basal half. Genital arch somewhat narrowing above; clasper with about thirteen teeth in a straight row. Aedeagus and anterior paramere fused to be a thick Y-shaped organ, which is broader than long. Other features as described by the author (*op. cit.*).

Holotype. ♂, Kumotoriyama, Tokyo, 14 VII 1953 (Okada). Paratypes. 3 ♂, Nukabira, Hokkaido, 12 VIII 1966 (Okada); 1 ♂, Nopporo, Hokkaido, 19 VIII 1966 (Okada); 10 ♂, Masutomi, Yamanashi Pref., 11 VII 1961 (Saigusa); 2 ♂, Kitadake, Yamanashi Pref., 24 VII 1968 (Okada and Hihara); 2 ♂, Kirishima, 19 VIII 1968 (Okada).

Distribution. Japan (Hokkaido; Honshu; Kyushu).

Relationships. Resembles the foregoing species, *chungii*, in having completely fused aedeagus lobe and anterior paramere, but the apical free ends of these organs are longer and basal fused portion narrower.

***Amiota (Amiota) subfurcata* sp. n.**

Amiota (Amiota) alboguttata, forma *furcata* Okada (*part.*), 1960:96.

♂. Body about 2.0–2.5 mm in length. Front mat brownish black, anteriorly paler, not silvery pollinose. Wings 2.0 mm or less in length. C-index 1.9; 4V-index 2.2; 5x-index 1.6; Ac-index 4.0; Cx-index 0.8. C3-fringe on basal half. Genital arch not narrowing above; clasper with about six teeth in a row. Aedeagus lobe and anterior paramere fused to be a thin Y-shaped organ, which is longer than broad. Other features as described by Okada (*op. cit.*).

Holotype. ♂, Sugadaira, 24 VI 1970 (Okada). Paratypes. 9 ♂, collected together with the holotype; 23 ♂, Kitakaruzawa, 12–18 VII 1970 (Okada); 1 ♂, Sapporo, 19 VIII 1953 (Okada); 5 ♂, Kyoto, 10 IX 1964 (Okada); 8 ♂, Saitoshi, Miyazaki Pref., VI–X 1962 (Nagata); 2 ♂, Wulai, Taipei County, 10 VIII 1967 (Throckmorton).

Distribution. Japan (Hokkaido; Honshu; Kyushu); Taiwan.

Relationships. Closely allied to the foregoing species, *furcata*, in having Y-shaped organ composed of aedeagus lobe and anterior paramere, but differs in having this organ thinner, genital arch not narrowing above, front not silvery pollinose, and clasper teeth fewer.

Amiota (Amiota) elongata sp. n.

Amiota (Amiota) alboguttata, forma *elongata* Okada, 1960: 95.

♂. C-index 1.8; 4V-index 2.7; 5x-index 1.8; Ac-index 4.0. Genital arch constricted at mid-dorsal line. Other features as described and figured by Okada (*op. cit.*).

Holotype. ♂, Sugadaira, Nagano Pref., 28 VIII 1959 (Okada). Paratypes. 1♂, Takinoyu, Niigata Pref., 28 VIII 1963 (Okada); 1♂, Yunokoya, Gumma Pref., 26 VII 1960 (Okada); 1♂, Tanigawa, Gumma Pref., 16 VIII 1961 (Okada); 3♂, Masutomi, Yamanashi Pref., 11-12 VIII 1961 (Saigusa).

Distribution. Japan (Honshu).

Relationships. Resembles *A. clavata* Okada in having aedeagus and anterior parameres elongate, but differs in having aedeagus pale and slender (black and robust in *clavata*).

Amiota (Amiota) okinawana sp. n. (Figs. 8-10)

♂. Body about 2.5 mm in length. Antenna with second joint orange brown, third brownish black. Arista with five upper and three lower long branches besides a large fork. Palpi grey, slender. Ocellar triangle black, convexed. Periorbits pollinose grey. Front black, anterior two-thirds orange brown. Clypeus black. Face greyish brown, buccal margin broadly milky white. Carina low. Cheek narrow, white. Anterior reclinate orbital slightly shorter than other orbitals, twice as apart from posterior reclinate as from proclinate. Vibrissa rather weak, other orals fine. Mesonotum subshining black, scutellum black, somewhat pollinose grey. Thoracic pleura mostly black. Humeral one, prominent. Anterior scutellars divergent, as long as posteriors, which are nearer to each other than to anteriors. Sterno-index 0.6. Legs yellow, tarsi slightly fuscous. Wings hyaline; R_{2+3} gently curved to costa apically; R_{4+5} distally strongly convergent with M, subbasally somewhat sinuated. C-index 1.5; 4V-index 2.5; 5x-index 1.8; Ac-index 6.0; Cx-index 0.7. C3-fringe on basal four-fifths. Halteres white. Abdominal tergites subshining black; 1T entirely and 2T medially yellow.

Periphallial organs (Fig. 9): Genital arch black, narrowly constricted mid-dorsally, pale and rounded below. Clasper pale, quadrate, distally with about seven black teeth in a straight row. Phallic organs (Fig. 10): Aedeagus and anterior parameres small, closely apposed to each other, yellowish brown, the former slender, the latter shorter but broader than the former. Apodeme of aedeagus large. Ejaculatory apodeme as in Fig. 8.

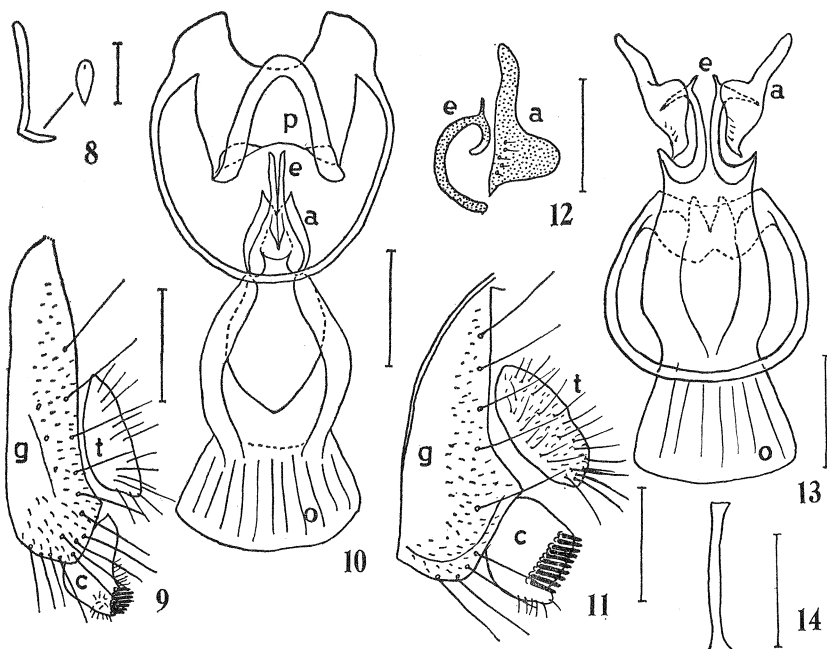
Holotype. ♂, Komi, Iriomote Is., 9 VII 1966 (Okada and Hihara). Paratopotypes 3♂, 9 VII 1966 (Okada and Hihara).

Distribution. Okinawa.

Relationships. Resembles *A. nagatai* in the shape and coloration of aedeagus and anterior parameres, but differs in having smaller Cx-index, mid-dorsally constricted genital arch, and clasper without a finger-like process below teeth row. The types were misidentified by Okada, 1968: 310, as belonging to *A. nagatai*.

Amiota (Amiota) curvistyla sp. n. (Figs. 11-14)

♂. Body about 2.5 mm in length. Antenna dark brown. Arista with five upper and three lower long branches besides a moderate fork. Palpi yellowish brown. Ocellar triangle and periorbits brownish black. Clypeus mat black. Front mat brownish black, anteriorly silvery pollinose. Face dark brown, lower half milky white. Carina low. Cheek narrow, yellow. Anterior reclinate orbital two-thirds as long as others, thrice as apart from posterior reclinate as from proclinate. Second oral weak. Mesonotum and scutellum mat brownish black. Thoracic pleura brownish black. Humeral one, long. Prescutellars slightly longer than anterior dorsocentrals. Anterior dorsocentrals



Figs. 8-10. *Amiota (Amiota) okinavana* sp. n. 8. Ejaculatory apodeme; 9. Periphallic organs; 10. Phallic organs, ventral aspect.

Figs. 11-14. *Amiota (Amiota) curvistyla* sp. n. 11. Periphallic organs; 12. Phallic organs, part; 13. *ibid.*, ventral aspect; 14. Ejaculatory apodeme. Signs as in Figs. 1-7. Scales 0.1 mm.

half posteriors. Anterior scutellars divergent, slightly longer than posteriors, which are somewhat nearer to each other than to anteriors. Sterno-index about 0.6. Legs yellow. Wings hyaline, R_{2+3} straight, R_{4+5} and M gently convergent. C-index 1.6; 4V-index 2.1; 5x-index 1.5; Ac-index 4.0; Cx-index 1.0. C3-fringe on basal five-eighths. Halteres white, stalk yellow. Abdominal tergites mat brownish black, 1T pale.

Periphallic organs (Fig. 11): Genital arch black, narrowly constricted at mid-dorsal line, gently rounded below. Clasper quadrate, pale yellowish brown, distally with a straight row of about ten black teeth, with a finger-like process below the teeth row and with a crest of fine teeth discally. Anal plate pale yellowish brown. Phallic organs (Figs. 12, 13): Aedeagus black, apically pale, slender and looped, subapically with a short slender process. Anterior parameres black, basal half very thick, ventrally swollen, distal half slender and nearly straight. Posterior parameres apically with a pair of black conical processes. Ejaculatory apodeme (Fig. 14) with long straight stalk and fine plate.

Holotype. ♂, Kitadake, Yamanashi Pref., 28 VII 1970 (Hihara). Paratype. 1 ♂, Tanigawa, Gumma Pref., 16 VIII 1961 (Okada).

Distribution. Japan (Honshu).

Relationships. Somewhat resembles *A. clavata* Okada in having clavate anterior parameres, which are separated from slender aedeagus lobe, but differs in having anterior parameres prominently swollen basally and aedeagus more strongly looped.

Amiota (Amiota) dentata sp. n. (Figs. 15-17)

♂. Body about 2 mm in length. Antenna dark reddish brown, third joint darker. Arista with four upper and four lower long branches besides a fine fork. Palpus dark

yellowish brown, apically black. Ocellar triangle glossy black, convexed. Periorbits mat brownish black. Front mat brownish black, anteriorly three-thirds as broad as length down middle, caudally broadened. Face mat black, with milky white band below; carina undeveloped. Clypeus black. Cheek grey, narrow. Anterior reclinate orbital slightly shorter than other orbitals. Vibrissa long, other orals fine. Mesonotum, scutellum, and thoracic pleura mat black. White spots on humerus and wing base rather small. Humeral one, long. Prescutellars somewhat longer than anterior dorsocentrals. Anterior scutellars divergent, somewhat longer than posteriors, which are a little nearer to each other than to anteriors. Sterno-index 1.0. Legs dark yellow. Wings hyaline, R_{2+3} weakly curved to costa apically, R_{4+5} and M gently convergent distally. C-index 1.4; 4V-index 2.4; 5x-index 1.5; Ac-index 4.0; Cx-index 0.8. C3-fringe on basal five-eighths. Halteres white, stalk fuscous. Abdominal tergites mat black.

Periphallalic organs (Fig. 15): Genital arch black, interrupted at mid-dorsal line; heel projected anteriorly; toe rounded. Anal plate fuscous, oblong. Clasper fuscous, hemispherical, with nine to ten blunt black teeth in a straight row. Phallic organs (Fig. 16): Aedeagus lobe and anterior paramere fused, distally acutely pointed and black, basally thickened, medially with a few sensilla. Apodeme of aedeagus large, fan-shaped. Posterior parameres apparently bilobed, ventroapically with three acute black dentations, thus the specific name. Ejaculatory apodeme as in Fig. 17.

Holotype. ♂, Hikagezawa, Tokyo, 9 VI 1970 (Okada). Paratypes. 2♂, Kitakaruizawa, Gumma Pref., 12-18 VII 1970 (Okada).

Distribution. Japan (Honshu).

Relationships. Somewhat resembles *A. dispina* Okada in having mat black front, but distinguished in having R_{2+3} apically curved to costa, C-index smaller, and posterior parameres dentated.

Amiota (Amiota) flagellata sp. n. (Figs. 18, 19)

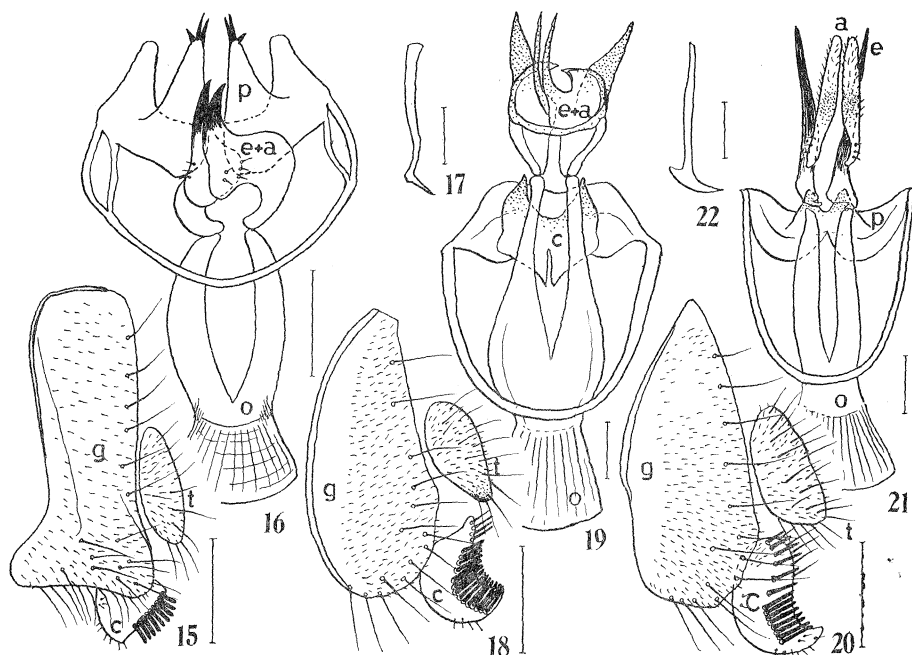
♂. Body 2.5 mm in length. Antenna reddish brown, third joint grey brown. Arista with five upper and three lower long branches besides a moderate fork. Ocellar triangle black, medially orange. Periorbits brownish black. Front brownish black, anteriorly orange brown and six-sevenths as broad as length down middle. Clypeus mat black. Carina low but long. Face greyish brown, with a milky white cross band below. Cheek white, narrow. Anterior reclinate orbital two-thirds as long as proclinate. Second oral one-third vibrissa. Mesonotum and pleura mat brownish black; scutellum darker. Humeral one, long. Prescutellars as long as anterior dorsocentrals, which are half as long as posteriors. Anterior scutellars divergent, a little longer than posteriors, which are nearer to each other than to anteriors. Sterno-index 0.9. Legs yellow. Wings hyaline, crossveins clear; R_{2+3} nearly straight; R_{4+5} and M gently convergent distally. C-index 1.5; 4V-index 2.7; 5x-index 1.7; Ac-index 5.0; Cx-index 0.8. C3-fringe on basal half. Halteres yellow. Abdominal tergites mat brownish black.

Periphallalic organs (Fig. 18): Genital arch black, evenly rounded below, mid-dorsally constricted but not interrupted. Anal plate oval, yellowish brown, lower tip dark. Clasper large, yellowish brown, with a concave row of about thirteen long black teeth. Phallic organs (Fig. 19): Aedeagus lobe and anterior paramere black, fused, ventrally with a long flagellate process, dorsally with a large pointed process. Apodeme of aedeagus fan-shaped. Posterior parameres ventroapically with a pair of black conical processes.

Holotype. ♂, Kawafuru, Gumma Pref., 19 VIII 1961 (Okada). Paratype. 1♂, Masutomi, Yamanashi Pref., 11 VIII 1961 (Saigusa).

Distribution. Japan (Honshu).

Relationships. Resembles *A. promissa* in having a pair of flagellate processes of



Figs. 15-17. *Amiota (Amiota) dentata* sp. n. 15. Periphallic organs; 16. Phallic organs, ventral aspect; 17. Ejaculatory apodeme.

Figs. 18, 19. *Amiota (Amiota) flagellata* sp. n. 18. Periphallic organs; 19. Phallic organs, ventral aspect.

Figs. 20-22. *Amiota (Amiota) palpifera* sp. n. 20. Periphallic organs; 21. Phallic organs, ventral aspect; 22. Ejaculatory apodeme. Signs as in Figs. 1-7. Scales 0.1 mm.

aedeagus and straight R_{2+3} , but differs in entirely yellow legs, anteriorly orange front, and longer and concave row of clasper teeth.

***Amiota (Amiota) palpifera* sp. n. (Figs. 20-22)**

♂. Body 3 mm in length. Antenna orange, third joint grey except basally. Palpi yellowish brown. Ocellar triangle black. Periorbits brownish grey. Front dark brown, anteriorly paler and four-fifths as broad as length down middle. Clypeus brownish black. Face brownish black, with a milky white band below. Carina broad, low, black. Cheek narrow, yellow. Second oral one-third vibrissa. Mesonotum, scutellum, and thoracic pleura mat black. Humeral one, long. Prescutellars as long as anterior dorso-centrals, which are half posteriors. Anterior scutellars divergent; posteriors three-fourths as long as anteriors, equally apart from each other and from anteriors. Legs yellow. Wings hyaline, R_{2+3} weakly curved to costa apically. C-index 2.0; 4V-index 2.5; 5x-index 1.0; Ac-index 6.0; Cx-index 0.6. C3-fringe on basal five-eighths. Abdominal tergites mat black, 1T entirely and 2T medially yellow.

Periphallic organs (Fig. 20): Genital arch black, mid-dorsally interrupted, broadened below. Anal plate yellow, oboval. Clasper yellow, broad crescent, with a concave row of about fourteen long black teeth, the teeth row becoming looser above. Phallic organs (Fig. 21): Aedeagus lobe slender, straight, black. Anterior paramere palp-shaped, basally attached to aedeagus lobe, pale and pubescent, subbasally with a few sensilla. Posterior parameres with a pair of conical black processes ventroapically. Ejaculatory apodeme as in Fig. 22.

Holotype. ♂, Kawafuru, Gumma Pref., 19 VIII 1964 (Okada).

Distribution. Japan (Honshu).

Relationships. Resembles the foregoing species, *flagellata*, in having concave row of clasper teeth, ventrally broadly rounded genital arch, and a pair of black conical processes of posterior parameres, but differs in having genital arch medially interrupted and aedeagus and anterior parameres not as in the related species.

Subgenus *Apsiphortica* nov.

Eye large, with its long axis vertical to the body axis. Arista with short upper and lower branches. Carina undeveloped. Cheek very narrow. Three long equal-sized orbitals, posterior reclinate orbital nearer to inner vertical than to proclinate orbital. Scutellum without discal hairs. No distinct white spots on humerus and below wing base. Mesopleura with several short bristly hairs. Hind tibiae without strong bristles proximally above. Discal and second basal cells separated. R_{4+5} and M convergent distally; third costal section with numerous minute thorn-like warts. Periphallic organs with genital arch strongly pointed below, clasper longer than broad.

Relationships. Resembles the subgenus *Phortica* Schiner in having numerous minute thorn-like warts on the third costal section and no distinct white spots on humerus and below wing base, but differs in having mesopleura bristly. Periphallic and phallic organs resemble those of *Apsinota rufipes* Okada from Nepal, thus the subgeneric name.

Type. *A. (Apsiphortica) lini* sp. n. (Taiwan).

Amiota (Apsiphortica) lini sp. n. (Figs. 30-34)

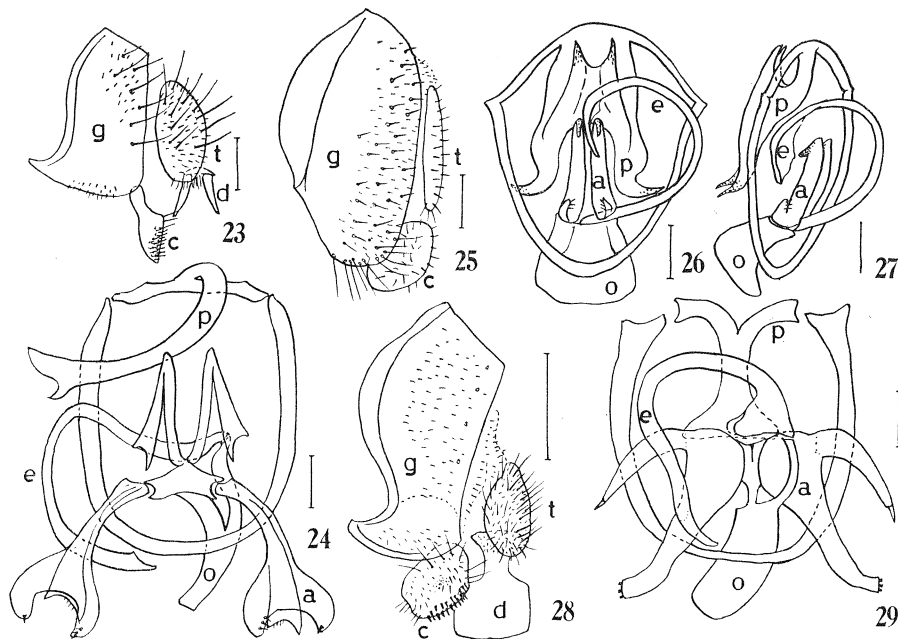
♂. Body about 2.7 mm in length, dark reddish brown. Antenna (Fig. 34) greyish brown, third joint oblong. Arista with about seven upper and seven lower short branches besides a fine fork. Palpi greyish brown, slender, with a few setae below. Ocellar triangle black. Periorbits greyish yellow, anteriorly curved inward, white along eye margin. Front anteriorly narrower than length down middle, caudally narrower than half head width, mat dark brown, somewhat purplish, anteriorly paler. Frontal hairs present. Face greyish white, carina undeveloped. Cheek very narrow, yellowish white. Anterior reclinate orbitals slightly shorter than other orbitals, nearer to proclinate than to posterior reclinate. Vibrissa strong, other orals fine. Mesonotum dark brown, scutellum mat greyish brown. Thoracic pleura mat brownish black. Mesopleura with several black setae. Humeral one, strong. Anterior dorsocentrals half posteriors. Anterior scutellars divergent, a little shorter than posteriors. Sterno-index 0.8. Legs entirely yellow. Wings (Fig. 31) somewhat fuscous; C-index 2.2; 4V-index 2.0; 5x-index 1.0; Ac-index 5.0; Cx-index 0.5. C3-fringe on basal two-thirds. Halteres white, basally grey. Abdominal tergites glossy black; 1T entirely, 2T medially, yellowish grey.

Periphallic organs (Fig. 30): Genital arch yellowish brown, mid-dorsally broadly fused, ventrally exceedingly elongated. Anal plate oval, yellowish brown. Clasper rod-like, dark brown, without teeth. Phallic organs (Figs. 32, 33): Aedeagus slender, gently curved ventrally, apodeme very long. Anterior parameres (?) pale, finely setigerous.

Holotype. ♂, Puli, Nan-t'ou County, 19 VIII 1967 (Okada).

Distribution. Taiwan.

The specific name is dedicated to Mr. F. J. Lin of Academia Sinica, Taipei, who has been kind enough to help me to obtain the material.



Figs. 23, 24. *Amiota (Phortica) orientalis* Hendel. 23. Peripheral organs; 24. Phallic organs, ventral aspect.

Figs. 25-27. *Amiota (Phortica) foliiseta* Duda. 25. Peripheral organs; 26. Phallic organs, ventral aspect; 27. *ibid.*, lateral aspect.

Figs. 28, 29. *Amiota (Phortica) paramagna* sp. n. 28. Peripheral organs; 29. Phallic organs, ventral aspect. Signs as in Figs. 1-7. Scales 0.1 mm.

Subgenus *Phortica* Schiner

Amiota (Phortica) orientalis Hendel (Figs. 23, 24)

♂. Body 2 mm in length. Arista with seven upper and three lower long branches besides a fine fork. Palpi yellow. Front dark brown, laterally orange. Clypeus black, medially grey. Face grey, carina narrow. Cheek narrow, white. Anterior reclinate orbitals half others. Mesonotum grey, with black spots. Scutellum velvety black, proximally silvery grey, apically narrowly white. Thoracic pleura greyish brown, with black patches. Anterior scutellars divergent, as long as posteriors. Sterno-index 0.9. Legs yellow, tibiae with three black annuli. Wings hyaline; R_{2+3} straight; R_{4+5} and M convergent distally; crossveins weakly clouded. C-index 2.2; 4V-index 2.8; 5x-index 1.0; Ac-index 4.0; Cx-index 0.6. C3-fringe on basal two-thirds. Halteres white. Abdominal tergites black, anteriorly yellow, caudal margins narrowly yellow.

Peripheral organs (Fig. 15): Genital arch broad, ventroanteriorly pointed. Anal plate large. Clasper basally narrowing, distally with numerous short thick bristles. Phallic organs (Fig. 16): Aedeagus black, slender and curved. Anterior parameres gross, reddish brown, distally expanded and bifurcated.

Specimens examined. 1♂, Yunshuei, Chia-I County, 12 VIII 1967 (Okada).

Distribution. Taiwan.

Remarks. Hennig (1941: 147) found that the specimens in Deutsches Entomologisches Institut labelled by Duda as *maculiceps* and *variegata* belong to *orientalis*.

Amiota (Phortica) foliiseta Duda, 1923 (Figs. 25-27)

♂. Body 2.5 mm in length. Arista bare, apically with a leaf-like flap. Palpi yellow. Legs yellow. Wings hyaline, R_{2+3} straight, R_{4+5} and M slightly convergent distally. C-index 2.0; 4V-index 3.0; 5x-index 0.8; Ac-index 3.0; Cx-index 0.7. C3-fringe on basal two-thirds. Third costal section without warts.

Periphallalic organs (Fig. 25): Genital arch broad, black, ventrally pale and rounded. Anal plate and clasper pale yellow; clasper without teeth. Phallic organs (Figs. 26, 27): Aedeagus bilobed, rod-like, apically curved ventrally and darkened. Anterior parameres minute, apparently fused to aedeagus.

Specimen examined. 1♂, Wulai, Taipei County, 12 VII 1967 (Throckmorton).

Distribution. Taiwan.

Amiota (Phortica) paramagna sp. n. (Figs. 28, 29)

♂. Body 4 mm in length. Antenna dark brown; arista with three long basal and three minute distal upper branches, without lower branches and fork. Palpi black. Periorbits milky yellow. Clypeus mat black, medially yellow. Front velvety black, laterally orange, anteriorly slightly narrower than length down middle, caudally broadened. Face mat black, pollinose grey, ventrolateral corners with yellow spots. Carina weak. Cheek narrow, black, white along eye margins. Anterior reclinate orbital half proclinate, equally apart from proclinate and from posterior reclinate. Vibrissa strong, second oral one-third as long as vibrissa. Mesonotum mat black, with irregular grey blue pollinose patches. Humeri yellow. Scutellum mat black, apically narrowly pale, medially with X-shaped grey patch. Thoracic pleura ornamented as in mesonotum. Humeral one, strong. Anterior dorsocentral three-fifths as long as posteriors. Sterno-index 0.8. Anterior scutellars divergent, as long as posteriors. Legs yellowish white, femora mostly black, tibiae with three black annuli. Wings hyaline; R_{2+3} gently curved to costa apically; R_{4+5} and M weakly convergent distally; crossveins faintly fuscous. C-index 2.3; 4V-index 3.0; 5x-index 1.0; Ac-index 3.0; Cx-index 0.9. C3-fringe on basal three-fourths. Halteres white.

Periphallalic organs (Fig. 28): Genital arch broad, brownish black, ventrally paler and projected anteriorly. Anal plate pale yellow. Clasper conical, brownish black, distally with numerous fine black bristles. Phallic organs (Fig. 29): Aedeagus slender, curved, black and apically pale. Anterior parameres large, V-shaped, one arm black, apically with a stout spine, another arm yellow, apically with three short thick teeth.

Holotype. ♂, Hokuko-Kaminoshima Onsen, Miao Li County, 11 IV 1967 (Shirozu). Paratypes. 1♂, Fen-ch'i-hu, Nan-t'ou County, 10 IV 1965 (Hirashima); 2♂, collected together with the holotype.

Distribution. Taiwan.

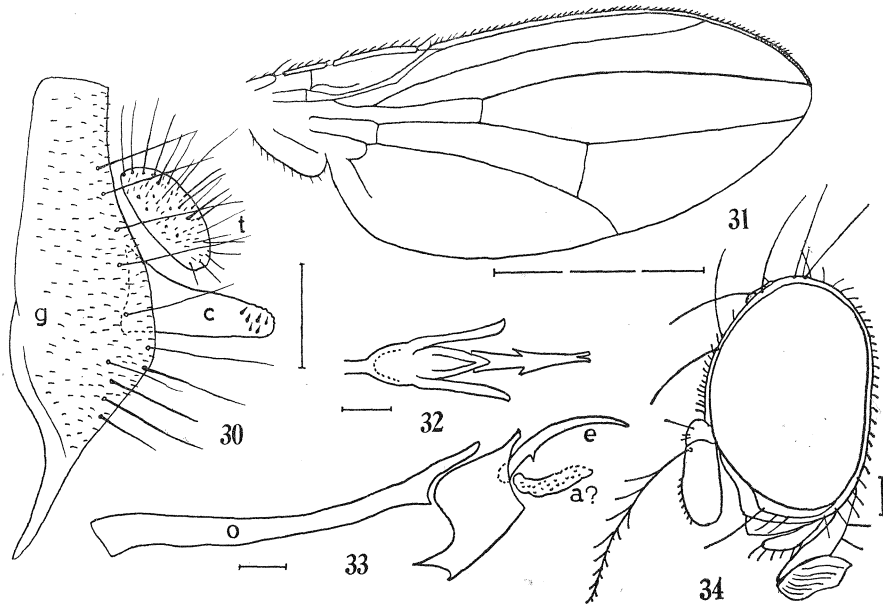
Relationships. Closely allied to *A. magna* Okada in general features and coloration, but differs in having front medially velvety black, clasper without long ventral spine, and anterior parameres deeply bifurcated.

Note on a taxonomic character of the genital arch

Whether the genital arch is interrupted, constricted, or fused at mid-dorsal line seems to have been overlooked or scarcely studied at least in the genus *Amiota*. The following is a brief summary about this character with examples thus far studied.

Type I.—Clearly interrupted: *alboguttata*, *albilabris*, *stylopyga*, *palpifera*, *dentata*.

Type II.—Contiguous merely by a short cross bar: *acuta*, *dispina*, *orchidea*.



Figs. 30-34. *Amiota (Apsiphortica) lini* subgen. and sp. n. 30. Peripheral organs; 31. Wing; 32, 33. Phallic organs; 34. Head. Signs as in Figs. 1-7. Scales 0.1 mm (1.0 mm in fig. 31).

Table 1. Two-state coding of the characters.

Characters	0	1
A Body length	less than 3.0 mm	3.0 mm or more
B Lower branches of arista	as long as upper	shorter than upper or absent
C Palpi	yellowish	dark brown to black
D Milky band of face	distinct	obscure
E Mesonotum	black	dark or yellowish brown
F Legs	uniformly yellow	partially black
G Sterno-index	less than 0.8	0.8 or more
H R_{2+3}	apically curved to costa	straight
I C-index	less than 2.0	2.0 or more
J 4V-index	less than 2.5	2.5 or more
K 5x-index	less than 1.5	1.5 or more
L Ac-index	less than 5.0	5.0 or more
M Cx-index	less than 0.8	0.8 or more
N C3-fringe	more than 1/2	1/2 or less
O Abdominal tergites	black	yellowish to dark brown
P Genital arch	mid-dorsally fused or constricted	entirely or nearly interrupted
Q Clasper teeth	in a straight row	in concave row
R Number of clasper teeth	less than ten	ten or more
S Finger-like process of clasper	absent	present
T Aedeagus	black	pale
U Aedeagus lobe and anterior paramere	separated or closely apposed	completely fused
V Apodeme of aedeagus	fan-shaped	rod-shaped
W Long median process of aedeagus	absent	present
X Ejaculatory apodeme	stalk less than thrice as long as plate	stalk more than thrice as long as plate
Y White spots on humerus and wing base	obscure or absent	distinct

Type III.—Narrowly constricted: *clavata*, *chungi*, *elongata*, *flagellata*, *lanceolata*, *okinawana*, *curvistyla*.

Type IV.—Broadly contiguous: *furcata*, *subfurcata*, *nagatai*, *sigma*, *sinuata*, *lini*, *foliiseta*, *magna*, *orientalis*, *paramagna*, *variegata*.

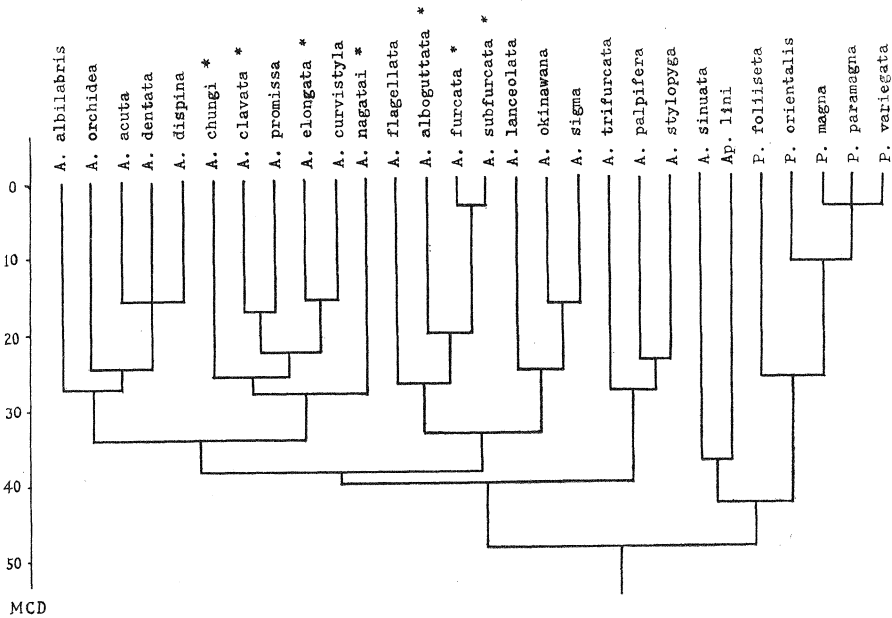
Proximity and cluster analyses

To estimate the phenetic relationships of the twenty-eight examined species, a proximity analysis by MCD (Mean Character Difference) and cluster analyses by UPGA (Unweighted Pair-group Analysis using average linkage) and WPGA (Weighted Pair-group Analysis using average linkage) are attempted. The characters tested are twenty-five, chiefly diagnostic to species or to subgenera. Each character is randomly coded in two states (0, 1) as shown in Tables 1 and 2. Although the number of characters tested, that is twenty-five, is far less than that empirically estimated as prerequisite for the numerical phenetic analysis, that is sixty, the adoption of the selected diagnostic characters instead of the operationally unbiased ones might sufficiently overcome the methodological deficiency. The attempt is to compromise the methods of conventional and operational taxonomies, taking up comparatively favorable concepts of these two: for example, the selection of characters of conventional taxonomy and objective clustering of operational taxonomy. The data matrix (Tab. 2) can be used as a diagnostic table.

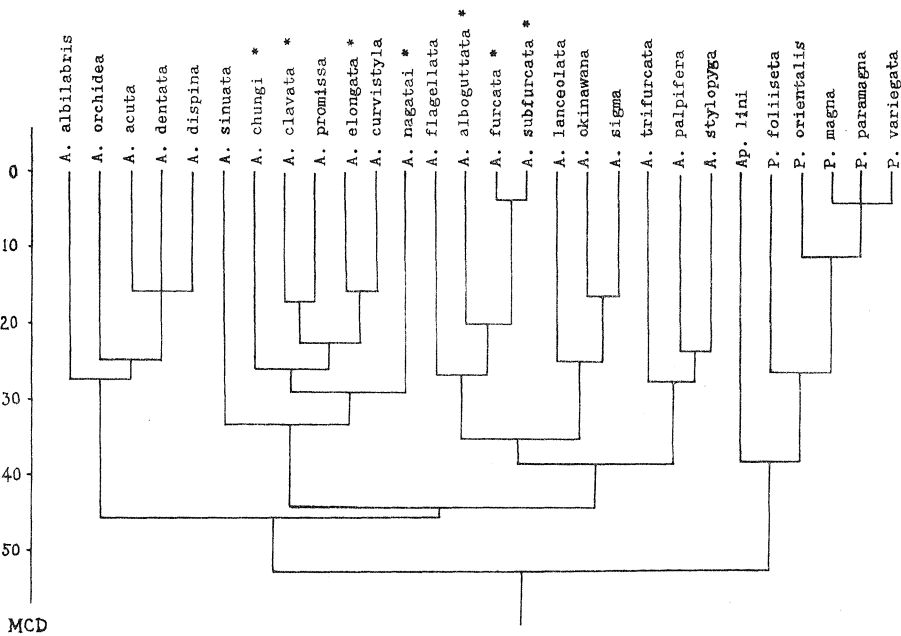
The results of the cluster analyses are shown in Figs. 35 and 36. The species of the subgenus *Phortica* are compactly clustered together. To this cluster are connected, though rather distantly, the subgenus *Apsiphortica* and, in the case of UPGA, also a species (*sinuata*) of the subgenus *Amiota*. Those species formerly assorted to the formae

Table 2. Data matrix. NC, no comparison.

Species	Characters	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	
<i>A. (A.) acuta</i>		0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	1	0	1	0	1		
<i>A. (A.) albilabris</i>		1	1	1	0	0	1	0	1	1	0	0	0	1	0	1	1	0	1	0	0	0	0	0	1	1	
<i>A. (A.) alboguttata</i>		0	1	0	0	0	0	1	1	1	0	1	0	1	1	0	1	0	1	0	0	0	0	0	NC	1	
<i>A. (A.) chungi</i>		1	0	1	0	0	0	NC	0	0	0	0	0	1	0	0	0	0	1	1	0	1	0	1	0	NC	1
<i>A. (A.) clavata</i>		1	0	1	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	1	0	0	0	0	1	1	
<i>A. (A.) curvistyla</i>		0	0	0	0	0	0	1	1	0	0	1	0	1	0	0	0	0	1	1	0	0	0	0	1	1	
<i>A. (A.) dentata</i>		0	0	0	0	0	0	1	0	0	1	1	0	1	0	0	1	0	1	0	1	0	1	1	1	1	
<i>A. (A.) dispina</i>		0	1	0	0	0	1	0	0	1	1	0	0	0	0	1	0	0	0	0	0	1	0	0	1	1	
<i>A. (A.) elongata</i>		0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	1	1	0	0	0	1	1	
<i>A. (A.) flagellata</i>		0	0	0	0	0	0	1	1	0	1	1	1	1	1	0	0	1	1	0	0	1	1	0	NC	1	
<i>A. (A.) furcata</i>		0	0	0	0	0	0	1	1	0	0	1	0	1	1	0	0	0	1	0	0	1	0	0	0	1	
<i>A. (A.) lanceolata</i>		0	0	1	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	NC	1
<i>A. (A.) nagatai</i>		1	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	1	1	0	0	0	0	1	
<i>A. (A.) okinawana</i>		0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
<i>A. (A.) orchidea</i>		1	0	1	0	0	1	1	0	0	1	0	0	1	0	0	1	0	0	0	1	0	1	1	1	1	
<i>A. (A.) palpiifera</i>		1	0	0	0	0	1	0	1	0	1	0	1	0	0	0	1	1	1	1	0	0	0	0	0	1	
<i>A. (A.) promissa</i>		1	0	0	0	0	1	NC	1	0	1	0	0	1	0	0	0	0	0	1	0	0	1	0	NC	1	
<i>A. (A.) sigma</i>		0	NC	0	1	0	0	1	0	0	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	1	
<i>A. (A.) sinuata</i>		0	0	1	1	1	0	0	0	0	1	0	1	1	0	0	0	0	0	1	1	1	0	0	0	1	
<i>A. (A.) stylopyga</i>		1	0	0	0	1	0	1	1	1	1	0	0	0	0	0	1	0	1	0	0	1	0	0	0	1	
<i>A. (A.) subfurcata</i>		0	0	0	0	0	0	1	1	0	0	1	0	1	1	0	0	0	0	0	0	1	0	0	0	1	
<i>A. (A.) trifurcata</i>		1	0	0	0	1	0	1	0	0	1	0	1	0	1	1	0	0	1	0	0	0	0	0	0	1	
<i>A. (Ap.) lini</i>		0	1	1	1	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	1	1	1	1	NC	0	
<i>A. (P.) foliiseta</i>		1	0	1	1	1	0	NC	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
<i>A. (P.) magna</i>		1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<i>A. (P.) orientalis</i>		0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	NC	0
<i>A. (P.) paramagna</i>		1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	NC	0
<i>A. (P.) variegata</i>		1	1	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0



35



36

Figs. 35, 36. Phenograms based on MCD proximity analysis and UPGA (Fig. 35) and WPGA (Fig. 36) cluster analyses. A. subgenus *Amiota*; Ap. subgenus *Apsiphortica*; P. subgenus *Phortica*. * The species originally assorted to the formae of *A. alboguttata*.

of *alboguttata*, which are indicated by asterisks in Figs. 35 and 36, are found scatteringly clustered among other good species of the subgenus *Amiota*. Consequently, it becomes reasonable to raise these formae to the species rank.

The cophenetic correlation coefficient (CPCC) between the original distance matrix and the matrix derived from the phenogram is slightly higher in the case of UPGA (+0.694) than in the case of WPGA (+0.644), similar as in the usual case of numerical phenetics. It seems, however, that the sequences of the phenograms show superiority of WPGA to UPGA, especially concerning the position of *A. sinuata*

**Key to subgenera and species of the genus *Amiota* of Japan
and adjacent countries**

- | | |
|--|----|
| 1. Anterior reclinate orbitals nearly as long as other orbitals. | 2 |
| — Anterior reclinate orbitals shorter than other orbitals; humerus and wing base without distinct white spots. | 3 |
| 2. Mesopleura hairy; humerus and wing base without distinct white spots. Subgenus <i>Apsiphortica</i> | |
| <i>lini</i> | |
| — Mesopleura bare; humerus and wing base with distinct white spots. Subgenus <i>Amiota</i> | 5 |
| 3. Arista pubescent or bare in both sexes. Subgenus <i>Erima</i> | |
| <i>fasciata</i> | |
| — Arista not bare at least in female. | 4 |
| 4. Carina developed; frontal hairs numerous; R ₄₊₅ and M parallel. Subgenus <i>Paraphortica</i> | |
| <i>lata</i> | |
| — Carina undeveloped; frontal hairs absent or rare; R ₄₊₅ and M distally more or less convergent. Subgenus <i>Phortica</i> | 26 |
| 5. Body tannish or dark brown. | 6 |
| — Body black. | 8 |
| 6. Aedeagus very long, slender, and straight; body about 4 mm in length; Ac-index 6.0; Cx-index 0.5. <i>stylopyga</i> | |
| — Aedeagus not very long; body 3 mm or less in length; Ac-index 5.0. | 7 |
| 7. Cx-index 1.0; aedeagus lobe not furcated. <i>sinuata</i> | |
| — Cx-index about 0.5 or less; aedeagus lobe trifurcated, with apodeme fan-shaped; clasper with teeth. <i>trifurcata</i> | |
| 8. Aedeagus lobe and anterior paramere distinctly separated. | 9 |
| — Aedeagus lobe and anterior paramere fused or closely apposed. | 11 |
| 9. Anterior parameres much shorter than aedeagus. <i>sigma</i> | |
| — Anterior parameres nearly as long as aedeagus. | 10 |
| 10. Aedeagus much shorter than its apodeme; genital arch partially pale; legs with femora and tibiae black. <i>albilabris</i> | |
| — Aedeagus nearly as long as its apodeme; genital arch entirely black; legs nearly entirely yellow. <i>lanceolata</i> | |
| 11. Apodeme of aedeagus rod-shaped. <i>promissa</i> | |
| — Apodeme of aedeagus fan-shaped. | 12 |
| 12. Cx-index less than 0.6. <i>dispina</i> | |
| — Cx-index more than 0.6. | 13 |
| 13. Posterior parameres without long process nor acute teeth. | 14 |
| — Posterior parameres with long process or acute teeth. | 24 |
| 14. Clasper teeth in a concave row. | 15 |
| — Clasper teeth in a straight or convexed row. | 16 |
| 15. Genital arch mid-dorsally not interrupted; aedeagus lobe and anterior paramere completely fused, with a pair of slender flagellate processes. <i>flagellata</i> | |
| — Genital arch mid-dorsally interrupted; anterior parameres palp-shaped, inserted on aedeagus lobes. <i>palpifera</i> | |
| 16. Ventral branches of arista absent; genital arch parallel-sided, mid-dorsally interrupted; Cx-index 1.0. <i>albuguttata</i> | |
| — Ventral branches of arista present; genital arch tapering above. | 17 |
| 17. Cx-index less than 0.8; ventral branches of arista slightly shorter than dorsal branches. | 18 |
| — Cx-index more than 0.8; ventral branches of arista nearly as long as dorsal branches. | 20 |
| 18. Aedeagus lobe and anterior paramere pale, closely apposed. <i>okinawana</i> | |
| — Aedeagus lobe and anterior paramere black, fused to become a Y-shaped organ. | 19 |
| 19. Front largely silvery white pollinose. <i>furcata</i> | |

- Front not silvery pollinose. *subfurcata*
20. Aedeagus lobe and anterior paramere closely apposed. 21
 — Aedeagus lobe and anterior paramere fused, black. 23
21. Aedeagus black, looped. *curvistyla*
 — Aedeagus pale, slender. 22
22. Anterior parameres black, L-shaped; genital arch mid-dorsally constricted. *elongata*
 — Anterior parameres pale; genital arch mid-dorsally not constricted. *nagatai*
23. Aedeagus lobe and anterior paramere clavate. *clavata*
 — Aedeagus lobe and anterior paramere pointed at tip. *chungi*
24. Posterior parameres apically with acute black teeth. *dentata*
 — Posterior parameres with a long apically forked process. 25
25. Posterior parameres with a pair of long curved serrated processes inserted at the base of median process. *orchidea*
 — Posterior parameres without serrated processes; femora and tibiae yellow. *acuta*
26. R_{4+5} and M parallel. 27
 — R_{4+5} and M distally convergent. 29
27. Mesonotum and scutellum white, the latter large, half as long as the former; wing black and bent down. *albodorsata*
 — Mesonotum and scutellum yellowish or dark brown; wing hyaline, fuscous along costal margin. 28
28. R_{2+3} straight; arista with about twelve upper and eleven lower branches. *leucophengoides*
 — R_{2+3} slightly curved to costa apically; arista with about nine upper and seven lower branches. *parallelinervis*
29. Front with thick frontal hairs; tibiae without black annuli; arista plumose in female, bare and apically swollen in male. *foliiseta*
 — Frontal hairs absent; tibiae with black annuli; arista with at least dorsal branches. 30
30. Front anteriorly broader than length down middle; abdominal tergites with black medially protruding caudal bands; arista without long branches below. *variegata*
 — Front anteriorly narrower than length down middle; abdominal tergites with straight black caudal bands. 31
31. Mesonotum with four dark longitudinal stripes; mid and hind femora distally black. *varipes*
 — Mesonotum with dark spots. 32
32. Femora entirely yellow; arista with long ventral branches. *maculiceps*
 — Femora medially black. 33
33. Arista with ventral branches. *orientalis*
 — Arista without ventral branches. 34
34. Front golden brown medially; clasper with a long spine ventrally; anterior parameres not bifurcated. *magna*
 — Front velvety black medially; clasper without long spine ventrally; anterior parameres bifurcated. *paramagna*

A list of species of the genus *Amiota* of Japan and adjacent countries

- Subgenus *Amiota* Loew, 1862
- | | | | |
|---|-----------------------------|---|-----------------|
| <i>acuta</i> Okada, 1968: 306. | Japan | <i>flagellata</i> sp. n. | Japan |
| <i>albilabris</i> (Zetterstedt, 1860), Dipt Scand. 14: 6425 [<i>Drosophila</i>]; Roth in litt. cf. Basden, 1961: 169. | Europe, Japan | <i>furcata</i> sp. n. | Japan |
| <i>alboguttata</i> (Wahlberg, 1838). Acta Acad. Sci. 22: 11 [<i>Drosophila</i>]. | Europe, Siberia, New Guinea | <i>lanceolata</i> sp. n. | Japan |
| <i>chungi</i> sp. n. | Korea | <i>nagatai</i> sp. n. | Japan |
| <i>clavata</i> sp. n. | Japan | <i>okinawana</i> sp. n. | Okinawa |
| <i>curvistyla</i> sp. n. | Japan | <i>orchidea</i> Okada, 1968: 307. | Japan |
| <i>dentata</i> sp. n. | Japan | <i>palpifera</i> sp. n. | Japan |
| <i>dispina</i> Okada, 1960: 97. | Japan | <i>promissa</i> Okada, 1960: 305. | Japan |
| <i>elongata</i> sp. n. | Japan | <i>sigma</i> sp. n. | Japan |
| | | <i>sinuata</i> Okada, 1968: 905. | Japan |
| | | <i>stylopyga</i> Wakahama and Okada, 1958. Annot. Zool. Jap. 31: 109. | Japan, S. Korea |
| | | <i>subfurcata</i> sp. n. | Japan, Taiwan |
| | | <i>trifurcata</i> Okada, 1968: 308. | Japan |

- Subgenus *Apsiphortica* nov.
lini sp. n. Taiwan
- Subgenus *Phortica* Schiner, 1862
albodorsata Sturtevant, 1927. Phil. J. Sci. 32: 362. Philippines
foliiseta Duda, 1923. Ann. Mus. Nat. Hung. 20: 35. Taiwan, New Guinea
leucophengoides Sturtevant, 1927. Phil. J. Sci. 32: 363. Philippines
maculiceps Duda, 1924: 183. Taiwan, Sumatra
magna Okada, 1960: 99. Japan
orientalis Hendel, 1914. Suppl. Ent. 3: 115. Taiwan
- parallelinervis* Duda, 1924: 183; 251. Java
paramagna sp. n. Taiwan
variegata (Fallén, 1823). Dipt. Suec. Geomyz. 5: 2 [*Drosophila*].
 Europe, Japan, Korea, Taiwan, Sumatra
varipes Duda, 1926. Suppl. Ent. 14: 47. Sumatra
- Subgenus *Paraphortica* Duda, 1935
lata (Becker, 1907). St. Petersburg. Ann. Mus. Zool. 12: 54 [*Drosophila*]. China
- Subgenus *Erima* Kertész, 1899
fasciata Kertész, 1899. Termés. Füzetek 22: 193. New Guinea

Summary

A new subgenus, *Apsiphortica*, and fifteen new species of the genus *Amiota* Loew of Japan and adjacent countries are described. A key to thirty-five species belonging to five subgenera in these areas is given. A taxometric treatment of twenty-eight examined species belonging to three subgenera is made by means of MCD proximity analysis and UPGA and WPGA cluster analyses, which resulted in the finding that the three subgenera tested are well distinguished from each other and that those taxa which have hitherto been assorted to the formae of *Amiota albo guttata* (Wahlberg) are better treated as good species.

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