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Genus *Felisacus* Distant (Hemiptera: Miridae) of Taiwan 【Research report】

臺灣產愛蕨盲椿屬(半翅目：盲椿科)【研究報告】

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Abstract

Five species of Genus *Felisacus* Distant from Taiwan are recognized. Among them, one species are described as new to science: *Felisacus bellus* n. sp., and three are new to Taiwan: *Felisacus okinawanus* Miyamoto, *Felisacus gressitti* Miyamoto, and *Felisacus insularis* Miyamoto. Parameres are described and illustrated. Pictures are given. Key to species from Taiwan are included.

摘要

本文記述臺灣產愛蕨盲椿屬(*Felisacus* Distant)昆蟲5種，包括1新種：豔麗愛蕨盲椿*Felisacus bellus* n. sp.，及3新記錄種：琉球愛蕨盲椿*Felisacus okinawanus* Miyamoto、桂氏愛蕨盲椿*Felisacus gressitti* Miyamoto、島嶼愛蕨盲椿*Felisacus insularis* Miyamoto。並附各種之照片、抱器繪圖、及檢索表。

Key words: Miridae, Bryocorinae, *Felisacus*, new species.

關鍵詞: 盲椿科、單室盲椿亞科、愛蕨盲椿屬、新種

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Genus *Felisacus* Distant (Hemiptera: Miridae) of Taiwan

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ABSTRACT

Five species of Genus *Felisacus* Distant from Taiwan are recognized. Among them, one species are described as new to science: *Felisacus bellus* n. sp., and three are new to Taiwan: *Felisacus okinawanus* Miyamoto, *Felisacus gressitti* Miyamoto, and *Felisacus insularis* Miyamoto. Parameres are described and illustrated. Pictures are given. Key to species from Taiwan are included.

Key words: Miridae, Bryocorinae, *Felisacus*, new species.

Introduction

The Genus *Felisacus* Distant includes 25 species in the world (Schuh, 1995), with a mainly tropical and subtropical distribution. The only host plants recorded for species of this genus are ferns (Woodward, 1954). According to Esaki (1926), there are two species, *Felisacus longiceps* Poppius and *Felisacus magnificus* Distant, in Taiwan. In this paper, five species are recorded.

Specimens examined are based on the collection deposited at the National Museum of Natural Science (NMNS), and the Taiwan Agricultural Research Institute (TARI). Methods of dissection and terminology followed Miyamoto (1965). The type specimens are deposited at TARI.

Key to species of genus *Felisacus* Distant from Taiwan

1. First antennal segment swollen

- subbasally 2
 First antennal segment cylindrical ... 3
 2. Left paramere stout and broad
 *F. longiceps* Poppius
 Left paramere slender and narrow ...
 *F. okinawanus* Miyamoto
 3. Membrane cell broader than cuneus ..
 4
 Membrane cell narrower than cuneus
 *F. gressitti* Miyamoto
 4. Ventral surface of body with 2 black spots *F. bellus* n. sp.
 Ventral surface of body without 2 black spots *F. insularis* Miyamoto
 1. *Felisacus bellus* n. sp. (Fig. 1 A & Fig. 2A)

Male. Head and collar shining brown. Antenna brown, clypeus brown, epipharynx fuscous, basal antenna and antecular region whitish yellow. Pronotum shining brown, posterior margin black. Rostrum fuscous. Scutellum brown

with a black band in middle. Hemelytra transparent, with brown margin. Cuneus reddish brown. Ventral surface of body with two black spots. Hind coxa black. Dorsal abdomen reddish brown, ventral surface of abdomen whitish ochraceous, last abdominal segment reddish brown.

Body elongate, subparallel-sided, and covered with sparse hairs on dorsum. Head wider than long, with a few hairs, interocular space about half as long as head wide, a median longitudinal furrow on vertex; clypeus subparallel-sided, a little elevated; eyes subglobular, situating on antero-lateral parts of head; antenna long, first segment straight, with a few fine hairs, three apical segments pubescent. Rostrum moderately long, tip reaching middle of mesosternum.

Pronotum broader than long, narrowed anteriorly, distinctly constricted before middle, posterior margin pubescent, with fine, erect long hairs; basal width of pronotum about half times as much as apical width; apical collar separated by a transverse furrow from calli, furrow with a few distinct punctures on both sides; contiguous calli impunctate, hind border emarginate in middle, both sides of border sharply furrowed and furnished with some strong punctures; posterior lobe impunctate; scutellum a little swollen dorsally, with sparse, erect, long hairs. Hemelytra elongate, extending far beyond apex of abdomen; inner half of clavus elevated and border to outer area sharp, with a row of punctures along lower margin of the border; cuneus slightly longer than 2 times as much as wide, somewhat narrow toward behind and obliquely truncate at apex; membrane cell longer and broader than cuneus. Legs long and slender, with long erect hairs on ventral side of femora and with pubescence on tibiae and tarsi.

Left paramere broad, gently narrowed, inwardly curved, suddenly narrowed basally and become pointed apically. Right paramere thickened and widened in middle,

narrowed inwardly curved and pointed apically. Penis with 2 sclerotized spiculi.

Measurements (in mm): Head width 0.65, interocular distance 0.35; antennal segment length 1.1, 1.4, the others broken; rostrum length 1.4. Collar length 0.05, width 0.3; anterior pronotal lobe length 0.25, width 0.55; posterior pronotal lobe length 0.55, width 1.0. Scutellum length 0.45, claval commissure length 0.7; corium length 1.9, width 0.4, cuneus length 0.7, width, 0.3; cuneus apex to membrane apex 1.0; largest width of both hemelytra at repose 1.4; basal width 1.0, body length 4.6.

Female. Similar to male in general aspect and coloration.

Holotype: Male, NANTOU: Tongpu (1200 m), 20-22-VI-1980, C. C. Chen, Paratype: NANTOU: Tongpu (1200 m), 1, 18-21-X-1982, K. C. Chou & S. C. Lin, 1, 20-24-VI-1983, K. C. Chou & C. Y. Wong.

This species is similar to *Felisacus rubricuneus* Carvalho 1956, can be separated by the first antennal segment not incrassate and the shape of the parameres.

Distribution: Taiwan.

Etymology: From the Latin "bellus", refers to pretty.

2. *Felisacus gressitti* Miyamoto, 1965 (Fig. 1 B & Fig. 2 B)

Felisacus gressitti Miyamoto, 1965 Kontyu 33(1): 162.

Male. Head, and anterior pronotal lobe orangish or brownish yellow. Frons, clypeus, and anterocular region fuscous. Eye dark brown. First antennal segment brown, second segment reddish brown and two apical segments fuscous; rostrum brownish yellow. Collar yellow. Pronotum brown, posterior pronotal lobe black with a brown longitudinal band in medium. Scutellum brown. Hemelytra semi-hyaline,

cuneus semihyaline, clavus dirty yellow, inner margin fuscous, narrowly infuscate along claval commissure; corium hyaline, narrow costal area semihyaline, both margins of area fuscous, and with a semicircular dark fuscia along outer and posterior margins; membrane semihyaline. Legs yellowish on basal part and orangish yellow from middle of femora to apex of tarsi. Ventral surface of body and abdomen brown, dorsal abdomen reddish brown. Coxae whitish-yellow.

Head narrowed, a little wider than long, covered with hairs, interocular space twice as long as width of eye, vertex with a weak longitudinal median furrow; eye subocular, locating on antero-lateral parts of head; antenna long, first segment somewhat sinuate. Rostrum long, tip reaching apex of posterior coxa. Pronotum broader than long, narrowed anteriorly, constricted before middle, with a row of distinct punctures along furrow behind calli; scutellum triangular, a little swollen dorsally, with a pair of pits at base. Hemelytra elongate, clavus broadly impressed along claval suture and covered with sparse, long hairs; cuneus subparallel-sided, long, more than twice as long as wide; membrane broad, with closed-cell larger than cuneus. Legs long and slender, femora furnished with some erect, long hairs on ventral side.

Left paramere elongate, curved and with some erect bristles; right paramere widened toward apex and obliquely truncated.

Measurements (in mm): Head width 0.55, interocular distance 0.3; antennal segment length 0.8, 0.9, 0.9, 0.7; rostrum 1.4. Collar length 0.1, width 0.4, anterior pronotal lobe length 0.2, width 0.55; posterior pronotal lobe length 0.4, width 1.0. Scutellum length 0.3, claval commissure length 0.7, corium length 1.7, width 0.5; cuneus length 0.6, width 0.2, cuneus apex to membrane apex 0.6, largest width of both hemelytra at repose 1.1; basal width 1.0; body length 4.3.

Female. Very similar to male, except legs and ventral surface of abdomen brown.

Distribution: Taiwan (new record), Okinawa (Miyamoto, 1965).

Materials examined: NANTOU: Meifeng, 5 5, 24-IX-1997, W. T. Yang (NMNS-2726-576, 577, 585, 586, 587, 566, 592, 593), Je-Ye-Tan, 1, 19-VII-1990, W. C. Chung, Tongpu, 7 12, 25-29-IX-1980, 5, 5-8-X-1981, T. Lin & W. S. Tang, 18-23-XI-1981, 4 21, T. Lin & W. S. Tang, 7, 19-23-VII-1982, L.Y. Chou & T. Lin, 3 3, 18-21-X-1982, Wushe, 4, 21-23-1983; 3, 17-VIII-1984.

3. *Felisacus insularis* Miyamoto, 1965 (Fig. 1C & Fig. 2 C)

Felisacus insularis Miyamoto, 1965, Kontyu 33(1): 159.

Male. Head and body orange or ochraceous. Eye black or dark brown. Collar yellow. Basal and second antennal segments ochraceous, two apical segments dark brown. Hemelytra transparent. Cuneus yellow brown, membrane transparent. Legs ochraceous. Ventral surface of body ochraceous. Ventral surface of abdomen yellow.

Body elongate, subparallel-sided and covered with sparse hairs on dorsum. Head wider than long, interocular space about half as long as head width, vertex with a feeble median longitudinal furrow; eye subglobular, located on antero-lateral parts of head; antenna long, first segment straight, with a few fine hairs. Rostrum moderately long, tip reaching middle of mesosternum.

Pronotum broader than long, narrowed anteriorly, constricted before middle, covered with a few erect long hairs, basal width of pronotum about 2 times as much as apical width; scutellum a little swollen dorsally, with sparse, erect, long hairs. Hemelytra elongate, extending far beyond apex of abdomen; inner half of clavus elevated and border to outer area

sharp, with a row of punctures along lower margin of border; cuneus slightly 3.5 times longer than wide, narrowed toward behind and truncate at apex. Legs long and liner, with long erect hairs on ventral side of femora and with pubescence on tibiae and tarsi.

Left paramere broad, gently narrowed apically and inwardly curved, with a small lobe in middle; right paramere thickened and widened in middle. Penis with 3 sclerotized spiculi.

Measurements (in mm): Head width 0.6, interocular distance 0.3; antennal segment length 0.8, 0.9; rostrum 1.4. Collar length 0.05, width 0.3; anterior pronotal lobe length 0.2, width 0.5; posterior pronotal lobe length 0.45, width 0.9. Scutellum length 0.4, claval commissure length 0.6; corium length 1.67, width 0.4; cuneus length 0.7, width 0.2; cuneus apex to membrane apex 0.6, largest width of both hemelytra at response 1.1; basal width 0.95; body length 4.1.

Female. Similar to male in general aspect and coloration

Distribution: Taiwan (new record), Okinawa (Miyamoto, 1965).

Materials examined: PINTUNG: Santiman, 11 10 , 24-III, 1982, K. C. Chou & S. P. Huang, 1 , 24-III-1982, K. C. Chou & C. C. Pan, 8 9 , 31-I-4-II-1982, 1983, K. C. Chou & S. P. Huang, 1 , 16-20-I-1984, K. C. Chou & C. C. Pan, Nantou: Lienhuachi, 1 , 19-XI-1999, C. S. Lin & W. T. Yang, HSINCHU: Wufeng (400 m), 1 , 14-16-VII-1982, K.C. Chou & C. C. Pan.

4. *Felisacus longiceps* Poppius, 1915 (Fig. 1 D & Fig. 2 D)

Felisacus longiceps Poppius, 1915, *Arch. Naturg.* 80A(8):55.

Male. Head brown, neck brown with sanguine stripe laterally. Frons brown, clypeus and antecular region and lorums with sanguine spot. Basal antennal segments reddish brown, other segments reddish fuscous. Collar brown. Anterior

pronotal lobe brown, posterior pronotal lobe shining black or fuscous. Scutellum shining fuscous. Most parts of hemelytra black or fuscous and hyaline, clavus black of fuscous; corium with black or fuscous X-shaped fascia; cuneus semi-hyaline, slightly black of fuscous along inner margin; membrane broadly black or fuscous with posterior margin semi-hyaline. Legs whitish ochraceous with black or fuscous ring and sanguine spot. Underside surface of body reddish brown or black; ventral surface of abdomen, coxae whitish yellow, last segment of abdomen black.

Body elongate, subparallel-sided and covered with some fine hairs. Head longer than wide, interocular space about half as long as head width, postocular subparallel-sided and no constriction; eye subglobular, situating on antero-lateral parts of head; antenna long, first segment swollen basally, second segment straight and a little swollen apically, with a few fine hairs, two apical segments pubescent. Rostrum moderately long, tip reaching middle of mesosternum.

Pronotum broader than long, narrowed anteriorly, distinctly constricted a little before middle, covered with a few fine hairs, basal width of pronotum 2.5 times as much as apical width; posterior lobe of pronotum with a series of coarser punctures at anterior constriction, posterior margin furnished with a few long hairs. Scutellum a little swollen dorsally, anterior margin with two coarse punctures, furnished with several long hairs. Hemelytra elongate, extending far beyond apex of abdomen; inner half of clavus elevated and border to outer area sharp, with a row of punctures along lower margin of the border; cuneus 2 times longer than width, somewhat triangular in shape; membrane cell longer but narrower than cuneus. Legs long, covered with erect long hairs.

Penis with a long distal seminal duct. Left paramere stout, broad at middle. Left

paramere long, slender, curved, with a thumb-like process.

Measurements (in mm): Head width 0.5, interocular distance 0.25; antennal segment length 0.6, 0.7, 0.8, 0.5; rostrum length 0.9. Collar length 0.1, width 0.3; anterior pronotal lobe length 0.2, width 0.4; posterior pronotal lobe length 0.4, width, 0.9. Scutellum length 0.3, claval commissure 0.6; corium length 1.5, width 0.5; cuneus length 0.6, width 0.25; cuneus apex to membrane apex 0.55; largest width of both hemelytra at repose 1.2; basal width 1.0; body length 3.9.

Female. Very similar to male, except legs whitish yellow.

Distribution: Taiwan.

Materials examined: PINTUNG: Kenting, 5 3, 26-IV-1992, C. Y. Li (NMNS 1446-858, 1446-613, 1446-270, 1446-84, 1446-812, 1446-101); Ouluanbi, 2 3, 12-13-III-1984, K. C. Chou, C. C. Pan, Mutan, 23 18, 9-XI-1999, NANTOU: Tongpu, 1, 18-23-IX-1981, T. Lin & W.S. Tang, Lienhuachi, 20 23, 19-XI-1999, 8 17, 15-17-XII-1999, C. S. Lin & W. T. Yang, TAIYUAN: Fuhsing, 1, 14-III-1989, K. W. Huang, TAIPEI: Tsashan, 9 4, 28-X-1957, K. S. Lin, Wulai, 2, 23-V-1962, S. C. Chiu, Mucha, 1, 15-XII-1991, C.Y. Li (NMNS 1395-29).

5. *Felisacus okinawanus* Miyamoto, 1965 (Fig. 1 E & Fig. 2E)

Felisacus okinawanus Miyamoto, 1965 Kontyu 33(1): 166.

Male. Head brown, vertex sanguineous or reddish brown; frons, clypeus yellowish brown; first antennal segment fuscous or reddish brown, rest yellow; neck, collar and pronotum shining brown; scutellum shining fuscous. Clavus, two transverse fasciae inwardly connected at corium, membrane fuscous; apical margin of membrane pale hyaline; legs yellow, frontal and middle femora with brown ring; posterior femur with fuscous

ring; ventral surface of body fuscous and abdomen ochraceous.

Body elongate, subparallel-sided and covered with some long hairs. Head longer than width, interocular space half as long as head wide including eyes. First antennal segment a little sinuate and incrassate on basal half; rest segments slenderer than first, furnished with a few of long hairs. Rostrum long, tip reaching apex of posterior coxa.

Pronotum wider than long, distinctly constricted before middle, with a row of strong punctures along constriction, basal width about nearly 2 times as much as apical width, posterior lobe twice as long as apical lobe, roundly swollen dorsally; scutellum subtriangle, somewhat swollen dorsally, smooth, furnished with some long erect hairs, with a pair of pits at base. Hemelytra elongate; inner half of clavus elevated, border sharp and with a row of punctures along its lower margin; cuneus elongate, triangular, about twice as long as wide; membrane broad, membrane cell longer but narrower than cuneus. Legs long, covered with erect long hairs.

Penis with a long distal seminal duct. Left paramere slender, narrowed at middle. Right paramere long, curved, with sub-basal process.

Measurements (in mm): Head width 0.4, interocular distance 0.2; antennal segment length, 0.6, 0.6, 1.75, 0.5; rostrum length 0.5. Collar length 1, width 0.6; anterior pronotal lobe length 0.2, width 0.5, posterior pronotal lobe length 0.4, width 0.8. Scutellum length 0.3, claval commissure length 0.5, corium length 0.6, width 0.4; cuneus apex to membrane apex 0.6; largest width of both hemelytra at repose 0.75; basal width 0.7; body length, 3.4.

Female. Very similar to male. Body brown with underside of body brown and ventral surface of abdomen whitish yellow.

Distribution: Taiwan (new record), Okinawa (Miyamoto, 1965).

Materials examined: PINTUNG:

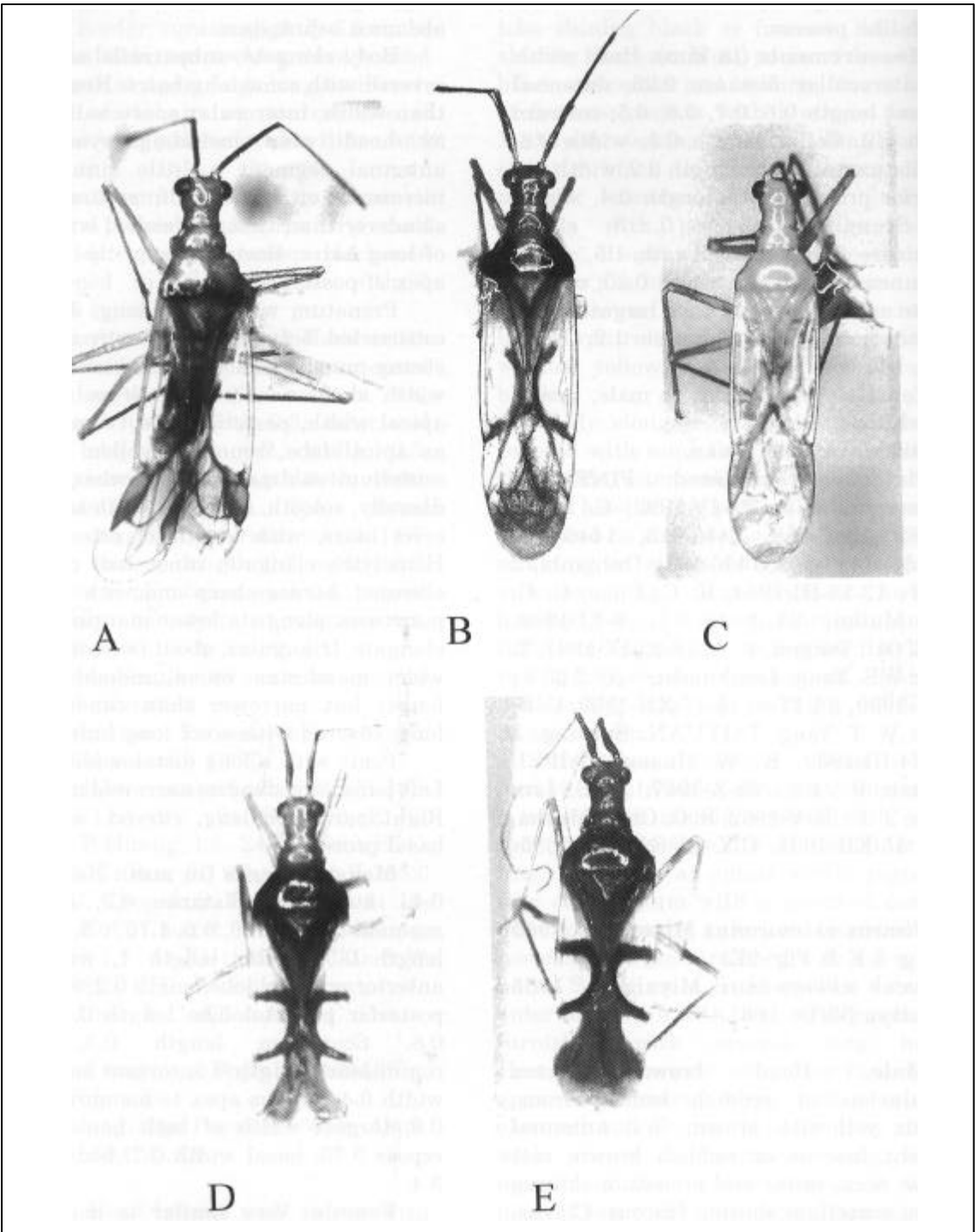


Fig. 1. Dorsal view of *Felisacus* spp.

A. *F. bellus* n. sp., B. *F. gressitti* Miyamoto, C. *F. insularis* Miyamoto, D. *F. longiceps* Poppius, E. *F. okinawanus* Miyamoto.

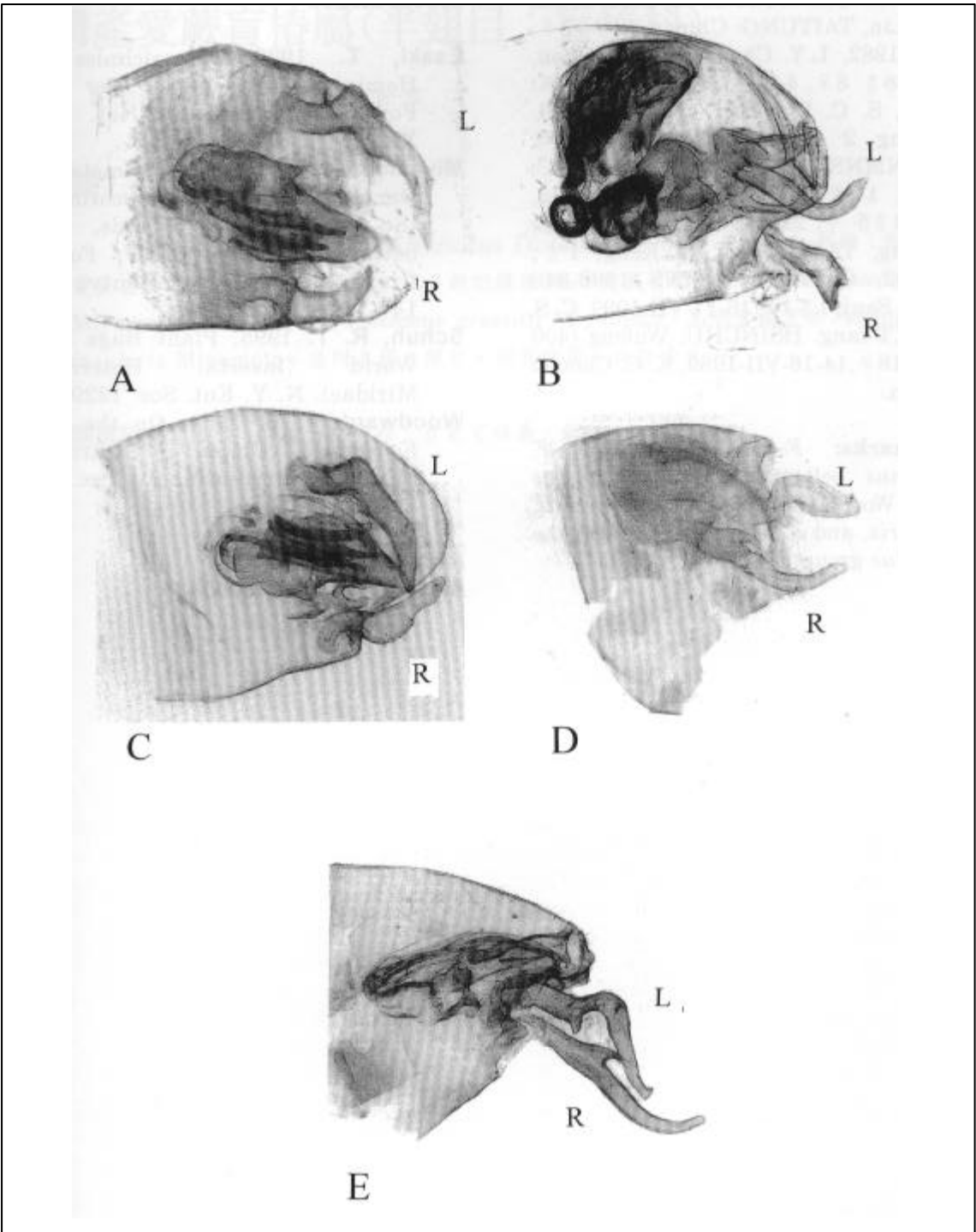


Fig. 2. Genitalia of *Felisacus* spp. (L, left paramere, R, right paramere)

A. *F. bellus* n. sp. B. *F. gressitti* Miyamoto, C. *F. insularis* Miyamoto, D. *F. longiceps* Poppius, E. *F. okinawanus* Miyamoto.

Kenting, 19 15 , 22-26-III-1982, T. Lin & S. C. Lin, TAITUNG: Chipen, 21 13 , 17-18-II-1982, L.Y. Chou & K. C. Chou, Lanyu, 28 8 , 4-9-V-1982, K. S. Lin, K. C. Chou, S. C. Lin, C. C. Pan, CHAIYI: Yunghsing, 2 2 , 15-XII-1988, K. W. Huang (NMNS 425-34, 425-35), NANTOU: Chiusan, 1 , 30-I-1963, S. C. Chiu, Wushe, 3 5 , 22-VII-1982, K. S. Lin & W.S. Tang, TAICHUNG: Ta Keng, 1 , 20-II-1992, C. Y. Li (NMNS 1390-34). MIAOLI: Sani, 1 1 , 16-17-VII-1999, C.S. Lin & W.T. Yang. HSINCHU: Wufeng (400 m), 21 18 , 14-16-VII-1982, K. C. Chou & C. C. Pan.

Remarks: *F. longiceps* and *F. okinawanus* belonged to the *magnifus* group of Woodward (1954) and *F. gressitti*, *F. insularis*, and *F. bellus* belonged to the *elegantulus* group of Woodward (1954).

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摘 要

本文記述臺灣產愛蕨盲椿屬(*Felisacus* Distant)昆蟲 5 種,包括 1 新種: 豔麗愛蕨盲椿 *Felisacus bellus* n. sp.,及 3 新記錄種: 琉球愛蕨盲椿 *Felisacus okinawanus* Miyamoto、桂氏愛蕨盲椿 *Felisacus gressitti* Miyamoto、島嶼愛蕨盲椿 *Felisacus insularis* Miyamoto。並附各種之照片,抱器繪圖,及檢索表。

關鍵詞: 盲椿科、單室盲椿亞科、愛蕨盲椿屬、新種。