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Revision of the Mirine Genus *Creontiades* DISTANT and
Allies from Japan (Heteroptera, Miridae)
Part I: True Members of *Creontiades*

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Abstract As the first part of revisionary papers of the genus *Creontiades* DISTANT and allies of Japan, *Creontiades* is redefined, and three species, *C. coloripes* HSIAO, *C. bipunctatus* POPPIUS and *C. minutus* POPPIUS, are re-described and reported from Japan for the first time. A new species, *C. brevis*, is described from the Ogasawara (Bonin) and the Volcano Islands. The lectotype of *C. minutus* is designated.

Key words: revision; Miridae; *Creontiades*; new species; new records; Japan.

Introduction

The mirine plant bug genus *Creontiades* was proposed by DISTANT (1883) to accommodate a single Nearctic species, *Megacoelum rubrinerve* Stål. The genus was characterized by the elongate body, oblique head, prominent eyes, presence of a distinct, longitudinal mesal sulcation on the vertex, long antennae and rostrum, subtriangular pronotum with the distinct collar, large and somewhat longitudinally raised scutellum, long and sparingly hirsute legs, and prominent tibial spines. FIEBER (1858) erected the monobasic genus *Megacoelum* for the European species, *Capsus infusum* HERRICH-SCHAEFFER, and defined it by the following features: vertical head, long eyes, somewhat projected frons, long rostrum that is reaching the anterior abdominal segments, wide and weakly arched scutellum, etc. Subsequently, many species have been described from the Old World tropics and subtropics under the two genera (e.g., DISTANT, 1904; 1909; POPPIUS, 1915 a, b). Since *Megacoelum* and *Creontiades* were originally erected to accommodate northern temperate species, the placement of species from Eurasia and the Old World tropics and subtropics should be critically evaluated. Because DISTANT's and FIEBER's generic definitions were based on superficial characters, species with an elongate body, long antenna, and sulcate vertex has been placed in *Creontiades* or *Megacoelum*.

In Japan ESAKI (1950) recorded a Taiwanese *Creontiades bipunctatus* POPPIUS, 1915, from Honshu, Kyushu and the Ryukyus. CARVALHO (1956)

reported *C. pallidifer* from Micronesia including the Ogasawara Islands; *C. pallidifer* was originally described from North Bengal (India) by WALKER (1873). Subsequently, HASEGAWA (1960) considered that the occurrence of *C. bipunctatus* in Japan had been incorrect, and he regarded the common Japanese species of *Creontiades* conspecific with *C. pallidifer* instead of *bipunctatus*. But I found that *C. bipunctatus* is actually distributed in Japan, remaining the identity of Japanese '*C. pallidifer*' still unclear. HASEGAWA (1960) also transferred a known Japanese species, *Calocoris tricolor* SCOTT, 1880, to *Megacoelum*, but LINNAVUORI (1963) placed it in *Creontiades*. Following LINNAVUORI's treatment, YASUNAGA (1988) added a new species endemic to Japan, '*Creontiades* *eurytus*', a close relative of *C. tricolor*, but the further examination has revealed that *tricolor* and *eurytus* are not congeneric with *C. rubrinervis*.

KERZHNER (1988a) described *C. vitreus* from the Russian Far East, which also significantly differs from true members of *Creontiades* in general appearance and the genital structure. HSIAO (1963) described *Creontiades gossypii*, *C. coloripes* and *Megacoelum fuscescens* from China; I consider the generic placement of only the three Chinese species to be correct. Recently, LI and ZHENG (1991) described seven Chinese species related to *tricolor* as members of the genus *Megacoelum*. The generic placements of Japanese species as well as those from the eastern Eurasia are currently unsatisfactory, since related species were sometimes placed in different genera, and representatives of different genera were included in a single genus.

During my studies to clarify the Japanese fauna of *Creontiades* and its allies, eleven species were recognized. After comparing these Japanese species with *C. rubrinerve* and *Megacoelum infusum*, I can only place four of them in *Creontiades*, not conspecific with '*pallidifer*', and the remaining seven Japanese species and most of the East Asian species are not members of *Creontiades* or *Megacoelum*.

This paper is the first part of a series planned to clarify the Japanese fauna of *Creontiades* and its allies. In the present part, the genus *Creontiades* is redefined, a new species, and four true members of the genus are reported from Japan.

All measurements in the text are given in millimeters. In the synonymic listings, only original references and references subsequent to CARVALHO catalogue (CARVALHO, 1959) are cited for each taxon. Depositories of the specimens examined are abbreviated as follows: DBNU: Department of Biology, Nankai University, Tianjin, China; DEI: Deutsches Entomologisches Institut, Eberswalde; ELKU: Entomological Laboratory, Faculty of Agriculture, Kyushu University, Fukuoka; HBLK: Hikosan Biological Laboratory, Kyushu University; HUE: Biological Laboratory, Hokkaido University of Education,

Sapporo; IC: Mr. ICHITA's personal collection, Kuroishi City, Aomori; MC: Dr. MIYAMOTO's personal collection, Sawara-ku, Iikura, Fukuoka; MNHA: Museum of Nature and Human Activities, Hyogo; NHML: Department of Entomology, the Natural History Museum, London; NIAES: National Institute of Agro-Environmental Sciences, Tsukuba, Ibaraki; NSMT: Department of Zoology, National Science Museum, Tokyo; USNM: U. S. National Museum of Natural History, Washington, D. C.

Genus Creontiades DISTANT

Type species: *Megacoelum rubrinerve* Stål 1862, Stettin. ent. Ztg., 23: 321, by monotypy.

Creontiades DISTANT, 1883, Biol. Ctr.-Am., Rhyn., 1: 237; CARVALHO, 1959, Arq. Mus. nac., Rio de Janeiro, 48: 73; WAGNER & WEBER, 1964, Faune Fr., 67: 109, 113; WAGNER, 1970-71, Ent. Abhandlung. Mus. Tierk. Dresden, 37, suppl.: 133, 267; SLATER & BARANOWSKY, 1978, How to know the true bugs, p. 168; KERZHNER, 1988b, Opredel. Nasek. daln. vost. SSSR., 2: 783, 815; HENRY & WHEELER, 1988, in Cat. Het. Canad. Continental U. S., p. 302; SCHUH, 1995, Plant Bugs of the World, p. 743.

Diagnosis. Recognized by the elongate and rather slender body, pale general coloration, impunctate and weakly rugose dorsum, oblique head, a longitudinal mesal sulcation on the vertex, long antenna that is longer than the body, an apical dark spot on the scutellum, rather delicate hemelytra, long legs, and distinct tibial spines.

Redescription. Body generally pale in coloration, slender, parallel- or subparallel-sided, moderate in size (5.5–7.8 in total length); dorsal surface clothed with pale suberect pubescence. Head oblique, somewhat granulate, bearing silky hairs; length of head subequal to width including eyes in anterior view; eyes somewhat removed from pronotal collar; vertex with a distinct, longitudinal mesal sulcation, not carinate basally; frons striolate. Antennae long, as long as or longer than body; segment I broadest, with several dark bristles; segment II longest, not incrassate, almost linear or slightly thickened toward apex; segment II almost linear, longer than basal width of pronotum; segment III slightly longer than I. Rostrum long, exceeding hind coxa, sometimes reaching abdominal segment V or VI.

Pronotum somewhat roughened, weakly and transversely rugose, narrowly margined basally, not carinate laterally; calli weak; collar about as thick as base of antennal segment II, bearing several erect setae. Mesoscutum somewhat shagreened; scutellum flat, weakly rugose, with an apical dark spot in many species. Hemelytra impunctate, relatively delicate, weakly granulate or shagreened, clothed with pale, suberect pubescence, not strongly declivous at cuneal fracture, with almost straight lateral margins. Legs long; femora and tibiae provided with spines; hind femora somewhat flattened; tibial spines pale brown

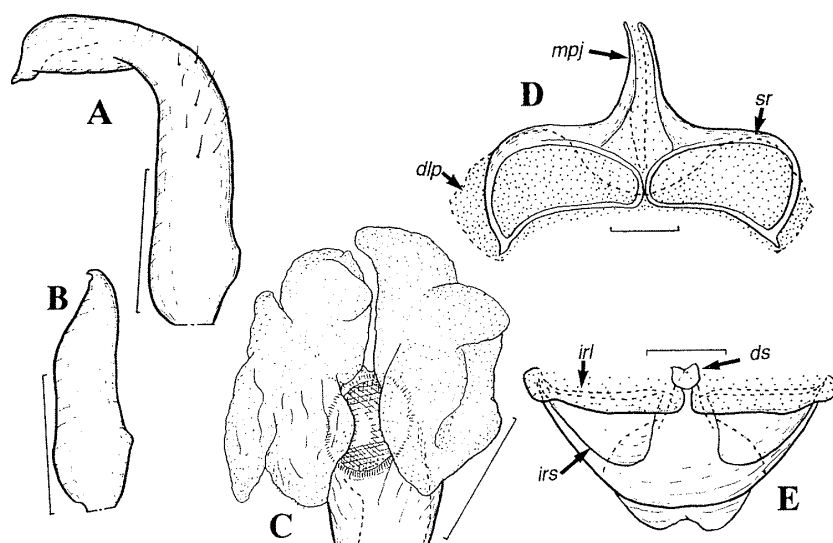


Fig. 1. Male (A-C) and female (D-E) genitalia of *Creontiades rubrinervis* from the New World, a type species of the genus. A, Left paramere; B, right paramere; C, vesica; D, sclerotized rings; E, posterior wall of bursa copulatrix. Scales: 0.2 mm. Abbreviations: *dlp* = dorsal labiate plate, *ds* = dorsal structure, *irl* = interramal lobe, *irs* = interramal sclerite, *mpj* = mesal projection (of sclerotized ring) and *sr* = sclerotized ring.

to brown, distinct; tarsomere III longer than I or II. Abdomen much shorter than hemelytra.

Male genitalia (Fig. 1, A-C): Genital segment without thumb-like processes near base of each paramere. Parameres with short sensory hairs which are sometimes invisible or absent; left paramere semi-circularly curved, with a small apical projection; right paramere short and straight, with an apical hook. Vesica bilobed, highly symmetrical, without any distinct sclerites or spiculi; gonoporal rim thin; ejaculatory duct not expanded apically.

Female genitalia (D-E): Sclerotized ring with median triangular process, rings subcontiguous mesally. Posterior wall of bursa copulatrix with rather wide interramal lobes; interramal sclerite usually continuous, but sometimes divided mesally.

Distribution. Widely distributed in the temperate zones of the Palearctic Region, Old World tropics and subtropics, Australian and Nearctic Regions, and the islands of the tropical Pacific; most species occurring in the eastern Eurasia and Southeast Asia.

Discussion. The genus *Creontiades* has been frequently confused with *Megacoelum*, because both genera share such external characters as the elongate body, longitudinal mesal sulcation on the vertex, and long antenna that are longer than the body. The former genus is readily distinguished from the latter by the following characters: the more slender body; paler general coloration; somewhat shagreened and weakly rugose dorsal surface; weakly arched scutel-

lum; paler tibial spines; male genital segment with weak or lacking thumb-like process; almost membranous vesica without any spiculi; thin gonopore aperture; and female sclerotized ring with a distinct mesal projection that is considered here as a distinct autapomorphy for *Creontiades*.

Since three species previously placed in *Creontiades*, *eurytus* YASUNAGA, *tricolor* SCOTT and *vitreus* KERZHNER, are not accommodated by *Creontiades* or *Megacoelum*, new genera will be proposed for them and discussed in detail in the subsequent parts of this series. Many Oriental species described in *Creontiades* and *Megacoelum* should require further study to correctly ascertain their generic placement.

Japanese species of *Creontiades* are usually found on grasses and weeds of the Gramineae or Legminosae, and have two or more generations per year. Some species are known as pests of economic importance. The species associated with broadleaf host plants, such as *tricolor* SCOTT and *vitreus* KERZHNER, are considered not to be true members of *Creontiades*.

Creontiades coloripes HSIAO

(Figs. 2, A; 3, A; 4, A-D & M-N)

Creontiades coloripes HSIAO, in HSIAO & MENG, 1963, Acta zool. sin., 15: 442, 448; ZHENG, 1995, Proc. ent. Soc. Wash, 97: 462; SCHUH, 1995, Plant Bugs of the World, p. 744.

Creontiades bipunctatus (nec POPPIUS, 1914): ESAKI, 1950, Icon. Ins. Jpn., p. 258, fig. 677.

Creontiades bipunctatus?: MIYAMOTO & YASUNAGA, 1989, in Check List Jpn. Ins., 1: 159.

Creontiades pallidifer (nec WALKER, 1873): HASEGAWA, 1960, Bull. Nagaoka municip. Sci. Mus., 1: 50; MIYAMOTO, 1965, in Icon. Ins. Jpn. Col. nat. Edi., 3: 99, pl. 50, fig. 1; MIYAMOTO & LEE, 1966, Sieboldia, Fukuoka, 3: 383; LEE, 1971, in Illus. Encyc. Fn. Fl. Korea, 12, Insecta 4: 373, 559, pl. 24, fig. 235; MIYAMOTO, 1976, in Fn. Fl. Tsushima Is., p. 504; TAWARA, 1977, Tatehamodoki, (12): 34; ICHITA, 1988, Celastrina, (20): 134; YASUNAGA & al., 1989, in Fn. Fl. Nagasaki Pref., p. 227; MIYAMOTO & YASUNAGA, 1989, in Check List Jpn. Ins.,

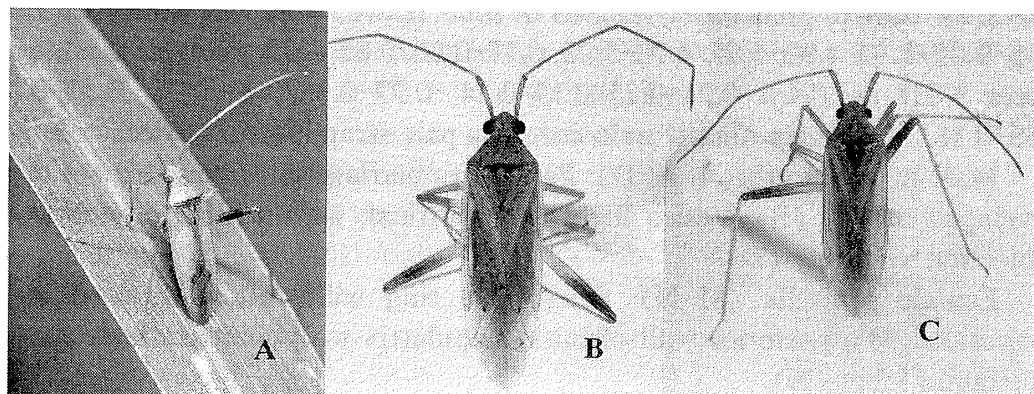


Fig. 2. Females of *Creontiades* spp. A, *C. coloripes* at Muroto, Kochi Pref. (photographed by Mr. KAWAMURA); B, *C. bipunctatus*; C, *C. brevis* n. sp.

1: 159; LEE & KWON, 1991, Nat. Life. Taegu, 21: 28; YASUNAGA & *al.*, 1993, in Field Guide to Jpn. Bugs, p. 158, pl. 19, fig. 68; ZHENG, 1995, Proc. ent. Soc. Wash. 97: 462.
Creontiades stramineus (nec WALKER, 1873): POPPIUS, 1915a, Archiv Naturg., 8A(8): 14; ESAKI, 1926, Annl. Mus. natn. Hung., 14: 171.

Diagnosis. Recognized by the moderate to large body, long antennal segment I that is apparently longer than width of the head including eyes, long rostrum that is much exceeding the hind coxa, and mesal red stripe on the hemelytra. The general coloration and body size are significantly variable.

Redescription. Body elongate, parallel-sided; dorsal surface generally pale stramineous brown. Head pale brown, with reddish markings or spots, granulated, clothed with silky pubescence; vertex partly with pale reddish markings; frons striolate with pale red grooves. Antennae almost unicolorously pale stramineous brown; segment I longer than width of head including eyes; lengths of segments I–IV (σ^7/φ): 1.00–1.30/1.02–1.23, 2.47–3.25/2.57–3.30, 2.25–2.75/2.42–2.88, 1.05–1.50/1.25–1.33. Rostrum pale brown, reaching abdominal segment V; apical part of segment IV infuscate; lengths of segments I–IV (σ^7/φ): 0.75/0.75–0.85, 0.85/0.70–0.78, 0.47–0.48/0.61–0.63, 0.85/0.85–0.88.

Pronotum pale brown, sometimes narrowly darkened near yellowish brown posterior margin, impunctate and weakly rugose, uniformly clothed with silky, recumbent or suberect pubescence; collar about as thick as antennal segment II, bearing several pale, erect setae. Mesoscutum and scutellum usually sanguineous brown, sometimes with dark spots, clothed with recumbent silvery pubescence; apex of scutellum always darkened. Hemelytra pale stramineous brown, impunctate and weakly shagreened, sparsely clothed with suberect silky pubescence, sometimes with small dark spots on inner parts of corium and clavus; inner margin of clavus, and anal ridge and posterior inner part of corium usually reddish; membrane somber yellowish brown, with partly reddish veins. Leg pale brown; apical part of hind femur usually widely sanguineous or reddish brown; hind tibia with a dark spot at extreme base; tibial spines pale brown or brown, prominent; lengths of hind femur, tibia and tarsus (σ^7/φ): 3.35/3.05–3.30, 4.90–5.05/4.70–5.05, 0.77–0.80/0.65–0.75; those of hind tarsomeres I–III (σ^7/φ): 0.21–0.25/0.15–0.24, 0.27–0.38/0.31–0.37, 0.33–0.38/0.35–0.38. Abdomen almost unicolorously pale stramineous brown.

Male genitalia (Fig. 4, A–D): Parameres hairless; left paramere not much developed basally (B). Vesica highly symmetrical, with a small, membranous projection ventrally (D).

Female genitalia (M–N): Sclerotized ring with rather widened mesal projection (M); posterior wall of bursa copulatrix with comparatively narrow interramal lobes (N).

Dimensions. σ^7/φ : Body length 6.20–7.70/6.20–7.80; head width including eyes 1.01–1.18/1.02–1.13; vertex width 0.32–0.38/0.39–0.43; total rostral

length 2.87–2.93/2.87–3.00; mesal pronotal length including collar 0.92–1.23/0.92–1.18; basal pronotal width 1.57–2.03/1.65–2.03; maximum width across hemelytra 2.10–2.18/1.97–2.38.

Specimens examined. JAPAN: [Honshu] 3 ♀, Sakata, Yamagata Pref., 5. viii. 1954, H. HASEGAWA (NIAES); 1 ♂, Suginami, Tokyo, 13. ix. 1950, N. FUKUHARA (NIAES); 1 ♂, same locality, 29. vii. 1954, N. FUKUHARA (NIAES); 1 ♂, Taketoyo, Aichi Pref., 26. v. 1982, B. TANAKA (NSMT); 1 ♀, Wakaura, Wakayama C., Wakayama Pref., 29. vi. 1991, M. KITABATA (HUES); 1 ♀, Chiyo River, Tottori C., Tottori Pref., 5. x. 1993 (HUES); 1 ♂, Ibara C., Okayama Pref., light trap, 17. vi. 1993 (HUES). [Kyushu] 1 ♀, Yamada Park, Kitakyushu C., Fukuoka Pref., on *Lespedeza* sp., 20. vii. 1990, T. YASUNAGA (HUES); 1 ♀, Nokonoshima Is., Fukuoka C., Fukuoka Pref., 8. vii. 1986, S. MIYAMOTO (MC); 1 ♀, same locality, 11. ix. 1986, S. MIYAMOTO (MC); 5 ♂ 1 ♀, same locality, 23. ix. 1986, S. MIYAMOTO (MC); 2 ♂, same locality, 15. ix. 1988, S. MIYAMOTO (MC); 1 ♂ 1 ♀, Gannosu, Fukuoka City., Fukuoka Pref., 11. vi. 1985, T. YASUNAGA & al. (HUES); 1 ♂, Mt. Kurodake, Mts. Kuju, Oita Pref., 15. ix. 1985, S. NOMURA (HUES); 8 ♂ 8 ♀, Takahama, Nomozaki T., Nagasaki Pref., on *Kummerowia striata*, 15. ix. 1990, T. YASUNAGA; 1 ♂, Sakasegawa, Amakusa, Kumamoto Pref., 11. vii. 1961, HIDAKA & AZIM (ELKU); 2 ♀, Hazeudo, Amakusa, 12. vii. 1961, HIDAKA & AZIM (ELKU); 1 ♀, Mt. Kado-dake, Amakusa, Kumamoto Pref., 13. vii. 1961, HIDAKA & AZIM (ELKU); 1 ♀, Unagi-ike, Satsuma, Kagoshima Pref., 10. x. 1956, T. HIDAKA (ELKU); 1 ♀, Anbo, Yakushima Is., 22. viii. 1952, C. TAKEYA & Y. HIRASHIMA (ELKU); 1 ♂ 1 ♀, Koidomari, Yakushima Is., 1. vii. 1991, T. NAKAMURA (HUES). [The Ryukyus] 1 ♂, Kinsakubaru, Amami-Oshima Is., 3. xi. 1984, M. TOMOKUNI (NSMT); 1 ♀, Yona, Kunigami Vl., Okinawa Is., 28. vi. 1984, M. TOMOKUNI (NSMT); 1 ♀, Uehara, Iriomote Is., light trap, 9. xi. 1984, M. TOMOKUNI (NSMT); 1 ♂, Funaura, Iriomote Is., light trap, 28. v. 1990, M. HAYASHI & al. (HUES); 1 ♂, same locality, light trap, 11. v. 1993, T. YASUNAGA (HUES). TAIWAN: 1 ♀, Mt. Fushan, 500 m alt., Taipei Hsien, light trap, 25. viii. 1990, M. TOMOKUNI (NSMT). N. KOREA: 9 ♂ 9 ♀, Ryuko (Heiannando=Pyongannam-do), 1940, S. KOBAYASHI (ELKU). CHINA: 1 ♂, Anyang, Henan Prov., 25. iv. 1954, H.-I. MENG (paratype, DBNU); 1 ♀, same locality, 26. v. 1955 (paratype, DBNU).

Distribution. Japan* (Honshu, Shikoku, Kyushu, Tsushima Is., Yakushima Is., Amami-Oshima Is., Okinawa Is., Iriomote Is.), N. & S. Korea* (incl. Cheju Is.), Taiwan*, China (Henan Prov.).

Remarks. Since HASEGAWA (1960), this species has been called as *C. pallidifer* WALKER, originally described from India, but is distinguished from *pallidifer* by the longer antennal segments I and III, reddish hemelytra and hind femora, and different shape of the genitalia (see Figs. 3, C; 4, I–L & Q–R). The

general coloration is somewhat greenish when alive.

Creontiades coloripes is the commonest among the Japanese congeners. The host plants seem to be some leguminous species; I found both adults and last-instar nymphs on *Kummerowia striata*, and some colleagues and I collected it from *Lespedeza* sp. and *Trifolium* sp. In China, this species is cited as a pest of cotton (HSIAO and MENG, 1963).

Creontiades bipunctatus POPPIUS

(Figs. 2, B; 3, B; 4, E-H & O-P)

Creontiades bipunctatus POPPIUS, 1915a, Archiv Naturg., 8A(8): 11; ESAKI, 1926, Annl. Mus. natn. Hung., 14: 171; CARVALHO, 1959, Arq. Mus. nac., Rio de Janeiro, 48: 74; GAEDIKE, 1971, Beitr. Ent., 21; ZHENG, 1995, Proc. ent. Soc. Wash., 97: 462; SCHUH, 1995, Plant Bugs of the World, p. 743.

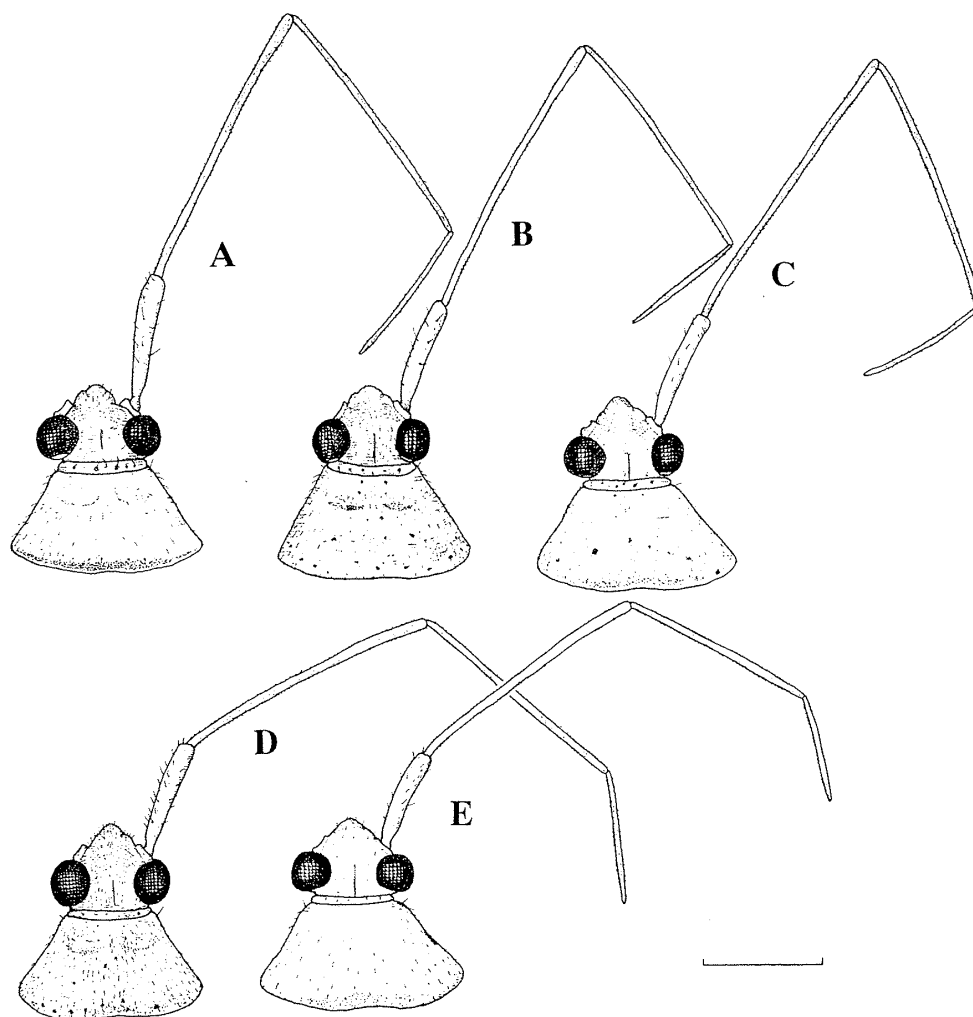


Fig. 3. Female heads and pronota of *Creontiades* spp. A, *C. coloripes*; B, *C. bipunctatus*; C, *C. pallidifer* from India; D, *C. brevis* n. sp.; E, *C. minutus*. Scale: 1 mm.

Diagnosis. Recognized by the rather short antennal segment I that is about as long as width of the head including eyes, short rostrum that is not exceeding the hind coxa, and almost unicolorous hemelytra that lack the mesal reddish striation.

Redescription. Body elongate, parallel-sided; dorsal surface generally pale brown, partly tinged with red, clothed with recumbent or suberect pale pubescence. Head pale brown, partly with reddish spots, bearing silvery pubescence; vertex partly pale red; frons striolate with reddish grooves; tylus with reddish spots, depressed at base. Antennae uniformly pale brown, somewhat tinged with red; segment I bearing pale brown spines, about as long as width of head including eyes and mesal length of pronotum; lengths of segments I–IV (σ^7/φ): 1.00–1.13/0.98–1.08, 2.47–2.80/2.50–2.70, 2.00–2.25/1.97–2.25, 1.07–1.17/1.00–1.25. Rostrum pale brown, reaching but not surpassing hind coxa; lengths of segments I–IV (σ^7/φ): 0.72–0.73/0.70, 0.70/0.62–0.63, 0.57–0.58/0.52–0.53, 0.72–0.78/0.77–0.78.

Pronotum weakly shagreened, sometimes with small dark spots, uniformly clothed with silvery, recumbent pubescence and bearing several pale, erect setae; posterior median part sometimes darkened or provided with dark spots; collar with several dark spots at each base of pale, erect seta, slightly narrower than apex of antennal segment IV. Mesoscutum and scutellum bearing silvery, recumbent pubescence; the latter with a pair of dark spots at anteromedian border, some smaller spots at middle, and an infusate apex. Hemelytra somewhat shagreened and roughened, partly tinged with red, rather sparsely clothed with pale, suberect hairs; inner apex of corium with a dark spot; inner parts of corium and clavus usually with small dark spots; membrane pale grayish brown, semitransparent, with reddish veins. Leg pale brown; apical part of hind femur sanguineous brown; tibial spines pale brown; apices of tarsomeres III infusate; lengths of hind femur, tibia and tarsus (σ^7/φ): 2.90–3.00/3.00–3.15, 4.40–4.45/4.50–4.75, 0.75/0.80–0.85; those of hind tarsomeres I–III (σ^7/φ): 0.18–0.24/0.21–0.24, 0.31–0.37/0.31–0.34, 0.35–0.39/0.36–0.38. Abdomen pale yellowish brown, generally with reddish markings or spots; ventrolateral margin widely sanguineous.

Male genitalia (Fig. 4, E–H): Left paramere somewhat broadened basally (F). Vesical membrane well developed; two main lobes contiguous to each other in maximally expanded condition (G–H).

Female genitalia (O–P): Mesal projection of sclerotized ring somewhat narrowed subapically (O); interrampal lobe of posterior wall somewhat widened laterally (P).

Dimensions. σ^7/φ : Body length 6.50–7.00/6.50–7.00; head width including eyes 1.05–1.12/0.98–1.08; vertex width 0.32–0.38/0.40–0.43; total rostral length 2.55–2.65/2.60–2.65; mesal pronotal length including collar 0.98–1.05/

0.95–1.00; basal pronotal width 1.67–1.88/1.62–1.80; maximum width across hemelytra 1.82–1.90/1.92–2.00.

Specimens examined. JAPAN: [Kyushu] 1♂, Shimadomari, Kagoshima Pref., 7. x. 1956, T. HIDAKA (ELKU); 2♀, Unagi-ike, Kagoshima Pref., 10. x. 1956, T. HIDAKA (ELKU); 1♂1♀, Koidomari, Yakushima Is., 1. vii. 1991, T. NAKAMURA (HUES). [The Ryukyus] 1♀, Coast of Ankiyaba, Tatsugo T., Amami-Oshima Is., 1. vi. 1993, T. YASUNAGA (HUES); 3♂2♀, Tatsugo T., Amami-Oshima Is., 30. v. 1996, M. TAKAI (HUES); 1♀, Wano, Kasari T., Amami-Oshima Is., 1. vi. 1993, T. YASUNAGA (HUES); 17♂8♀, Shurisakiyama, Naha C., Okinawa Is., on grasses of Gramineae, 5–6. xi. 1992 and 19. v. 1993, T. YASUNAGA (HUES); 3♂, Naha C., Okinawa Is., 17. vi. 1960, Y. KOMURO (NIAES); 4♀, Ishigaki Is., x. 1994 and v. 1995, M. TAKAI (HUES). TAIWAN: 1♂, Anping, 7. viii., H. SAUTER (holotype, DEI).

Distribution. Japan* (southern Kyushu, Yakushima Is., Amami-Oshima Is., Okinawa Is., Ishigaki Is.), Taiwan.

Remarks. This species is closely related to *C. coloripes*, from which it can be distinguished by the generally slenderer body, shorter rostrum, shorter antennal segment I that is as long as or shorter than width of the head including eyes, shorter pronotum, and weaker red markings on the hemelytra and hind femora, and different shape of the vesica.

In the original description, POPPIUS (1914: 11–12) described “antennal segment II somewhat ‘shorter’ than III” (p. 12, l. 17), but this sentence should be read as “antennal segment II somewhat ‘longer’ than III”, because no mirine plant bug has such shortened antennal segment II. The present examination of the holotype male revealed the length of each antennal segment as 1.08, 2.75, 2.35 and 1.28.

In Okinawa Island, *C. bipunctatus* has been frequently collected by sweeping graminous grasses that appear to be the host plant.

Creontiades brevis YASUNAGA, n. sp.

(Figs. 2, C; 3, D; 5, A–E)

Creontiades pallidifer (nec WALKER, 1873): CARVALHO, 1956, B. P. Bishop Mus. Ins. Micronesia, 7: 79, fig. 48.

Diagnosis. Recognized by the small and slender body, short antennal segment I that is slightly shorter than width of the head including eyes, and somber markings sometimes widely presenting on the hemelytra.

Description. Body relatively small, slender and subparallel-sided; dorsal surface pale stramineous brown, with rather sparse vestiture. Head pale stramineous brown, partly reddish, granulate or shagreened, with silvery, recumbent

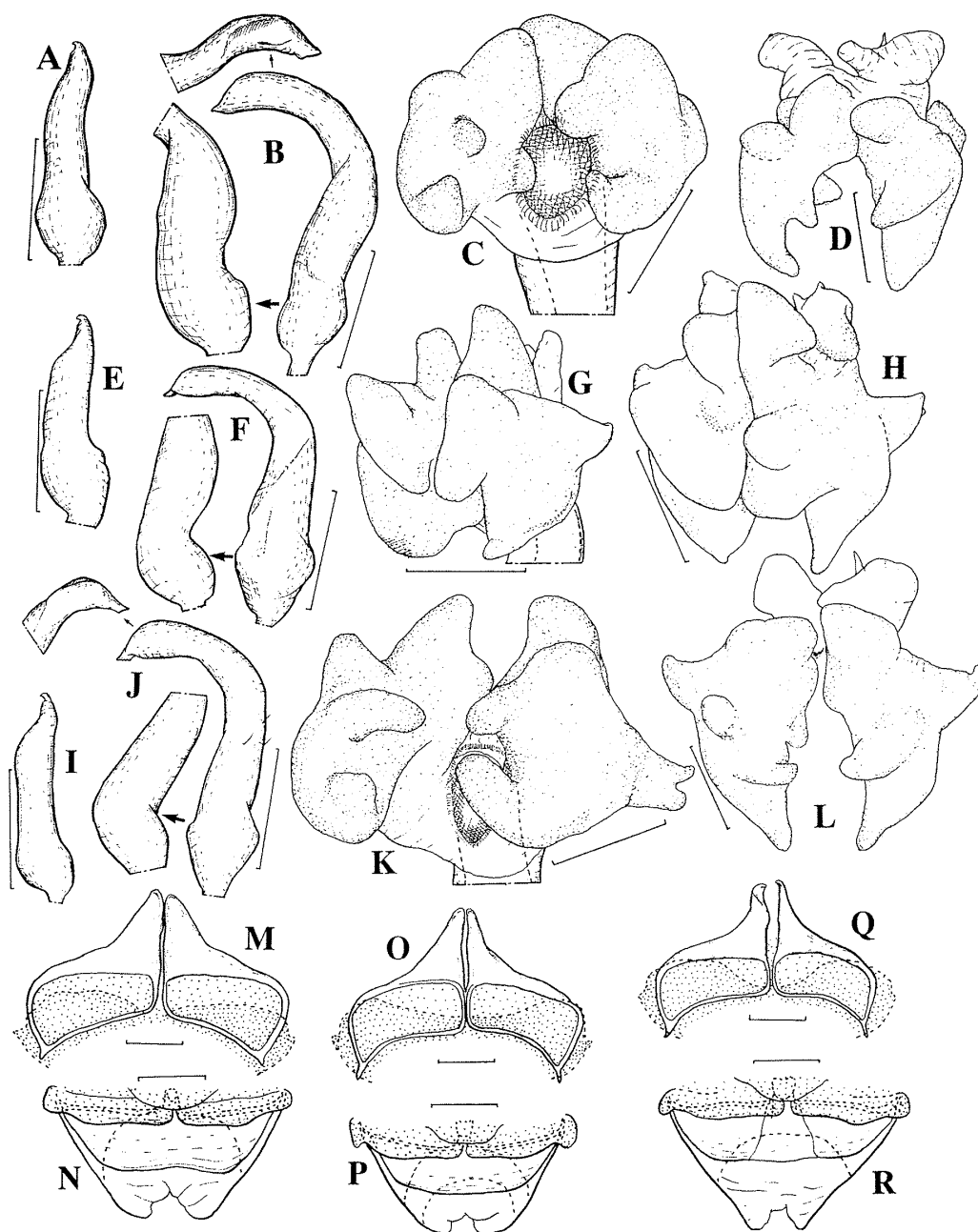


Fig. 4. Male (A-L) and female (M-R) genitalia of *C. coloripes* (A-D & M-N), *C. bipunctatus* (E-H & O-P), and *C. pallidifer* from India (I-L & Q-R). A, E & I, right paramere; B, F & J, left paramere; C, G & K, vesica in anterior view; D, H & L, ditto in dorsal view; M, O & Q, sclerotized rings; N, P & R, posterior wall of bursa copulatrix. Scales: 0.2 mm.

pubescence; longitudinal mesal sulcus on vertex usually reddish; frons striolate with reddish grooves, bearing several silky suberect hairs. Antennae entirely pale brown; segment I provided with reddish spots, bearing brown spines, about

as long as or slightly shorter than basal width of pronotum; lengths of segments I–IV (σ^7/φ): 0.85–1.00/0.85–0.95, 2.17–2.40/1.97–2.53, 1.87–2.08/1.75–1.79, 1.02–1.17/1.01–1.15. Rostrum pale brown, surpassing hind coxa, reaching abdominal sternum II or III; apical half of segment IV infusate; lengths of segments I–IV (σ^7/φ): 0.70–0.73/0.67–0.73, 0.70/0.67–0.68, 0.50/0.50, 0.72–0.75/0.72–0.73.

Pronotum shallowly rugose, granulate and somewhat roughened, clothed with silvery, recumbent pubescence; posterior part usually darkened or provided with dark spots but posterior margin pale. Thoracic pleurite sometimes widely darkened or reddish. Mesoscutum and scutellum pale brown to reddish brown, usually with dark, symmetrical markings, clothed with silvery, recumbent pubescence; apex of scutellum infusate. Hemelytra pale stramineous brown, minutely granulate, sometimes with somber stripes along veins, bearing silvery, suberect pubescence; clavus sometimes with dark spots or widely darkened; apical inner corner of corium with a dark spot; inner margin of cuneus tinged with red; membrane pale grayish brown, semitransparent, with reddish veins. Leg pale brown; apical part of hind femur weakly darkened or sometimes with dense, sanguineous spots; tibial spines pale brown to brown; apex of tarsomere III slightly infusate; lengths of hind femur, tibia and tarsus (σ^7/φ): 2.75–2.85/2.47–2.70, 4.15–4.35/3.50–4.10, 0.70–0.80/0.60–0.85; those of hind tarsomeres I–III (σ^7/φ): 0.18–0.22/0.20–0.24, 0.31–0.32/0.27–0.28, 0.37–0.38/0.31–0.37. Abdomen pale brown; ventrolateral part reddish or sanguineous.

Male genitalia (Fig. 5, A–C): Genital segment roundly produced near base of left paramere (A). Left paramere projected basally, bearing visible sensory setae (C).

Female genitalia (D–E): Sclerotized ring with gradually narrowed mesal projection and not strongly thickened anterolateral rim (D).

Dimensions. σ^7/φ : Body length 5.40–5.70/5.40–6.00; head width including eyes 0.93–1.02/0.90–1.00; vertex width 0.30–0.33/0.36–0.39; total rostral length 2.50–2.60/2.42–2.53; mesal pronotal length including collar 0.85–0.97/0.80–0.93; basal pronotal width 1.50–1.85/1.37–1.60; maximum width across hemelytra 1.75–1.78/1.53–1.83.

Holotype: σ^7 , Tamagawa Reservoir, Hahajima Is., Ogasawara Isls., 16. vii. 1991, T. YASUNAGA (HUES). Paratypes: [Ogasawara Islands] 2 σ^7 2 φ , same data as for holotype; 1 σ^7 1 φ , Kuwanokiyama, Hahajima Is., 16. vii. 1991, S. KAMITANI (HUES); 1 φ , Oki Vl., Hahajima Is., 14. iv. 1993, T. YASUNAGA (HUES); 1 σ^7 , Kita Vl., Hahajima Is., 15. iv. 1993, T. YASUNAGA (HUES). [Volcano Islands] 10 σ^7 10 φ , Minami Iwo-jima Is., 12–20. vi. 1982, M. SATO (NSMT).

Distribution. Japan (Ogasawara and Volcano Islands).

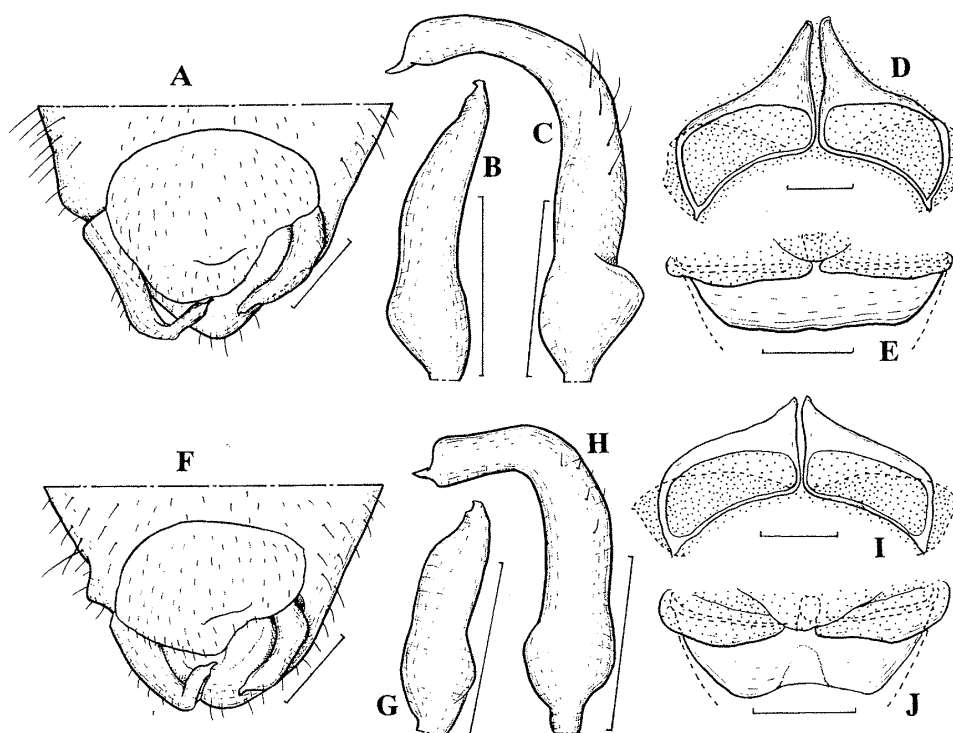


Fig. 5. Male (A-C & F-H) and female (D-E & I-J) genitalia of *Creontiades brevis* n. sp. (A-E) and *C. minutus* (F-J). A & F, genital segment in dorsal view; B & G, right paramere; C & H, left paramere; D & I, sclerotized rings; E & J, posterior wall of bursa copulatrix. Scales: 0.2 mm.

Remarks. This new species is similar in general appearance to *C. bipunctatus* and *C. pallidifer*, from which it is easily distinguished by the apparently smaller body, and somber streaks sometimes presenting on dorsum. It has been misidentified as *C. pallidifer* since CARVALHO (1959). It is possible that *C. brevis* may be widely distributed over the Micronesia, because CARVALHO reported '*C. pallidifer*' from many Micronesian Islands.

I collected some adults from gramineous grasses at Hahajima Island, which are not yet to be confirmed as the host plant.

Creontiades minutus POPPIUS

(Figs. 3, E; 5, F-J)

Creontiades minutus POPPIUS, 1915a, Archiv Naturg., **8A**(8): 12; ESAKI, 1926, Annl. Mus. natn. Hung., **14**: 171; CARVALHO, 1959, Arq. Mus. nac., Rio de Janeiro, **48**: 75; GAEDIKE, 1971, Beitr. Ent., **21**: 149; SCHUH, 1995, Plant Bugs of the World, p. 745.

Diagnosis. Easily recognized by the small and elongate oval body, short antennal segment I that is about 3/4 as long as width of the head including eyes,

short rostrum that is not much surpassing the hind coxa, and shiny and weakly rugose pronotum.

Redescription. Body elongate oval, subparallel-sided; dorsal surface uniformly pale brown, shining, less rugose, with sparse vestiture. Head unicolorously pale brown, shining, minutely granulate, bearing sparse, silky pubescence; any grooves and sulcations on vertex and frons not pigmented. Antennae pale brown; segment I with brown or reddish spots, shortened, about $3/4$ as long as basal width of pronotum, bearing brownish spines; lengths of segments I–IV (σ^7/φ): 0.72–0.75/0.75, 1.80–2.35/2.00–2.19, 1.52–2.03/1.72–1.78, 0.78–0.80/0.85–0.88. Rostrum pale brown, reaching or slightly exceeding hind coxa; apical part of segment IV infusate; lengths of segments I–IV (σ^7/φ): 0.62–0.63/0.60–0.70, 0.57–0.58/0.62–0.68, 0.42–0.43/0.45–0.50, 0.65/0.62–0.70.

Pronotum shiny pale brown, immaculate or narrowly darkened posteriorly, very weakly and shallowly rugose, sparsely clothed with silky, suberect pubescence; posterior margin not darkened. Mesoscutum and scutellum pale brown to brown, sometimes provided with several dark spots, bearing silky pubescence; apex of scutellum infusate. Hemelytra unicolorously pale brown, shining, minutely granulate, sparsely furnished with silky, short pubescence; clavus and corium sometimes with somber spots; membrane pale brown, semitransparent, with pale brown veins. Leg pale brown; apical part of hind femur usually reddish or sanguineous brown; tibial spines pale brown or brown; apex of tarsomere III narrowly infusate; lengths of hind femur, tibia and tarsus (σ^7/φ): 2.45–2.50/2.80–2.88, 1.78–1.80/2.00–2.04, 0.65/0.65–0.70; those of hind tarsomeres I–III (σ^7/φ): 0.16–0.19/0.15–0.23, 0.25–0.32/0.27–0.29, 0.28–0.37/0.31–0.37. Abdomen almost uniformly pale stramineous brown; ventral surface rarely widely darkened in φ .

Male genitalia (Fig. 5, F–H): Genital segment with a triangular process near base of left paramere (F). Parameres apparently short; right paramere shortened but rather broad (G); left paramere strongly curved at apical $1/3$, bearing short sensory setae (H).

Female genitalia (I–J): Sclerotized ring with thickened anterior rim; mesal projection not developed and short (I); interramal lobes somewhat removed mesally (J).

Dimensions. σ^7/φ : Body length 5.30–5.60/5.50–6.30; head width including eyes 0.97–1.00/1.02–1.10; vertex width 0.26–0.38/0.40–0.41; total rostral length 2.22–2.28/2.35–2.40; mesal pronotal length including collar 0.85–0.95/0.97–1.07; basal pronotal width 1.52–1.68/1.70–1.90; maximum width across hemelytra 1.73–1.94/1.92–2.10.

Lectotype: σ^7 , Anping, Formosa (Taiwan), 29. vi. 1912, H. SAUTER (DEI).

Additional specimens examined. JAPAN (the Ryukyus): [Tokara Isls.]

1 ♀, Takarajima Is., 18. v. 1991, H. UENO (HUES). [Okinawa Is.] 2♂5 ♀, Shurisakiyama, Naha C., 19. v. 1993, T. YASUNAGA (HUES); 1 ♀, Oura, 11. x. 1990, M. HAYASHI (HUES); 1 ♀, Ura, light trap, 2. x. 1991, M. HIRATATE (HUES); 1♂, Yona, Kunigami Vl., light trap, 20–24. v. 1993, T. YASUNAGA (HUES). [Ishigaki Is.] 1♂, Shinkawa, 16. iv. 1981, K. BABA (NSMT); 1 ♀, Yonehara, 10. iv. 1986, T. YASUNAGA (HUES); 2 ♀, Hirano, at light, 14–15. v. 1993, T. YASUNAGA & Y. NAKATANI (HUES); 1 ♀, v. 1995, M. TAKAI (HUES). [Iriomote Is.] 5 ♀, Haemida, near Toyohara, 11. v. 1993, T. YASUNAGA & Y. NAKATANI (HUES); 2 ♀, Funaura, light trap, 28–29. v. 1990, M. HAYASHI (HUES); 2 ♀, Funaura, light trap, 18. xi. 1994, K. YOSHIKAWA (HUES). TAIWAN: 2♂, Taitung, S.–E. Taiwan, 20. iv. and 3. x. 1971, N. FUKUHARA (NIAES); 1♂, Kenting, S. Taiwan, 23. iv. 1971, N. FUKUHARA (NIAES).

Distribution. Japan* (the Ryukyus: Takarajima, Okinawa, Ishigaki & Iriomote Isls.), Taiwan.

Remarks. This species is readily distinguished from other congeners by the small and elongate oval body, shiny and almost immaculate dorsal surface, and short antennal segment I that is apparently shorter than width of the head including eyes.

Creontiades minutus is frequently found on gramineous grasses, which are considered to be the host plants, and is occasionally attracted to light.

(to be continued)

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