from their base and the medial surface is hispid. These traits are not known to occur in any other species of *Trichogramma*.

The three species described here are the only known New Zealand representatives of the speciose subgenus *Trichogramma*. Although four species of this cosmopolitan group were introduced to the country from other parts of the world for biological control, these apparently have not become established (Cameron and Allan 1989), and none occurred in the collection examined for this study. The neighboring Australian *Trichogramma* fauna is represented by several species of the nominate subgenus as well as three species of the subgenus *Trichogrammanza* (Oatman and Pinto 1987). Australian representatives of the former group reflect Asian affinities however (Pinto and Stouthamer 1994) and none has yet been recorded from New Zealand. The Drepanophorum Group is not known to occur in Australia. *Trichogrammanza*, on the other hand, is restricted to Australia and New Zealand, and the same or very similar species occur in both countries. Thus, the known *Trichogramma* of New Zealand include only four named species: *T. maori*, *T. valentinei*, *T. falk*, and *T. (Trichogrammanza) funiculatum*. The nominate species are related to a New World element; the *Trichogrammanza* are closely tied to Australia.

It should be mentioned that Noyes and Valentine (1989) estimated at least 15 undetermined species of New Zealand *Trichogramma* in addition to *T. funiculatum*. This estimate was based on a collection of card mounted specimens that we also examined for this study. Separation of *Trichogramma* to species is virtually impossible unless specimens are mounted on slides, and Noyes and Valentine appear to have overestimated the diversity of their collection. This material includes no more than eight species: the three described above, one or, at most, two very similar *Trichogrammanza* (including *T. funiculatum*), and two or three additional new species closely related to *T. valentinei* and *T. falk*. Unfortunately, the latter are represented by limited material that cannot adequately be described at this time. Included here are two specimens of a wingless form taken on Auckland Island at 150°, 32′ S latitude, a collection representing the southernmost record for the genus.

**Key to the New Zealand Species of the Drepanophorum Group of *Trichogramma***

1. Male genitalia as in Figs. 5, 6 with inter-ovisellar process (IVP) spinelike; IVP originating at approximately same level as parameres. Forewing (Fig. 3) broad, with a distinct RS1, setal track and a short setal fringe, length of longest setae in fringe less than 0.1 maximum wing length .................................................. *T. maori*

1′. Male genitalia as in Figs. 9, 10, with inter-ovisellar process (IVP) subclavate; IVP originating distinctly anterior to parameres. Forewing (Fig. 4) much narrower, usually without a distinct RS1, setal track and with a much longer setal fringe, length of longest setae in fringe 0.15–0.20 maximum wing length ....... 2

2. Male flagellum (Fig. 1) with setae short and robust, the length of longest setae ca. 1.5 basal width of flagellum; lateral surface with basalmost placoid sensillum widely separated from apical placoid sensillum (Fig. 2) .... *T. valentinei*

2′. Male flagellum with longer, more slender setae, the length of longest setae at least twice the basal width of flagellum; lateral surface with basalmost placoid sensillum attaining base of apical placoid sensillum ........ *T. falk*

**Acknowledgments**

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Fig. I. Sirthenea koreana, male paratype. Also with brown spot behind eye. Antenna yellow; segment II and base of segment III brown, but intercalar segments yellow. Ros- trum yellow. Fore lobe of pronotum black; hind lobe brown to black. Scutellum black. Hemelytra yellow at base; inner half of clavus and all corium behind apex of clavus dark brown to black. Membrane black with whitish apical spot. Legs yellow, without embrowned areas. Ventral side of thorax dark brown to black, propleurae behind suture paler, acetabulae yellow. Abdomen underneath dark brown to black, segment II, median part of segment III, anterior half of connexival segments III-VI, connexival segment VII, and genital segments in both sexes yellow.

Structure: Head porrect; anteocular part much longer than postocular one. Antennal segment I reaching or slightly surpassing apex of head, segment II distinctly longer than III and IV. Rostral segment II not surpassing hind margin of head. Fore lobe of pronotum with distinct median and lateral furrows. Hemelytra in male nearly reaching to slightly surpassing apex of abdomen, in female reaching middle to hind margin of abdominal segment VI. Fossa spongiosa of fore legs 0.4 times as long as fore tibia. Exterior margin of metepistema with 2 parallel, equally developed carinae. Male genitalia as figured (Figs. 4-7).

Measurements (in mm, females in parentheses): length 19-22 (23-24), width at pronotum 4.5-5.1 (4.5-4.8), at abdomen 4.1-4.6 (4.5-4.8), head length 3.4-3.8 (4.2-4.5), anteocular part 2.0-2.2 (2.5-2.6), postocular part 0.55-0.60 (0.7-0.8), head width 2.1-2.3 (2.3-2.5), interocular distance 1.0-1.1 (1.25-1.30), interocellar distance 0.55-0.60 (0.60-0.65), length of antennal segments (I-IV) 1.1-1.2 (1.2-1.3), 2.45-2.90 (2.2-2.4), 2.0-2.3 (1.8-1.9), 2.1-2.2 (2.0), length of rostral segments (I-III) 0.9-1.0 (1.1-1.2), 2.5-2.9 (3.5-3.7), 1.5-1.6 (1.6-1.7), length of fore pronotal lobe 2.9-3.2 (3.4-3.7), of hind pronotal lobe 1.8-2.0 (1.6-1.8), of scutellum 1.8-2.0 (1.8-2.0), of hemelytra 12.2-13.7 (11.2-12.1).

Variation. — In both specimens from Daedeong, the exterior vein of clavus is brown and basal part of corium exterior to vein Cu light brown, so that only a longitudinal stripe on clavus and the interobasal part of corium remain yellow. Also legs, especially hind tibiae, are darkened in these specimens. No other differences are found.

Nymph (IV instar). — Head, rostrum and antennal segment I yellow; antennal seg-


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A NEW SPECIES OF SIRTHENEA SPINOLA (HETEROPTERA: REDUVIIDAE)
FROM KOREA

CHANG EON LEE AND IZYASLAV M. KERZHNER

(CEL) Department of Biology, College of Natural Sciences, Kyungpook National University, Taegu 702-701, Republic of Korea; (IMK) Zoological Institute, Russian Academy of Sciences, St. Petersburg 199034, Russia.

Abstract.—Sirthenea koreana, new species, is described from Korea. It is similar to S. dimidiata Horváth but differs by the yellow head and numerous yellow areas on the ventral side of the abdomen.

Key Words: Heteroptera, Reduviidae, Sirthenea, Korea

Three species of the genus Sirthenea Spinola were known from the East Palearctic (Cai and Lu 1990). Sirthenea flavipes (Stål 1855) is distributed in nearly the whole Oriental Region, South China (to 37° N) and Japan (Honshu, Kyushu, Shikoku). It was recorded also from Korea (Central, South, Chejudo - Okamoto 1924; Maruda 1929; Lee and Kwon 1991; etc.), but it is evident that records from Central and partly from South Korea were based on the new species described below. Sirthenea dimidiata Horváth, 1911 is distributed in South China (to 30° N) and in Taiwan (type locality). Sirthenea melanota Cai and Lu, 1990 is described from one male collected in the Shaanxi Prov. of China. Comparison with specimens of S. flavipes and descriptions of two other species shows that most Korean specimens belong to an undescribed species.

Following abbreviations are used for collections in Korea, in which the type material of the new species is kept (curators are indicated in parentheses): ASI—Department of Entomology, Agricultural Sciences Institute, Rural Development Administration, Suwon (Dr. S.B. Ahn); CL—collection of Prof. C.E. Lee, Taegu; CNU—Department of Agricultural Biology, Chungnam National University, Taegon (Prof. K.R. Choe); EWUB—Department of Biology, Ewha Womans University, Seoul (Prof. B.J. Rho); EWUM—Natural History Museum, same University (Prof. I.R. Lee); GNU—Department of Biology, Gyeongsang National University (Prof. J.S. Park); KINU—Department of Agricultural Biology, Kyungpook National University, Taegu (Prof. Y.J. Kwon); SNUS—College of Agriculture and Life Sciences, Seoul National University, Suwon (Prof. K.S. Woo); TU—Department of Biology, Taegon University, Taegon (Prof. S.H. Nam).

Sirthenea koreana Lee and Kerzhner,
NEW SPECIES
(Figs. 1–7)

Description.—Color. Head yellow, with brown to black subtriangular spot in ocellar area usually subdivided partly or completely by light median stripe; in darkest specimens, this spot prolonged back to hind margin of head, in females sometimes absent; lateral parts usually with more or less distinct oblique brownish stripe from base of rostrum to lower border of eye and then to hind margin of head; in darkest specimens,
also with brown spot behind eye. Antenna yellow; segment II and base of segment III brown, but intercalar segments yellow. Rostrum yellow. Fore lobe of pronotum black; hind lobe brown to black. Scutellum black. Hemelytra yellow at base; inner half of clavus and all corium behind apex of clavus dark brown to black. Membrane black with whitish apical spot. Legs yellow, without embrowned areas. Ventral side of thorax dark brown to black, propleurae behind su-
ture paler, acetabulae yellow. Abdomen beneath dark brown to black, segment II, median part of segment III, anterior half of connexival segments III–VI, connexival segment VII, and genital segments in both sexes yellow.

Structure: Head porrect; anteocular part much longer than postocular one. Antennal segment I reaching or slightly surpassing apex of head, segment II distinctly longer than III and IV. Rostral segment II not surpassing hind margin of head. Fore lobe of pronotum with distinct median and lateral furrows. Hemelytra in male nearly reaching to slightly surpassing apex of abdomen, in female reaching middle to hind margin of abdominal segment VI. Fossa spongiosa of fore legs 0.4 times as long as fore tibia. Exterior margin of metepisterna with 2 parallel, equally developed carinae.

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Measurements (in mm, females in parentheses): length 19–22 (23–24), width at pronotum 4.5–5.1 (4.5–4.8), at abdomen 4.1–4.6 (4.5–4.8), head length 3.4–3.8 (4.2–4.5), anteocular part 2.0–2.2 (2.5–2.6), postocular part 0.55–0.60 (0.7–0.8), head width 2.1–2.3 (2.3–2.5), interocular distance 1.0–1.1 (1.25–1.30), interocellar distance 0.55–0.60 (0.60–0.65), length of antennal segments (I–IV) 1.1–1.2 (1.2–1.3), 2.45–2.90 (2.2–2.4), 2.0–2.3 (1.8–1.9), 2.1–2.2 (2.0), length of rostral segments (I–III) 0.9–1.0 (1.1–1.2), 2.5–2.9 (3.5–3.7), 1.5–1.6 (1.6–1.7), length of fore pronotal lobe 2.9–3.2 (3.4–3.7), of hind pronotal lobe 1.8–2.0 (1.6–1.8), of scutellum 1.8–2.0 (1.8–2.0), of hemelytra 12.2–13.7 (11.2–12.1).

Variation.—In both specimens from Dae-deong, the exterior vein of clavus is brown and basal part of corium exterior to vein Cu light brown, so that only a longitudinal stripe on clavus and the interobasal part of corium remain yellow. Also legs, especially hind tibiae, are darkened in these specimens. No other differences are found.

Nymph (IV instar).—Head, rostrum and antennal segment I yellow; antennal seg-
middle and hind legs fuscous. The new species is intermediate between S. dimidiatus and S. flavipes, sharing coloration of pronotum and hemelytra with the first and of head and abdominal venter with the second. The following specimens of S. flavipes from Korea were examined by us: Chollanamdo Prov., Pokildo I., Chunri, 21. VII. 1981, N.J. Yun, 1 female (EWUM); Kyongsangnamdo Prov., Jinyang, 26-30. VIII. 1992, R.G.O., 1 male (ASI); Chejudo I., Seogwipo, 1. and 13. IX.1975, H.S. Kim, 1 male, 1 female (ASI). All of them belong to f. apicalis.

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Figs. 2-7. Sirthenea koreana. 2, Head, lateral view. 3, Abdomen, lateral view. 4, Right paramere. 5, Left paramere. 6,7, Aedeagus in two positions.

Paratypes (all from Korea).—KYONGGIDO: Anseong, 30.V.1983, P.C. Hi, 1 male (EWUM); Enjeongbu, 3.VI.1966, B.J. Rho, 1 male (EWUB); Pokwangsa, 20.V.1981, B.J. Rho, 1 male (EWUB); Kwacheon, 28.V.1972, B.J. Rho, 1 male (EWUB); Kusanak Mts, 15.V.1965, B.J. Rho, 1 male (EWUB); Kwangneung, 28.V.1973, S.M. Lee, 2 males (KINU); Mt. Wangbang, 7.VI.1974, S.M. Lee, 1 male (KINU); Suweon, 28.V.1987, C.I.Y., 1 male (SNUS); Suweon, 3.VI.1987, Y.H. Ko, 3 males (SNUS); Suweon, 10.VI.1985, D.S. Yang, 1 male (SNUS); Suweon, 10.VI.1987, S.J.H., 1 male (SNUS); Suweon, 21.VI.1985, S.B. Ahn, 1 female (ASI); Suweon, 8.VII.1974, K.K. Choi, 1 male (ASI); Suigen (= Suweon), 1.III.1925, T. Hanaya, 1