

Three New Species of the Genus *Acrepyris* KIEFFER, 1905 (Hymenoptera, Bethylidae) from China

Mamoru TERAYAMA,

Division of Agriculture and Agricultural Life Sciences, The University of Tokyo,
Yayoi, Bunkyo-ku, Tokyo, 113–8657 Japan

Zai-fu XU

College of Natural Resources and Environment, South China Agricultural University,
Guangzhou, 510642 China

and

Jun-hua HE

Department of Plant Protection, Zhejiang University, Hangzhou, 310029 China

Abstract Three new species of the genus *Acrepyris* KIEFFER, 1905, are described from China: *A. sinensis* from Guangdong, Guangxi and Guizhou Provinces, *A. zhejiangensis* from Zhejiang Province, and *A. rugulosus* from Fujian and Zhejiang Provinces.

The genus *Acrepyris* KIEFFER, 1905, belonging to the subfamily Pristocerinae of the family Bethylidae, is represented by 30 species most of which are distributed in the New world, and a few in the Oriental and southeast Palaearctic regions (TERAYAMA, 1996). Eight species have so far been known in this genus from the East and Southeast Asia: 4 species from Japan, one species from Japan and Korea, and 3 species from Taiwan island (TERAYAMA, 1995, 1996, 1999a, b). All the species show distinct sexual dimorphism: males are fully winged and have ocelli; whereas females are apterous and lack ocelli. Therefore, the conspecificity of specimens of different sexes is difficult to determine, unless they were captured together with reliable data. The species of this genus of which hosts are known are parasites of elaterid coleopteran larvae (YASUMATSU, 1955; Evans, 1964).

In the course of our study on the bethylid fauna of China, we were able to examine the material of this genus from the mainland of China. After careful examination, we recognize three new species, which are described and illustrated in this paper.

The following abbreviations are used in the descriptions: HL—head length; HW—head width; WF—width of frons; LM—length of mesosoma; LP—length of propodeum in dorsal view; WPD—width of propodeal disc in dorsal view; FWL—forewing length; TL—total body length; EL—eye length; POL—distance between posterior ocelli; AOL—distance between posterior ocellus and anterior ocellus; OOL—distance from a posterior ocellus to nearest eye margin; WOT—distance across and including posterior ocelli; DAO—diameter of anterior ocellus.

All the types are preserved in the collection of the Department of Plant Protection, Zhejiang University, China.

Acrepyris sinensis sp. nov.

(Figs. 1–8)

Male (holotype). HL 2.24 mm; HW 2.21 mm; WF 1.36 mm; LM 3.70 mm; LP 1.12 mm; WPD 1.61 mm; FWL 7.3 mm; TL 10.2 mm.

Body black; mandible and legs blackish brown; antenna blackish brown; wings subhyaline with brownish tinge; wing veins and pterostigma brown.

Head almost as long as wide, with convex posterior margin in full-face view; posterolateral corner round, not forming an angle; WF 1.63 times HW and 1.42 times

EL; frons densely punctate, with smooth interspaces; punctures relatively large, ca. 0.05–0.08 mm in diameter, and separated from one another by 0.3–0.8 times their own diameters; punctures on vertex sparser and smaller than those on frons. Mandible punctate, with 3 teeth; basal tooth largest and next one smallest of all. Anterior margin of clypeus shallowly concave medially. Antenna with short suberect hairs; first 5 segments of antenna in a ratio of about 15 : 3 : 9 : 8 : 8.5 in length. EL 0.85 mm. Ocelli forming obtuse triangle; OOL 1.3 times WOT; POL : AOL = 5 : 4; DAO 0.16 mm.

Pronotal disc short, sparsely punctate, with smooth interspaces; transverse carina present at anterior 1/3; anterior margin of disc weakly convex in dorsal view; anterolateral corner not angulate. Mesoscutum sparsely punctate; scutellum punctate. Propodeum short, 0.69 times as long as maximum width, and widest at posterior 1/5 in dorsal view; median triangular area reticulate, without median longitudinal carina; posterolateral area with transverse rugae.

Gaster sessile, seen from above 2.15 mm width.

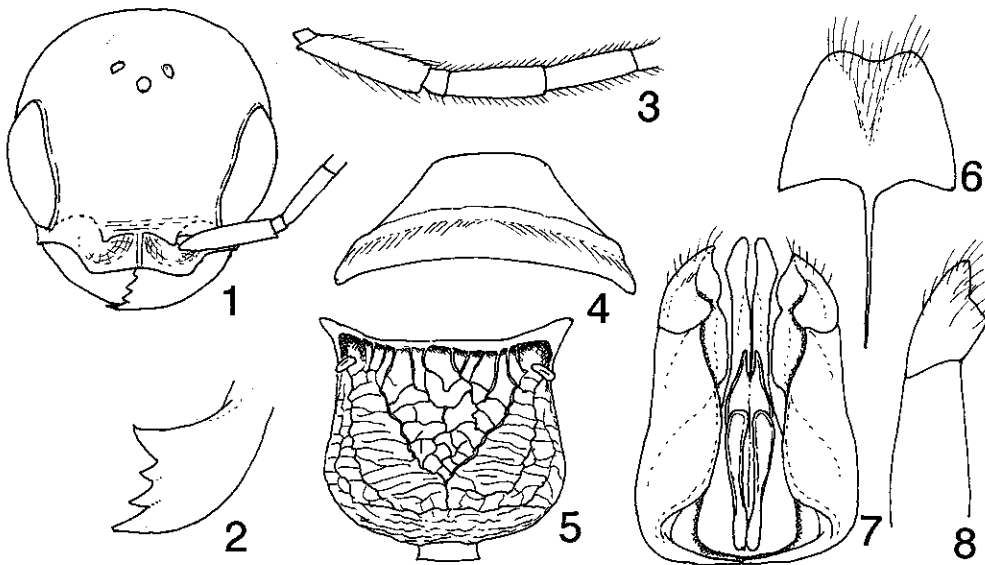
Subgenital plate and genitalia (paratype). Subgenital plate with long basal stalk and concave apical margin (Fig. 6). Genitalia short and broad (Fig. 7); paramere acute apically; inner side with a lobe; in lateral view paramere with obtusely angulate ventral margin and narrowly rounded apical margin (Fig. 8). Aedeagus produced beyond apical ends of parameres; ventral valve with rounded apex; middle valve tapering to acute apex; dorsal valve long and slender, terminating in small lobe.

Female. Unknown.

Distribution. China (Guangdong, Guangxi, Guizhou).

Holotype: Male, Neichujiang, Longsheng, Guangxi, 24. vi. 1982, J.-H. HE leg. Paratypes: 2 males, Fengkai, Guangdong, 16. v. 1992, X.-X. CHEN leg; 1 male, Mt. Fanjingshan, Guizhou, 9. vii. 1993, X.-X. CHEN leg.

Variation. Available males vary in head length from 2.21 mm to 2.42 mm and head width from 2.10 mm to 2.26 mm.



Figs. 1–8. *Acrepyris sinensis* sp. nov., male. — 1, Head, full-face view; 2, mandible; 3, first to fourth segments of antenna; 4, pronotum, dorsal view; 5, propodeum, dorsal view; 6, subgenital plate; 7, genitalia, ventral view; 8, paramere, lateral view.

Etymology. Named after the type locality.

Remarks. This species resembles *Acrepyris japonicus* (YASUMATSU, 1955) from Japan in having 3-toothed mandibles and the larger size of body, but is separated from the latter by the absence of a median longitudinal carina on propodeum, the rounded posterolateral corner of head, and the short propodeum.

Acrepyris zhejiangensis sp. nov.

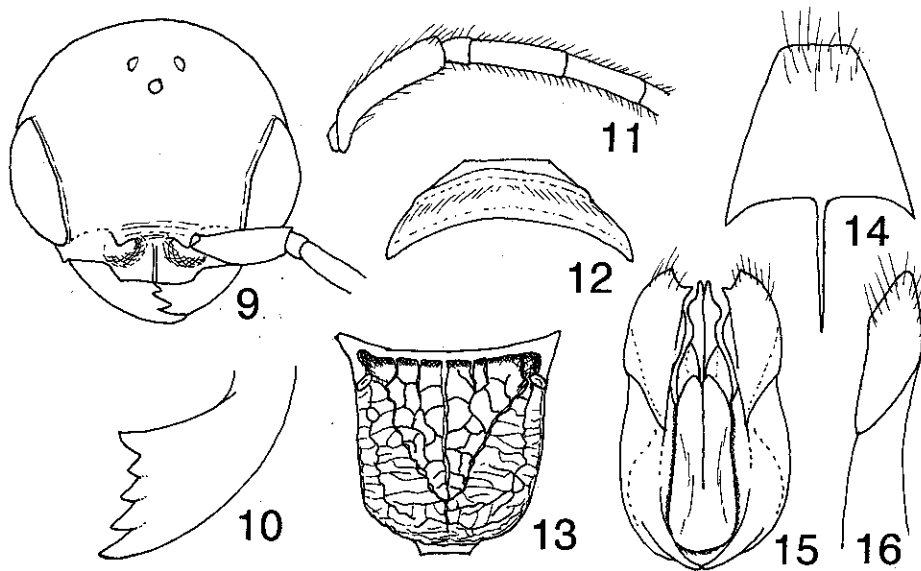
(Figs. 9–16)

Male (Holotype). HL 1.86 mm; HW 2.11 mm; WF 1.32 mm; LM 1.53 mm; LP 1.05 mm; WPD 1.34 mm; FWL 6.2 mm; TL 9.3 mm.

Body black; mandible and antenna blackish brown; coxae, trochanters and femora blackish brown; tibiae and tarsi brown; wings subhyaline; wing veins yellowish brown; pterostigma brown.

Head wider than long, 0.88 times as long as wide, with convex posterior margin in full-face view; posterolateral corner not angulate angle; WF 1.62 times HW, and 1.30 times EL; frons densely punctate, with smooth interspaces; punctures ca. 0.04–0.05 mm in diameter, and separated from one another by 0.5–0.8 times their own diameters; punctures on vertex sparser, smaller and shallower than those on frons. Mandible punctate, with 4 acute teeth; 2nd tooth smallest. Anterior margin of clypeus straight. Antenna with short suberect hairs; first 5 segments of antenna in a ratio of about 11 : 3 : 7 : 6 : 7 in length. EL 1.02 mm. Ocelli forming regular triangle; OOL 1.8 times WOT; POL : AOL = 1 : 1; DAO 0.18 mm.

Pronotal disc trapezoidal, with convex anterior margin and angulate anterolateral corners in dorsal view; transverse carina present at near anterior margin of disc; surface smooth with a few punctures; anterior surface strongly punctate. Mesoscutum and scutellum punctate, with smooth interspaces; punctures on scutellum much denser than



Figs. 9-16. *Acrepyris zhejiangensis* sp. nov., male. — 9, Head, full-face view; 10, mandible; 11, first to fourth segments of antenna; 12, pronotum, dorsal view; 13, propodeum, dorsal view; 14, subgenital plate; 15, genitalia, ventral view; 16, paramere, lateral view.

those on mesoscutum. Propodeum 0.78 times as long as wide, with weakly convex sides and median longitudinal carina; basal triangular area reticulate; posterolateral area with transverse rugae.

Gaster sessile, seen from above 1.87 mm width.

Subgenital plate and genitalia (paratype). Subgenital plate with a long basal stalk and straight apical margin (Fig. 14). Genitalia longer than wide (Fig. 15); paramere broad, angulate apically, with distinct tooth on inner margin at near apex; in lateral view apical margin narrowly rounded (Fig. 16). Aedeagus not exceeding apices of parameres; ventral valve long, with rounded apex and parallel sides; middle valve with obtuse angulate apex; dorsal valve with acute apex, outer margin with a lobe at near apex.

Female. Unknown.

Distribution. China (Zhejiang).

Holotype: Male, Deqing Zhejiang, 27. v. 1995, X.-X. CHEN leg. Paratypes: 1 male, same data as holotype; 1 male, Hangzhou, Zhejiang, 12. vi. 1987, Z.-H. XU leg.

Variation. The smallest specimen measures HL 1.35 mm and HW 1.46 mm.

Etymology. Named after the type locality.

Remarks. This species is easily separated from the other Asian congeners by the feature of the pronotal transverse carina which is closed to the anterior margin of pronotum, the wider head, and the 4-toothed mandibles.

Acrepyris rugulosus sp. nov.

(Figs. 17–24)

Male (holotype). HL 1.40 mm; HW 1.41 mm; WF 0.85 mm; LM 2.67 mm; LP 1.02 mm; WPD 0.94 mm; FWL 5.1 mm; TL 7.2 mm.

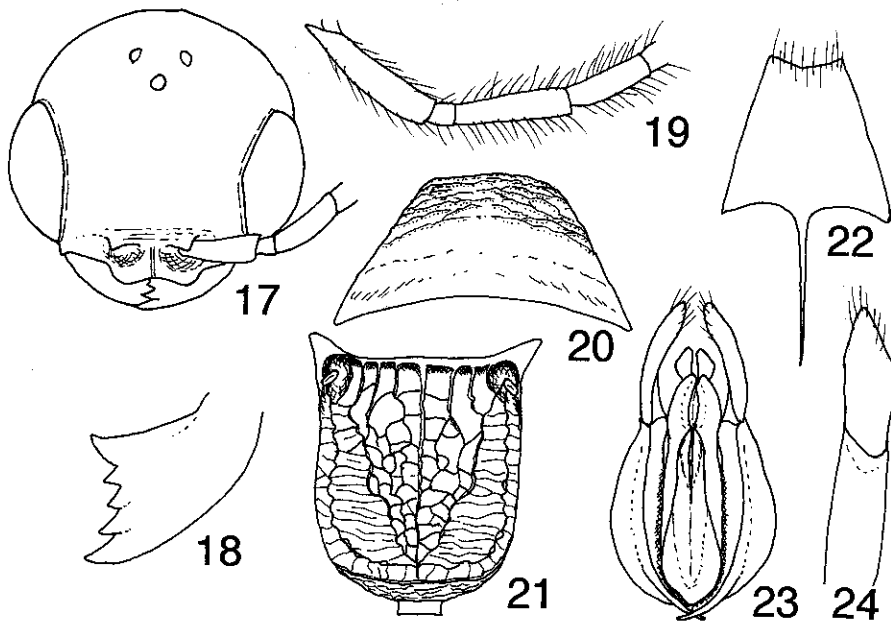
Head and mesonotum black; gaster black except for dark brown 1st and 2nd gastral tergites; mandible brown except for black basal half; antenna dark brown; legs dark brown, tibiae and tarsi somewhat lighter; wings subhyaline; wing veins and pterostigma brown.

Head almost as long as wide, with convex posterior margin in full-face view; posterolateral corner not angulate; WF 1.71 times HW, and 1.13 times EL; frons densely punctate, with smooth interspaces; punctures ca. 0.03–0.04 mm in diameters, and separated from one another by 0.5–1.0 times their own diameters; punctures on vertex sparser and smaller than those on frons. Mandible punctate, with 4 teeth; basal tooth prominently large, 2nd and 3rd teeth smaller. Anterior margin of clypeus weakly concave. Antenna with long erect hairs more than half of width of antennal segment; first 5 segments of antenna in a ratio of 10 : 3 : 8 : 7 : 3.5 in length. EL 0.75 mm. Ocelli forming a regular triangle; OOL 1.67 x WOT; POL : AOL = 1 : 1; DAO 0.12 mm.

Pronotal disc trapezoidal, densely punctate with smooth interspaces; anterolateral corner angulate in dorsal view; pronotal transverse carina absent, but 6–7 relatively irregular transverse rugae present at anterior 2/3 of disc and anterior surface. Mesonotum punctate, with smooth interspaces. Scutellum largely smooth, with a few punctures. Propodeum long, 1.05 times as long as wide, with parallel sides and a median longitudinal carina; median triangular area reticulate; posterolateral area with transverse rugae; transverse carina present at posterior margin of disc.

Gaster sessile, seen from above 1.20 mm width.

Subgenital plate and genitalia (paratype). Subgenital plate with a long basal stalk and shallowly concave apical margin (Fig. 22). Genitalia small and long (Fig. 23); paramere thin and long, with rounded apex; in lateral view dorsal and ventral margins each with a blunt angle; apical margin narrowly rounded (Fig. 24). Aedeagus short, far from apical ends of parameres; ventral valve tapering to a bluntly angulate apex; middle valve



Figs. 17–24. *Acrepyris rugulosus* sp. nov., male. — 17, Head, full-face view; 18, mandible; 19, first to fourth segments of antenna; 20, pronotum, dorsal view; 21, propodeum, dorsal view; 22, subgenital plate; 23, genitalia, ventral view; 24, paramere, lateral view.

elongate, with subparallel sides and rounded apical margin; dorsal valve terminating in a lobe.

Female. Unknown.

Distribution. China (Zhejiang, Fujian).

Holotype: Male, Mt. Tianmushan, Zhejiang, 10–12. ix. 1983, J.-H. HE leg. *Paratypes:* 2 males, Guadun, Mt. Wuyishan, Fujian, 7. x. 1991, X.-X. CHEN leg.; 1 male, Liancheng, Fujian, 27. viii. 1988, J. HUANG leg.

Variation. Available specimens vary in head length from 1.45 mm to 1.76 mm and head width from 1.52 mm to 1.71 mm.

Etymology. Named after the 6–7 transverse rugae on the pronotum.

Remarks. This species resembles *Acrepyris tainanensis* (TERAYAMA, 1995) from Taiwan in having 4-toothed mandibles, the pronotum with several relatively irregular transverse rugae, and the propodeum with transverse carina. However, it is separated from the latter by the absence of distinct pronotal carina and the posterolateral areas of propodeum with transverse rugae. It is also allied to *A. ishigakiensis* (YASUMATSU, 1955) from the Ryukyu Islands, Japan, but is separated from the latter by the presence of several relatively irregular transverse rugae pronotum, and of transverse carina of propodeum, and the shape of paramere of genitalia.

Key to the species of Chinese *Acrepyris* (Male)

1. Mandible with 3 teeth. 2
- Mandible with 4 teeth. 3
2. Propodeal disc without median longitudinal carina; posterolateral area of propodeal disc reticulate; large species (HL > 2.0 mm).

- *Acrepyris shinensis* sp. nov. [Guangdong, Guangxi, Guizhou]
 - Propodeal disc with a median longitudinal carina; posterolateral area of propodeal disc mostly smooth; smaller species (HL ca.1.1 mm).
 *Acrepyris takasago* (TERAYAMA, 1995) [Taiwan]
 3. Pronotal disc smooth with a few punctures, and with a distinct longitudinal carina at near anterior margin; propodeal disc without a transverse carina at posterior margin; head wider than long in full-face view. .. *Acrepyris zhejiangensis* sp. nov. [Zhejiang]
 - Propodeum moderately punctate, with 6–8 relatively irregular transverse rugae at anterior portion; propodeal disc with a transverse carina at posterior margin; head as long as wide or longer in full-face view. 4
 4. Pronotal disc with a distinct transverse carina at basal 1/3; posterolateral area of propodeum reticulate; anterior margin of clypeus straight.
 *Acrepyris tainanensis* (TERAYAMA, 1995) [Taiwan]
 - Pronotal disc without distinct transverse carina; posterolateral area of propodeum not reticulate with transverse rugae; anterior margin of clypeus shallowly concave.
 *Acrepyris rugulosus* sp. nov. [Zhejiang, Fujian]

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