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EIGHT NEW SPECIES OF THE GENUS *SINOPOTAMON* FROM JIANGXI PROVINCE, CHINA (CRUSTACEA, DECAPODA, BRACHYURA, POTAMIDAE)

DAI AI-YUN*, ZHOU XIAN-MIN** & PENG WEI-DONG**

*Institute of Zoology, Academia Sinica,

**Jiangxi Medical College

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ABSTRACT

Fifteen species of freshwater crabs belonging to the genus Sinopotamon are recorded from Jiangxi Province, S.E. China. Eight species are new to science and these are described: S. xiushuiense, S. jiujiangense, S. wanzaiense, S. anyuanense, S. siguqiaoense, S. linhuanense, S. yushanense and S. ninggangense. The distribution of all species is discussed.

INTRODUCTION

Jiangxi province is situated in the south-east part of China. Its north boundary is bordered by the Changjiang river, while its east, south and west sides are surrounded by mountains with a height of 500-2000 m above sea level. The northern part of it is Boyang lake plane, 0-100 m above sea level. The central part of it is a hilly region 300-600 m above sea level. Excepting Copepoda and Cladocera, the crustaceans including the freshwater crabs of this province have been barely investigated until now. During 1981-1992, the freshwater crabs were investigated by the Institute of Zoology, Academia Sinica and Jiangxi Medical College in connection with their role in parasitology

especially the lung flukes. A total of 29 species and subpecies have been found. This paper deals with 8 new species of the genus Sinopotamon. The remaining species belong to the genera Somanniathelphusa and Hunanpotamon, are treated in three other papers published elsewhere, in addition to remarks on the zoogeography of freshwater crabs of this province.

SYSTEMATICS

Fifteen species of *Sinopotamon* are recorded from the Jiangxi province, including eight new to science. These are:

Sinopotamon xiushuiense sp. nov. S. jiujiangense sp. nov.

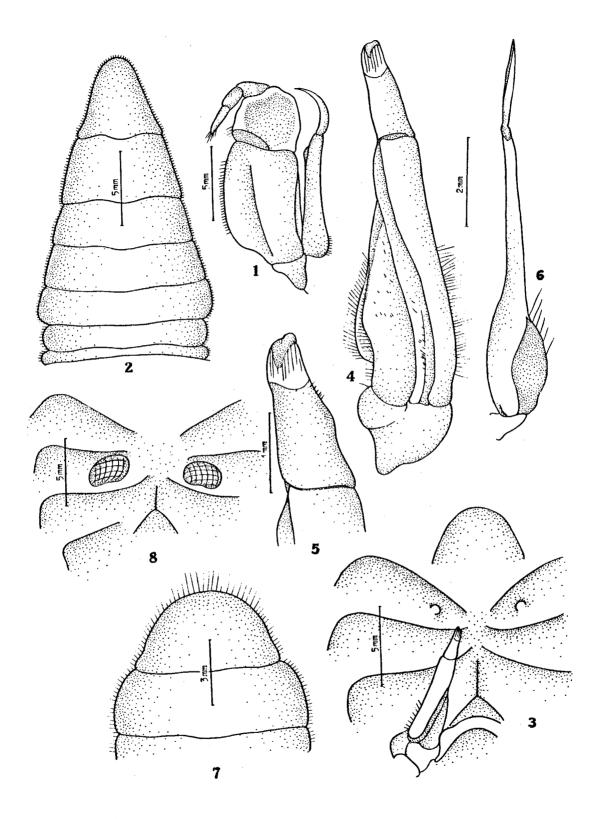


Fig. 1. Sinopotamon xiushuiense sp. nov., 1. σ , third maxillipede, 2. σ , abdomen, 3. σ , first pleopod in natural position, 4-5. σ , first pleopod and its enlarged last segment, 6. σ , second pleopod, 7. φ , last two segments of abdomen, 8. φ , genital pore.

- S. wanzaiense sp. nov.
- S. bilobatum Dai & Jiang, 1991
- S. lansi Doflein, 1902
- S. fukiense Dai & Chen, 1979.
- S. anyuanense sp. nov.
- S. siguqiaoense sp. nov.
- S. linhuanense sp. nov.
- S. yushanense sp. nov.
- S. depressum Dai & Fan, 1979
- S. yangtsekiense Bott, 1967
- S. obliquum Dai & Jiang, 1991
- S. unaequum Dai & Jiang, 1991
- S. ninggangense sp. nov.

The new species are described below. The type material of all new species is deposited in the Institute of Zoology, Academia Sinica.

Sinopotamon xiushuiense sp. nov. Fig. 1.

Holotype: of (JX8992154A), allotype: Q (JX 8992154 B), both from Maozhushan, Xiushui, 29°N 114.5°E, Jiangxi province, October 1989; paratypes: 1 of, 1 Q, same locality, August 1981.

DESCRIPTION

Carapace slightly convex, surface finely punctated, epibranchial region granulated. Cervical groove slightly broad and deep, H-shaped groove between gastric and cardiac regions narrow. Postfrontal lobe bluntly convex, postorbital crest prominent. Front slightly deflexed, anterior border emarginated medially. Dorsal orbital borders ridged, exorbital angle bluntly triangular in shape, its outer-lateral border about equal to 1/2 the antero-lateral border in length, lined with 6 granules. Epibranchial tooth inconspicuously prominent, antero-lateral border lined with 15-16 granular teeth. Third maxillipede with merus about 1.1 x as broad as long, with ischium about 1. 6 x as long as broad; exopod reaching to about proximal 1/3 of merus, provided with a flagellum.

Chelipedes unequal, carpus with fine rugae on dorsal surface, inner distal border with 3 prominences, inner-distal angle with a conical spine, with a small conical spine at its base. Larger manus about $1.5 \, x$ as broad as high, about $1.2 \, x$ as long as movable finger, no gap between two fingers. Ambulatory legs stout, last leg with propodus about $1.4 \, x$ as long as broad, slightly shorter than dactylus.

Male abdomen triangular in shape, the sixth segment about 2 x as broad as long; telson tongue-shaped, about 1.2 x as broad as long. Median groove of thoracic sternum moderately deep; separated groove of sternal sutures slightly broad; middle line of sterna VII/VIII slightly short. First pleopod about reaching to the suture of V/VI, the penultimate segment about $2.7 \times as$ long as the last segment; the last segment with two triangular lobes; its lateral view about 1.8 x as long as broad. The second pleopod with penultimate segment about 2.4 x as long as the last segment. Female abdomen with the sixth segment about 2.6 x as broad as long; telson about 2.4 x as broad as long, slighty shorter than the sixth segment. Separated groove of sternal sutures comparatively narrow. Genital pore ovate.

Carapace length of male 34.8 mm, breadth 43 mm; length of female 28.3 mm, breadth 34.6 mm

REMARKS

This new species is close to *S. styxuum* Dai, 1990, but the first male pleopod has the last segment more acute distally, its lateral surface being not bilobated. Also, the thoracic sternum of the female has the separated groove of the sternal sutures comparatively narrow.

Sinopotamon wanzaiense sp. nov. Fig. 2.

Holotype: of (JX9293155A); allotype: Q (JX9293155B), paratypes: 1 of (juv.); all from Wanzai, 28.1°N 114.4°E, November1986; paratypes: 2 of of, same locality, October 1989.

DESCRIPTION

Carapace slightly thick and swollen; surface convex, smooth. Epibranchial region granulated and

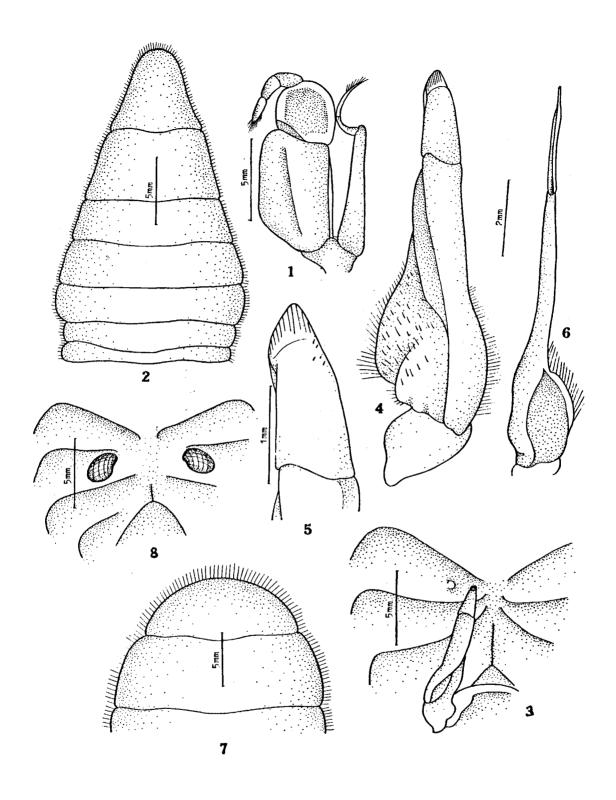


Fig. 2. Sinopotamon wanzaiense sp. nov., 1. σ , third maxillipede, 2. σ , abdomen, 3. σ , first pleopod in natural position, 4-5. σ , first pleopod and its enlarged last segment, 6. σ , second pleopod, 7. φ , last two segments of abdomen, 8. φ , genital pore.

rugose. Cervical groove comparatively deep and conspicuous; H-shaped groove between gastric and cardiac regions narrow but clear. Postfrontal lobe prominent, postorbital crest slightly sharp, postorbital region concave. Front slightly deflexed, anterior border emarginated medially. Dorsal orbital border ridged, exorbital angle triangular in shape, its outer-lateral border lined with depressed inconspicuous granules. Epibranchial tooth slightly large and prominent, antero-lateral border lined with 15-16 serrated teeth. Third maxillipede with merus about as long as broad, with ischium about 1.6 x as long as broad; exopod stout, about reaching to proximal 1/3 of merus, provided with a flagellum.

Chelipedes unequal; carpus with anterior border concave, with a stout spine at its inner distal angle, with a spinule at its base. Larger manus about 1.5 x as long as high, about 1.1 x as long as movable finger. Two fingers slender, no gap between them. Ambulatory legs slender; the last leg with propodus about 1.8 x as long as broad, slightly shorter than dactylus.

Male abdomen triangular in shape, the sixth segment about 1.9 x as broad as long, telson bluntly triangular in shape, about 1.1 x as broad as long. First pleopod reaching to about the tubercle of the fifth sterna; the penultimate segment about 2.9 x as long as the last segment; the last segment with inner lateral side angular in shape, about 2.3 x as broad as long. The second pleopod with the penultimate segment about 2.5 x as long as the last segment. Female abdomen ovate; the sixth segment about 2.9 x as broad as long; telson about 2.3 x as broad as long.

Carapace length of male 30.0 mm, breadth 37.0 mm; of female, length 28.5 mm, breadth 33.7 mm.

REMARKS

This new species is similar to *S. turgidum* Dai et al., 1985 but differs from the latter by the first male pleopod having the last segment comparatively slender, the penultimate segment about 2.9 not 3.2 x as long as the last segment, and with the last segment about 1.7 x as long as broad.

Sinopotamon anyuanense sp. nov. Fig. 3.

Holotype: of (JX8994158A), allotype: Q (JX8992158 B), paratypes: 5 of (1 juv.), 2 QQ (2 juv.), all from Anyuan, 25.1°N 115.3°E, Jiangxi province, October 1989.

DESCRIPTION

Carapace slightly convex; surface finely granulated and punctated. Epibranchial region finely rugose. Cervical groove concave and deep medially. H-shaped groove between gastric and cardiac regions narrow and deep; lateral side with butterfly-shaped prominence. Postfrontal lobe convex; postorbital crest comparatively prominent. Front broad, deflexed; anterior border slightly emarginated medially. Exorbital angle triangular in shape, its outer-lateral border comparatively long, about equal to half the anterolateral border in length, lined with 7-8 granular teeth, separated from epibranchial tooth by a comparatively deep notch. Two antero-lateral borders parallel with each other, lined with 18-20 granules. Third maxillipede with merus about 1.1 x as broad as long, with ischium about 1.6 x as long as broad; exopod about reaching to proximal half of merus, provided with a flagellum.

Chelipedes unequal; merus with borders sharp and serrated; carpus squarish; distal border rounded convex; inner-distal angle with a triangular acute spine, with a spinule at its base. Larger manus about 1.4 x as long as high, about 1.1 x as long as movable finger; no gap between two fingers. Ambulatory legs stout; merus and carpus with anterior border and propodus with posterior border furnished with long setae; last leg with propodus about 1.7 x as long as broad, slightly shorter than dactylus.

Male abdomen elongated triangular in shape; the sixth segment about 2 x as broad as long. Median groove of thoracic sternum comparatively deep; separated groove of sternal sutures deep; middle line of sterna VII/VIII moderately long. First pleopod not reaching to the tubercle of the fifth sternum, only reaching to the suture between sterna V/VI; the penultimate segment about 3.7 x as long as the last segment, slightly bent outward laterally. The second pleopod of

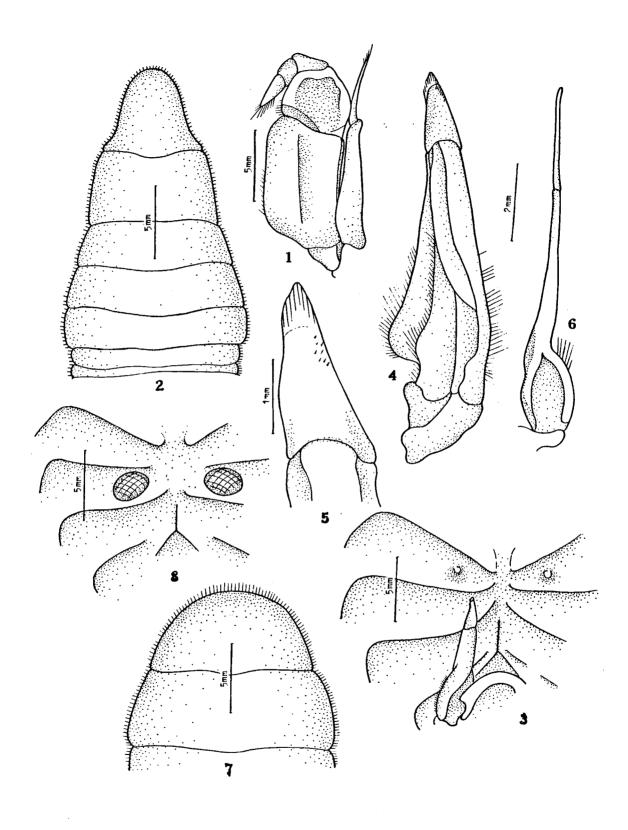


Fig. 3. Sinopotamon anyuanense sp. nov., 1. σ , third maxillipede, 2. σ , abdomen, 3. σ , first pleopod in natural position, 4-5. σ , first pleopod and its enlarged last segment, 6. σ , second pleopod, 7. φ , last two segments of abdomen, 8. φ , genital pore.

the penultimate segment about 2.4 x as long as the last segment. Female abdomen ovate; the sixth segment about 2.5 x as broad as long; telson about 1.9 x as broad as long. Genital pore elliptical.

Carapace length of male 33.2 mm, breadth 40.8 mm; of female, length 27.7 mm, breadth 34.1 mm.

REMARKS

The new species is similar to *S. fukienense* Dai & Chen, 1979, but the carapace with antero-lateral border parallel does not curve backwards; the male abdomen has the sixth segment about 2 x, not 1.8 x, as broad as long; the first pleopod is directed inward, not nearly straight, and the last segment has the lateral surface slightly curved outward, not conspicuously bent outward.

Sinopotamon siguqiaoense sp. nov. Fig. 4.

Holotype: O (JX8192153A), allotype: & (JX8192153 B), paratypes: 2 OO (1juv.), 1 Q (juv.), all from Siguqiao, Yushan, 28.6°N 118.2°E, Jiangxi province, August 1991.

DESCRIPTION

Carapace slightly convex; surface finely punctated; epibranchial region with scattered granules. Cervical groove shallow; H-shaped groove between gastric and cardiac regions narrow and deep. Postfrontal lobe bluntly convex; postorbital crest prominent. Front deflexed; anterior border emarginated medially. Dorsal orbital border ridged; postorbital region concave; exorbital angle directed inward, its outer-lateral border lined with 6-7 granules. Epibranchial tooth prominent and angular in shape. Antero-lateral border ridged, lined with 18-20 granules. Third maxillipede with merus about 1.1 x as broad as long, with ischium about 1.7 x as long as broad; exopod about reaching to proximal 1/3 of merus, provided with a flagellum.

Chelipedes unequal, inner-distal angle of carpus with an acute spine, with a spinule at its base. Larger manus about 1.5 x as long as high, about 1.3 x as long as movable finger; almost no gap between two fingers. Ambulatory legs stout; last leg with propodus about 1.8 x as long as broad, clearly shorter than the dactylus.

Male abdomen pagoda-shaped; the sixth segment about 2 x as broad as long; telson tongue-shaped about 1.1 x as broad as long. Median groove of thoracic sternum slightly shallow; separated groove between sternal sutures slightly broad; middle line of sterna VII/VIII short. First pleopod with penultimate segment about 2.7 x as long as the last segment; the last segment slender, bluntly rounded distally. The second pleopod with penultimate segment about 2.4 x as long as the last segment. Female abdomen ovate, the sixth segment about 3 x as broad as long; telson about 2.4 x as broad as long, about equal to the sixth segment in length.

Carapace length of male 31.8 mm, breadth 38.4 mm; of female, length 21.2 mm, breadth 25.3 mm.

REMARKS

This new species is similar to *S. chishuiense* Dai & Yuan, 1988, but has the male abdomen with telson comparatively longer and more constricted at the base, and the last segment of the first pleopod is rounded distally and inconspicuously lobed.

Sinopotamon linhuaense sp. nov. Fig. 5.

Holotype: of (J5X9293165A), allotype: Q (JX9293165B), paratypes: 8 of (3 juv.), 5 QQ (5 juv.), all from Linhua, 27.1°N 113.9°E, Jiangxi province, August 24, 1992.

DESCRIPTION

Carapace slightly swollen; surface comparatively smooth, only epibranchial region covered with fine rugae and granules. Cervical groove broad and slightly deep. Postfrontal lobe prominent; postorbital crest sharp on the inside, rugose on the outside; postorbital region concave. Front

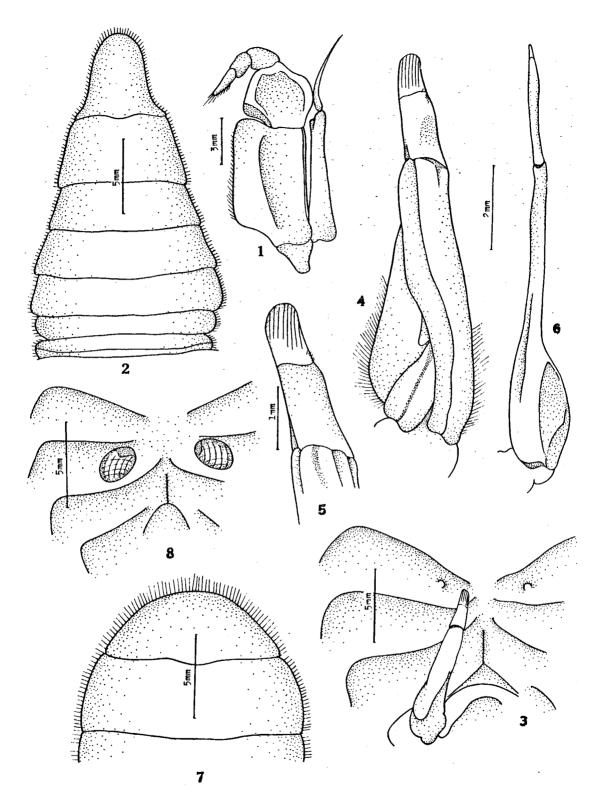


Fig. 4. Sinopotamon siguifacense sp. nov., 1. O, third maxillipede, 2. O, abdomen, 3. O, first pleopod in natural position, 4-5. O, first pleopod and its enlarged last segmnent, 6. O, second pleopod, 7. Q, last two segments of abdomen, 8. Q, genital pore.

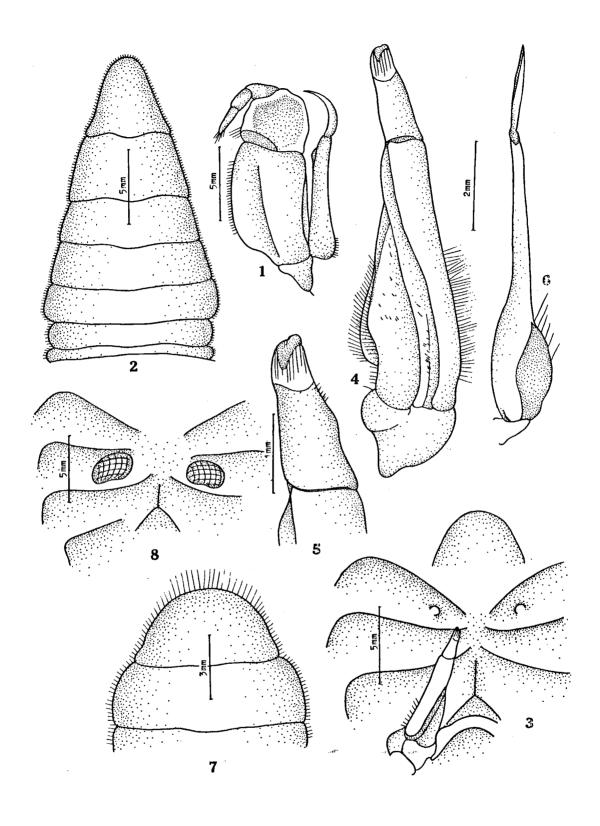


Fig. 5. Sinopotamon linhuaense sp. nov., 1. σ , third maxillipede, 2. σ , abdomen, 3. σ , first pleopod in natural position, 4-5. σ , first pleopod and its enlarged last segment, 6. σ , second pleopod, 7. φ , last two segments of abdomen, 8. φ , genital pore.

slightly deflexed; anterior margin emarginated medially. Dorsal orbital border ridged; exorbital angle triangular in shape, directed inwards; its outer-lateral border lined with granules, separated from epibranchial tooth by a V-shaped notch. Epibranchial tooth prominent, antero-lateral border ridged, lined with scattered serrated teeth; last end turning backwards. Third maxillipede with merus about as broad as long; with ischium about 1.8 x as long as broad; exopod about reaching to proximal half of merus, provided with a long flagellum.

Chelipedes unequal; merus with a distal acute spine on the inside; inner- distal angle of carpus with an acute spine, with a spinule at its base. Larger manus about 1.5 x as long as high, longer than movable finger; almost no gap between two fingers. Ambulatory legs slender; last leg with propodus about 2 x as long as broad, about equal to dactylus in length.

Male abdomen triangular in shape; the sixth segment about 1.9 x as broad as long; telson tongue-shaped, about 1.1 x as broad as long. Median groove of thoracic sternum moderately deep; serrated groove of sternal sutures slighlty narrow; middle line of sterna VII/VIII slightly short. First pleopod just not reaching to the tubercle of the fifth sternum; the penultimate segment about 3 x as long as the last segment, directed inner-backwards. The last segment slender; ventral lobe with an angular prominence outer- distally; the second pleopod groove on dorsal side at last segment; genital pore distal. The second pleoped of the penultimate segment about 2.7 x as long as the last segment. Juvenile female abdomen ovate; the sixth segment about 2.8 x as broad as long; telson semicircular, about 1.8 x as broad as long; genital pore pea-shaped.

Carapace length of male 30.2 mm, breadth 36. 2 mm; of female, length 17.5 mm, breadth 20.5 mm.

REMARKS

This new species is close to *S. siguquaoense* sp. nov., but the carapace is slightly swollen, not flat; the epibranchial tooth is more conspicuously prominent than that of the latter; the male abdomen

has the telson comparatively shorter, its lateral borders not being very concave; and the last segment of the first pleoped has an angular -not rounded-prominence distally.

Sinopotamon jiujiangense sp. nov. Fig. 6.

Holotype: O (JXS9293166A), allotype: Q (JX9293166B), paratype: 1 O, all from Mingshan, Jiujiang, 29.7°N 115.9°E, Jiangxi province, August 24, 1992.

DESCRIPTION

Carapace convex; surface glabrous, finely punctated. Cervical groove slightly broad and shallow; H-shaped groove between gastric and cardiac regions narrow and deep. Postfrontal lobe prominent; postorbital crest sharp on the inside, about reaching to the middle portion of dorsal orbital border. Front deflexed, emarginated medially. Dorsal orbital border ridged; exorbital angle triangular in shape; its outer-lateral border lined with fine granules. Epibranchial tooth slightly prominent; antero-lateral border ridged, lined with 17-18 granular teeth. Third maxillipede with merus about 1.1 x as broad as long, with ischium about 1.6 x as long as broad; exopod stout, about reaching to proximal 1/3 of merus, provided with a long flagellum.

Chelipedes unequal, carpus with a median shallow groove dorsally; its inner-distal angle with a depressed triangular tooth, with a spinule at its base. Larger manus about 1.5 x as long as high, about 1.2 x as long as the movable finger; almost no gap between two fingers.

Male abdomen elongated triangular in shape; the sixth segment about 2 x as broad as long; telson tongue-shaped, about 1.2 times as broad as long. Median groove of thoracic sternum slightly deep; separated groove between sternal sutures slightly broad; middle line of sterna VII/VIII comparatively long. First pleopod reaching to about the suture between sterna V/VI, not reaching the tubercle of fifth sternum; the penultimate segment about 3.6 x as long as the last segment; the last segment straight, elongated squarish; genital pore outer-distally. The second

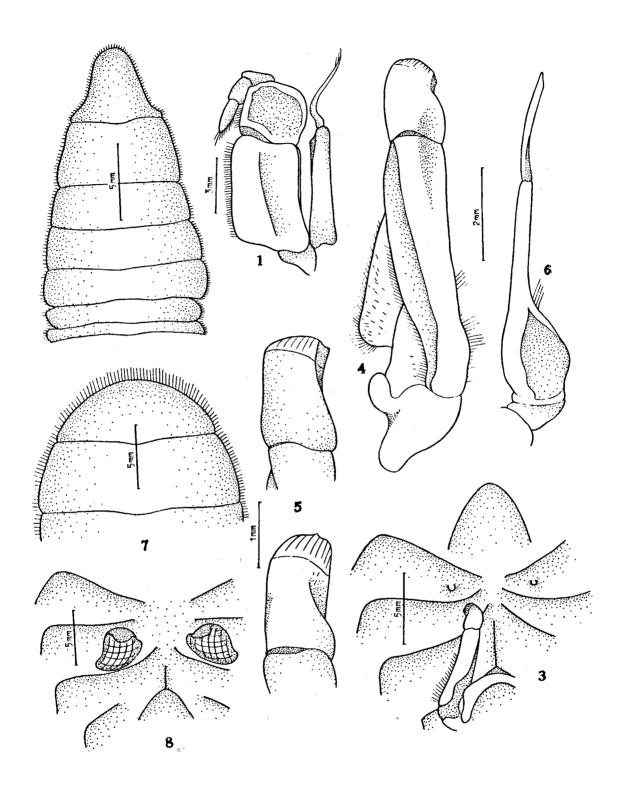


Fig. 6. Sinopotamon jiujianense sp. nov., 1. σ , third maxillipede, 2. σ , abdomen, 3. σ , first pleopod in natural position, 4-5. σ , first pleopod and its enlarged last segment, 6. σ , second pleopod, 7. Q, last two segments of abdomen, 8. Q, genital pore.

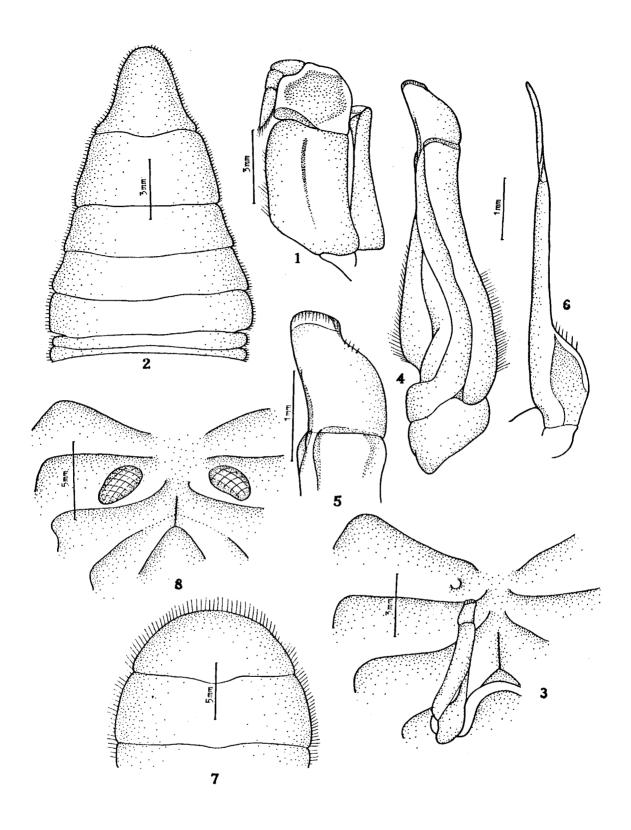


Fig. 7. Sinopotamon ninggangense sp. nov., 1. σ , third maxillipede, 2. σ , abdomen, 3. σ , first pleopod in natural position, 4-5, σ , first pleopod and its enlarged last segment, 6. σ , second pleopod, 7. φ , last two segments of abdomen, 8. φ , genital pore.

pleopod of the penultimate segment about 2.1 x as long as the last segment. Female abdomen ovate; the sixth segment about 2.8 x as broad as long; telson semicircular, about 2.5 x as broad as long. Genital pore shaped like a watermelon seed.

Carapace length of male 30.6 mm, breadth 37.5 mm; of female, length 23 mm, breadth 27.6 mm.

REMARKS

This new species is similar to *S. denticulatum* (H. Milne-Edwards, 1853), but the carapace is slightly convex, not flat; the epibranchial tooth is prominent; the male abdomen is more elongated and triangular in shape and narrower basally; the first pleopod is straight and not curved outward, with the proximal 2/3 - not the proximal half - convex.

Sinopotamon ninggangense sp. nov. Fig. 7.

Holotype: O (JX89911592); locality: Ninggang, 28.7°N 113.9°E, Jiangxi province, October 1989.

DESCRIPTION

Carapace slightly convex; epibranchial region finely rugose. Cervical groove deep; H-shaped groove between gastric and cardiac regions shaped like the wings of a butterfly, deep and conspicuous. Postfrontal lobe convex; postorbital crest narrow; postorbital region slightly concave. Front deflexed, emarginated medially. Dorsal orbital border ridged. Exorbital angle triangular in shape, its outer-lateral border lined with 6-7 serrated teeth. Epibranchial tooth defined; antero-lateral border shorter than postero-lateral border, ridged, lined with 15-16 granules. Third maxillipede with merus about 1.2 x as broad as long, with ischium about 1.4 x as long as broad; exopod stout, reaching to about proximal half of merus.

Chelipedes unequal; carpus slightly concave medially; its inner-distal angle with a stout spine and a spinule at its base. Large manus about 2.2 x as long as high, about 1.6 x as long as movable finger; almost no gap between two fingers. Ambulatory legs slender; each segment with anterior border with short setae; last leg with propodus about 1.5 x as long as broad, slightly shorter than dactylus.

Male abdomen broad triangular in shape; the sixth segment about 2 x as broad as long; telson tongue-shaped, about 1.1 x as broad as long. Median groove of thoracic sternum moderately broad; middle line of sterna VII/VIII short. First pleopod reaching to the suture of sterna IV/V, not reaching to the tubercle of fifth sternum; the penultimate segment about 3.7 x as long as the last segment; strongly convex medially, about 1.7 x as long as broad in outer-lateral view; distal margin truncate. The second pleopod with the penultimate segment about 2.4 x as long as the last segment.

Carapace length of male 24.3 mm, breadth 29.5 mm.

REMARKS

This new species is close to S. nanum Dai & Chen. 1990, but the first male pleopod has the penultimate segment strongly convex inner-ventrally; the last segment is broader and more truncate distally.

Sinopotamon yushanense sp. nov. Fig. 8.

Holotype: O' (JX8392156), paratype:1 O'; locality: Yushan, 28.6°N 118.2°E, Jiangxi province, 1983.

DESCRIPTION

Carapace slightly-depreseed; surface finely punctated, epibranchial region rugose. Cervical groove deep; H-shaped groove between gastric and cardiac region narrow. Postfrontal lobe slightly convex; postorbital crest comparatively prominent. Front deflexed; anterior border emarginated medially. Dorsal orbital border ridged; postorbital region concave; exorbital angle depressed-triangular in shape, its outer-lateral border lined with 6-7 granules; epibranchial

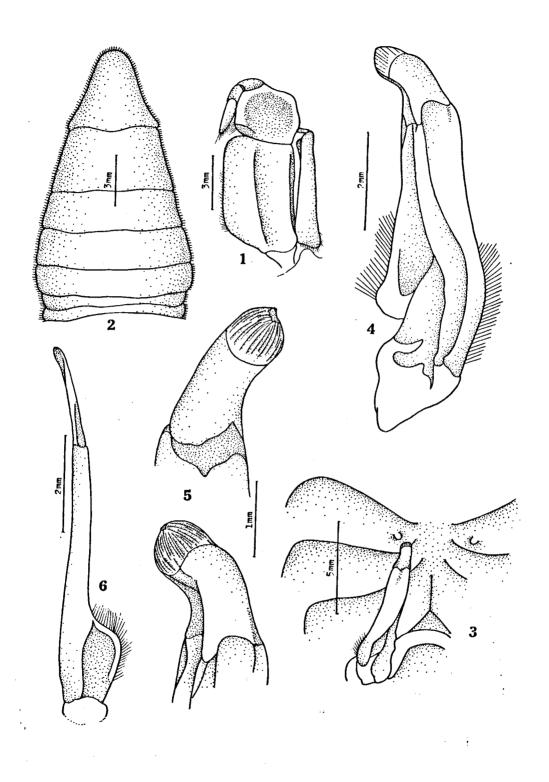


Fig. 8. Sinopotamon yushanense sp. nov., 1. σ , third maxillipede, 2. σ , abdomen, 3. σ , first pleopod in natural position, 4-5. σ , first pleopod and its enlarged last segment, 6. σ , second pleopod.

tooth granulate; antero-lateral border ridged, lined with 19-20 granular teeth. Third maxillipede with merus about 1.2 x as broad as long, with ischium about 1.2 x as long as broad; exopod reaching to about proximal 1/3 of merus, provided with a flagellum.

Chelipedes unequal; carpus concave medially; inner-distal angle with an acute spine, with a spinule at its base. Larger manus about 1.4 x as long as high, about 1.1 x as long as movable finger; almost no gap between two fingers. Ambulatory legs stout; last leg with propodus about 1.4 x as long as broad, about equal to dactylus in length.

Male abdomen pagoda-shaped; the sixth segment about 2.1 x as broad as long; telson narrower in the last portion, about 1.1 x as broad as long. Separated groove between sternal sutures broad, middle line of sterna VII/VIII moderately long. First pleopod reaching to about the tubercle of fifth sternum; the penultimate segment about 3.7 x as long as the last segment; the last segment directed dorsally, bluntly rounded. The second pleopod of the penultimate segment about 2.4 x as long as the last segment; the last segment stout, broader in last portion.

Carapace length of male 25.4 mm, breadth 32.2 mm.

REMARKS

This new species is similar to *S. jichiense* Du et al., 1978, but male abdomen is pagoda-shaped - not elongated and triangular in shape; the sixth segment is 2.1 x - not 1.6 x - as broad as long; the first pleopod has the last segment comparatively broader in the distal portion - not in the proximal portion.

DISCUSSION

Jiangxi province (Fig. 9) belongs to the subtropical area of the Oriental region. The species diversity of the freshwater crabs is rich. The fauna bears the characteristics of the middle and lower parts of the Changjiang system. The genus *Sinopotamon* is endemic to China and it is the representative group of the Changiiang river system.

Out of 29 species of freshwater crabs found in the recent survey 15 species (51.7%) belong to Sinopotamon. 9 species are endemic to Jiangxi province: S. xiushuiense, S. jiujiangense, S. wanzaiense, S. siguqiaoense, S. linhuaense, S. yushanense, S. obliquum, S. unaequum and S. ningganense. S. bilobatum occurs also in Hunan province. S. lansi occurs also in Hubei province. S. fukiense and S. anyuanense are also recorded from Fujiang province. S. yangtsekiense is also recorded from Zhejiang and Anhui provinces. S. depressum occurs also in Hubei and Anhui provinces.

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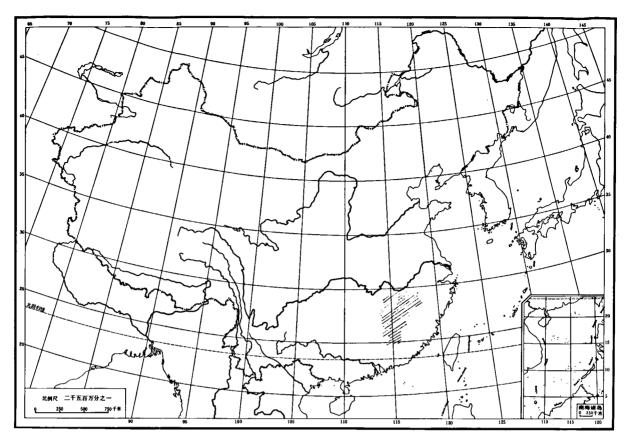


Fig. 9. Map of China showing the location (hatched area) of Jiangxi Province.

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