ON A NEW SPECIES OF FRESHWATER CRAB OF THE GENUS *SINOPOTAMON* (DECAPODA, BRACHYURA, POTAMIDAE) FROM WUYI MOUNTAIN, SOUTHEASTERN CHINA

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ABSTRACT

The present study describes a new species of *Sinopotamon* Bott, 1967, from Zixi county, Jiangxi Province, China. The new species can be distinguished from the allied *S. siguqiaoense* Dai, Zhou & Peng, 1995, and *S. linhuaense* Dai, Zhou & Peng, 1995, primarily by the structure of the male first gonopod.

ZUSAMMENFASSUNG

Eine neue Art der Gattung *Sinopotamon* Bott, 1967 wird aus dem Zixi-Distrikt der Jiangxi Provinz in China beschrieben. Die neue Art unterscheidet sich von den ihr nahe stehenden *S. siguqiaoense* Dai, Zhou & Peng, 1995 und *S. linhuaense* Dai, Zhou & Peng, 1995 vor allem durch den Bau der ersten männlichen Gonopoden.

INTRODUCTION

The Wuyi mountain range is the largest montane formation in southeastern China, lying along the border between the Jiangxi and Fujian provinces, their height ranging from 500 to 2158 m above sea level. This area is famous for its regional biodiversity. For example, at least 35 species of freshwater crabs of the family Potamidae have been recorded. Potamids are major intermediate hosts of the lung flukes of the genus *Paragonimus* (Platyhelminthes, Digenea, Paragonimidae), and because of this, the crabs have received considerable attention

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Also available online: www.brill.nl/cr

Crustaceana 81 (11): 1381-1387
DOI:10.1163/156854008X361076

in parasitological, medical, sanitary, and taxonomic studies (Ng, 1988; Naiyanetr & Takeda, 1989; Zhou et al., 1991; Wang et al., 1994; Yeo & Ng, 1998; Dai, 1999; Zhang et al., 2004; Zhou et al., 2006; Li et al., 2008; Naruse et al., 2008; Yeo et al., 2008). As a part of a research program on the biogeography of the crabs and *Paragonimus* of the Wuyi mountain range, the first and third author have collected more than 500 individuals of freshwater crabs form 111 localities across Wuyi Mountain. Among these, *Sinopotamon fujianense* Dai & Cheng, 1979, and *S. jianglense* Dai, Chen & Cai, 1993, are the dominant species in this area. Recently, we also found a new species from around the border between the Jianxi and Fujian provinces. This paper aims to describe the new species.

Specimens examined are deposited in the Department of Parasitology, Medical College of Nanchang University (NCU MCP); National Museum of Natural Science, Taichung, Taiwan (NMNS); the Zoological Reference Collection, Raffles Museum of Biodiversity Research, National University of Singapore (ZRC); and National Institute for Parasitic Diseases, Chinese Center for Disease Control and Prevention (CDC-NIPD). Measurements provided are of the carapace length (CL) by the carapace width (CW). The abbreviations G1 and G2 are used for the male first and second gonopods, respectively.

TAXONOMY

Sinopotamon zixiense n. sp. (figs. 1, 2)

Material examined. — Male holotype, 32.8 × 40.9 mm (NCU MCP 2008.0012), Paishan Village (ca. 27°41′00″N 117°04′46″E), Luyan Rural, Zixi County, Jiangxi Province, coll. local collaborator (received by X. Zhou), Aug. 2007.

Paratypes, 2 males, 27.2 × 34.4, 25.5 × 31.0 mm, 1 female, 27.2 × 34.5 mm (NCU MCP 2008.0013), 1 male, 32.0 × 39.4 mm, 1 female, 20.5 × 25.7 mm (ZRC 2008.0041), data same as holotype; 3 males, 25.5 × 31.3 – 29.5 × 36.6 mm, 4 females, 25.6 × 31.4 – 27.8 × 34.5 mm (CDC-NIPD 2008.0014), 1 male, 28.8 × 35.1 mm, 1 female, 32.5 × 40.6 mm (NMNS), Jianfudun Village (ca. 27°39′33″N 116°59′29″E), Matoushan City, Zixi county, Jiangxi Province, coll. local collaborator (received by X. Zhou), Aug. 2007; 3 males, 26.1 × 32.0 – 28.6 × 34.3 mm, 1 female, 22.7 × 27.8 mm (ZRC 2008.0042), Zuya Village (ca. 27°42′07″N 117°03′47″E), Luyang Rural, Zixi County, Jiangxi Province, coll. J. Zou, C. Zhu & X. Zhou, 16 Aug. 2007; 7 males, 25.4 × 30.3 – 31.1 × 36.9 mm (NCU MCP 2008.0015), Baishakeng Village (ca. 27°43′02″N 117°08′58″E), Matoushan City, Zixi County, Jiangxi Province, coll. local collaborator (received by X. Zhou), Aug. 2007; 2 males, 25.7 × 30.5, 24.8 × 30.4 mm (NCU MCP 2008.0016), Xiashazhou Village (ca. 27°12′20″N 116°36′53″E), Taihe City, Nanfeng County, Jiangxi Province, Jul. 2007; 2 males, 19.4 × 22.8, 27.1 × 32.5 mm, 1 female, 20.6 × 24.8 mm (ZRC 2008.0043), Maixizhou Village (ca. 27°24′59″N 117°05′33″E), Zhanchun Rural, Lichuan County, Jiangxi Province, coll. local collaborator (received by X. Zhou), Aug. 2007; 5 males, 25.3 × 30.3 – 30.7 × 37.1 mm, 2 females, 27.1 × 32.9, 23.6 × 28.7 mm (NCU MCP 2008.0017), 2 males, 28.8 × 34.8, 31.4 × 36.8 mm (ZRC 2008.0044), Daoshi Village (ca. 27°31′30″N 117°10′30″E), Zima City, Guangzhe County, Fujian Province, coll. local collaborator (received by X. Zhou), Jun. 2007.

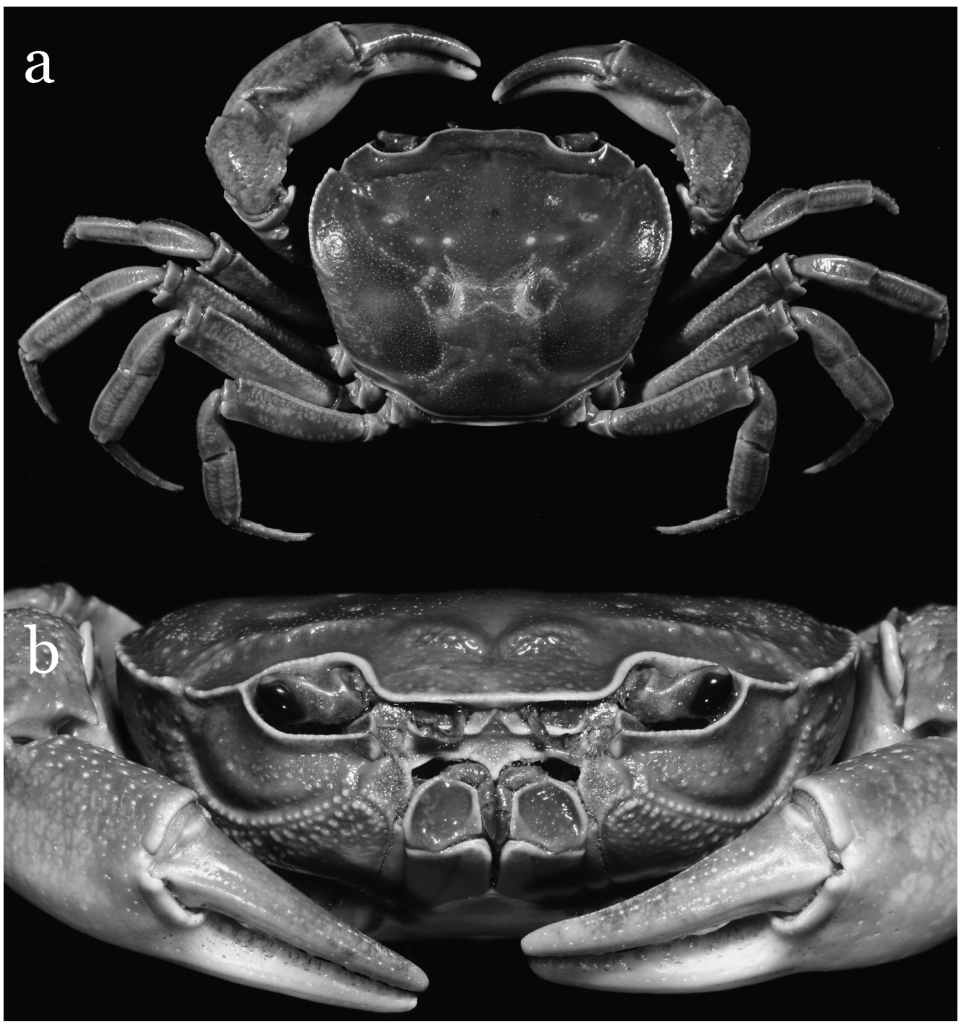

Fig. 1. *Sinopotamon zixiense* n. sp. (holotype male, 28.2 × 34.2 mm); a, habitus, dorsal view; b, cephalothorax, anterior view.

Description. — Carapace (fig. 1a) widest across middle of anterolateral margins, CW 1.17-1.27 times CL (mean = 1.21, $n = 27$); dorsal surface convex, smooth, glabrous; postfrontal crista rounded, postorbital crista prominent, slightly oblique to frontal margin, separated from anterolateral margin by shallow cervical groove; epibranchial region sparsely granulated; H-shaped groove between gastric and cardiac regions narrow, deep. Front directed antero-ventrally (fig. 1b); supra- and infra-orbital margins cristate, granulated; suborbital and pterygostomial regions partially granulated. External orbital angle triangular, directed anteriorly inwards, outer margin about 2.5 times as long as inner margin, posterior quarter of outer

margin and epibranchial tooth forming prominent V-shaped notch. Epibanchial tooth prominent; anterolateral margin cristate, with distinct granules; posterior end of anterolateral margin curved inwards. Posterior margin of epistome (fig. 1b) cristate, with long, triangular median lobe, margin of lobe and bases granulated. Third maxilliped rectangular, ischium about 1.6 times as long as broad, merus about 1.2 times as broad as long, exopod slender, reaching proximal third of merus, with long flagellum.

Cheliped (fig. 1a) subequal, major cheliped slightly stouter, longer than minor. Merus of male major cheliped with granulated dorsal margin, subdistal tooth acute, ventral margins granulated, inner part of distal end of ventral inner margin with a prominent projection; inner angle of carpus with acute tooth, with 1 spinule below base. Larger manus about 1.5 times as long as high, longer than movable finger, gape narrow when chela closed, cutting edge lined with low teeth.

Ambulatory legs (fig. 1a) almost glabrous, moderately long, combined length of merus to dactylus of second ambulatory leg 1.42-1.62 times CL (mean = 1.53, $n = 15$). Meri with subdistal angle on anterior margin, length of merus of second ambulatory leg 0.55-0.64 times CL (mean = 0.60, $n = 17$). Dactyli (fig. 2a) as long as respective propodi, rectangular in cross-section, each margin sparsely lined with small spines, subdistal spine of dorsal outer row as strong as terminal spine, slightly placed dorsally.

Male thoracic sternites 2 and 3 demarcated by anteriorly convex shallow groove; sternites 3 and 4 indiscernible. Abdominal cavity reaching imaginary line joining posterior third of cheliped coxae, cavity moderately wide, distance between inner ends of sutures between thoracic sternites 4 and 5 about a third the length of the distance between the sternal condyles; sternal condyle placed in middle of thoracic sternite 5. Female vulva semicircular, wider than long.

Male first abdominal segment with low transverse ridge (fig. 2b), third segment widest, third to sixth segment forming straight lateral margins, sixth segment 2.00-2.45 times as wide as long (mean = 2.28, $n = 14$); telson with proximally concave lateral margins, width 1.10-1.33 times length (mean = 1.17, $n = 14$), 1.24-1.47 times (mean = 1.17, $n = 14$) longer than sixth segment. G1 (figs. 2c–f) stout, straight, just reaching to sternal condyle of thoracic sternite 5; distal segment slender, straight, outer ventral and outer dorsal surfaces of distal half of distal segment sloping outward, distal tip slightly curved outwards, opening placed at distal outer angle. G2 slightly longer than G1, length of flagellum about two-fifths of narrowed part of G2.

Etymology. — The species is named after the type locality, Zixi City, Jiangxi Province, China.

Distribution and habitat. — *Sinopotamon zixiense* n. sp. was collected from four neighbouring localities (Zixi County, Jiangxi Province, 225 m a.s.l.; Nanfeng

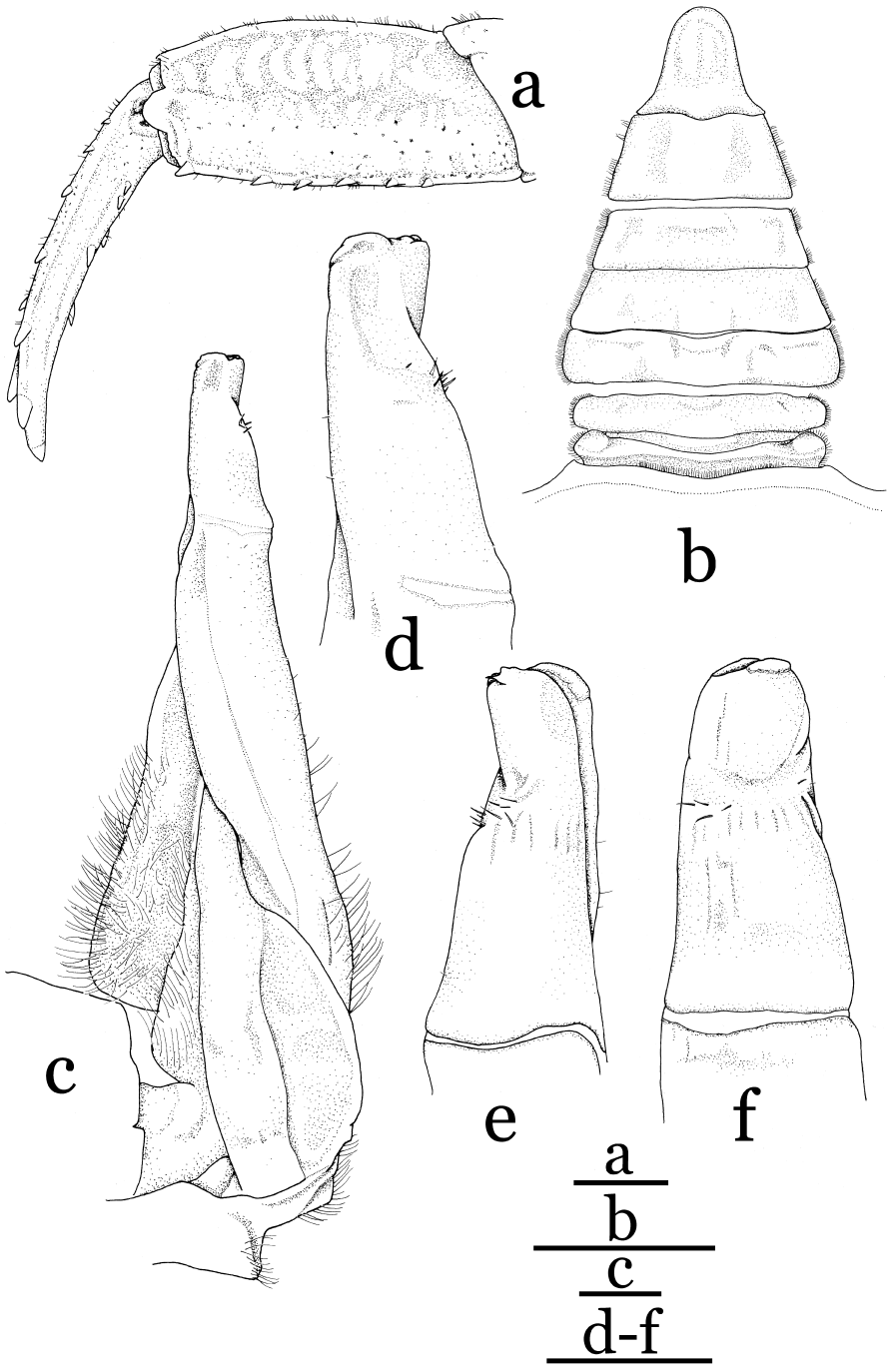

Fig. 2. *Sinopotamon zixiense* n. sp. (holotype male, 28.2 × 34.2 mm); a, left dactylus of fourth ambulatory leg; b, abdomen and telson; c, left G1, ventral view; d, distal segment of left G1, vental view; e, distal segment of left G1, dorsal view; f, left G2. Scales, a, b, 5 mm, c–f, 1 mm.

County, Jiangxi Province, 165 m a.s.l.; Lichuan County, Jiangxi Province, 205 m a.s.l.; Guangzhe County, Fujian Province, 290 m a.s.l.). The species was found in rivulets.

Remarks. — *Sinopotamon zixiense* n. sp. is morphologically most similar to *S. siguqiaoense* Dai, Zhou & Peng, 1995, and *S. linhuaense* Dai, Zhou & Peng, 1995, in their physiognomy as well as in the general shape of the G1. *Sinopotamon zixiense*, however, can be distinguished from these two species by the shape of the G1. In *S. zixiense*, the distal segment of the G1 is wider and directed anteriorly, the distal outer surface of the distal segment is depressed at the distal third, and the distal part of the dorsal layer of the distal segment is visible from ventral view. In *S. siguqiaoense* and *S. linhuaense*, however, the distal segment is relatively narrower and directed anteriorly inwards, the outer surface of the distal segment is not depressed, and the distal part of the dorsal layer of the distal segment is not visible from ventral view (see fig. 2c–f; Dai, Zhou & Peng, 1995, figs. 4(4, 5), 5(4, 5); Dai, 1999, figs. 149(4, 5), 152(4, 5)).

The distributions of *S. zixiense* and *S. fujianense* partially overlap at Lichuan County. *Sinopotamon zixiense* is easily differentiated from *S. fujianense* by its more truncate distal tip of the G1 (vs. tip of the G1 distinctly tapered in *S. fujianense*). It must be noted here that, although Dai & Chen (1979) originally named the species *S. fujianense*, but subsequent have spelled it as "*fukienense*" (see Dai et al., 1993, 1995; Dai, 1999; Ng et al., 2008), the original spelling "*fujianense*" must be retained according to ICZN rules.

ACKNOWLEDGEMENTS

We are grateful to Peter K. L. Ng (National University of Singapore) for supporting this study, Zhu Chunchao (Medical College of Nanchang University) and Zhang Zhiping (Nanping Center for Disease Control & Prevention, Fujiang) for helping with our laboratory and field work. This study was supported by the National Natural Science Foundation of China (NSFC No. 30660167), Parasite Specimens of China (PSIC No. 2005DKA21104, No. 2005DKA21100), and the National University of Singapore (R-154-000-222-112). The first author was supported by a visiting research fellowship from the Raffles Museum.

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First received 4 August 2008.
Final version accepted 12 August 2008.