

**PARAKRITHELLA PSEUDADONTA (HANAI, 1959)
IN THE INLAND SEA, JAPAN (OSTRACODA)^{1,2)}**

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With Text-figures 1-2

Parakrithella pseudadonta (Hanai, 1959), discovered from some coasts of Japan by Hanai (1959) and Ishizaki (1968, '71), occurs abundantly in the Inland Sea. Both Hanai and Ishizaki have described its valves alone, but left its soft parts undescribed, therefore the species is to be redescribed wholly in this paper.

The specimen from Japan named *Eukrithes zhirmunskyi*, gen. n., sp. n., by Schornikov (1975) is thought to be the A-1 instar of this species. The comparison between adults and A-1 instars may raise some questions about the development and phylogeny of this species and the systematic position of the genus to which it belongs.

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Family KRITHIDAE Mandelstam, 1960

Genus *Parakrithella* Hanai, 1961

Parakrithella pseudadonta (Hanai, 1959)

Neocyprideis pseudadonta Hanai, 1959, p. 300, pl. 17, figs. 5-9, text-fig. 2a, b (valves), Japan (Kanagawa Prefecture).

Parakrithella pseudadonta Hanai, 1961, text-fig. 4A 2a, b, (valves); Ishizaki, 1968, p. 18, pl. 3, figs. 13, 14, (valves), Japan (Kochi Pref.); ———, 1971, p. 78, pl. 2, fig. 16, (valve), Japan (Aomori Pref.).

Eukrithes zhirmunskyi Schornikov, 1975, (A-1 instar), p. 4, fig. 1, (valve & appendages), Japan (Wakayama Pref.).

Description. Length 0.5 mm. Carapace spindle-shaped in dorsal view; anterior end narrower than the posterior; left valve overlapping the right at both ends; greatest width two-fifths of the length, behind the middle. Surface smooth and polished, scattered with openings of large normal pore canals. Carapace itself pellucid, but, when alive, its inner surface covered with darkish ochre pigment in

1) Recent Marine Ostracoda in the Inland Sea, Japan — III.

2) Contribution from the Mukaishima Marine Biological Station, No. 136.

piebald, except along free margins (Fig. 2e); the colour more darkish in males than in females. Seen ventrally, antennulae and antennae yellow ochre, and copulatory organs brown; the presence of the latter is one of the good criteria to discriminate male from female.

Left valve (Figs. 1a, c, 2a) sub-reniform in lateral view; greatest height just behind the middle, in female half, in male less than half the length. Dorsal margin

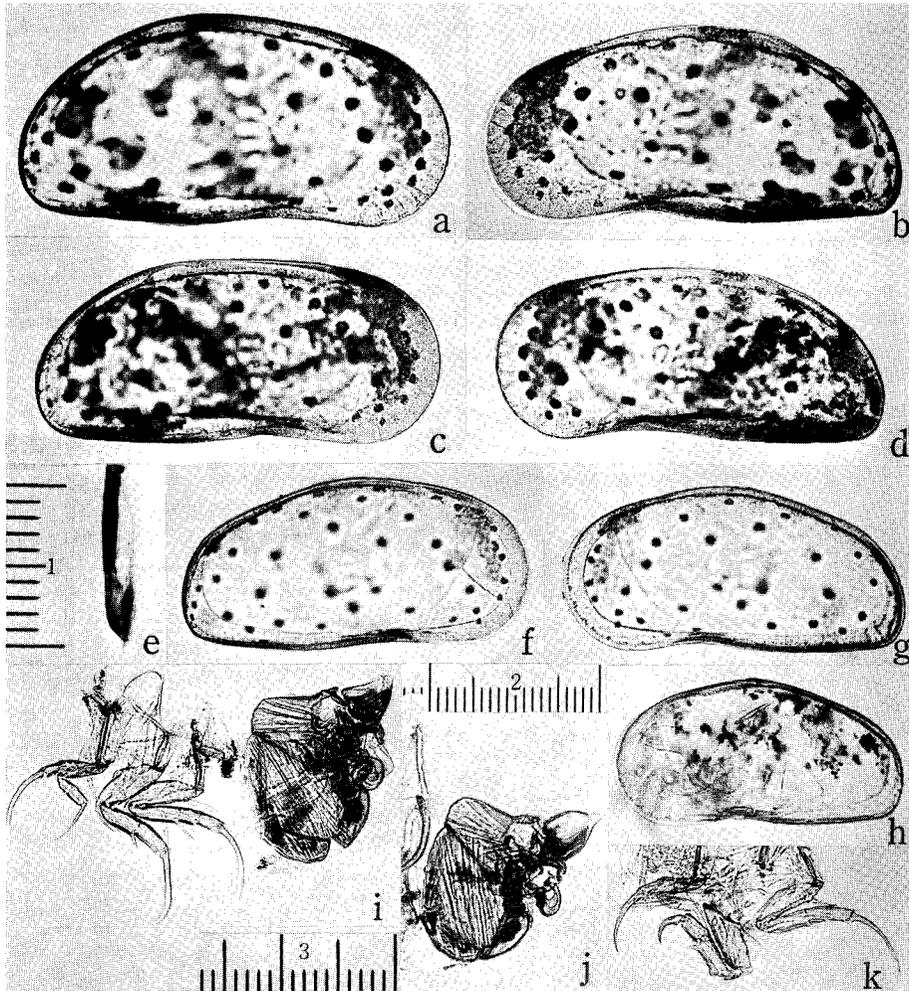


Fig. 1. *Parakriethella pseudadonta*. a, b, left, right valve of ♀; c, d, left, right valve of ♂; e, cross section through ventral margin of ♂; f, g, left, right valve of A-1; h, right valve of A-2; i, right walking legs & copulatory organ of ♂; j, k, left copulatory organ, walking legs of ♂ (thoracopoda 1 reflexed).

Scales: parts of a one-millimetre measure divided into 100 equal parts: 1 for e; 2 for a-d, f-h; 3 for i-k.

Fig. 1 a, b, & Fig. 2 a, b, g-l, n, MO-182. Fig. 1 c, d, i-k, & Fig. 2 m, MO-183. Fig. 1 f-h, & Fig. 2 c, d, MO-193.

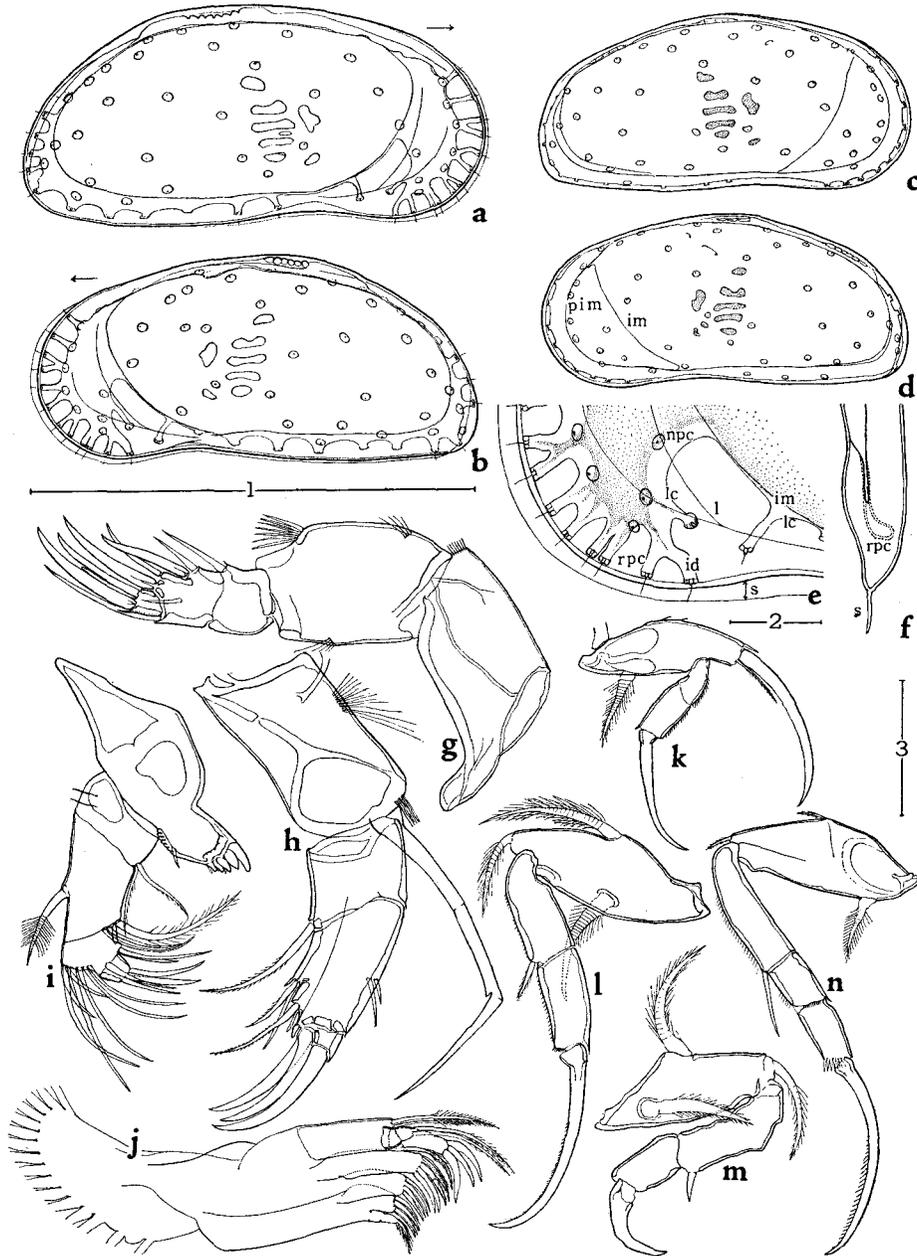


Fig. 2. *Parakrithella pseudadonta*. a, b, left, right valve of ♀ (inside); c, d, left, right valve of A-1 instar (inside); e, antero-ventral part of right valve (dotted area covered with dark pigment); f, schematic drawing of cross section through right ventral margin; g, antenna; h, antenna; i, mandible; j, maxillula; k, maxilla (=fifth limb); l, thoracopoda 1; m, left thoracopoda 1 of ♂; n, thoracopoda 2.

Abbreviations: id, "inner duct" of rpc; im, inner margin; l, list; lc, line of concrescence; npc, normal pore canal; pim, "primitive inner margin"; rpc, radial pore canal; s, selvage.
 Scales: 1 (0.5 mm) for a-d; 2 (0.05 mm) for e; 3 (0.05 mm) for f-n.

gently arched in female, rather flat in male. Ventral margin almost straight, slightly sinuated. Anterior margin rounded obliquely. Posterior margin small, sloping steeply to round postero-ventral corner.

Marginal zone (Figs. 1e, 2e, f) rather simple in structure. Selvage peripheral, wide, pellucid, fringed with pellucid hair. No flange. Bifurcate list present only on anterior infold. Infold wide anteriorly, narrow ventrally and posteriorly; anteriorly inner margin one-fifth of the length from anterior end. Normal pore canals sieve-type, moderate in number. False radial pore canals several in number, along ventral margin. Radial pore canals about a dozen along anterior margin, a few along the posterior; exits of hairs distinguished from surroundings; "inner ducts" rather thick and long, often fused proximally with the neighbour to become bifurcate. Line of conrescence irregular, especially along antero-ventral margin.

Right valve (Figs. 1b, d, 2b) similar to the left in outline, slightly smaller and lower; structure almost equal to that of left valve, selvage a little wider.

Adductor muscle scars composed of four scars in vertical row, with frontal, upper and mandibular scars.

Hingement pseudodont; both valves crenulated at posterior third of dorsal margin.

Antennula (Fig. 2g). Large, of five podomeres; distal four podomeres having length ratio 8:4:3:2, along ventral margins toward end. Second podomere tumid, with short setae dorso-distally, tufts of fine hairs ventro-distally and dorso-proximally. Third podomere much smaller than the second, with claw dorso-distally. Fourth podomere made by fusing of two podomeres, furnished with two claws and four setae: claw and seta dorso-distally, claw and seta dorso-medially, long seta ventro-distally, short seta medially. Fifth podomere with claw, thin claw, sense club distally.

Antenna (Fig. 2h). Large, of four podomeres, their length ratio 14:7:12:2. First podomere with two tufts of fine hairs; spinneret seta not reaching to tips of terminal claws, three-segmented at a ratio of 2:2:3, proximal joint faint. Second podomere with serrated seta at postero-distal end. Third podomere with two fine setae antero-medially, two setae ventro-medially, seta and sense club ventro-distally. Fourth podomere very short, with three claws.

Mandible (Fig. 2i). Base with several teeth near palp, besides those of lower end. Palp rather large, of four podomeres. First podomere tumid, with two plumose setae at ventro-distal end, and with exopodite. Second podomere large, with three setae ventro-distally, feather-like seta mid-anteriorly. Third podomere with seven setae antero-distally, one seta near fourth podomere, two setae postero-distally. Fourth podomere very small, with four setae distally.

Maxillula (Fig. 2j). Maxillary plate with 16 feather-like branchial setae. Palp of two podomeres; proximal one with two setae at antero-distal end, two setae nearby, a seta at ventro-distal end; distal one attached a little apart from end of the proximal, provided with three claw-like setae. Each masticatory lobes with six terminal setae; ventro-medial seta of inner masticatory lobe large and plumose.

Maxilla (=fifth limb) (Figs. 1j, k, 2k). Protopodite with strong knee-claw, very short seta, haired seta distally, haired lobar seta posteriorly. Endopodite of delicate appearance, attached at recess of end of protopodite, composed of three podomeres. Terminal podomere becoming base of claw.

Thoracopoda 1 (Figs. 1i, k, 2l, m). Of four podomeres; showing conspicuous sexual dimorphism. (Female, male right) Protopodite with two tumid plumose setae, a lobar seta. Length ratio of second and third podomeres and terminal claw 1:1:2, along posterior margins. Second podomere with seta at antero-distal end. Third podomere without seta. Fourth podomere very small, being base of terminal claw; claw curved strongly distally, finely haired along distal half. (Male left) Endopodite rugged; terminal claw short, stout.

Thoracopoda 2 (Figs. 1i, k, 2n). Of five podomeres. Protopodite with two short setae: one antero-distally and one antero-proximally, a small lobar seta posteriorly. Second to fourth podomere and terminal claw having length ratio 2:1:1:3. Second podomere with seta. Third and fourth podomeres without seta. Fifth podomere being base of claw; claw evenly curved, haired along distal half.

A-1 instar (Figs. 1f, g, 2c, d). Valves a little different in outline from those of adults; postero-dorsal angles observed faintly. Normal pore canals at the same places as in adults, except at only a few places, where they are absent. Radial pore canals also slightly less than in adults, having no "inner ducts" owing to undeveloped fused zone. Line of concrescence rather regular. Inner margin at the same place as in adults; in addition, "primitive inner margin" or boundary line between calcified and imperfectly calcified areas existing on infold, parallel to free margins. Adductor muscle scars of the same shape as in adults. Hingement pseudadont, with feeble crenulations mid-dorsally and postero-dorsally.

Appendages rather similar to those of adults, described in detail by Schornikov (1975).

Material Examined [MO-provisional No., Sex, Carapace (length-width) or Left, Right valve (length-height) in mm]. MO-182, ♀, LV (0.51-0.25), RV (0.49-0.24). MO-183, ♂, LV (0.48-0.22), RV (0.47-0.20). MO-193A, A-1, LV (0.41-0.20), RV (0.41-0.20). MO-193B, A-2, RV (0.33-0.17). MO-170A, ♀, C (0.51-0.20). MO-170B, ♀, C (0.51-0.20). MO-170C, ♂, C (0.49-0.19). MO-182, 183, 193 collected on 6-IX-1975; MO-170 on 20-IX-1975, in intertidal zone near the Mukaiyama Marine Biological Station (133°13.2'E, 34°21.7'N). MO-182, 183, 193 in Canada balsam (valves) and in neo-shigal (soft parts); MO-170 in spirits.

Occurrence. In intertidal zones on various coasts of the Inland Sea. Rather abundant.

Remarks. Specimens in the Inland Sea agree well with those from Kanagawa (Hanai, 1959) and Kochi (Ishizaki, 1968) Prefectures in the shape of the valves. The right valve from Aomori Bay (Ishizaki, 1971), however, seems to be slightly

different from the others, the anterior margin being rather smaller.

As to the size, specimens in the Inland Sea are as large as those from Kochi and Aomori Prefectures, but much smaller than those from Kanagawa Prefecture, which are 0.66–0.70 mm in length. A-1 instars in the Inland Sea are approximately as long as the specimen described as *Eukrithe zhirmunskyi* from Wakayama Prefecture by Schornikov (1975).

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