Mitt. hamb. zool. Mus. Inst.	Band 97	S. 91-98	Hamburg, November 2000 ISSN 0072 9612

A new species of *Neocallichirus, N. angelikae,* from South Australia (Decapoda: Callianassidae)

KATSUSHI SAKAI

Biological Laboratory, Shikoku University, 771-1192 Tokushima, Japan
E-mail: ksakai@shikoku-u.ac.jp

ABSTRACT. – A new species, *Neocallichirus angelikae*, from a stony flat, at Ceduna, Murat Bay, South Australia, is described. *Neocallichirus angelikae* can be separated from the only other South Australian species *N. limosa* by the lengths of antennular and antennal peduncles, the forms of the chelipeds, the female Plp1, and the presence of anterolateral spines. *Neocallichirus angelikae* is morphologically closest to *N. nickellae* MANNING, 1993 from Tobago, Carribean.

KEYWORDS: Crustacea; Decapoda; Thalassinidea; Callianassidae; new species; *Neocallichirus angelikae;* South Australia.

Introduction

The South Australian Callianassidae has been recently studied by G.C.B. POORE (1975; 1979), N. NGOC-HO, (1994), and K. SAKAI, (1999a, b), and six species have now been reported. An interesting callianassid female specimen was recently sent to me for study by the courtesy of Prof. Dr. A. BRANDT (Zoological Institute, University Hamburg). This material has been collected by Prof. Dr. G. HARTMANN (same Institute) during his Australian Expedition in 1975-76 from a flat in the Great Australian Bight, South Australia. In the present paper I describe it as a new species, and separate it from the only other species of *Neocallichirus* recorded from South Australia, *N. limosa* (POORE, 1975), collected from Port Phillip Bay and Tasmania at 5.5-75 m depth (POORE & GRIFFIN, 1979: 270).

Material and Methods

The material contained a single female specimen only, which had been collected from a stony flat in the Great Australian Bight, South Australia, during G. HARTMANN's Australian-Expedition in 1975/76.

The specimen was preserved in 70 % ethanol. The mouth parts were dissected by a needle under the binocular.

The material is deposited at the Zoological Museum Hamburg, Germany.

The following abbreviations are used in the text: **ZMH** (Zoologisches Institut und Zoologisches Museum, Hamburg, Germany); **Mxp1-3** (maxilliped 1 - maxilliped 3); **P/1-P/5** (pereiopod 1-pereiopod 5); **Plp1-5**, (pleopod 1-pleopod 5); **TL** (total length from tip of rostrum to posterior margin of telson); **CL** (from tip of rostrum to posterior margin of carapace; **FFF** (female/s); **MMM** (male/s).

Taxonomy

Neocallichirus SAKAI, 1988

Neocallichirus SAKAI, 1988: 61; SAKAI 1999b: 84.

D i a g n o s i s. – Mxp3 ischium-merus subquadrate; propodus broadened, subquadrate, wider than long; dactylus narrow, digitiform. Antennular peduncle usually not longer and stouter than antennal peduncle. Anterolateral spines of carapace without noncalicified membrane proximally. Uropodal endopod broadened distally or slender, tapering distally.

R e m a r k s. – The present new species belongs to *Neocallichirus* though the antennular peduncle is slightly longer than the antennal peduncle.

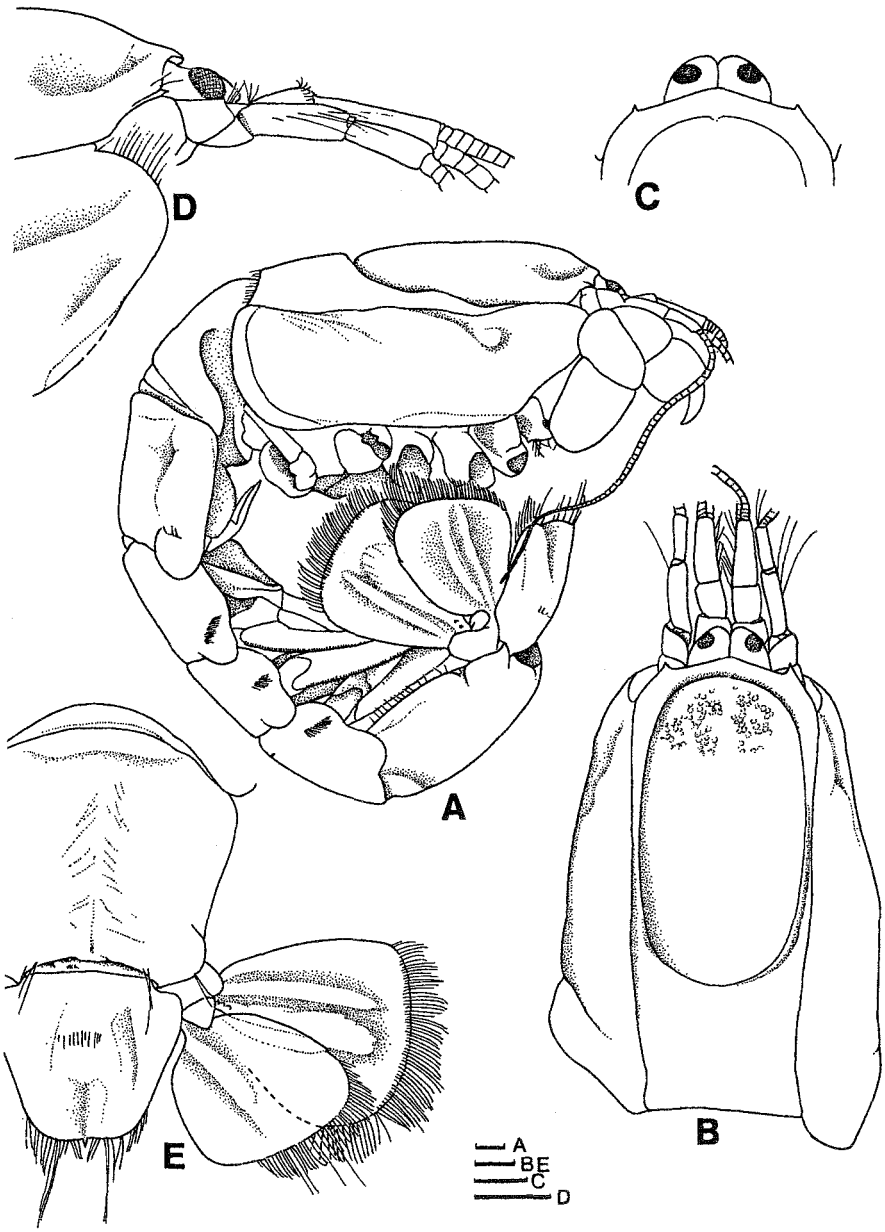
POORE & GRIFFIN (1979) recognized five species of Australian Callianassidae. Following SAKAI's (1999b) synopsis of the family these are as follows: *Neocallichirus limosa* (POORE, 1975) from Port Phillip Bay, Victoria; *Callianassa australiensis* (DANA, 1852) from Townsville, northern Queensland to Port Phillip Bay, Victoria; *C. ceramica* FULTON & GRANT, 1906 from Tasmania, Victoria, to the south of Western Australia; *C. arenosa* POORE, 1975 from southern Queensland, Tasmania and Victoria; and *Calliax aequimana* (BAKER, 1907) from southern Queensland to the south of Western Australia. In addition, SAKAI (1999a) has recently described a sixth species *Callianassa poorei* from Tasmania.

Neocallichirus angelikae sp. nov.
(Figs 1-3)

H o l o t y p e. – Female, TL 47.0 mm, CL 11.3 mm. 29 November 1975. ZMH K-38196. G. HARTMANN leg.
T y p e l o c a l i t y. – South Australia, Great Australian Bight, Murat Bay, stony flat near a motel, N. Ceduna (32° 07'S 133° 40'E); collected by hand.
E t y m o l o g y. – The species is named after Prof. ANGELIKA BRANDT; she is a carcinologist par excellence, and generous colleague.

D i a g n o s i s. – Rostrum barely developed. Carapace with acute anterolateral spine. Eyestalks triangular, broader than long proximally, tip obtuse, shorter than distal end of antennular basal article; antennular peduncle slightly longer than antennal peduncle.
Mxp 3 merus-ischium broadened; carpus triangular; propodus subquadrate; dactylus digitiform. Female P/1 unequal in size and dissimilar in shape; larger cheliped with ventral margins of ischium, merus, carpus and palm distincly denticulate. Telson trapezoid, slightly broader than long; lateral margins parallel over proximal third, then clearly convergent posteriorly to a rounded corner. Uropodal endopod trapezoidal; uropodal exopod square-ended distally, larger than endopod.

D e s c r i p t i o n. – Rostrum (Fig. 1A-D) barely developed in dorsal view. Carapace (Fig. 1A-B) almost smooth and with an acute anterolateral spine; dorsal oval conspicuous; cervical groove located in posterior fourth of carapace. Linea thalassinica extends entire length.



Neocallichirus angelikae sp. nov., holotype, female, TL 47.0, ZMH K-38196. – **A**, whole lateral view; **B**, carapace, eyestalks, antennular and antennal peduncles, dorsal view; **C**, anterior carapace, and eyestelks, dorsal view; **D**, anterior part of carapace, eyestalks, antennular and l peduncles, lateral view; **E**, abdominal somite 6 and tail-fan, dorsal view. Scale 1 mm.

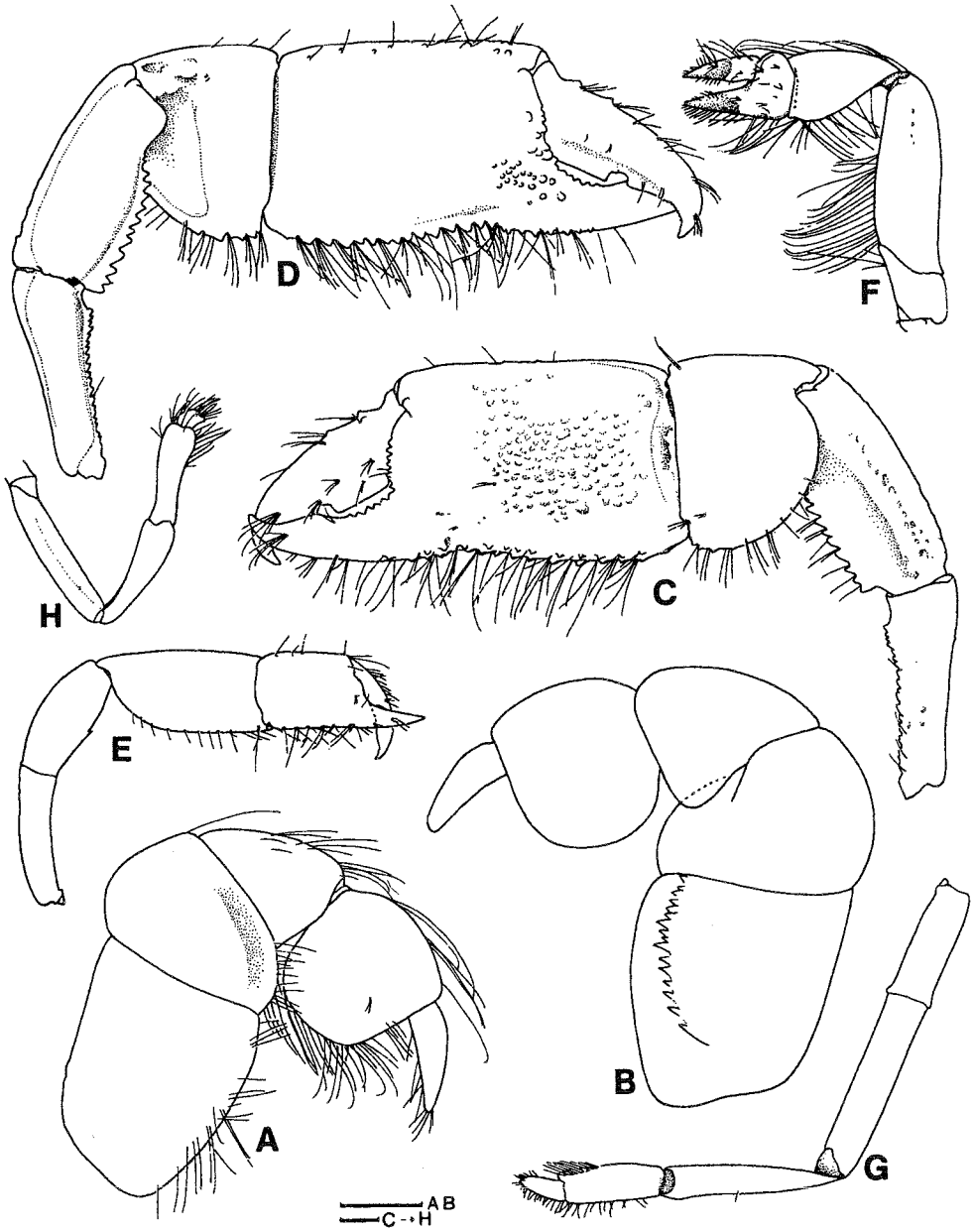


Fig. 2. *Neocallichirus angelikae* sp. nov., holotype, female, TL 47.0, ZMH K-38196. – **A**, Mxp 3, right side, lateral view; **B**, same, mesial view; **C**, larger cheliped, lateral view; **D**, same, mesial view; **E**, smaller cheliped, lateral view; **F**, P/2, lateral view; **G**, P/4, lateral view; **H**, P/5, lateral views. Scale 1 mm.

estalks (Fig. 1A-D) triangular, broader than long proximally, convex on dorsal surface; tuse, shorter than distal end of antennular basal article; cornea large, located distolaterally, nted brown in alcohol specimen.

tennular peduncle (Fig. 1A-D) slightly longer than antennal peduncle, terminal article twice as long as penultimate. Antennal scale oval but vestigial; terminal article distinctly r than and, slightly narrower than penultimate article; antennal flagellum about 2.5 length of antennular flagellum. Mandible incisor process with denticulate cutting edge 3A, B). Maxilla 1 (Fig. 3C) palp with ultimate half directed backwards ending in truncate ction. Maxilla 2 (Fig. 3D) scaphognathite without long posterior bristle. Mxp 1 (Fig. ndopod small and rounded, and epipod large. Mxp 2 with rudimentary podobranch. 3 (Fig. 2A, B) without exopod; merus-ischium of endopod broadened; ischium subrectangular, nes as long as broad; crista dentata with row of sparse denticles; merus subtriangular, nes as broad as long, distomesial margin broadened, obliquely truncate and continuous ort mesial margin by rounded corner; carpus triangular, 1.3 times as long as broad; dus subquadrate, slightly broader than long, truncate distally with straight line; dactylus form, 0.8 times as long as propodus.

anchial formula as shown in Table 1.

1. *Neocallichirus angelikae* sp. nov., branchial formula.

	Maxillipeds			Pereiopods				
	1	2	3	1	2	3	4	5
pods	1	1	-	-	-	-	-	
ods	1	-	-	-	-	-	-	-
obranchs	-	r	-	-	-	-	-	-
robranchs	-	-	2	2	2	2	2	-
robranchs	-	-	-	-	-	-	-	-

rudimentary)

l unequal in size and dissimilar in shape. Larger cheliped (Fig. 2C-D) massive; ischium er, dorsal margin almost straight and unarmed, ventral margin bearing a row of distinct cles; merus slightly longer than ischium, about twice as long as high, dorsal margin ly arcuate and smooth, ventral margin lacking distinct enlarged lobe, but slightly convex a row of eleven triangular denticles, and exterior surface slightly swollen in upper half. s broadened with rounded posterior margin, 1.3 times as high as long, and about hirds length of merus. Chela heavy, 2.8 times as long as carpus; palm 1.8 times as as carpus, about 1.5 as long as high, dorsal margin smooth, ventral margin with a row angular denticles extending to base of fixed finger, and distal margin denticulate on half; fixed finger one-third length of palm, prehensile margin medially convex, bearing of triangular denticles at proximal half, and smooth over distal half; dactylus distally ved downward, prehensile margin bearing a median concavity, unarmed over proximal and distally denticulate over distal half. Smaller cheliped (Fig. 2E) slender and less ive than larger cheliped; ischium narrow, dorsal and ventral margins unarmed; merus gular, slightly shorter than ischium, ventral margin bearing small median tooth; carpus

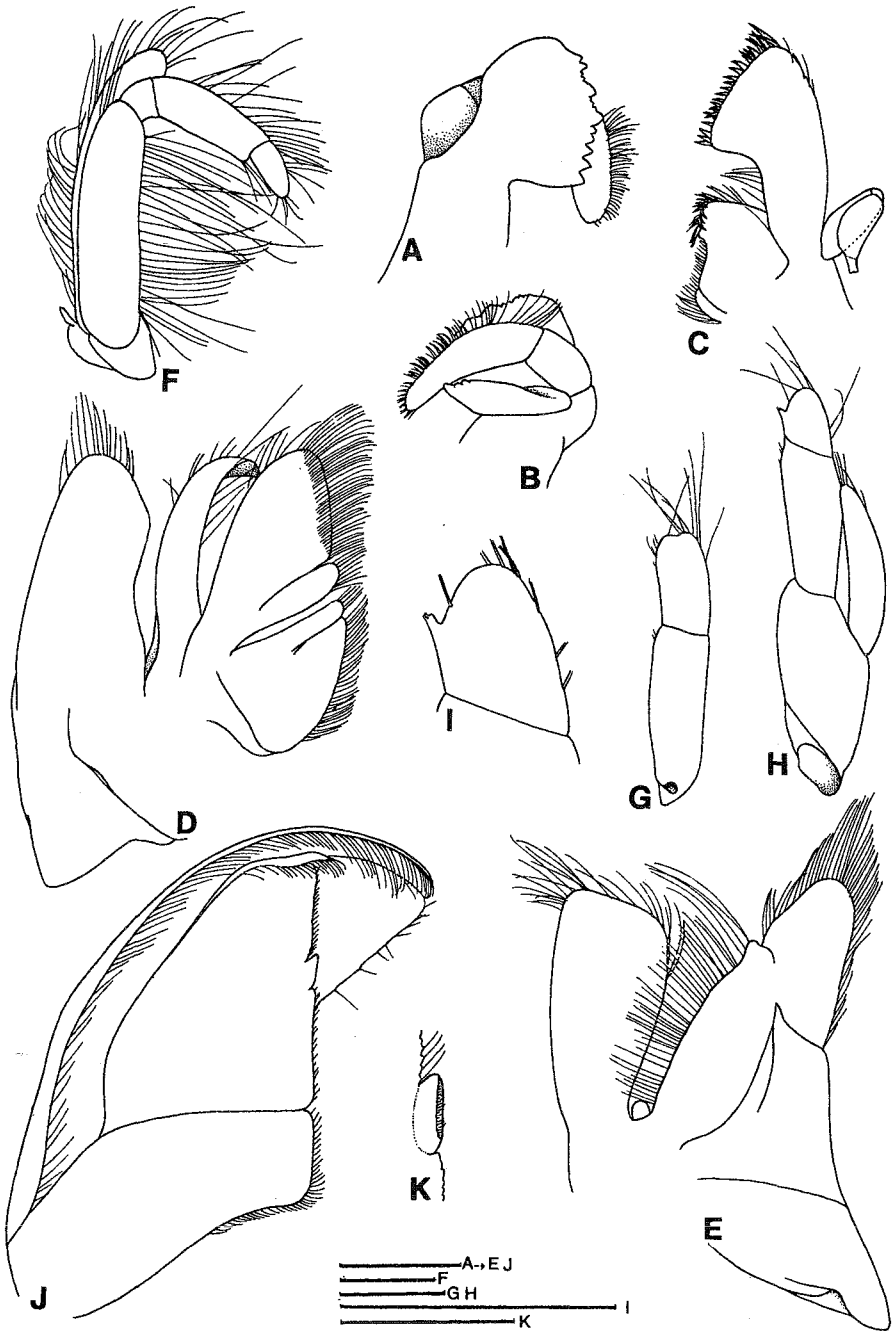


Fig. 3. *Neocallichirus angelikae* sp. nov., holotype, female, TL 47.0, ZMH K-38196. – **A**, mandible, lateral view; **B**, same, mesial view; **C**, maxilla 1, mesial view; **D**, maxilla 2, lateral view, **E**, Max 1, mesial view; **F**, Max 2, lateral view; **G**, female pleopod 1, anterior view; **H**, female plp 2, anterior view; **I**, distal segment of pleopod 2 and appendix interna with hooks; **J**, plp 3, right side, anterior view; **K**, same, appendix interna. Scale 1 mm.

gular, 1.3 times as long as high, proximoventral margin broadly rounded. Chela as ıs carpus; palm subsquare, about 1.5 times as long as high; fixed finger half as long m, prehensile margin unarmed; gape unarmed; dactylus slender, slightly longer than conspicuously longer than fixed finger, prehensile margin unarmed.

(Fig. 2F) chelate; merus broadened, twice as long as ischium, flexor margin with closely tae; carpus setose on dorsal and flexor margins; chela about as long as carpus, setose ırgins; both fingers 1.8 times as long as palm, corneous on prehensile margins and nissing on right side.

missing.

(Fig. 2G) slender, barely subchelate; merus 1.6 times as long as ischium; carpus about g as merus; propodus rectangular, two-thirds length of carpus, lateral surface scattered soft setae, ventrodistal corner obtusely protruded; dactylus setose on external surface.

(Fig. 2H) chelate; propodus forming a broad fixed finger ventrodistally, ventral surface lense setation; dactylus hooked towards external side of fixed finger, tip deflected.

dominal somites smooth, glabrous dorsally; pleurites 2-5 each with a tuft of setae ly; abdominal somite 6 smooth on lateral margin.

lson (Fig. 1E) trapezoid, slightly broader than long; lateral margins parallel over proxiırd, then clearly convergent posteriorly to a rounded corner; posterior margin narrowed ıight line, setose and with a distinct median spine; dorsal surface with transverse row ae posteromedially. Uropodal endopod trapezoidal; anterior margin broadened, largely ed distally with denticle, extending to squared distal margin by rounded anterodistal , dorsal surface with median longitudinal carina. Uropodal exopod squared distally, than endopod, about as long as broad; dorsal surface with three longitudinal medial e, anterior slender, median broader than anterior one, bearing 1-3 denticles proximally, ior slender, reaching slightly beyond midline.

ı1 (Fig. 3G) uniramous, two-segmented, and weakly bilobed distally. Plp2 (Fig. 3H-I) ous; exopod shorter than endopod; endopod two-segmented, distal segment mesially ppendix interna bearing few hooks distally. Plp3 (Fig. 3J) -5 biramous, broadly foliaceous, ɔearing a small triangular appendix interna (Fig.3K) a little distance from tip on mesial n of endopod.

ı a r k s. – *Neocallichirus limosa* POORE, 1975 is well known from South Australia. resent new species, *N. angelikae,* can be separated from *N. limosa* by the lengths of ıular and antennal peduncles, the forms of the chelipeds, the female Plp1, and the ıce of anterolateral spines.

ɔcallichirus angelikae is morphologically allied to *N. nickellae* MANNING, 1993 from ɔral Garden, Tobago, Carribean (11°11'N, 60°49'W), by the ischium, merus, carpus and of the male larger cheliped all having denticulate ventral margins, and by the form of il-fan. However, *N. angelikae* is different from *N. nickellae* by having the merus of ıaller cheliped with a median spine on the ventral margin, and the antennular peduncle y longer than the antennal peduncle. In *N. nickellae* the merus of the smaller cheliped ırmed ventrally, and the antennular peduncle is obviously shorter than the antennal cle.

ACKNOWLEDGMENTS. I thank Prof. Dr. ANGELIKA BRANDT and Mrs. GISELA WEGENER Zoologisches Institut und Zoologisches Museum, Hamburg, Germany, for providing me with the interesting specimen and its data. My thanks are also extended to Prof. Dr. G. HARTMANN, the Emeritus Professor of the same Institute, who collected it in Australia. Dr. PETER DAVIE of the Queensland Museum, Brisbane read the manuscript and helped to correct the English.

References

BAKER, W. H. 1907. Notes on South Australian decapod Crustacea. Part V. – Trans. Proc. Rep. R Soc. South Australia 31(5): 173-191, pls 23-25.

DANA, J. D., 1852. Crustacea. In: United States Exploring Expedition during the years 1838, 1839, 1840, 1841, 1842, under the command of CHARLES WILKES, U.S.N., 13(pt. 1): i-viii, 1-685. – Philadelphia: C. SHERMAN (Lochem, Netherlands, 1972, reprinted by Antiquariaat Junk)

DANA, J. D., 1855. Crustacea. United States Exploring Expedition during the years 1838, 1839, 1840, 1841, 1842 under the command of CHARLES WILKES, U.S.N. 14(Atlas): 1-27, pls 1-96.

FULTON, S. W. & F. E. GRANT, 1906a. Some little known Victorian decapod Crustacea, with descriptions of new species. No. 3. – Proc. R. Soc. Victoria (2) 19(1): 5-15, pls 3-5.

MANNING, R. B., 1993. Two new species of *Neocallichirus* from the Caribbean Sea (Crustacea: Decapoda: Callianassidae). – Proc. Biol. Soc., Washington 106(1): 106-114.

NGOC-HO, N., 1994. Some Callianassidae and Upogebiidae from Australia with description of four new species (Crustacea: Decapoda: Thalassinidea). – Mem. Mus.Victoria 54: 51-78.

POORE, G. C. B., 1975. Systematics and distribution of *Callianassa* (Crustacea, Decapoda, Macrura) from Port Phillip Bay, Australia, with descriptions of two new species. – Pacific Sci. 29(2): 197-209.

POORE, G. C. B. & D. J. G. GRIFFIN, 1979. The Thalassinidea (Crustacea: Decapoda) of Australia. – Rec. Aust. Mus. 32(6): 217-321.

SAKAI, K., 1988. A new genus and five new species of Callianassidae (Crustacea: Decapoda:Thalassinidea) from northern Australia. – Beagle, Rec. Northern Territory Mus. 5: 51-69.

SAKAI, K., 1999a. A new species, *Callianassa poorei* sp. nov. (Decapoda: Crustacea: Callianassidae) from Tasmania. – J. Mar. Biol. Ass. U.K. 79: 373-374.

SAKAI, K. 1999b. Synopsis of the family Callianassidae, with keys to subfamilies, genera and species, and the description of new taxa Crustacea: Decapoda: Thalassinidea). – Zool. Verh. Leiden 326: 1-152.

Received: 27 May 1999; accepted: 05 June 2000.