BRIAN KENSLEY

DECAPOD AND ISOPOD CRUSTACEANS FROM THE WEST COAST OF SOUTHERN AFRICA, INCLUDING SEAMOUNTS VEMA AND TRIPP

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BRIAN KENSLEY

Cape Town Kaapstad

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By

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(With 9 figures)

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ABSTRACT

Seven species of isopods (including *Stenetrium vemae* sp. nov. and *Jaeropsis monsmarinus* sp. nov.) and nineteen species of decapods (including *Pseudodromia cacuminis* sp. nov. and *Macropodia cirripilus* sp. nov.) are recorded from seamounts Vema and Tripp, and the Lüderitz area. Zoogeographically, the isopods show strong affinities with the South African fauna, while the decapods include mainly South African and west African forms, with single Indo-Pacific and Austral species.

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INTRODUCTION

The benthic fauna of the continental shelf and seamounts off the west coast of South Africa has barely been investigated. What information exists is to be found in scattered reports, and we are still a long way from even a superficial overview.

The material dealt with in this report comes from several sources and emphasizes the fragmentary state of our knowledge. It was thought useful, however, to publish several new records and species, and to summarize the little that is known about Seamount Vema's crustacean fauna.

Seamount Vema, first discovered in 1957, was visited by personnel from the University of Cape Town and the South African Museum in 1964 and 1966. In 1978 the University of Cape Town did further collecting on the summit peak. Lying about 650 km off the west coast of South Africa at 31°38′S 08°02′E (Fig. 1), and rising steeply from the 5 000 m deep sea-floor, the summit plateau averages about 40 m below the surface. Collecting on this plateau has been done both with air-lift dredge and by scuba divers (see Grindley 1967). Most

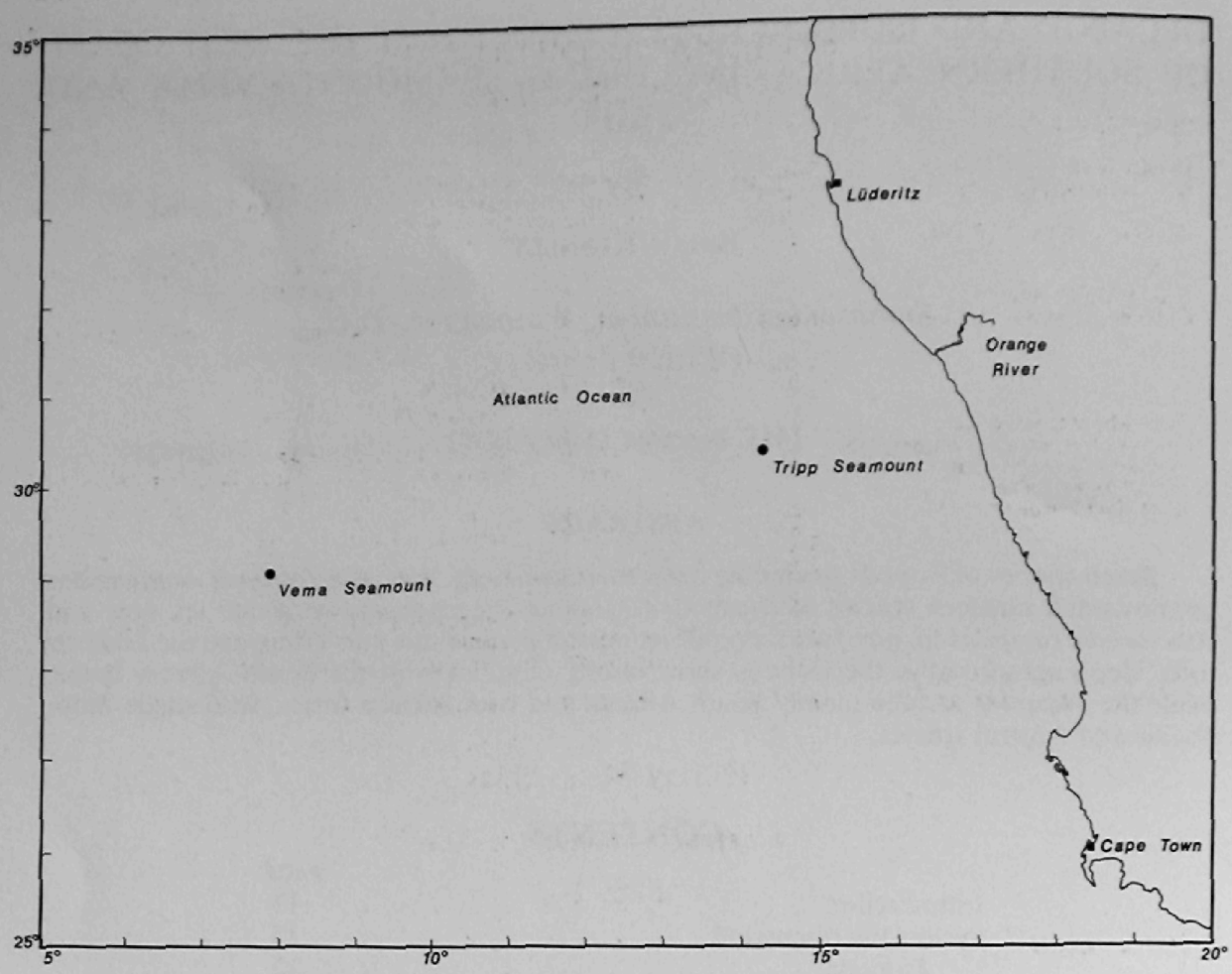

Fig. 1. Map showing localities.

of this material has been deposited in the South African Museum, while a preliminary account of the fauna was given by Berrisford (1969). The Decapoda in this latter report were given preliminary identifications by J. Forest and D. Guinot of the Paris Museum.

Material from Seamount Tripp was collected in the late 1960s by the then Division of Sea Fisheries and the South African Museum, and a few specimens came from commercial fishing boats on the west coast. Seamount Tripp (20°36′S 14°15′E) has received even less attention than Vema, the three specimens mentioned here having been accidentally caught during hydrographic operations. The summit is about 150 m below the sea surface.

Abbreviations used

CL—carapace length
CW—carapace width
IK—Isaacs Kidd trawl
juv.—juvenile(s)
ovig.—ovigerous
SAM—South African Museum
USNM—United States National Museum
VEM—Vema station numbers

SYSTEMATIC DISCUSSION
Order ISOPODA

SPECIES LIST

	Material	*Station No.*	*Locality*	*Distribution*
Family Idoteidae				
Glyptidotea lichtensteini (Krauss)	2 juvs	VEM 2.3	Vema, 39 m	Lüderitz to Transkei
	3 juvs	VEM 4.3	Vema, 40 m	
Paridotea ungulata (Pallas)	1 ♂	VEM 2.2	Vema, 39 m	Walvis Bay to East London; Australia; New Zealand; Chile; Argentina
Family Cirolanidae				
Cirolana saldanhae Barnard	1 ovig. ♀	VEM 2.3	Vema, 39 m	Orange River mouth to Saldanha Bay
	1 damaged			
	1 juv.	VEM 4.3	Vema, 40 m	
	1 ♀	VEM 4.6	Vema, 42 m	
Family Sphaeromatidae				
Cymodoce unguiculata Barnard	1 ♀	VEM 4.6	Vema, 42 m	Lüderitz to False Bay
Cymodocella sublevis Barnard	1 ♀	VEM 4.2	Vema, 40 m	Lüderitz to East London
Family Stenetriidae				
Stenetrium vemae sp. nov.	2 ovig. ♀	VEM 2.1	Vema, 39 m	—
	2 ovig. ♀ 2 ♀ 3 ♂	VEM 2.2	Vema, 39 m	
	4 ovig. ♀ 4 ♀ 8 ♂	VEM 2.3	Vema, 39 m	
	1 ♂	VEM 4.1	Vema, 40 m	
	1 ♀	VEM 4.2	Vema, 40 m	
	1 ♂	VEM 4.6	Vema, 42 m	
Family Jaeropsidae				
Jaeropsis monsmarinus sp. nov.	1 ♀ 1 ♂	VEM 4.3	Vema, 40 m	—

Family **Stenetriidae**

Stenetrium vemae sp. nov.

Figs 2–3

Description

Male

Body about three and one-half times longer than wide, with scattered setae dorsally. Cephalon broader than long, with well-developed dorsal reniform eyes; anterolateral corners produced, acute; antennal spine of frontal margin triangular, acute; rostrum wider than long, pentagonal, two anterior margins with tiny teeth, apex an obtuse angle somewhat dorsally flexed. Pereonites 1–4 with anterolateral corners acute, posterolateral corners rounded; midventral keel hardly developed, with tiny denticle on pereonites 1–3, absent on 4; pereonites 5–7 with anterolateral corners rounded, posterolateral corners of 5 rounded, 6 bluntly produced, 7 acute; midventral keel with strong posterior spine on 6 and 7. First pleonite short, reduced; pleotelson wider than long, with single strong lateral tooth in posterior half of margin, followed by sinuous margin leading to rounded apex; middorsal region gently convex, barely demarked from lateral regions.

Antennular peduncle 3-segmented, basal segment broader and longer than two distal segments, second segment shorter than third, bearing elongate simple setae; flagellum of 29–30 articles. Basal antennal segment produced into spinose process on outer distal angle; second segment shorter than first; third segment outer distal margin deeply excavate for insertion of large setiferous scale; fourth segment less than half length of third. Mandibular palp 3-segmented, basal segment with single, strong fringed seta; second segment

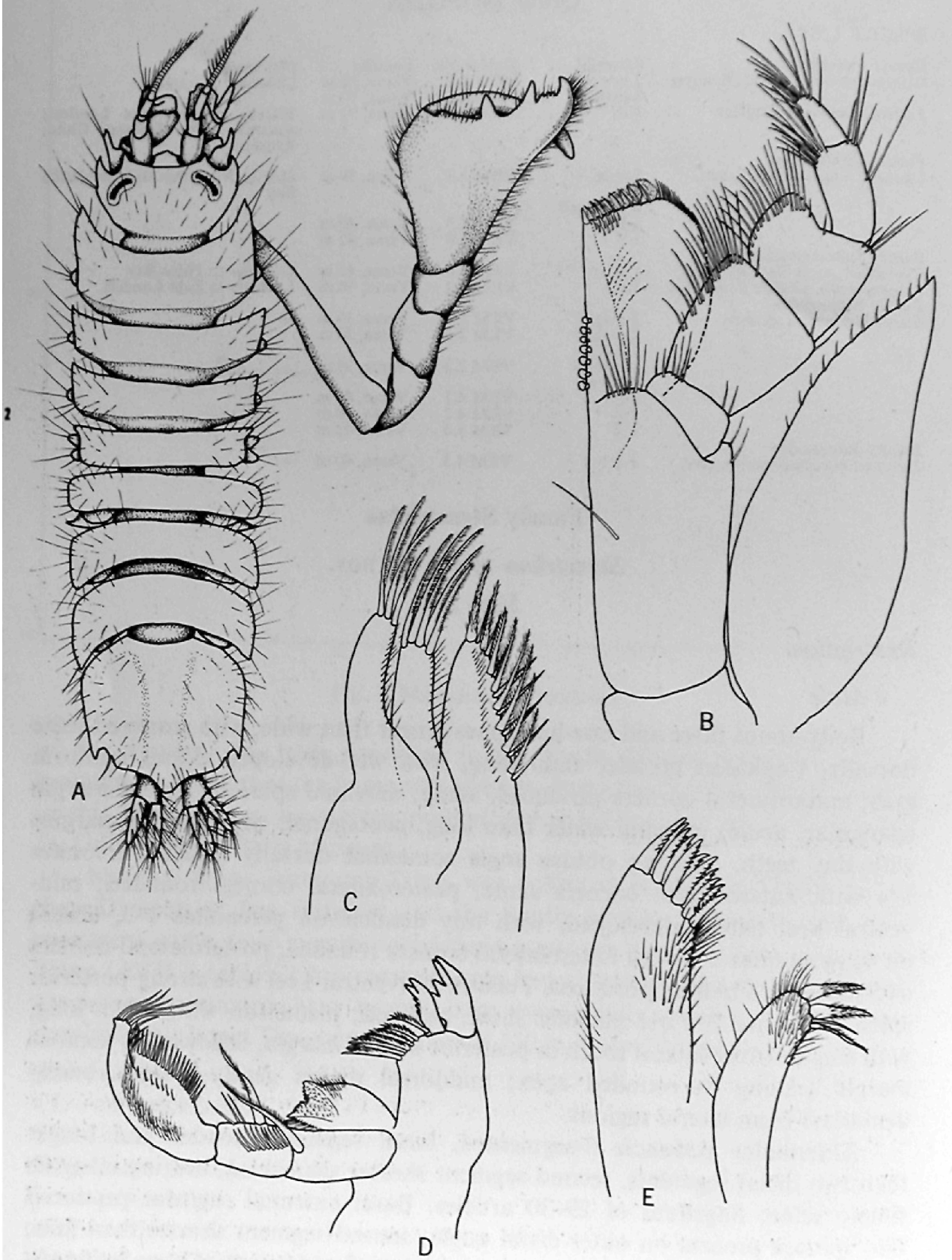

Fig. 2. *Stenetrium vemae*.
A. Holotype in dorsal view. B. Maxilliped. C. Maxilla 2. D. Mandible. E. Maxilla 1.

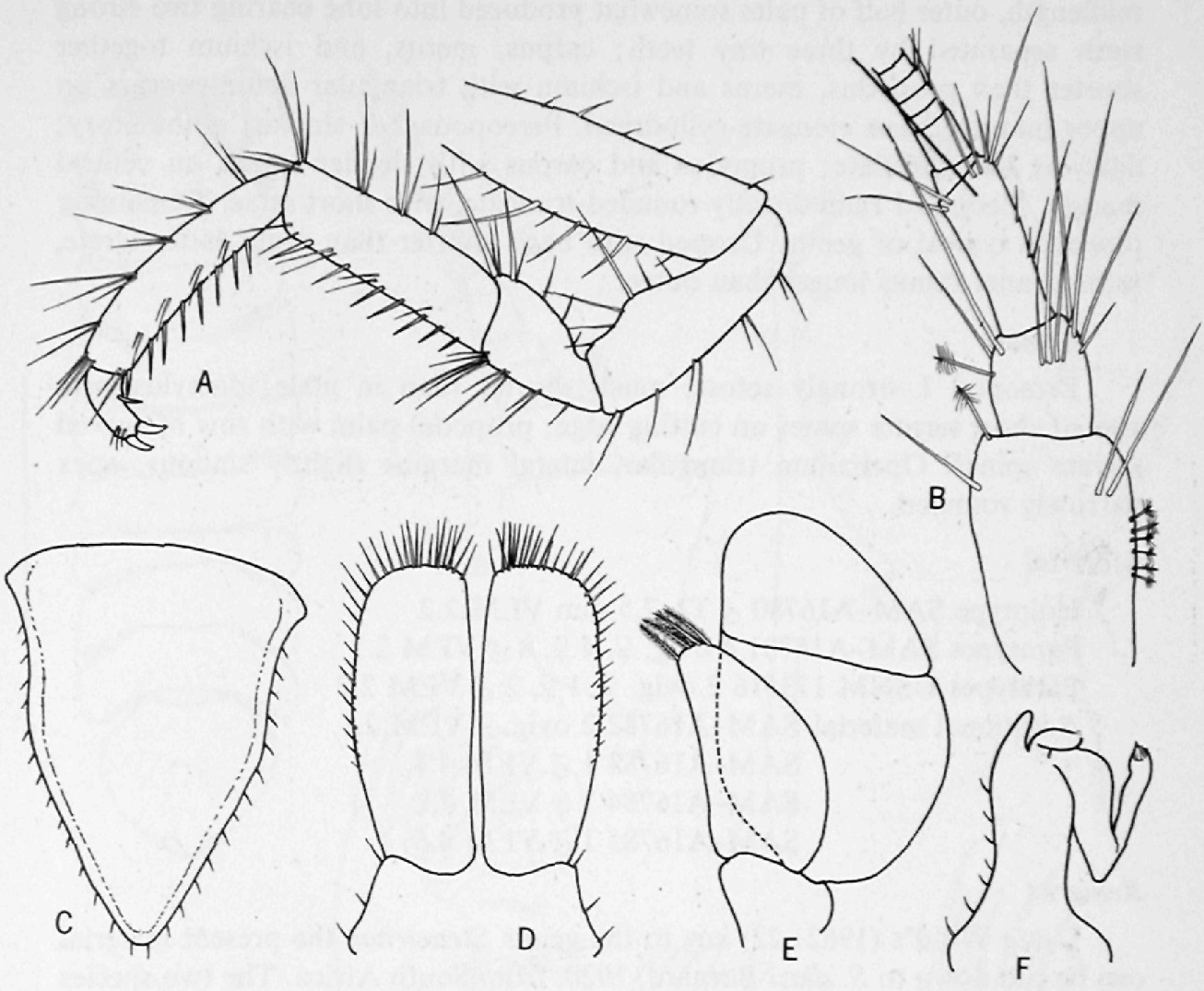

Fig. 3. *Stenetrium vemae*.
A. Pereopod 2. B. Antennular peduncle. C. Operculum ♀. D. Pleopod 1 ♂. E. Pleopod 3 ♂. F. Pleopod 2 ♂.

with row of short spines and single, strong fringed seta; terminal segment strongly curved, with row of spines on inner margin, several elongate setae on distal narrowed part; left mandible with incisor of four large cusps, sclerotized lacinia of two strong cusps and serrate spine; spine row of six serrate spines; molar bearing short marginal spines, roughened distal surface; right mandible lacking lacinia; spine row of sixteen serrate spines. Maxilla 1 outer ramus with eleven strong dentate spines; inner ramus distally with two strong and two slender setae. Maxilla 2 both lobes of outer ramus each with five elongate fringed spines; inner ramus with eight fringed spines and several setae. Maxilliped exopod apically acute; palp of five segments, each with numerous simple setae; endite with seven coupling hooks on median margin, several fringed spines and seven or eight flattened fringed scales. Pereopod 1 almost equal to entire body in length; dactylus strongly curved, longer than propodal palm; propodus widening distally, palm with strong tooth at about

midlength, outer half of palm somewhat produced into lobe bearing two strong teeth separated by three tiny teeth; carpus, merus, and ischium together shorter than propodus, merus and ischium with triangular acute process on upper margin; basis elongate-cylindrical. Pereopods 2–7 similar, ambulatory; dactylus biunguiculate; propodus and carpus with slender spines on ventral margin. Pleopod 1 rami distally rounded-truncate, with short setae. Remaining pleopods typical of genus. Uropod with basis shorter than rami; latter terete, setose, inner ramus longer than outer.

Female

Pereopod 1 strongly setose, much shorter than in male; dactylus with row of short serrate spines on cutting edge; propodal palm with row of curved serrate spines. Operculum triangular, lateral margins slightly sinuous, apex narrowly rounded.

Material

Holotype SAM–A16780 ♂ TL 7,5 mm VEM 2.2
Paratypes SAM–A16781 4 ovig. ♀, 4 ♀, 8 ♂ VEM 2.3
Paratypes USNM 173516 2 ovig. ♀, 1 ♀, 2 ♂ VEM 2.2
Additional material SAM–A16782 2 ovig. ♀ VEM 2.1
SAM–A16783 1 ♂ VEM 4.1
SAM–A16784 1 ♀ VEM 4.2
SAM–A16785 1 ♂ VEM 4.6

Remarks

Using Wolff's (1962: 22) key to the genus *Stenetrium* the present material can be run down to *S. diazi* Barnard, 1920, from South Africa. The two species are undoubtedly similar, especially in the elongate form and structure of pereopod 1 of the mature male. Several differences separate the two species: the rostrum of *S. diazi* has a concave anterior margin, the rami of pleopod 1 ♂ are acutely rounded on the inner distal angle, while pereopod 1 ♂, although having a somewhat elongate propodus, does not have the outer distal lobe bearing two large teeth separated by three tiny teeth; instead it possesses two blunt, closely opposed teeth near the articulation.

Etymology

The specific name is derived from the type locality, Seamount Vema.

Family **Jaeropsidae**

Jaeropsis monsmarinus sp. nov.

Figs 4–5

Description

Male

Body about three times longer than wide, with numerous scattered, short setules dorsally. Cephalon with lateral margins entire, apex rounded.

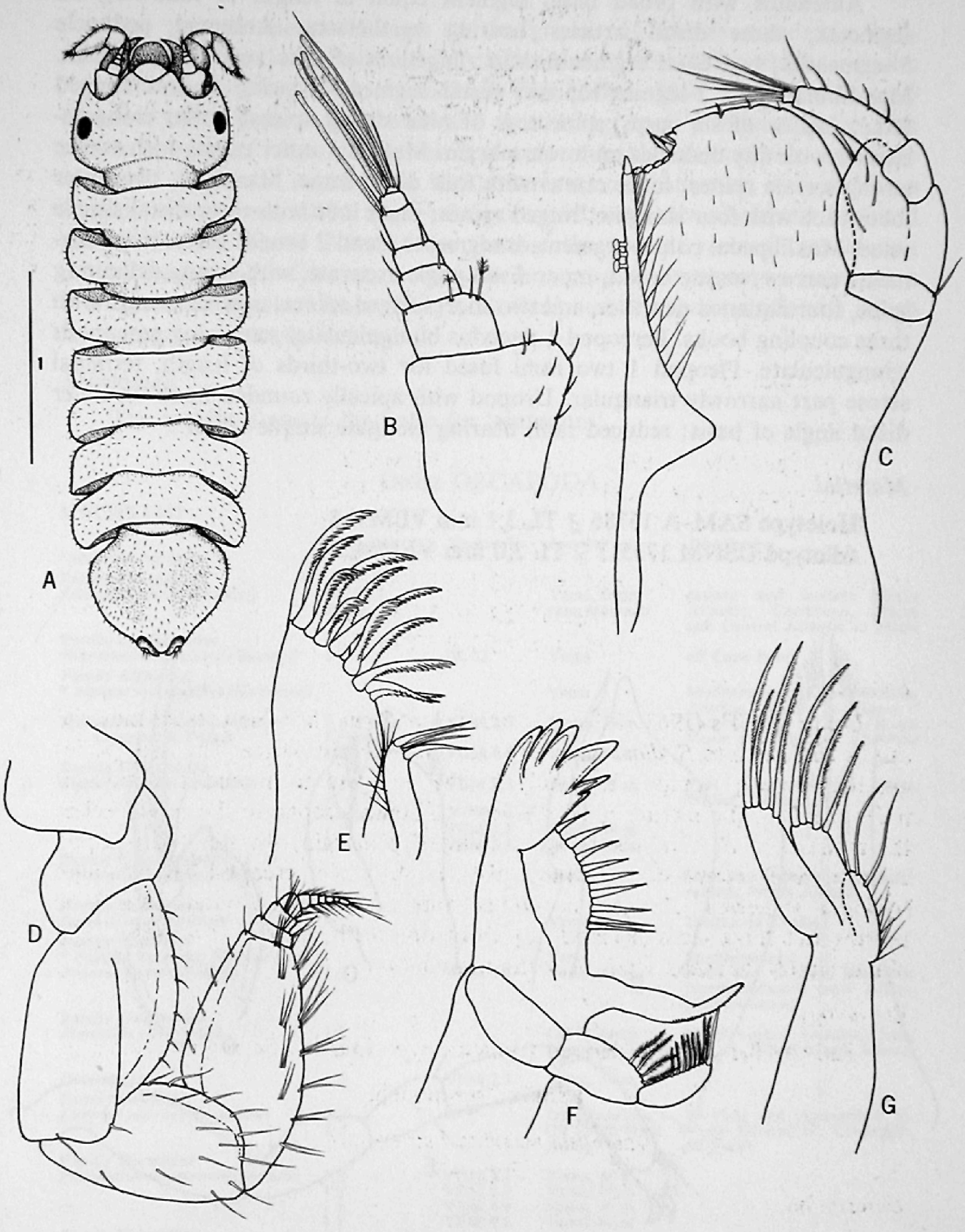

Fig. 4. *Jaeropsis monsmarinus.*
A. Holotype in dorsal view. B. Antennule. C. Maxilliped. D. Antenna. E. Maxilla 1. F. Mandible. G. Maxilla 2.

Antennule with broad basal segment equal in length to following six segments; three distal articles bearing aesthetascs. Antennal peduncle 5-segmented; two basal segments short; flagellum of nine very short articles. Mandibular palp 3-segmented, two distal segments bearing several fringed setae; incisor of six cusps; spine row of nine strong spines; molar elongate-slender with tiny denticles on lower margin. Maxilla 1 outer ramus with twelve strong serrate spines; inner ramus with four distal setae. Maxilla 2, two outer lobes each with four elongate fringed spines; inner lobe with three distal simple setae. Maxillipedal palp 5-segmented, segments 1 and 2 broad, three distal segments narrow; endite broad, inner distal angle excavate, with strong delimiting spine, four flattened denticles, and two short fringed spines; median margin with three coupling hooks. Pereopod 1 dactylus biunguiculate, remaining pereopods triunguiculate. Pleopod 1 two rami fused for two-thirds of length, terminal setose part narrowly triangular. Uropod with apically rounded hook on inner distal angle of basis; reduced rami bearing elongate simple setae.

Material

Holotype SAM–A 16786 ♂ TL 3,1 mm VEM 4.3
Allotype USNM 173517 ♀ TL 3,0 mm VEM 4.3

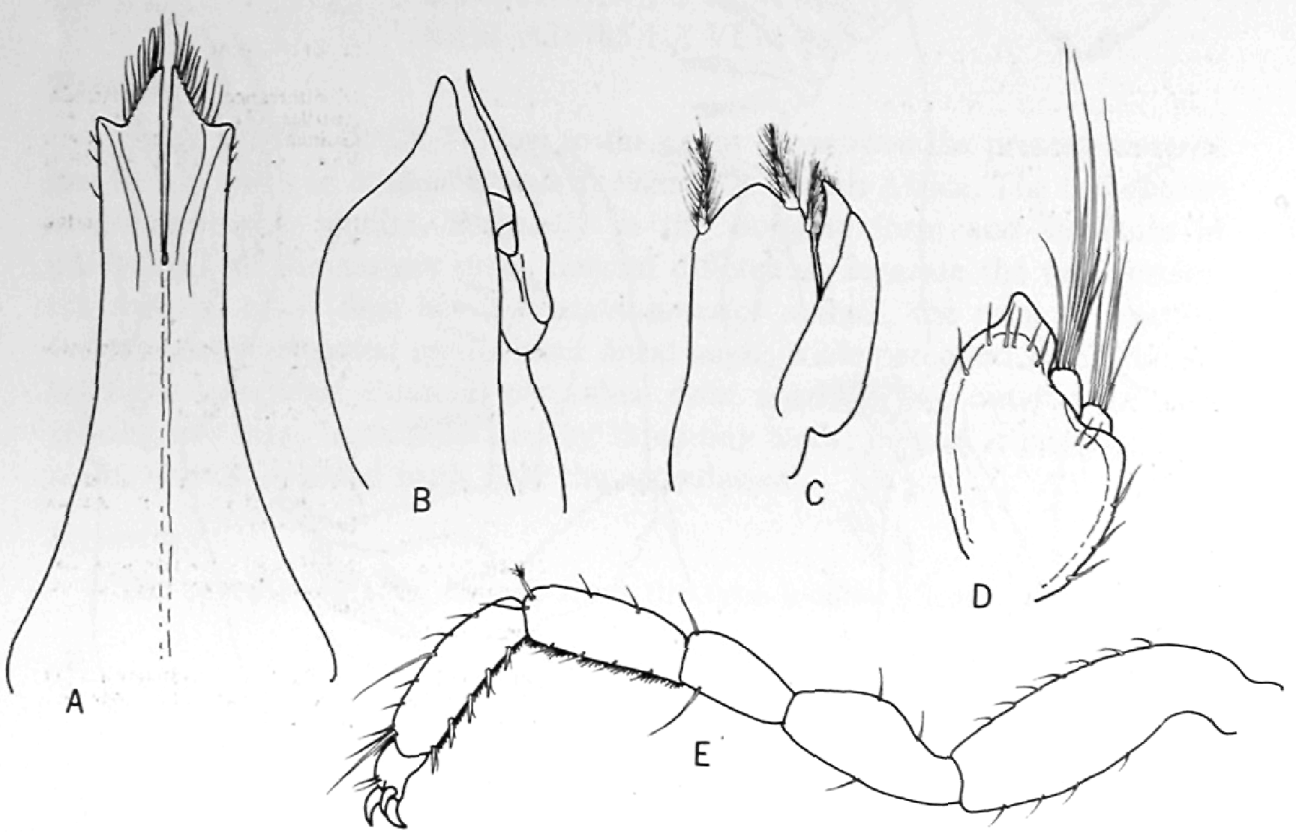

Fig. 5. *Jaeropsis monsmarinus*.
A. Pleopod 1 ♂. B. Pleopod 2 ♂. C. Pleopod 3 ♀. D. Uropod. E. Pereopod 2.

Remarks

The present species belongs to the groups of species possessing well-separated obliquely-inserted uropods (Barnard 1965: 200), which includes *J. stebbingi* Kensley, 1975, *J. paulensis* Vanhöffen, 1914, and *J. waltervadi* Kensley, 1975. Both *J. waltervadi* and *J. stebbingi* each possess a pleon with serrate margins. *J. monsmarinus* most closely resembles *J. paulensis*, especially in rostral shape and mouthparts. Vanhöffen's species, however, does not have a hook on the inner distal angle of the uropod, while the triangular terminal part of the pleopod 1 ♂ is broader than in the present species. Considering the isolated nature of Vema, *J. monsmarinus* possibly represents a population of *J. paulensis* (known from Gough, St Paul and Amsterdam Islands) which has become genetically isolated.

Etymology

The specific name is the Latin for 'seamount'.

Order DECAPODA

SPECIES LIST

* material not seen	*Material*	*Station No.*	*Locality*	*Distribution*
Family **Penaeidae**				
Funchalia villosa (Bouvier)	11 ♂ 7 ♀ 40 juv.		Vema, from tuna stomach	eastern and western North Atlantic, Caribbean, South and Central Atlantic to Natal
Family **Oplophoridae**				
Notostomus auriculatus Barnard	1 ♀	IK 52	Vema	off Cape Point
Family **Alpheidae**				
* *Alpheus macrocheles* (Hailstone)			Vema	Mediterranean, Great Britain, Antilles, Guinea, Sao Tome
Synalpheus huluensis africanus Crosnier & Forest	5 ♂ 5 ovig. ♀ 12 juv.	VEM 2.3	Vema, 39 m	Guinea, Sao Tome, Cape Verde Is., Principe, Annobon
	1 ♀	VEM 4.6	Vema, 42 m	
Family **Hippolitidae**				
Eualus ctenifera (Barnard)	1 ♂	VEM 2.2	Vema, 39 m	Port Elizabeth to Natal, Walter's Shoal
	11 ♂ 16 ♀ 1 ovig. ♀	VEM 2.3		
	1 ♀	VEM 3.2	Vema, 48 m	
	1 ♀	VEM 3.3	Vema, 50 m	
Family **Crangonidae**				
**Pontophilus sculptus* (Bell)			Vema	False Bay to Durban, Mediterranean, North Atlantic
Family **Palinuridae**				
Jasus tristani Holthuis			Vema	Tristan da Cunha
Family **Paguridae**				
* *Pagurus chevreuxi* Bouvier			Vema	Mediterranean
Pagurus cuanensis (Bell)	1 ♂	VEM 4.5	Vema, 42 m	False Bay to Port Elizabeth, North Atlantic, west Africa, Mediterranean
Family **Galatheidae**				
Eumunida picta Smith	1 ♀		Off Lüderitz	North-western Atlantic, Cuba, Florida, New Zealand, Australia
	1 ♂ 1 ♀		Seamount Tripp	
Galathea sp.	1 ♂	VEM 2.3	Vema, 39 m	
Family **Lithodidae**				
Lithodes murrayi Henderson	2 ♂		Off Lüderitz	St Paul and Amsterdam Is.
	3 ♂		Off South West Africa	Prince Edward Is., Crozet Is., off Natal
Family **Dromiidae**				
Pseudodromia cacuminis sp. nov.	1 ♂	VEM 3.2	Vema, 48 m	
	1 ♂	VEM 4.2	Vema, 40 m	
	1 ♀	VEM 4.4	Vema, 40 m	
	1 ♀	VEM 4.6	Vema, 42 m	
Family **Homolidae**				
Paromola alcocki (Stebbing)	1 ♀		Off Lüderitz 800 m	Port Elizabeth, Mozambique, Maldives
Paromola cuvieri (Risso)	1 ♂		Off Lüderitz, 800 m	eastern North Atlantic, Mediterranean, west Africa
	1 ovig. ♀		Seamount Tripp	

	Material	*Station No.*	*Locality*	*Distribution*
Family **Majidae**				
Macropodia cirripilus sp. nov.	1 ♀	VEM 4.4	Vema, 40 m	
	1 ♂	VEM 15M	Vema, 40 m	
Family **Xanthidae**				
Pilumnus sp.	1 ♂ 4 juv.	VEM 2.3	Vema, 39 m	
	1 ♂	VEM 3.3	Vema, 50 m	
* *Pseudactaea corallina* (Alcock)			Vema	Indo-Pacific
Family **Grapsidae**				
Plagusia chabrus (Linnaeus)	1 ♂ 1 ovig. ♀		Vema	South West Africa to Natal, Chile, Juan Fernandez, Australia, New Zealand

Family **Lithodidae**

Lithodes murrayi Henderson

Lithodes murrayi Henderson, 1888: 43, pl. 4. Hale, 1941: 272, pl. 3 (figs 3–4). Yaldwyn & Dawson, 1970: 275, figs 1–3. Arnaud, 1971: 167; Kensley, 1977: 166, fig. 3.

Previous records

Possession Is., Prince Edward Is. 620 m; Macquarie Is. 120 m; Crozet Is., New Zealand, 764 m; Zululand to Durban, South Africa, 600–810 m.

Material

SAM–A 16206 ♂ CL 89 mm CW 90 mm off Lüderitz, 800 m

SAM–A 15358 ♂ CL 101 mm CW 102 mm off Lüderitz, 800 m

SAM–A 16211 3 ♂♂ CL 109–118 mm CW 106–120 mm off South West Africa

Remarks

These first Atlantic records of *L. murrayi* represent a considerable extension in the range of what was regarded as a southern Indian Ocean species.

Family **Dromiidae**

Pseudodromia cacuminis sp. nov.

Figs 6–7

Description

Female

Carapace, abdomen, and pereopods covered with short spiky hairs, becoming dense in supraorbital, rostral, and abdominal margins. Carapace wider than long, dorsally convex; front bluntly trilobed, median lobe set at lower level than lateral lobes, ventrally keeled, dorsally visible; single, rounded lateral lobe present; anterolateral and supraorbital areas bearing numerous short spines; scattering of tiny spines in rostral area. Abdomen 7-segmented, terminal segment broadly rounded; no trace of uropods. Sternal grooves ending together on broad rounded-truncate sternal plate between bases of chelipeds.

Eyestalk with scattered spinules. Antennular peduncle segments with few scattered spinules; flagellum of six articles, barely extending to distal end of

antennal peduncle. Antennal peduncle segments with scattered spinules; flagellum of about fifteen articles, extending well beyond orbit. Maxilliped 1 with triangular epipodite. Maxilliped 2 with narrow epipodite and gill. Maxilliped 3 segments 3 to 6 with tiny spinules on outer surface, slender epipodite and gill present. Chelipeds equal; palm of chela longer than finger and thumb; dactylus with cutting edge of seven rounded cusps; terminal teeth fitting between two terminal teeth of propodal finger; outer surface of propodus, carpus, merus, and ischium bearing scattered spinules. Pereopods 2 and 3

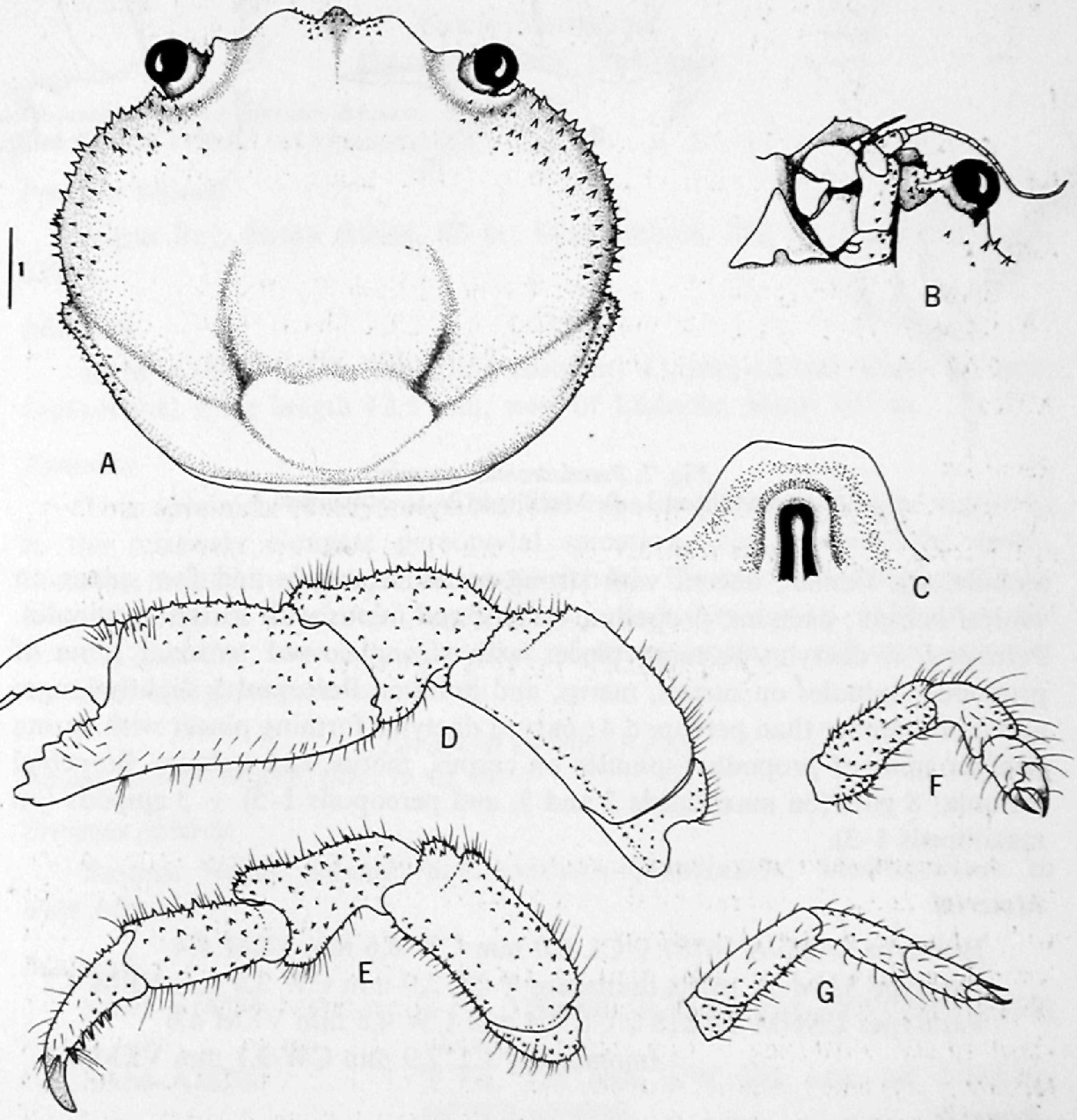

Fig. 6. *Pseudodromia cacuminis.*
A. Holotype carapace in dorsal view. B. Ventral view of orbit and antennae. C. Sternum ♀. D. Cheliped. E. Pereopod 2. F. Pereopod 4. G. Pereopod 5.

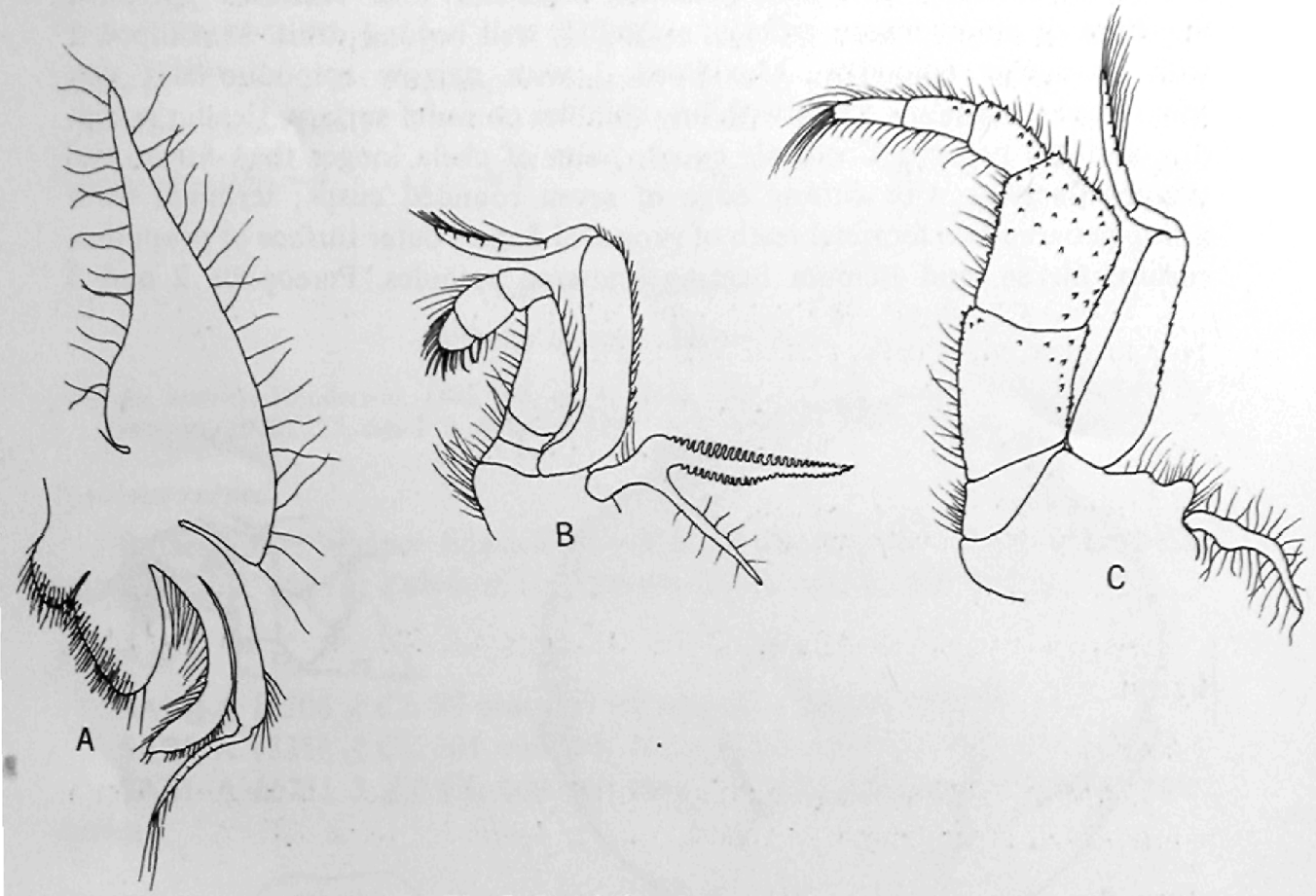

Fig. 7. *Pseudodromia cacuminis*.
A. Maxilliped 1. B. Maxilliped 2. C. Maxilliped 3.

ambulatory, similar; dactyli with strong corneous unguis and five spines on ventral margin; dactylus, propodus, carpus, and merus with scattered spinules. Pereopod 4, dactylus forming pincer with strong curved terminal spine of propodus; spinules on carpus, merus, and ischium. Pereopod 5 slightly longer and more slender than pereopod 4; curved dactylus forming pincer with strong straight spine of propodus; spinules on carpus, merus, and ischium. Branchial formula: 8 gills (on maxillipeds 2 and 3, and pereopods 1–5) + 3 epipods (on maxillipeds 1–3).

Material

Holotype SAM–A 16787 ♀ CL 6,0 mm CW 6,6 mm VEM 4.4
Paratype SAM–A 16788 immature ♂ CL 2,9 mm CW 3,0 mm VEM 4.2
Paratypes USNM 173518 ♀ CL 4,4 mm CW 4,8 mm VEM 4.6
immature ♂ CL 2,9 mm CW 3,1 mm VEM 3.2

Remarks

The lack of epipodites on the pereopods, the tridentate rostral area of the carapace, and a fifth pereopod longer than the fourth, place this material in the genus *Pseudodromia* Stimpson.

Of the five species of *Pseudodromia* described, the Vema material most closely resembles *P. spinosissima* Kensley, 1977, from deep water off the east coast of South Africa. However, the overall carapace shape of the two species differs, as does the carapace ornamentation (uniformly scattered spinules and long hairs in *P. spinosissima*, patchy spinules and short spiky hairs in *P. cacuminis*).

Etymology

The specific name 'cacuminis', meaning pointed as in a peak, refers to the type locality, viz. the summit of Seamount Vema.

Family **Homolidae**

Paromola alcocki (Stebbing)

Thelxiope (*Moloha*) *alcocki:* Barnard, 1950: 341.
(See Gordon 1950 for full synonymy.)

Previous records

Algoa Bay, South Africa, 80 m; Mozambique, 312 m; Maldive Islands, 229 m.

Material

SAM–A16207 ♀ CL (excluding rostrum) 42 mm, rostral length 8,5 mm, supraorbital spine length 12,5 mm, west of Lüderitz, about 800 m.

Remarks

This specimen closely resembles the type from South Africa, especially in the relatively elongate pereopodal spination. The supra-orbital spines, however, are relatively longer and more slender. The specimen differs markedly from the type of *P. alcocki faughni* Serene & Lohavanijaya, 1973, from the South China Sea, especially in its lack of strong setation, and in its stronger carapace and pereopodal spination.

Paromola cuvieri (Risso)

Paromola cuvieri: Monod, 1956: 79, fig. 89.

Previous records

Eastern North Atlantic and southern Scandinavia; Mediterranean to west Africa.

Material

SAM–A16789 ovigerous ♀ CL 105 mm, CW 83 mm, Seamount Tripp, 150 m.

SAM–A16790 ♂ CL 120 mm, CW 102 mm, off Lüderitz, 19°55′S 11°43′E.

Remarks

Although not previously recorded from southern Africa. *P. cuvieri* is being commercially fished in the Lüderitz area.

Family **Majidae**

Macropodia cirripilus sp. nov.

Figs 8–9

Description

Male

Carapace piriform, dorsally convex. Scattered curved hairs over entire carapace and abdomen. Rostrum of two relatively short parallel spines, reaching distal end of third antennal peduncle segment. Supra-orbital eaves with four or five short spines; strong nuchal spine present; hepatic region with few scattered spine-tubercles; strong dorsolateral spine on protogastric region; metagastric region convex with medial tubercle; convex bulbous branchial region with several scattered tubercles; cardiac region convex, lacking tubercles. Abdomen 6-segmented; third segment widest, with convex lateral areas; distal margin of terminal segment evenly convex; all segments with weakly-raised middorsal longitudinal ridge.

Eyestalk with curved anterior margin, produced into rounded papilla, posterior margin straight; cornea oval, as wide as eyestalk base. Outer margin of antennular fossa spinose; interantennular spine situated at end of acutely triangular grooved process; basal peduncular segment of antennule inflated, with row of four or five small spines. Basal antennal peduncular segment narrow, with few small proximal spines and two more elongate spines distally; second segment with single small distal spine; third segment longer than second, unarmed. Epistome broader than long, flattened. Maxilliped 3 ischium wider than merus, medial margin with several small tubercle-spines, exterior surface with scattered tubercles; outer distal margin of merus with five spines, few tubercles on external surface. Chelipeds subequal, only slightly longer than middorsal carapace length (including rostrum); finger and thumb shorter than palm; both cutting edges shallowly serrate, single spine at dactylar base; upper surface of palm with few scattered tubercles; lower margin with row of seven small spines; carpus shorter than palm, with few strong dorsal spines and strong proximal tubercle on outer surface; merus one and one-half times length of carpus, with row of spines on upper and lower margins; ischium about one-third length of merus, with row of spines on ventral margin. Ambulatory pereopods decreasing in length posteriorly; pereopod 2 dactylus almost straight, unarmed ventrally, almost as long as propodus. Dactylus of pereopod 3 with subapical secondary spine. Pereopods 4 and 5, dactyli curved, with strong subapical secondary spine plus row of smaller spines. Pleopod 1 ♂ basally broad, tapering distally to curved rounded apex.

Female as in male, except for abdomen.

Material

Holotype SAM–A 16791 ♂ CL 5,0 mm CW 3,1 mm (across branchial areas) VEM 15M

Allotype USNM 173519 ♀ CL 6,0 mm CW 3.9 mm VEM 4.4

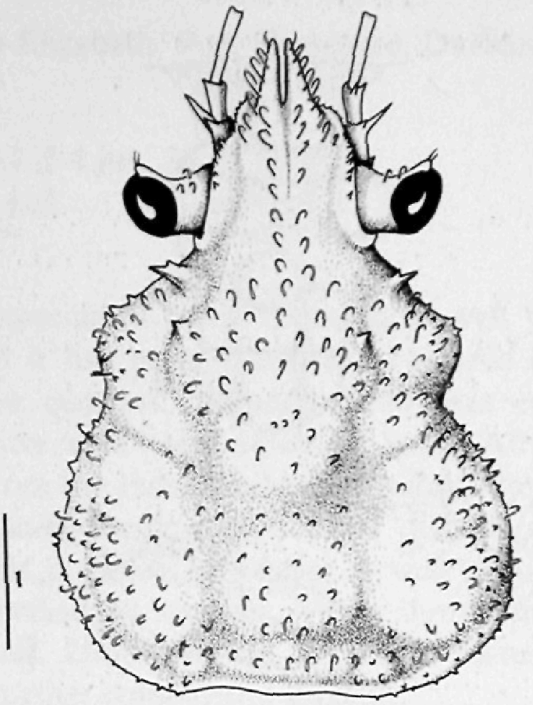

Fig. 8. *Macropodia cirripilus*.
Holotype in dorsal view.

Remarks

Of the seven species of *Macropodia* mentioned by Monod (1956), the present species resembles *M. rostrata* (Linnaeus), and that only to a limited extent. This similarity lies in the shape of the male abdomen and pleopod 1, and to a lesser degree, in the maxilliped 3. The carapace of *M. rostrata*, however, is much more strongly spinose, while the ambulatory pereopods do not become as strongly armed as in *M. cirripilus*. Further, the basal antennal segment is unarmed. None of the five species from the Mediterranean (Forest & Zariquiey Alvarez 1964) bears any close resemblance to *M. cirripilus*. The species referred to by Barnard (1950: 15, fig 2j) as *Macropodia formosa* var., from off the Natal coast, shows a similarity in the antennal and antennular spination and in the rostrum, but the carapace is less spinose and the proportions are quite different. The dactyli of the fourth and fifth pereopods, although possessing ventral spines, lack the strong subterminal spine seen in *M. cirripilus*.

Etymology

The specific name is derived from the two Latin words 'cirrus', a curl, and 'pilus' a hair, and refers to the characteristic curled hairs of the integument of this species.

Family **Xanthidae**

Pilumnus sp.

Pilumnus hirsutus non Stimpson, Barnard, 1950: 263, fig. 49 (d–g).

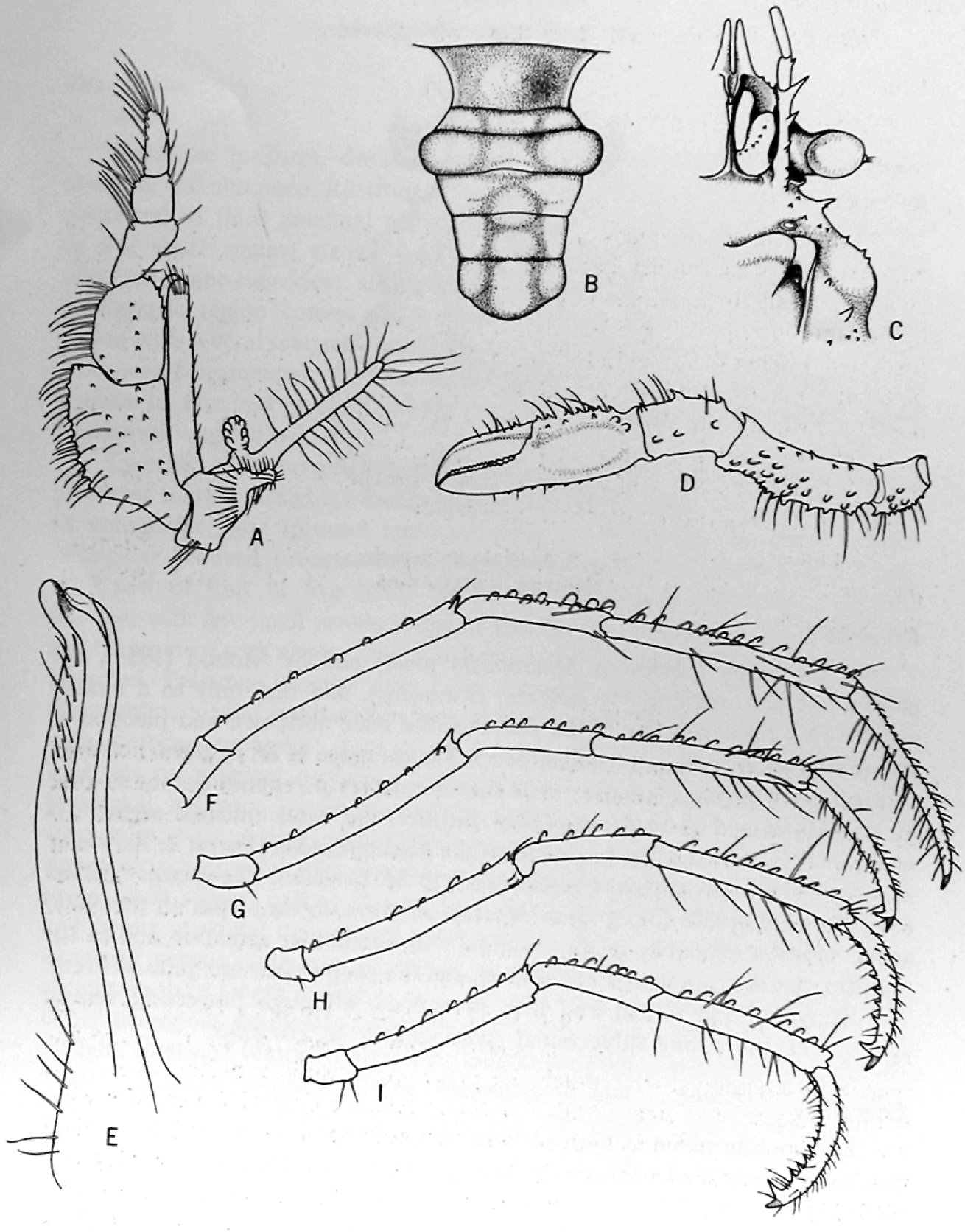

Fig. 9. *Macropodia cirripilus*.
A. Maxilliped 3. B. Abdomen ♂. C. Ventral view of orbit and antennae. D. Cheliped. E. Pleopod 1 ♂. F. Pereopod 2. G. Pereopod 3. H. Pereopod 4. I. Pereopod 5.

Previous records

False Bay, Port Elizabeth, Port Shepstone, Durban.

Material

SAM–A 16792 1 ♂ 4 juv. 39 m Vem 2.3
SAM–A 16793 1 ♂ 50 m Vem 3.3

Remarks

The six small specimens from Vema agree well with the South African material with which it has been compared. The true identity of this species, however, is an open question. Barnard (1950) was careful to note that his figures and description were based solely on South African material, which he suspected differed from the Indo-Pacific *P. hirsutus* Stimpson. Comparison with material from the Indo-Pacific shows some distinct differences. The Vema/South African species possesses stiff hairs as well as longer flexible hairs. The larger chela is proportionally squatter, with a shorter fixed finger in the Vema/South African species. Unfortunately, the latter material is dry and in poor condition, making further comparison difficult.

Comparison with the most closely related west African form, *Pilumnus inermis* A. Milne Edwards & Bouvier, also reveals several differences, especially in the carapace hairs.

ZOOGEOGRAPHIC DISCUSSION

Although the summit plateau of Seamount Vema is of somewhat limited area (about 8 km in diameter), it supports a relatively rich fauna dominated by encrusting and cryptic forms. Berrisford (1969, table 1) summarized the affinities of the 105 species of invertebrates identified. Of these, 25 per cent were South African species, 27 per cent had a scattered (cosmopolitan) distribution, 28 per cent were endemic, and 10 per cent had Indo-Pacific affinities. Millar (1968) found the ascidian fauna of Vema to have strong affinities with South Africa and no components in common with Tristan da Cunha.

Vema is about 11×10^6 years old (Simpson & Heydorn 1965), and older than Tristan. Apart from the fish and the spiny lobster species, there are few species in common, even though the prevailing oceanic conditions need not reinforce isolation. Vema is bathed in South Atlantic Central Water, with what was initially interpreted as local subsurface upwelling of Antarctic Intermediate water having a strong northerly-flowing component (Simpson & Heydorn 1965: 251). Welsh & Visser (1970), however, suggest that this apparent upwelling, which also occurs further south away from any topographical features such as seamounts, is really cyclonic upwelling caused by a 'dying' eddy moving northward. These eddies are formed in the area where the Agulhas Current meets the West Wind Drift.

The fish, being mainly pelagic forms, can be regarded as part of the Vema fauna only in the widest sense, while Penrith (1967) has recorded only one endemic species. The problem of recruitment of *Jasus tristani* is less simple, but with a planktonic life of several months, phyllosomata originating at Tristan would need to be transported in a north-easterly direction, perhaps by offshoots of the West Wind Drift encountering the north-flowing Benguela System, for successful colonization. This obviously happens, judging from the population discovered in the later 1950s. Since then, Vema's spiny lobster population has been heavily exploited. By 1967 Heydorn reported the summit almost denuded of *Jasus*, while the divers of the 1978 cruise did not see any lobsters, neither were any specimens of the grapsid crab *Plagusia chabrus* noted. This latter species was fairly commonly seen on the earlier visits. How long a time is required for this population to recover will probably be answered only by a theoretical exercise in population dynamics.

The isopods, with their strong South African affinity and lacking planktonic larvae for dispersal, perhaps reached Vema clinging to drifting kelp. The major alga of the summit is *Ecklonia biruncinata*, which also occurs off the southern Cape coast, and would provide ideal shelter for clinging animals.

Seventeen species of decapods are included in this brief discussion of zoogeography (the two mesopelagic species mentioned being excluded). Of these seventeen, six have been recorded from South Africa, including three from the east coast only (*Eualus ctenifera*, *Paromola alcocki*, *Lithodes murrayi*); *Pontophilus sculptus*, known from False Bay to Natal and also from the Mediterranean, north-western Atlantic, and Angola; *Pilumnus* sp. recorded as *P. hirsutus* from the east and south coast; and *Plagusia chabrus*, an essentially cold-temperate austral species known from South West Africa to Natal, Australia, New Zealand, Chile, and Juan Fernandez. *Lithodes murrayi* was previously regarded as an austral form, but has been recorded from deep water off Natal (Kensley 1977).

Pseudactaea corallina is a true Indo-Pacific species and has not been recorded from the east coast of South Africa.

The two new species described here, viz. *Pseudodromia cacuminis* and *Macropodia cirripilus*, are the only 'endemics'.

Five species have been recorded from West Africa; *Alpheus macrocheles*, *Synalpheus huluensis africanus*, and *Pagurus cuanensis* (also known from the Mediterranean) are regarded as true West African forms; *Paromola cuvieri* and *Eumunida picta* have a much wider range. *Pagurus chevreuxi* is known only from the Mediterranean.

With an age of eleven million years, it is not difficult to envisage colonization of Seamount Vema by West African/Mediterranean species. The species from the Indo-Pacific and the east coast of South Africa, however, must have been faced with greater problems of colonization. Perhaps the most feasible explanation is that planktonic larval forms of these species, present in southward-flowing Agulhas water, were caught in the pockets of Agulhas

water eddying northward in the South Atlantic as previously mentioned. The temperature regime in this series of events would not be a barrier to colonization. Although there is so-called upwelling of Antarctic Intermediate water in the vicinity of Vema, above the 75 m depth line the temperatures are fairly uniform (Welsh & Visser 1970: 2), being between 18° and 21° C, and comparable with east coast shallow-water temperatures.

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