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Descriptions of new species of South African Decapod Crustacea, with notes on synonymy and new records.
By K. H. BARNARD, D.Sc., F.L.S., Assistant Director.

A descriptive account, illustrated by numerous figures, of all the known species of South African Decapod Crustacea has been completed. As publication of this work may be delayed, an abstract of the new species, with notes on the more important cases of synonymy and new locality records, may be useful.

Many of the new records from Delagoa Bay, and from various localities on the coast of the Union of South Africa, are due respectively to Dr. C. J. van der Horst (Witwatersrand University, Johannesburg) and Prof. T. A. Stephenson (formerly University of Cape Town), now University College, Aberystwyth).

The presence of photophores in the Penæid *Macropetasma* is recorded.

Family Malidæ.

Subfamily ACANTHONYCHINÆ.

Dehaanius undulatus, sp. n.

Rostral prongs rather short and stout. Carapace smooth, shield-shaped, hepatic tooth moderately well developed, behind which the lateral margin is undulate

with three blunt and feeble, setiferous tubercles. Post-ocular tooth present. Two tubercles at base of rostrum, four on gastric region and two on posterior branchial regions, all setiferous. $17 \times 11-12$ mm. Durban and Delagoa Bay.

Resembles *Acanthonyx lunulatus* Risso (Monod. 1933, Bull. Com. Et. sci. Afr. occid. Franc. xv. fig. 7 D), but has three tubercles on lateral margin and a post-ocular tooth.

Dehaanius dentatus (M.-Edw.).

Syn.: *Pugetia quadridens*, non de Haan; Stebbing, 1920, Ann. Durban Mus. ii. p. 264, pl. 28, fig. B. The specimen is a juvenile.

Dehaanius scutellatus (McLeay).

Syn.: *Acanthonyx macleayi* Krauss, 1843; *macleayi* Alek., 1895; *macleayi* Stebbing, 1910, and Barnard, 1926.

Family **Hymenosomatidæ**.

Rhynchoplax bovis, sp. n.

Carapace subcircular, sparsely setose, dorsal rim continuous across base of rostrum; latter tridentate, median tooth larger than lateral ones, concave and spatulate dorsally. A strong sharp post-ocular tooth, and a sharp infra-orbital tooth. No teeth on antero-lateral or lateral margins. Chelipeds smooth, without keels, unarmed. 5.5×5 mm. Zwartkops R. estuary, Port Elizabeth; and Buffalo R. estuary, East London.

Elamena mathæi (Desm.) Gordon.

Syn.: *Epialtus vetchi* Stebbing, 1920, Ann. Durban Mus. ii. p. 266, pl. 29.

Family **Pinnotheridæ**.

Pinnotheres dofleini Lenz.

Syn.: *ostrearius* part, only the St. James specimen, Stebbing, 1920, Ann. S. Afr. Mus. xvii. p. 241. The Delagoa Bay specimen belongs to a different species.

Family **Grapsidæ**.

Geograpsus lividus (M.-Edw.).

Natal coast, and Delagoa Bay,

Sesarma (Holometopus) eulimene de Man.

Syn.: *catenatus* part, the Delagoa Bay specimen, Stebbing, 1921, Ann. Durban Mus. iii. p. 16.

Family **Portunidæ**.*Portumnus biguttatus* Risso.

Syn.: *Platyonichus nasutus* Latr., 1825; *Xaiva pulchella* McLeay, 1838, Ortmann, 1894, Stebbing, 1910; *Portumnioides garstangi* Bohn, 1902.

Portumnus mcleayi, sp. n.

Carapace about as broad as long, smooth, except for four or six very low and obscure tubercles in middle, minutely granulate and with scattered pits; front prominent, blunt, with undulate sides, antero-lateral margin with four teeth behind the incurved outer orbital tooth, the first low and truncate, the others triangular; upper orbital margin with two small fissures, but no tooth. Inner margin of third and fourth joints, outer surface of fourth joint and palp of mxp. 3 densely setose. Cornea globular. Cheliped wrist granulate externally, with sharp tooth on inner upper margin, hand smooth, glabrous, inner upper edge sharply keeled, a low ridge on outer upper surface, finger grooved on upper and outer surfaces, finger and thumb apically crossed. Fifth leg with seventh joint ovate-lanceolate, twice as long as broad, apex subacute, without distinct unguis. 13×13 mm. Algoa Bay to Port Shepstone (Natal), 24–27 fathoms.

Quite distinct from the species described by McLeay, which seems to be a purely littoral form.

Lissocarcinus orbicularis Dana.

Delagoa Bay.

Hellenus hastatoides (Fabr.).

Zululand coast, 25 fathoms. Numerous specimens.

Charybdis annulata (Fabr.).

Scottburgh and Durban, Natal.

Thalamita wood-masoni Alck.

Delagoa Bay.

Family **Xanthidæ**.*Phymodius monticulosus* (Dana).

Delagoa Bay.

Etisus electra (Herbst).

Delagoa Bay.

Lybia leptochelis (Zehntner).

Delagoa Bay.

Lybia plumosa, sp. n.

♀. Carapace broader than long, regions faintly defined, covered with a tomentum which towards and around the margins is composed of longish plumose setæ; antero-lateral margin with three lobes, first broad and flattened, second semicircular, third bluntly dentiform, behind the latter a small denticle; supra-orbital margin finely denticulate; a transverse ridge behind frontal margin, notched in middle, with fringe of long plumose setæ; a similar fringed ridge on antero-lateral part of gastric region, another on antero-branchial region, and another on either side of cardiac-intestinal region. Flagellum of ant. 2 setose. Chelipeds with shaggy plumose setæ, except on finger and thumb. Legs also shaggy. Bases of legs and the abdomen thickly furry. 6.5 × 9 mm. Pale buff, no markings, brown fur. Umtwalumi, Natal.

Differs from *cæstifer* Alc. and *leptochelis* (Zehntner) in the relative shapes and sizes of the antero-lateral lobes, and the denser furry covering on carapace and legs.

Sphærozius nitidus Stimpson.

Syn.: *Menippe convexa* Rathbun, 1893 and 1906. Shen, 1936; *M. ortmanni* de Man, 1899. See de Man, 1913, Delagoa Bay.

Pilumnoides perlatus (Poëppig).

Simon's Bay, Table Bay, Saldanha Bay, Lambert's Bay, Port Nolloth.

A South American species (see Rathbun, 1930) which has been reported from Queenstown, Ireland, and Plymouth, England.

Not taken by the Cape Government trawler s.s. 'Pietre Faure,' and, so far as I am aware, first discovered on the South African coast in 1933. It breeds freely here.

Epixanthus frontalis (M.-Edw.).

Syn. : *Galene natalensis*, non Krauss ; Stebbing, 1921, Ann. S. Afr. Mus. xviii. p. 456.

Stebbing's other record of *Eurycarcinus natalensis* (Krauss) (1917, Ann. Durban Mus. i. p. 436, and ii. p. 7, footnote) is correct.

Pilumnus longicornis Hilg.

Syn. : *Curtonotus vestitus*, non de Haan ; McLeay, 1838, Annulosa S. Afr. p. 61.

Parapilumnus pisifer (McLeay).

Syn. : *Pilumnus verrucosipes* Stimpson, 1858, and later authors ; *P. fragifer* M.-Edwards, 1873 ; *P. infraciliaris* Ortmann, 1894.

I am indebted to Mr. Melbourne Ward, of Sydney, Australia, for a photograph of McLeay's type (most of McLeay's types of South African Crustacea are in the Australian Museum, Sydney). From this photograph it is obvious that this very common species, hitherto known as *verrucosipes* Stimpson, should bear the name given by McLeay. Ortmann has picked out one of its most striking characters (the sausage-like infra-orbital ridge), and both McLeay's and Stimpson's names refer to the pea-like verrucosities on the chelipeds.

Actumnus setifer (de Haan).

Impengazi, north of St. Lucia Bay, Zululand.

Quadrellá coronata Dana.

Durban.

Family **Goneplacidæ**.

Ommatocarcinus sp.

A specimen was obtained from the stomach of a fish off the Natal coast, but at present I am not prepared to assign a name to it.

Litocheira kingsleyi (Miers).

Syn. : *Planes minutus* part, the specimen no. 15070 ; Stebbing, 1910, Ann. S. Afr. Mus. vi. p. 320.

Not a misidentification, but evidently a slip in entering the locality under the wrong species, although the specimen bears Stebbing's label.

Xenophthalmodes mœbii Richters.

Syn.: *Typhlocarcinus rubidus*, non Alek.; Barnard, 1926, Tr. Roy. Soc. S. Afr. xiii. p. 120.

The specimen is probably identical with Richters' and Alcock's material, though Alcock makes no mention of the elongate first pleopods.

Hexapus stebbingi, sp. n.

Syn.: *H. sexpes*, non Fabr.; Stebbing, 1910, Ann. S. Afr. Mus. vi. p. 315, pl. 15 (Crustacea, pl. 41).

Stebbing's words about the locality led Tesch (1918) to doubt whether the specimen came from Cape waters. The single specimen was derived from the s.s. 'Pieter Faure' collection; there are several other specimens of both sexes in the collection, now in the South African Museum.

Abdomen in ♂ five-segmented, hour-glass shaped, second segment shorter and narrower than first, third to fifth fused, sixth narrowest, longitudinally divided, seventh transversely pentagonal; thus quite different from Tesch's figure of *sexpes* de Haan.

Agulhas Bank from St. Sebastian Bay to Algoa Bay, 15-35 fathoms.

Family **Corystidæ**.*Gomezia bicornis* Gray.

Delagoa Bay.

Family **Dromiidæ**.*Dromia dormia* (Linn.).

1910. Stebbing, Ann. S. Afr. Mus. vi. p. 342 (part: not the False Bay specimen).

1913. Balss, Schultze Reise, v. in Jena Denkschr. med. nat. Ges. xvii. p. 109, not *D. dornica* [typ. err.].

Dromidia ægibotus, sp. n.

Syn.: *Dromia dormia*, non Linn., the False Bay specimen; Stebbing, Ann. S. Afr. Mus. vi. p. 342; ? *D. dornica* [typ. err.] Balss, 1913, *l. c.*, p. 109.

Covered with short stiff bristles, like a scrubbing-brush. Carapace broader than long, convex with low gibbosities, the most conspicuous being one on inner anterior portion of branchial region and separated by a rather well-marked groove from cardiac region. The three frontal teeth

subequal, acute. A sharp supra-orbital tooth, a sharp infra-orbital tooth, outer orbital angle blunt, with a very short fissure below it. Two blunt buccal teeth, subhepatic region convex, supra-sutural gibbosity obscure. Antero-lateral margin with three sharp teeth, a prominent tooth behind branchial groove. Terminal abdominal segment in ♂ triangular, broader than long, ending in a sharp point. Sternal grooves ♀ ending together on a slight prominence between bases of chelipeds. Fifth leg distinctly shorter than fourth; in both a horny spine on inner apex of sixth joint opposing the dactyl. A sharp backwardly directed spine on coxal joint of second leg, ♂. No epipods on chelipeds or legs. Eggs large, not numerous. ♂ 70×95 mm., ♀ 55×70 mm. Reddish, the bristles yellowish brown. Table Bay, False Bay, Algoa Bay, 0-32 fathoms.

The bristly covering has an appearance of close-cropped turf (*ἀνυβωτος*). There is a general resemblance to *erythropus* (see Rathbun, 1937, Bull. U.S. Nat. Mus. no. 166, p. 31, pl. 6).

Dromidia dissothrix, sp. n.

Sparsely covered with longer and shorter spiniform bristles and setæ. Carapace as broad as long, subcircular, convex, regions obsolete, even the branchial and lateral cardiac grooves very feeble. Frontal teeth subequal, acute. A prominent sharp supra-orbital tooth, outer orbital angle dentiform; an acute infra-orbital tooth. Antero-lateral margin with two sharp teeth, and a smaller one behind branchial groove. Subhepatic region convex, without tubercles. Sternal grooves ♀ ending together on a median tubercle between bases of chelipeds. Two sharp tubercles on wrist of cheliped. Legs not knobbed. Fifth leg slightly longer than fourth; sixth joint in both with spine on inner apex opposing the dactyl; in fifth leg a spine also on outer apex. No epipods on chelipeds or legs. 9×9 mm. One mature but non-ovig. ♀ off Hoets [*sic*] Bay; probably Hout Bay, on west coast of Cape Peninsula.

Dromidiopsis cornuta, sp. n.

Covered with close short pile, the hairs rather thick and shaggy, especially on margins of carapace, chelipeds

and legs. Carapace as long as broad, pentagonal, regions obsolete, but branchial groove distinct, the lateral grooves of cardiac region reduced to elongate pits. Frontal upper teeth acute and divergent in ♀, spiniform and subparallel in ♂, the median tooth slightly shorter, deflexed, acute. A very blunt and feeble supra-orbital projection, an acute infra-orbital tooth, outer orbital angle rounded, lateral margin nearly straight, with a feeble indent at branchial groove. Subhepatic region convex, without tubercles. Cheliped with two tubercles on outer apex of wrist. Legs not knobbed; fourth leg with sixth joint subglobose, with spine on inner apex; fifth leg shorter than third but longer than fourth, sixth joint with spine on both inner and outer apex. Epipods on cheliped only. Sternal grooves ♀ ending on a prominent knob on the suture between sternites of chelipeds and second legs. Eggs large, 20 in number. ♂ 9.5 × 8.5 mm., ♀ 7 × 7 mm. False Bay, 23 fathoms, and off Cape St. Blaize, 39 fathoms.

Petalomera wilsoni (Fult. & Grant).

Algoa Bay to Natal, 30–85 fathoms.

Comparison with an Australian specimen, kindly forwarded by Mr. M. Ward, shows no differences, except that in the South African specimens the outer orbital angle can scarcely be called prominent, and the smaller of the two subhepatic (supra-sutural) tubercles is very inconspicuous, in fact practically obsolete; the supra-orbital margin is perhaps a little more prominent in the Australian specimen.

Eudromidia, nom. nov.

For *Eudromia* Henderson, 1888, *nom. preocc.* Geoffroy, 1832. *Aves.*

Pseudodromia latens Stimpson.

1900. Stebbing, Mar. Invest. S. Afr. i. p. 24.

1907. Stimpson [ed. Rathbun], Smithson. Misc. Coll. xlix. p. 178, pl. 21, fig. 3

1910. Stebbing, Ann. S. Afr. Mus. vi. p. 345 (part: nos. 15 and 16).

1914. *Id.* Trans. Roy. Soc. Edinb. l. pt. 2, no. 9, p. 273.

Upper two frontal teeth subparallel and close together, concealing in dorsal view the much smaller lower median tooth.

Pseudodromia rotunda (McLeay).

1884. Miers, Crust. H.M.S. 'Alert,' pp. 552, 553.
 1888. Henderson, Rep. H.M.S. 'Challenger,' xxvii. p. 16, pl. 1, fig. 8 (*latens*, non Stimpson).
 1894. Ortmann, Crustacea in Semon Austral. Reise, v. in Jena Denkschr. med. nat. Ges. viii. p. 35.
 1904. Doflein, D. Tiefsee Exp. vi. p. 12, pl. 8, figs. 1-6 (*latens*, non Stimpson).
 1910. Stebbing, Ann. S. Afr. Mus. vi. p. 345 (*latens* part: no. 29).
 1913. Balss, Schultze Reise, v. in Jena Denkschr. med. nat. Ges. xvii. p. 109.
 1923. Odhner, Göteborg Vet. Handl. (4) xxvii. pt. 5, p. 26 (*latens*, non Stimpson).

Upper two frontal teeth a little distance apart and slightly divergent, allowing the equally large lower median tooth to be seen.

A photograph of McLeay's type, which I owe to Mr. Ward, agrees with Henderson's and Doflein's figures; all three differ from Stimpson's figure. The above difference is the only one I can find, and it is not a sexual difference. Both species (I have seen no gradational specimens) are abundant and their distribution co-extensive from East London westwards to False Bay, 0-55 fathoms, but I have seen no specimens of *rotunda* from Table Bay or the west coast of South Africa (*latens* extends to Saldanha Bay). Miers' material (Amirante Is.), and Doflein's from off Dar-es-Salaam, 400 metres, should be re-examined.

Cryptodromiopsis spongiosa (Stimpson).

1910. Stebbing, Ann. S. Afr. Mus. vi. p. 343 (*Dromidia s.*).

Syn.: *Cryptodromia micronyx* Stebbing, 1920, Ann. S. Afr. Mus. xvii. p. 251, pl. 22 (Crust. pl. 102).

Cryptodromiopsis bituberculata (Stebb.).

1920. Stebbing, Ann. S. Afr. Mus. xvii. p. 254, pl. 23 (Crust. pl. 103) (*Eudromia b.*).

Stebbing admitted that this species conflicted with the diagnosis of *Eudromia*. It is closely allied to *C. gilesii* Alck. but is even more strongly sculptured.

Cryptodromiopsis lepidota, sp. n.

Covered with soft close tomentum consisting of imbricate scale-like, battle-dore-shaped "hairs." Carapace areolate, smooth, not granulate, subpentagonal, about as

long as wide. Frontal teeth prominent, triangular, overhanging the small rostral point. No supra-orbital tooth, infra-orbital tooth weak; supra-sutural hump distinct, but region between it and orbital notch concave. Antero-lateral angle rounded; lateral margin distinctly notched at branchial groove, but without tooth. Sixth joint of fourth leg globose, with spine opposing the dactyl; sixth joint of fifth leg oblong, with spine on both inner and outer apex. 6×6.5 mm. Off Hood Point Lighthouse near East London, 49 fathoms. One immature ♀.

The imbricate scale-like covering renders this species distinct from all other South African Sponge Crabs, except the following one.

SPEODROMIA, gen. nov.

In general like *Cryptodromiopsis*. Carapace with the gastric and branchial regions gibbous, the latter especially inflated owing to a deep cavity in the sub-branchial region. This cavity is closed anteriorly by a lobate enlargement of the fourth joint of the cheliped (when flexed) and posteriorly by the fourth joints of the second-fourth (first to third walking) legs. Upper surface of carapace with sessile scale-like setæ arranged more or less in a network or vermiculate pattern; margins of carapace, under-surface, third maxillipeds, chelipeds and legs with longer clavate and spiniform setæ. Front obscurely tridentate. Tips of finger and thumb of cheliped hollowed, with interlocking teeth. Phyllobranchiate gills arranged as follows:—

	Podobranchs.	Arthrobranchs.	Pleurobranchs.
Mxp. 1	ep.	—	—
2	1+ ep.	—	—
3	1+ ep.	—	—
Prp. 1	—	2	—
2	—	1	1
3	—	1	1
4	—	1	1
5	—	—	1
	2+3 ep.	5	4=11+3 ep.

Stebbing made no comment on the remarkable cavities on the ventral surface of the branchial regions, which, together with the reduced branchial formula, are the reasons for instituting a separate genus.

Balss has rightly excluded Stebbing's species from *Dynomene*, but his statement, based on Stebbing's figures, that the tips of the finger and thumb of cheliped are pointed, is incorrect.

Speodromia platyarthrodes (Stebb.).

1905. Stebbing, Mar. Invest. S. Afr. iv. p. 59, pl. 17 (*Dynomene p.*).

1938. Balss, Göteborg Vet. Handl. (5B), v. no. 7, p. 6.

The type ♀ was not returned to the South African Museum. There are, however, one ♂ from Mossel Bay, and one adult ♂, one juv. ♂, one juv. ♀ from Algoa Bay, 20–28 fathoms, which I have examined.

In view of these latter localities, Stebbing's locality, "off Cape Point, 650–700 fathoms," is so remarkable that it suggests a misplaced label.

Family **Dynomenidæ**.

Dynomene pilumnoides Alek.

Syn.: *Maxillothrix actæiformis* Stebbing, 1921, Ann. S. Afr. Mus. xviii. p. 457, pl. 14. (Crust. pl. 109.)

Odhner (1925, Göteborg Vet. Handl. (4), xxix. no. 1, p. 85) has already pointed out that *Maxillothrix* is not a Xanthid, but a synonym of *Dynomene*. *D. pilumnoides* may be synonymous with *hispida* Desm. The present specimens have only one small tooth on lower orbital border, and are therefore referred to Alcock's species.

The antero-lateral margin has five sharp teeth; Stebbing described and figured them as "lobules" because he did not clean off the tomentum. The single ♂ in the South African Museum does not agree with Stebbing's description and figure: the first abdominal segment is wider than the second, which is the shortest (as is also the case in the ♀). Neither the figure of the ♂ abdomen nor that of the ♀ shows the very distinct intercalated pieces representing the uropods.

Family **Thelxiopeidæ (Homolidæ)**.

Genus **THELXIOPE** Raf. (HOMOLA Leach).

Moloha, subgen. nov.

Rostrum entire, spiniform. Carapace strongly spinose, urn-shaped, widest across branchial regions, not depressed, *lineæ homolicæ* conspicuous and well within the

lateral borders. Chelipeds slender. Fifth leg reaching to about end of fifth joint of fourth leg. No epipod (or a rudimentary one) on third leg, and no arthrobranch of fourth leg, branchial formula thus 13+5 epipods.

Thekiope (Moloha) alcocki (Stebb.).

1920. Stebbing, Ann. S. Afr. Mus. xvii. p. 255, pl. 24 (Crust. pl. 104.) (*Latreillopsis a.*).

1924. *Id. ibid.* xix. p. 4 (*Latreillopsis a.*).

1926. Barnard, Tr. Roy. Soc. S. Afr. xiii. p. 120 (*Latreillopsis a.*).

I have a strong suspicion that the record of *Latreillopsis multispinosa* Ihle (1923, Stebbing, Fish. Mar. Biol. Surv. Rep. iii. Spec. Rep. 3, p. 5) is based on a specimen of Stebbing's *alcocki*; it measures 45 mm., as against 23 mm., the measurement given by Ihle.

Family **Latreilliidæ**.

Latreillia pennifera Alek.

Syn.: *elegans*, non Roux; Stebbing, 1910, and Barnard, 1926.

Family **Calappidæ**.

Calappa gallus (Herbst).

Off Natal coast, 24–36 fathoms.

Calappa lophos (Herbst).

Off Natal coast, 20–36 fathoms.

Calappa japonica Ortm.

Syn.: *flammea*, non Herbst; Barnard, 1926, Tr. Roy. Soc. S. Afr. xiii. p. 120.

A very fine ♀ from trawling ground between Bushman's River and Bird Island, Algoa Bay (trawler 'Linnet,' 1905).

Family **Leucosiidæ**.

Heteronucia angulata, sp. n.

Carapace with Λ -shaped groove from front to hind margin, branchial region somewhat lumpy, the whole closely covered with vesicular granules of nearly uniform size, a few larger ones on the branchial humps, cardiac and intestinal areas, and a few scattered bristles. Front broad, shallowly bilobed, notched at its junction with the

epistome ventrally. Hepatic region forming an angular projection, with its anterior border horizontal in line with orbit, followed by a rounded lobe. Lateral angle formed by a trifid spinous projection, followed by a similar one and several bluntly spiniform or digitiform tubercles on postero-lateral margin. A dentiform projection on either side of buccal cavity, at tip of external maxilliped. Pterygostomial ridge not prominent. Cheliped and legs granulate; finger of cheliped subequal to upper margin of hand. 4×4.75 mm. Delagoa Bay.

Similar to the Ceylonese *H. vesiculosa*.

Ebalia tuberculata Miers.

Probable syn.: *tuberosa*, non Pennant; Stebbing, 1910, Ann. S. Afr. Mus. vi. p. 337.

Ebalia tuberculosa (M.-Edw.).

Syn.: *Nursia scandens* Stebbing, 1920, Ann. S. Afr. Mus. xvii. p. 247, pl. 26, fig. A. (Crust. pl. 106, fig. A); *N. postulans* Stebbing, 1921, Ann. S. Afr. Mus. xviii. p. 461, pl. 18, fig. A. (Crust. pl. 113, fig. A.)

An exactly similar variation in granulation, the extreme forms of which are represented by *scandens* and *postulans*, occurs in *tuberculata*.

Leucisca McLeay.

Syn.: *Carcinaspis* Stimpson, 1858, Proc. Ac. Nat. Sci. Philad. x. p. 161; and 1907 [ed. Rathbun], Smithsonian, Misc. Coll. xlix. p. 161.

Stebbing (1920, Ann. Durban Mus. ii. p. 271) credited McLeay with a figure of the pleon, but the figure in question belongs to *Dehaanius*. McLeay gave an accurate figure of the anterior ventral surface.

Leucisca squalina McLeay.

Syn.: *Carcinaspis marginatus* Stimpson, 1858, l. c., and 1907, l. c. p. 162, pl. 14, fig. 7; *Leucisca phænomma* Stebbing, 1920, l. c. p. 271, pl. 31.

False Bay to Natal. Natal specimens are smaller (both sexes) than Cape specimens, but otherwise indistinguishable.

Philyra globosa (Fabr.).

Off Tugela River mouth, Natal, 12 fathoms.

Philyra scabriuscula (Fabr.).

Syn.: *punctata*, non Bell; Barnard, 1926, Tr. Roy. Soc. S. Afr. xiii. p. 120).

Philyra platychira de Haan.

Off Zululand coast, 13 fathoms; Delagoa Bay.

Philyra globulosa M.-Edw.

Off East London, and coast of Natal and Zululand, 12-54 fathoms.

Family **Lithodidæ**.*Neolithodes asperrimus*, sp. n.

Carapace with larger and smaller spines as in *capensis* Stebb., but all of them smaller; in addition whole upper surface thickly sprinkled with tiny prickles. Very numerous and close-set small spines and prickles amongst the larger spines on chelipeds and legs. Finger of right cheliped one-and-a-half times length of upper margin of hand. Dactyls of second to fourth legs distally flattened, denticulate. (*capensis*: only a few small scattered spines amongst the large ones on chelipeds and legs; finger of right cheliped equal to upper margin of hand; dactyls of second to fourth legs terete, evenly tapering, almost smooth). ♂ 180 × 150 mm., ♀ 152 × 125 mm. Fourth leg ♂ 490 mm., ♀ 380 mm. Off Saldanha Bay and off Cape Point, 475-550 fathoms.

Close to *agassizii* (S. I. Smith). Seems to occur farther north than *capensis* and at lesser depths. Benedict (1895, Proc. U.S. Nat. Mus. xvii. p. 479) has recorded the similar occurrence of two species on the east coast of North America: *agassizii* with flattened and prickly legs at an average depth of 500 fathoms south of Cape Hatteras, and *goodei* with subcylindrical non-prickly legs at an average depth of 900 fathoms north of Cape Hatteras. The correlation of a decreased prickliness with increased depth and higher latitude in the two regions is rather striking.

Far more material is required before juveniles can be assigned to their correct species, but it would seem that the proportional lengths of finger and thumb of the chelipeds remains constant throughout life, whereas the relative length of the dactyls of the legs *e. g.* changes.

Family **Paguridae**.*Paguristes rosaceus*, sp. n.

Differs from the specimen identified by Stebbing as *gamianus* as follows:—Rostral projection sharply triangular, projecting well beyond the lateral points; peduncle of ant. 2 slightly longer (but not reaching to base of cornea); ophthalmic scales crescent or L-shaped, with concave outer margin and conspicuous apical point; outer surface of wrist and hand of chelipeds with large conical tubercles, each with a blackish corneous apical point, their bases contiguous or nearly so. Carapace length 9 mm. Anterior part of carapace, and the eye-stalks, antennæ, chelipeds, and second and third legs rose-red or carmine or speckled with crimson, distal half of dactyls of second and third legs white, ungues and tips of finger and thumb of chelipeds brown, cornea black. Eggs 12–15, major diameter 1.3 mm. Littoral, from Dangere Point to Port Alfred.

This being a common littoral species is very likely the species on which M.-Edwards founded *gamianus*; but it differs from both the specimens identified by Stebbing, and Balss's description and figure (1912, D. Tiefsee-Exp. xx. p. 91, fig. 2). If M.-Edwards's type still exists, the point might be settled.

Paguristes engyops, sp. n.

Rostral point broadly triangular. Eye-stalks shorter than width of carapace, subequal to distance between lateral points on front margin; shorter than peduncle of ant. 1, but subequal to that of ant. 2, flask-shaped, narrowing distally, cornea small. Ophthalmic scales L-shaped, with acute apices, approximate. Ant. 2, second joint with a single spine on outer apex, scale projecting inwards, with 2–3 teeth on outer margin, none on inner margin, a strong tooth on lower margin of both third and fourth joints, fifth joint not much longer than penultimate joint, with small tooth on lower apex, flagellum subequal to peduncle, shorter than half length of carapace, stout. Chelipeds subequal, robust, sparsely setose, upper and lower margins of fourth joint, and upper inner margin of wrist and hand with strong denticles, finger with two moderate and several minute denticles on its free edge, a few conical granules on outer surface of hand, a very

slight gap at base between finger and thumb. Second and third legs densely setose (plumose setæ) on upper and lower margins, fifth and sixth joints with upper margin spinose, dactyls subequal to sixth joint. Carapace length 2.5 mm. Creamy or buff, anterior part of carapace and the chelipeds and legs faintly pinkish, cornea brown. Eggs 3-4, very large, major diameter 1 mm. Paternoster, north of Saldanha Bay; False Bay; Hermanus.

This tiny littoral species is distinguished from the other South African species by its bottle-shaped eye-stalks.

Clibanarius virescens (Krauss).

Syn.: *æquabilis*, non Dana; Stebbing, 1920, Ann. S. Afr. Mus. xvii. p. 258. Also the specimen with parasites included under *Calcinus lævimanus*; *Calcinus astathes* Stebbing, 1924, Ann. S. Afr. Mus. xix. p. 5, pl. 2. (Crust. pl. 117.)

Four specimens of *astathes* returned by Stebbing are indistinguishable from *virescens*.

Calcinus gaimardii (M.-Edw.).

Impengazi, north of St. Lucia Bay, Zululand.

Diogenes brevirostris Stimpson.

Syn.: *costatus*, non Hend.; Stebbing, 1917, Ann. Durban Mus. ii. p. 21.

Upper edge of vertical side-wall of carapace with only 2-3 serrations posteriorly. Sixth joint of third leg rather stout. Ophthalmic scales broad with numerous serrations along whole of distal margin.

Diogenes costatus Hend.

Syn.: *brevirostris*, non Stimpson; Henderson, 1888, Rep. H.M.S. 'Challenger,' xxvii. p. 53, pl. 6, figs. 3, 3 a.

Upper edge of side-wall of carapace conspicuously serrate throughout nearly its whole length. Sixth joint of third leg slender. Ophthalmic scales narrow, with only a few serrations which are confined to the median side of the distal margin.

Pylopagurus liochele, sp. n.

Carapace as broad as long (to cervical groove), rostral point not prominent. Eye-stalks two-thirds width of carapace. Peduncle of ant. 1 slightly longer than eye-stalk. Peduncle of ant. 2 very slightly longer than that of ant. 1, acicle reaching to about basal third of last

peduncular joint of ant. 1, with strong bristles on inner margin and apex. Right cheliped: fourth joint quite smooth, a denticle at distal end of upper margin; wrist with inner and outer margins of upper surface serrate, upper distal margin denticulate, a very few low granules on upper surface; hand ovate, *upper surface quite smooth*, with *numerous shallow pits*, the costate and crenulate outer and inner margins not connected across base of hand (as in *affinis* Fax. and *hirtimanus* Fax.), lower surface with scattered tufts of setæ, an inconspicuous row of low pearly granules bordering the cutting-edge of thumb, which has four large blunt teeth, and three smaller ones proximally; finger with serrulate margin, a strong ridge with a row of pearly granules on upper surface, tips of finger and thumb conspicuously corneous. Left cheliped similar but more slender, with more numerous bristles on wrist, hand ovate-lanceolate, finger without ridge or granules on upper surface, distal half of its cutting-edge forming a sharp ridge. Sixth joint of fourth leg with a single row of very stout, slightly imbricate, blunt spines (as in *discoidalis* (M.-Edw.), *rosaceus* M.-Edw. & Bouv., and *hirtimanus* Fax.). Carapace length, ♂ 12 mm., ♀ 5 mm. Off Cape Seal, 37 fathoms, and Algoa Bay, 10 fathoms.

Anapagurus hendersoni, sp. n.

1888. Henderson, Rep. H.M.S. 'Challenger,' xxvii. p. 74 (Cape specimen referred with doubt to *pusillus*).

1910. Stebbing, Ann. S. Afr. Mus. vi. p. 358 (*pusillus*, non Hend.).

1912. Balss, Wiss. Ergebnisse d. D. Tiefsee-Exp. xx. pt. 2, p. 110 (*pusillus*, non Hend.).

Distinguishable from all South African species of the genus *Eupagurus* by the slender left cheliped with its long biserially spinose wrist. Right cheliped: upper surface of hand smooth except for a band of fine granules along inner margin, a very short tubercular ridge in middle at base, and a costate-serrulate outer margin, nearly glabrous.

Simon's Bay (Henderson) to Natal, 18-100 fathoms.

Family **Porcellanidæ**.

Porcellana streptocheles Stimpson.

1902 and 1910. Stebbing (*dehaanius* non Krauss).

1913. Doflein & Balss, Wiss. Ergebnisse d. D. Tiefsee-Exp. xx. pt. 3, p. 162 (*dehaanius*, non Krauss).

1914. Lenz & Strunck, D. Südpolar-Exp. 1901-03. xv. pt. 3, p. 286 (*dehaanius*, non Krauss).

1923. Odhner, Göteborg Vet. Handl. (4), xxvii. no. 5, p. 25 (*dehaanius*, non Krauss).

Median tooth of frontal margin broadly triangular, its length half its basal width. First peduncular joint of ant. 1 with a few not very prominent denticles. Basal joint of ant. 2 serrate. Lobe of fourth joint of cheliped squarely truncate.

False Bay to Algoa Bay, 0-50 fathoms; and a single record from off the Natal coast.

Porcellana dehaanii Krauss.

Median tooth of frontal margin narrower, its length subequal to its basal width. First peduncular joint of ant. 1 with numerous conspicuous denticles. Basal joint of ant. 2 entire. Lobe of fourth joint of cheliped rounded.

Natal to Delagoa Bay.

Polyonyx cf. *biunguiculatus* (Dana).

The specific name is provisional until the rather numerous "species" have been more strictly defined. Delagoa Bay.

Family **Galatheidæ.**

Galathea intermedia Liljeb.

Syn.: *labidolepta* Stimpson; Stebbing, 1910; Doflein & Balss, 1913; Lenz & Strunck, 1914; Odhner, 1923 (p. 25).

Cervical groove indicated only laterally. Apices of finger and thumb of cheliped acute. Fourth joint of mxp. 3 longer than third. Epipod on cheliped only.

All the South African specimens recorded under the names of Liljeborg's and Stimpson's species are obviously the same, and if they are really conspecific with the European and West African *intermedia*, Stimpson's *labidolepta* must lapse.

Galathea dispersa Bate.

Syn.: *nexa* Embleton, non Heller; Doflein & Balss, 1913; Balss, 1916; Odhner, 1923.

Cervical groove continuous across carapace. Apices of finger and thumb of cheliped spooned. Fourth joint of mxp. 3 subequal to third joint. Epipods on cheliped and following two legs.

In the case of this species also, South African specimens should be compared with European material.

Galathea elegans Ad. & White.

Durban and Delagoa Bay.

Family **Callianassidæ.**

Callianassa gilchristi, sp. n.

Mxp. 3 slender, pediform, third and fourth joints together four times as long as wide, inner surface of third joint smooth, fifth narrow, expanding slightly distally, sixth expanded, as long as wide. Larger cheliped ♂, third joint widening distally, lower margin serrulate, upper margin of fourth joint granulate or beaded (except distally), lower margin serrate, proximally widening to a sharp tooth, then indented, distally convex, inner surface and lower part of outer surface of third and fourth joints granulate; fifth joint longer than wide, upper margin with a few indents on the inturned costate edge, lower proximal corner rounded, serrate, serræ somewhat obscured by tufts of setæ; sixth joint slightly narrower than fifth, its width slightly less than length of upper margin, thumb with outer cutting-edge denticulate, inner edge denticulate, lower margin of hand and thumb with close-set tufts of setæ forming a thick fringe; finger with denticulate cutting-edge, upper margin near hinge with several granules; outer and inner surfaces of fifth and sixth joints smooth and polished. Pleopod 1 ♂ apically bilobed, outer lobe acute. Uropod extending well beyond telson, inner ramus ovate. 68 mm. False Bay and Durban Bay.

Callianassa natalensis, sp. n.

Mxp. 3 operculiform, third to sixth joints broad, third with curved row of denticles on inner surface, fourth broader than long, triangular, distal and inner margins oblique, fifth joint widening distally, sixth broader than long. Larger cheliped (♀) inner and outer surfaces smooth, polished, third joint widening distally, lower margin with two feeble denticles distally, fourth with lower margin evenly convex (widest in middle), serrate, setose, fifth joint as broad as long, lower hind corner

rounded, entire, sixth with upper margin equal to that of fifth, thumb shorter than rest of hand, broad basally, tapering to a sharp point, outer cutting-edge denticulate, finger stout, cutting-edge with two strong teeth, proximal one bifid, second one triangular; third to fifth legs as in *kraussi*. Pleopod 1 (♀) sigmoid as in *kraussi*; pleopod 2 biramous; pleopod, 3-5 as in *kraussi*. Telson a little broader than long, sides gently converging to the rounded-truncate hind margin. Uropod, inner ramus not extending beyond telson, trapezoidal, square-ended, outer ramus broadly triangular. Non-ovig. ♀ 100 mm., larger cheliped 50 mm. From stomach of Rock-cod, Natal coast.

Closely resembling *indica* de Man, 1905 (see also 1928, Siboga Exp. monogr. xxxix. a. 6. p. 160), a large Javanese species described from a single ♂ without the larger cheliped. Both *indica* and the present specimen differ from *mauritiana* in the proportions of the sixth joint of mxp. 3.

Family Upogebiidae.

Upogebia capensis (Krauss).

Balss, 1913 (excl. references to Ortmann, 1894 and Stebbing, 1910), 1916 (excl. localities Port Elizabeth and Algoa Bay); de Man, 1927 (excl. reference to Ortmann 1894).

Syn.: *subspinosa* Stimpson, 1860; Stebbing, 1910.

Coxæ of first to third (♂) or first and second (♀) legs with a spine. Fourth joint of cheliped with spine, more or less adpressed, on upper margin near apex.

Luderitzbucht, S.W.A., to Table Bay; west side of False Bay; and Mossel Bay. Essentially a west coast species; its extension to False Bay and Mossel Bay may perhaps be due to ship transport.

It is a pity that *subspinosa* has to be suppressed, because Stimpson drew attention to one of the two crucial diagnostic features.

Upogebia africana (Ortmann).

Ortmann, 1894; de Man, 1928.

Syn.: *capensis*, non Krauss; Stebbing, 1900 and 1910.

No coxal spines. No spine on fourth joint of cheliped. East side of False Bay to Natal.

Essentially a warm water form. The two species meet in False Bay, but apparently one occupies the eastern side and the other the western side. Further investigation, in detail, of the distribution in False Bay might prove interesting.

Upogebia assisi, sp. n.

Front scarcely tridentate, the lateral lobes scarcely projecting, rostrum shorter than its basal width, with eight tubercles on its rounded margin, no tooth on lower surface. No spinule on antero-lateral margin of carapace above ant. 2 (as in *osiridis* Nob.). Cheliped robust, upper margin of fourth joint with a minute adpressed spinule near apex, lower margin without spines, fifth joint with a small spine on lower apex and a smaller one on upper apex, sixth joint smooth, without spines or granules or dorsal grooves; thumb denticulate on inner margin proximally; finger with one or two blunt denticles basally and four to five long low lobes or crenulations (cf. *balssi* de Man). No gill on fifth leg. Both rami of uropod broadly sub-triangular. Telson broader than long, hind margin rounded-truncate. Ovig. ♀ 16 mm. St. Francis Bay (Agulhas Bank).

Upogebia cf. *rhadames* Nob.

In sponges washed up on beach, Natal.

Family **Astacidae**.

Genus **ENOPLOMETOPUS** M.-Edw.

Gurney (1938, 'Discovery' Rep. xvii. pp. 296-299) has used de Man's observations (1922, Siboga Exp. monogr. xxxix. a, 4, p. 51) on the abdominal appendages, together with the erroneous statement that only the first pair of legs is chelate, to suggest the exclusion of the genus from the Lobster family and its inclusion in the *Axiidae*.

My observations on South African specimens of *E. occidentalis* show that this species is a Lobster as regards the pleopods and the presence of a thelycum. Consequently I suspect that *longirostris* de Man is not a true *Enoplometopus*.

Enoplometopus occidentalis (Randall).

1934. Barnard, *Nature*, cxxxiv. p. 665 (occurrence in South Africa).

A specimen from a fish stomach, and consequently not in perfect condition, appears to have a gill formula of six podobranchs plus seven epipods, ten arthrobranchs and four pleurobranchs, =20+7 epipods.

Family **Scyllaridæ**.*Scyllarus cultrifer* (Ort.).

Syn.: *sordidus*, non Stimpson; Bate, 1888, and Barnard, 1926.

Scyllarus martensii Pfr.

Syn.: *Thenus orientalis*, non Lund; Stebbing, 1920, Ann. S. Afr. Mus. xvii. p. 267.

Zululand and Portuguese East Africa. A 30 mm. ♀ received after the printing of my 1926 paper at once showed that Stebbing's 18 mm. juv. should be assigned to *martensii* and not to *tuberculatus*.

Family **Penæidæ**.*Penæopsis hilarulus* de Man.

Durban Bay.

Metapenæus stebbingi Nob.

Delagoa Bay.

Parapenæus investigatoris Alck. & And.

Off Natal coast, 185 fathoms.

Parapenæopsis acclivirostris Alck.

Delagoa Bay and Zululand coast as far south as Tugela River.

Macropetasma africanum (Balss).

1934. Burkenroad, Bull. Amer. Mus. Nat. Hist. lxxviii. pp. 73, 74, 117-120 (observations on genus).

As Burkenroad says, there is one arthrobranch and one podobranch on mxp. 2; on p. 119 he says that there are no exopods except on first leg, although on p. 74 he correctly says there is also one on mxp. 1.

Swakopmund (Balss), and False Bay to Natal.

Some specimens, found by myself freshly washed up on the beach at Plettenberg Bay, showed luminous spots on the abdomen: a medio-dorsal one on each of first to sixth segments, near the anterior margin on the first to fifth, but in the middle on the sixth segment; and a lateral one near the hind margin on each of first to fifth segments; a spot on base of telson and a larger oval spot on both inner and outer rami of uropods. Hitherto only two instances of photophores in the *Penæidæ* have been known: *Hymenopenæus debilis* and *Plesiopenæus coruscans*.

Solenocera algæense, sp. n.

♂. Rostrum with six teeth, three behind the orbit, apex upturned. Surface of carapace more strongly and closely punctate dorsally behind cervical groove than in *africanum*. Indentation on cervical groove above hepatic spine barely traceable; other spines as in *africanum*. Abdominal segments more strongly punctate. The two halves of the petasma not coupled together, apex of each half bilobed, without any serrations or other armature, therefore probably not fully developed. Pleopod 2 appendix masculina with anterior lobe spatulate, the median edge flattened. 63 mm. Eastern portion of Algoa Bay, 50 fathoms.

Although probably not quite mature, the petasma of this specimen is quite distinct from that of a 47 mm. *comatum* and that of a 61 mm. *africanum*.

In the case of the two latter species Stebbing seems to have examined the petasma only after mounting on a slide; hence this descriptions and figures are defective and misleading.

Plesiopenæus nitidus, sp. n.

Rostrum tridentate, teeth equally spaced or first and second nearer to one another, middle one in advance of orbital margin, no post-rostral keel. Fourth to sixth abdominal segments keeled, third not keeled, but when viewed dorsally slightly dentiform in the middle line. Telson shorter than inner ramus of uropod, with three pairs of lateral mobile spines distally. Sternites of last three thoracic segments and of abdominal segments similar in ♂ and ♀, but in ♂ the spine between bases of third legs and those on abdominal sternites larger and more acute

than in ♀; a shield-shaped sternal plate between bases of *fourth* legs in ♀. Inner flagellum of ant. 1 in ♂ expanded on ventral margin just beyond apex of outer flagellum. Terminal joint of mxp. 3 modified in ♂ (no modification in mxp. 2). Carapace very smooth and glabrous. ♂ 110 mm., ♀ 150 mm. Off Cape Point, 475–630 fathoms.

Family **Sergestidæ**.

Sergestes talismani, nom. nov.

1919. Hansen, Siboga Exp. monogr. xxxviii. pp. 7, 13–18 (*splendens* sine descr.).

1920. *Id.*, Bull. Mus. d'Hist. Nat. no. 6, p. 480 (*splendens* cum descr., but publ. later than 24 June, 1920, and therefore pre-occ. by *splendens* Sund. publ. 30 March, 1920).

Hansen (1922, Res. Sci. Camp. Monaco, fasc. lxiv. p. 98) renamed *splendens* Sund as *crassus*, thinking that it was a nom. preocc. But Hansen's *splendens* was without description until some time after June 1920, and in the meantime (March 1920) Sund had published his *splendens* (a different species). Hansen's name, *crassus*, is not required for this latter species, but the "Talisman" species is without a name, and the above name is proposed for it. Customary etiquette would suggest the name "hanseni," but that would be too similar to *hanseni*, a synonym of *sargassi*.

Family **Leuciferidæ**.

Leucifer penicillifer Hansen.

Syn.: *typus*, non M.-Edw.; Stebbing, 1914, Ann. S. Afr. Mus. xv. p. 28.

Stebbing's record was published before Hansen had had shown (1919) that the species could be easily distinguished by the petasma. On re-examination the South African specimens prove to belong to the above Indo-Pacific species.

Family **Pandalidæ**

Pandalina brevirostris (Rathke).

Syn.: *Pandalus modestus* Bate; Stebbing, 1914, Ann. S. Afr. Mus. xv. p. 36.

Off Saldanha Bay, off Cape Peninsula, and off East London, 145–195 fathoms.

Family Hippolytidae.

Merhippolyte calmani Kemp & Sewell.

Off Cape Morgan, 250-320 fathoms.

Spirontocaris cf. *pectinifera* Stimpson.

Fourth joint of third and fourth legs in ♂ with comb-like series of close-set short stout spines on distal half of lower outer (posterior) margin, and on the inner surface with a series of small papilla-like denticles; in ♀ with four graduated stout spines distally on outer surface (cf. *cranchii* and *occulta*; see Lebour, 1936, Proc. Zool. Soc. Lond. pp. 93, 96, pl. v, figs. 1-6). These specimens differ from *occulta* in having an epipod (mastigobranch) on third leg and setobranch on fourth leg, and two ventral teeth on rostrum.

Algoa Bay and Durban.

Stimpson's paper is not available in South Africa.

Spirontocaris saldanhæ, sp. n.

♀. Carapace with small point at antero-inferior corner, supra-orbital spine strong; one post-rostral tooth, preceded by two on the short shallow rostrum which reaches to end of eyes and about half-way along antennal scale, one ventral tooth a little distance from the acute apex. Mxp. 3 without exopod. Wrist of second leg with seven jointlets. Epipods (mastigobranchs) on first to third legs, setobranch on fourth leg. Telson with four spines on left and two (or three) on right side, a short and a long spine at each corner, apical margin evenly convex, with six plumose spines between and shorter than the large lateral ones. 23 mm.

Off Saldanha Bay, 145 fathoms.

Larger than *occulta* Lebour, 1936, and with a somewhat unusual telson.

Latreutes mucronatus (Stimpson).

Syn.: *natalensis* Lenz, in Lenz & Strunck, 1914, D. Südpol-Exp. xv. p. 320, pl. 21, figs. 1-11.

Latreutes pygmæus Nob.

Delagoa Bay.

Angasia armata (Paulson).

Delagoa Bay.

Hippolysmata vittata Stimpson.

Syn.: *durbanensis* Stebbing, 1921, Ann. Durban Mus. iii. p. 20, pl. 5.

Hippolysmata kükenthali (de Man).

Syn.: *marleyi* Stebbing, 1921, Ann. Durban Mus. ii. p. 120, pl. 18; and *ibid.* iii. p. 22.

Gelastocaris paronæ (Nob.).

Delagoa Bay.

Family **Processidæ.***Processa austroafricana*, sp. n.

Syn.: *canaliculata*, non Leach; Stebbing, 1905 and 1910; Odhner, 1923; Balss, 1925 (part), Wiss. Ergebnisse d. D. Tiefsee-Exp. xx. pts. 4-5, p. 294

Body and third to fifth legs slender. Postero-inferior corner of fifth abdominal segment rounded-quadrate, without any denticle. Lateral basal process (stylocerite) of ant. 1 short, quadrangular, inner corner rounded, outer acute (cf. *australiensis* Baker, 1907). Fourth joint of third and fourth legs with five movable but more or less adpressed spines (fewer than in *canaliculata*, as described and figured by Lebour, 1936). Fourth joint of chelate leg (measured along its longest margin) subequal to wrist plus chela (thus longer than in *australiensis*, but similar to *gracilis* Baker). Sixth joint of fifth leg with two pairs of spines far apart on lower margin and three single ones apically (*i. e.*, 2-2-1, 1, 1). All dactyls slender, two-fifth, to half length of sixth joints. ♀ up to 38 mm.

Agulhas Bank, but not extending westwards to False Bay or very far east of Algoa Bay, unless Stebbing's 1918 record from Natal refers to this species.

Processa cf. edulis (Risso).

Amongst numerous slender specimens of the above-described species from Algoa Bay, a single ovig. ♀ was at once conspicuous on account of its robust form and short legs. Stylocerite apically rounded. Sixth joint of

fifth leg with two single spines far apart on lower margin and seven close together distally, each of the proximal two in this series accompanied by a shorter spine (*i. e.*, 1-1-2, 2, 1, 1, 1). All dactyls short and stout. Postero-inferior corner of fifth abdominal segment with one denticle on right, two on left side. 25 mm.

Family **Glyphocrangonidæ.**

Glyphocrangon dentarus Barnard.

1926. Barnard, Tr. Roy. Soc. Afr. xiii. p. 128 (*gileii* var. *dentata*).

Syn.: *mabahissæ* Calman, 1939; John Murray Exp. Rep. vi. p. 217, fig. 8.

My MSS. notes for the 1926 paper show that the elongate rostrum was noted, but unfortunately this feature was not recorded in the printed description. Calman's species appears to be synonymous, in spite of minor differences, which may well be due to local variation.

Family **Alpheidæ.**

Ogyrides saldanhæ, sp. n.

Syn.: *occidentalis*, non Ortmann; Stebbing, 1914, Ann. S. Afr. Mus. xv. p. 32. Probably also Balss, 1913, Schultze Reise, v. in Jena Denkschr. med. nat. Ges. xvii. p. 107.

Eyes extending to end of antennal scale, not quite to ends of peduncles of ant. 1 and 2. Antennal scale lanceolate, outer margin straight, inner margin convex, sloping to the acute apex. Third and fourth joints of third leg each with a strong spine on lower margin in distal half. Dactyl of third and fourth legs a thin cultrate plate, elongate oval, narrower in fourth than in third leg, unguis absent, an apical tuft of setules. Dactyl of fifth leg ensiform, with long, spaced, plumose setæ. A bifurcate sternal plate arising between bases of fourth legs, projecting forwards. 18 mm.

Saldanha Bay, 10 fathoms.

Resembles *sibogæ* de Man, 1922, in the antennal scale and spines on third leg, but eyes shorter.

Athanas cf. *nairfarænsis* Cout.

Umhlali, Natal.

Athanas cf. *minikocensis* Cout.

Umtwalumi, Natal.

Athanas cf. *djiboutensis* Cout.

Mozambique (Island).

Betæus jucundus, sp. n.

Carapace truncate and very slightly convex in front in dorsal view, surface faintly hollowed but no median V-shaped groove, hind lateral margin with a notch. No tooth or projection on inner side of cornea on eye-stalk, no ophthalmic scales. Ocellar tubercle inconspicuous. First and second joints of ant. 1 subequal (measured along inner margin), basal process extending almost to outer apex of second joint, a strong ventral tooth on first joint. Second joint of ant. 2 with short dorsal and ventral spines, the dorsal smaller than the ventral; scale extending to end of third joint. Mxp. 3 reaching slightly beyond middle of antennal scale. First legs symmetrical, fourth joint channelled below, both margins with blunt serrations and a larger blunt tooth in middle of the channel distally; palm with three little tubercles on inner surface, each with a seta at its base; finger with a low tooth on cutting-edge. First jointlet of wrist of second leg not quite equal to the others combined, fifth equal to third plus fourth. Third joint of third and fourth legs with strong spine on lower margin near apex; fourth joint of third to fifth legs with prominent spine in middle of lower margin; fifth joint with an apical spine; sixth joint with four spines on lower margin on third leg, three on fourth leg, only two to three fine setæ on fifth leg, but distally four series of finely serrulate spines and an apical brush of long spines. Dactyls elongate, slender, curved, finely pointed, unarmed. Epipods on mxp. 3 and first to fourth legs. No arthrobranch on mxp. 3 observed. Lower margins of abdominal pleuræ rounded, postero-inferior angle of fifth rounded-quadrangle; a movable scale at base of uropod. Telson broadly linguiform, not quite twice as long as greatest width, two pairs of dorsal spines, the anterior pair in the anterior half, two unequal spines laterally, the curved apical margin with 16 plumose setæ; anal tubercles distinct. Outer ramus of uropod with strong spine arising from ventral surface of diæresis, which is straight.

Gills five plus eight epipods (? arthrobranch). 13 mm.
Semi-transparent pale buff, eggs green.

Keurbooms River estuary, Plettenberg Bay.

Clearly distinct from *indicus* de Man (eyes, dactyls, etc.).
The dactyls seem to correspond with those of *harrimani* Rathbun.

Synalpheus cf. *jedanensis* de Man.

Delagoa Bay.

Synalpheus charon (Heller).

Delagoa Bay.

Alpheus longecarinatus Hilg.

Delagoa Bay.

Alpheus parvirostris Dana.

Mozambique (Island).

Alpheus luciae, sp. n.

Rostrum very short, setose, separated by deep but short grooves from the orbital hoods, which do not extend far backwards and are separated from pterygostomial portion of carapace only by shallow grooves. No supra-orbital spines, no tooth on rostral keel. First leg, no tooth on inner margin of fourth joint, hand of large chela with short deep longitudinal groove on both lower and upper surfaces, inner margin with pairs of rounded tubercles near base of thumb, outer margin with seven to eight similar tubercles distally (the proximal ones obscure), finger strong, outer margin forming a smooth blunt keel between tufts of setæ; whole chela with tufts and single setæ, especially on upper surface. Wrist of second leg with first jointlet subequal to second plus third, third and fourth subequal, fifth shorter than second, chela subequal to second jointlet, third to fifth legs stout, especially third and fourth; fourth joint of third and fourth legs without tooth on lower margin, sixth joint with seven strong spines on lower margin; sixth joint of fifth leg with six spines, serrulate spines extending two-thirds towards base; all dactyls simple. Telson one-and-a-half times as long as basal width, not constricted. Diæresis on outer ramus of

uropod scalloped. Rudimentary pleurobranch present on mxp. 3. 32 mm.

St. Lucia Bay, Zululand.

From the robustness of the chelæ the specimen appears to be a ♂, but there is no app. masc. on pleopod 2. Seems to be allied to *macrochirus* Richters, but with simple dactyls. The stout third and fourth legs resemble those of *idiocheles* Cout., 1905, but the large chela is quite different.

Alpheus bisincisus de Haan.

Natal coast, 0–25 fathoms.

In the present specimens the rostrum is longer and narrower in the ♂ than in the ♀; neither Coutière, 1905, nor de Man, 1911, indicate any such sexual difference.

Alpheus malabaricus Fabr.

Henderson, 1893, Trans. Linn. Soc. Zool. (2), v. p. 434; de Man, 1911 (and atlas 1915), Siboga-Exp. Monogr. 39 a', p. 330; Kemp, 1915, Mem. Ind. Mus. Calcutta v. no. 3, p. 301.

Not *malabaricus* de Haan, Ortmann, Hilgendorf
Delagoa.

Family **Gnathophyllidæ**.

Hymenocera elegans Heller.

Delagoa Bay.

A single ♂ specimen was found under a stone by Prof. C. J. van der Horst (Witwatersrand University), 1939.

Family **Palæmonidæ**.

Palæmon sundaica Heller.

Syn.: *Urocaridella borradailei* Stebbing, 1923, Fish Mar. Biol. Surv. Rep. iii. Spec. Rep. 3, p. 8, pl. 14.

Whether the South African specimens are really referable to *sundaicus* remains for future investigation. Stebbing's record from the Umhlotuzi River is obviously a *Palæmon*.

Leander pacificus Stimpson.

Syn.: *squilla*, non Linn.; Stebbing, 1910; *affinis*, non M.-Edw.; Stebbing, 1915; *peringueyi* Stebbing, 1915,

Ann. S. Afr. Mus. xv. p. 75, pl. 17, and *gilchristi* Stebbing, *ibid.* p. 76, pl. 18 (both founded on single specimens with malformed or abnormal rostra).

Table Bay, and False Bay to East London, 0-25 fathoms.

Tabulation of the rostral formulæ of numerous specimens from various localities seems to show some rather remarkable results. Four is the most frequent number of ventral teeth in all areas from Table Bay to East London. The preponderance of nine dorsal teeth in specimens from Table Bay decreases gradually eastwards until at Knysna the preponderating number is eight, and farther eastwards this preponderance of eight becomes successively greater. From west to east there is a decrease in the number of specimens with ten dorsal teeth, and an increase in the number of those with only seven. Approximately 3 per cent. of the specimens from Table Bay and Port Elizabeth have malformed rostra.

Leander capensis de Man.

Syn.: *serrifer*, non Stimpson; Stebbing, 1914, Ann. S. Afr. Mus. xv. p. 31.

In 1910 Stebbing erroneously attributed the authorship of the species to Weber.

Palmiet River (near Kleinmond, Cape), River Zonder End and Buffelsjagt R. (tributaries of the Breede R.), Duivenhoks R. (at Heidelberg, Cape), Knysna R., Gamtoos R., Baakens R. (Port Elizabeth). Has not been found in the Berg River or the Olifants River (Clanwilliam) in the course of extensive fish-netting operations. A tentative comparison can thus be made between the distribution of the Freshwater Eel (*Anguilla mossambica*) and that of the River Shrimp.

Periclimenes (Ancyclocaris) brevicarpalis (Schenkel).
Delagoa Bay.

Harpilius depressus Stimpson.
Delagoa Bay.

Harpilius beaupresii (Audouin).
Delagoa Bay.

Coralliocaris lucina Nob.

Delagoa Bay.

Family **Crangonidæ.**

Pontophilus hendersoni Kemp.

Syn.: *megalocheir* part, the specimens No. A 1316;
Stebbing, 1915, Ann. S. Afr. Mus. xv. p. 72.

Pontophilus sculptus (Bell).

Agulhas Bank to Natal, 30-54 fathoms.