margins convex. Surface very flat, except for 3 elevations forming a transverse ridge slightly behind middle, and short but distinct epigastric ridges. Ridges accentuated by covering of short dark brown hairs absent from rest of carapace except for marginal rim and additional ridge in posterolateral area. Inner dorsal orbital angle rounded. Front slightly concave in middle and with anterolateral angles angularly rounded but not produced. Suborbital ridge lying somewhat below distinct lower orbital margin, but reaching farther forward. Anterolateral margin of carapace unarmed. Sharp carina placed on posterolateral part of carapace, joining lateral margin anteriorly. Chelipeds with distinct sexual dimorphism. In male, chelipeds large, chelae with large molariform tooth on cutting edge of dactylus, but not on fixed finger. Meri of walking legs unarmed. Male abdomen with first somite somewhat wider than any of other somites, but failing to reach coxae of fifth legs by considerable distance. First somite of male abdomen free, second, third, fourth, and fifth fused, sutures only faintly indicated; incision in lateral margin marking separation between second and third somites. Outline of male abdomen narrowing gradually towards telson, but strongly constricted at level of the fifth somite, constriction revealing part of gonopods, even when abdomen is fully pressed against thoracic sternum. Exposed parts of gonopods, however, not flush with surface of abdomen. Sixth somite of male abdomen and telson are free. Male gonopod strongly recurved, ending in sharp point, neither swollen distally nor bearing appendages there.

REMARKS.—This genus, in the shape of the abdomen, which leaves part of the gonopods exposed, resembles the genera *Camptandrium* and *Paratylodiplax*, and differs in this respect from all other Camptandriine genera. In *Camptandrium* and *Paratylodiplax*, however, the gonopods have two distinct appendages distally, while in *Deiratonotus* such appendages are entirely lacking. In the general shape of the carapace, with elevated hairy ridges the present new genus resembles the West African genus *Telmatothrix*.

The type-species is the Indo-West Pacific *Paracleistostoma cristatum* De Man, 1895 (Figure 49). A second species that we assign to this genus is *Paracleistostoma japonicum* Sakai. Although we saw no material, Sakai's (1934:321, fig. 26, pl. 18: fig. 1) good description indicates the main characters of *Deiratonotus*: ridged carapace, male abdomen revealing the gonopods, and the shape of the male gonopod. *Deiratonotus cristatus* is known from Japan, China and Korea, *D. japonicus* only from Japan.

Genus *Ecphantor*, new genus

TYPE-SPECIES.—*Ecphantor modestus*, new species.

ETYMOLOGY.—From the Greek word *ekphantor* (revealer), referring to the partly exposed gonopods of the male; gender of name is masculine.

DIAGNOSIS.—A genus of Camptandriinae. Carapace subhexagonal, being only slightly (1.1 to 1.2 times) wider than long. Surface of carapace flat but slightly uneven, with dense, uniform, short pubescence. Front directed obliquely down. Epigastric lobes strong, placed on base of front; no other distinct ridges present. Anterolateral margins without teeth. Orbits transverse, situated in common straight line. Eyes with distinct pigmented cornea. Antennules obliquely folded. Antennae entering orbit. Lower margin of orbit straight, without tubercles or teeth. Epistome short, concave. Third maxilliped filling entire oral field; merus and ischium covering palp and part of exopod. Merus shorter than ischium. Anterolateral angle of merus widely rounded, not produced. Inner anterior angle of ischium produced forward. Chelipeds equal, left and right; those of adult male much stronger and more robust than in female. Dactylus of cheliped in male with strong tooth in basal half of cutting edge, no other teeth present. No teeth on either finger in female. Tips of fingers of chelipeds spoon-shaped. Ambulatory legs longer than chelipeds; third and fourth pereiopods longer than second and fifth. No spines or teeth on any segments of ambulatory legs, latter covered by uniform short pubescence and scattered longer hairs.

Male abdomen narrow; all somites distinct, regularly tapering from first to sixth. First somite failing to reach coxa of fifth pereiopods. Fifth somite slightly constricted in basal part, first gonopods thereby slightly exposed. Female abdomen very wide, almost semicircular. Male gonopods strongly recurved; pointed apex with broad subdistal lobe, but without appendages.

REMARKS.—The shape of the carapace of this new genus is somewhat similar in its hexagonal form to that of *Calabarium*, but it can immediately be distinguished by the total lack of anterolateral teeth. Like *Camptandrium*, *Calabarium*, *Paratylodiplax*, and *Deiratonotus*, *Ecphantor* has the abdomen constricted in such a way that the gonopods are partly visible even when the abdomen is firmly pressed against the sternum. The distal part of the gonopod, which carries a broad subdistal lobe but no appendages, distinguishes *Ecphantor* immediately from the other genera in the subfamily.

Ecphantor modestus, new species

FIGURE 50

MATERIAL EXAMINED.—*Pillsbury Material:* None. *Other Material:* Nigeria: Elechi Creek at College of Science and Technology, Port Harcourt, 04°47.3'N, 06°58.6'E, 19 Oct 1979, C. B. Powell, 1♂ holotype (L). Same locality, 21 Feb 1979, C. B. Powell, 1♀ paratype (W). Same locality, 25 Feb 1979, C. B. Powell, 1♀ paratype (L).

DESCRIPTION.—Carapace (Figure 50*a*) subhexagonal, slightly (1.1 to 1.2 times) wider than long. Surface flat, margins slightly elevated; with pubescence removed, surface appearing slightly uneven, smooth, shining and pitted. Hair cover of carapace uniform, consisting of short, dark, curved, stiff hairs; cover dense enough to obscure surface, especially so since mud particles usually are caught between hairs. Central part of cervical groove rather distinct, with another median transverse depression some distance behind it; latter, however, very vague. Front directed obliquely down, separated from rest of carapace by distinct epigastric lobes, falling off precipitously anteriorly, separated from each other by short, distinct median groove; short longitudinal lateral groove, less distinct than median groove, present on either side of frontal lobes. Width of front at level of epigastric lobes slightly less than half frontorbital width; distal width of front 2/5 frontorbital width. Upper surface of front rather flat, slightly concave in middle. Anterior margin produced somewhat forward in middle, top slightly emarginate. Anterolateral angles of front broadly rounded. Lateral margin of front merging with orbital margin under wide curve. Orbital margin with indistinct notch in inner, posterior part, latter otherwise slightly convex. Outer orbital angle rectangularly rounded. Anterolateral margin of carapace unarmed. Angle between anterolateral and posterolateral margins blunt and wide. Posterolateral margin less sharply defined than anterolateral. Angle between anterolateral and posterolateral margins lying in anterior half of body, forming widest part of carapace. Faint but broad rim present on posterior margin; latter about 2/3 as wide as frontorbital width.

Eyes with cornea distinct and globular but narrower than eyestalk. Lower margin of orbit straight, smooth, bearing several long hairs, lacking granules or teeth. Suborbital ridge similarly unarmed.

Antennules folding obliquely, almost transversely. Antennae entering orbit. Flagellum short, consisting of 4 articles and terminating in long seta.

Epistome wide, short, concave, anterior margin almost straight or slightly sinuous, posterior margin ending posteriorly in median carina separating the two halves of the oral field. No granules present.

Third maxillipeds filling entire oral field. In ventral view merus and ischium covering larger part of both exopod and palp, of both only basal part being visible. Merus shorter than ischium, with anterolateral angle broadly rounded, not produced or auricular. Palp articulating in middle of anterior margin of merus. Exopod rather broad, with well-developed flagellum.

First legs (Figure 50*c*,*h*) showing conspicuous sexual dimorphism. Chelipeds of male relatively small, shorter than any of other legs, but distinctly

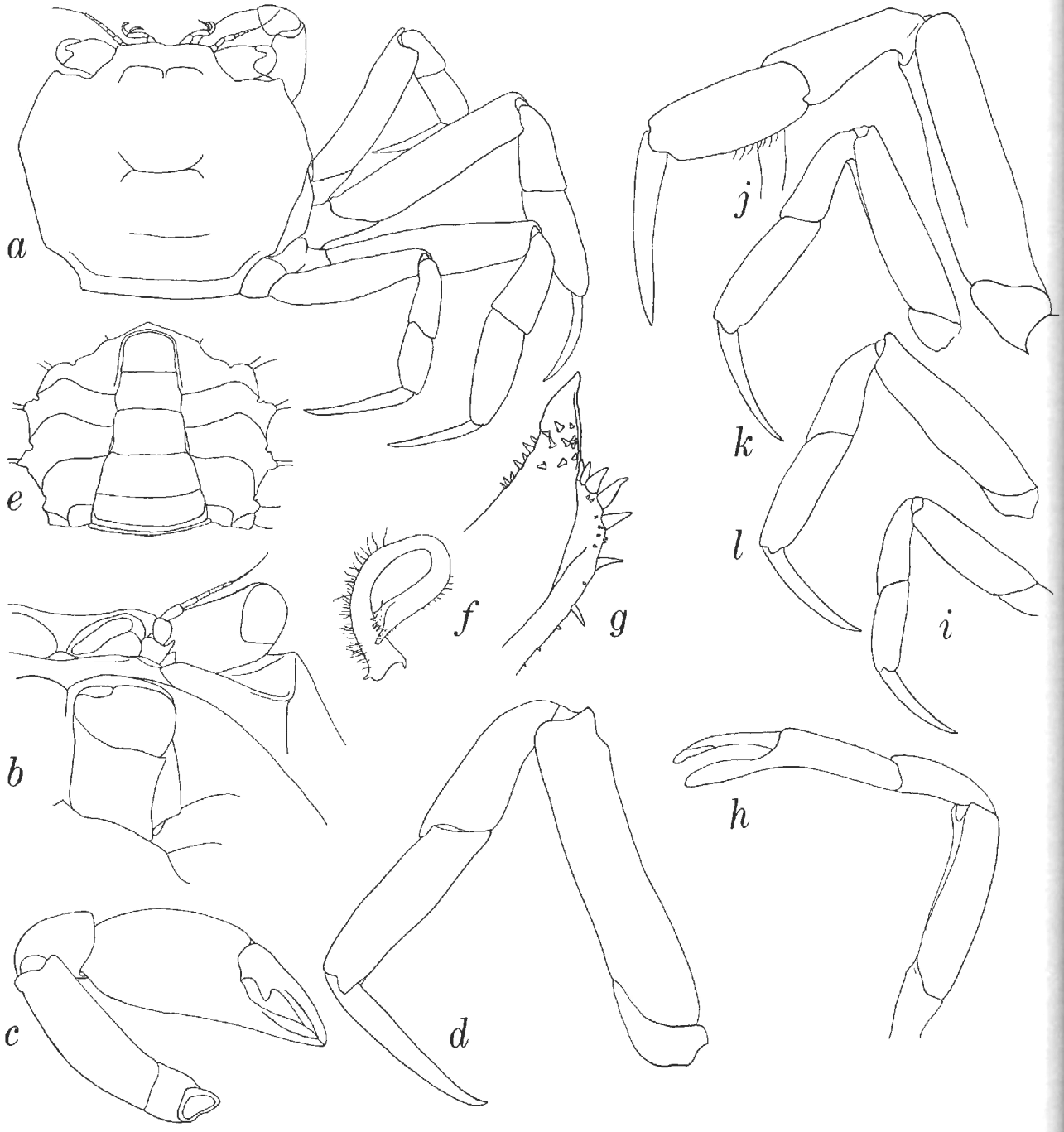

FIGURE 50.—*Ecphantor modestus*, new genus, new species. Male, holotype: *a*, dorsal view; *b*, anterior part of body, ventral view; *c*, cheliped; *d*, second pereiopod; *e*, abdomen; *f*, gonopod; *g*, apex of gonopod, enlarged. Smaller female, paratype: *h*, cheliped; *i–l*, second to fifth pereiopods.

more robust than those of female. Left and right chelipeds equal in both sexes. In adult male fingers of chela somewhat shorter than palm, gaping basally, tips spoon-shaped, with small horn-colored hoofs. Cutting edge of dactylus bearing strong tooth in gap, no other teeth present on it or on fixed finger. Palm slightly swollen, about 2/3 as high as long, highest in distal half. Carpus short, cup-shaped, slightly more than half as long as palm and distinctly less high. Merus elongate, slightly more than half as high as palm and about 2.5 times as long as wide. Chelipeds slenderer in female. Fingers narrow and elongate, somewhat shorter than palm, with spoon-shaped tips and fully unarmed cutting edges. Palm elongate, being about 3 times as long as high, increasing slightly in height distally. Carpus about as long as and as high as palm. Merus about 4 times as long as high, being slightly higher than carpus or palm.

Of following legs (Figure 50*d*, *i–l*) second and third (= third and fourth pereiopods) longest. Second and fifth pereiopods (= first and fourth ambulatory legs) shorter, but still longer than cheliped. Second pereiopod slightly more slender than fifth, especially in shape of propodus. Dactylus of each ambulatory leg slender, about as long as propodus, unarmed. Carpus about as long or slightly shorter than propodus and about 2/3 as long as merus. Merus totally lacking subdistal dorsal tooth, at most barely noticeable slight elevation there. All legs covered with same short, stiff, curved, dark hairs as are on carapace. Long, soft, somewhat plumose hairs present between short hairs, more distinct on anterior and posterior margins of segments. Longer hairs denser on posterior margins of dactylus and propodus than on anterior margins, and denser on posterior legs than on anterior ones.

Male abdomen (Figure 50*e*) slender, with all somites distinct and slightly and gradually tapering distally. First somite only slightly wider than second, largely failing to reach coxae of fifth legs. Second somite slightly longer than first, slightly wider than third. Fourth somite distinctly longer but slightly narrower than third, of all somites narrowing most strongly distally, anterior margin distinctly narrower than posterior. Fourth, fifth, and sixth somites of about same length. Fifth somite slightly constricted in basal half, enough to partially show first gonopods in opening between somite and sternum. Sixth somite broadest in basal half, narrowing slightly in distal half. Telson about as long as sixth somite, broadly rounded distally, with lateral margins converging slightly. In females, abdomen semicircular, with all somites free, very wide, covering entire sternum.

Male first gonopod (Figure 50*f*,*g*) with typical camptandriine shape, being very strongly recurved. Proximal half with some setae on outer margin. Distal recurved half widening slightly distally, forming blunt, wide, subdistal lobe, ending in narrow, elongate, triangular tip. Lobe bearing some heavy, rather short spines on margin and small spinules on rest of surface; tip with some spines, smaller than those of lobe.

MEASUREMENTS.—The male holotype has the carapace 3.5 mm long and 4.0 mm wide. The two female paratypes, both of which are ovigerous, have carapace lengths of 3.9 and 4.5 mm and carapace widths of 4.3 and 5.0 mm, respectively. The eggs measure 0.3 to 0.4 mm in diameter.

TYPE-LOCALITY.—Elechi Creek at College of Science and Technology, Port Harcourt, Nigeria, 04°47.3′N, 06°58.6′E.

DISPOSITION OF TYPES.—The male holotype (Crust. D. 32430) is in the Rijksmuseum van Natuurlijke Historie, Leiden; the smaller female paratype is in the same collection. The larger female paratype is in the National Museum of Natural History, Washington, D.C.

ETYMOLOGY—The specific epithet is derived from the Latin *modestus* (modest, unassuming), referring to the small size of the animals, which thereby may have been overlooked by most zoologists, and to the relatively very small portion of the male gonopods that are exposed.

BIOLOGY.—Mr. C. B. Powell, who collected all of the specimens and to whom we owe also for all of the material of West African Camptandriinae discussed here, described the habitat of the holo-

type as follows:

> The specimen was taken from a bed of leaf fragments etc., with no sand and not much mud. At low tide seepage water drains through the bed, and the crab was in a handful of the litter I had scooped from the edge of the main trickle of water. The most common macro-invertebrate present in the litter was the amphipod *Quadrivisio.*

According to Powell (1979:126), Elechi Creek is a mangrove creek of

> about 6–12 meters wide and 1–2 meters deep, draining a large area of mangrove peat flats. The vegetation consists mainly of *Avicennia africana* and *Laguncularia racemosa*; also present are *Rhizophora* spp. incl. *R. mangle*, the fern *Acrostichum aureum* and the grass *Paspalum vaginatum.* The tidal range is close to 2 meters so that at low tide the creek is dry except for a small shallow stream of drainage water running along the central sandy part of the creek bottom.... The maximum salinity of the creek water is probably about 20% ... the normal dry-season salinity range is in the order of 5–20%. In the rainy-season the maximum salinity is probably nearly as high ... but the average and minimum salinities must be somewhat less.

The type-locality of *Ecphantor modestus* is also the type-locality of *Potamalpheops pylorus* Powell, 1979, the description of which is cited here. Powell (1979:127) also provided a list of other invertebrates present at the type locality.

Ovigerous females were collected in February.

DISTRIBUTION.—Known only from the type-locality.

Genus *Ilyogynnis*, new genus

FIGURE 51

TYPE-SPECIES.—*Paracleistostoma microcheirum* Tweedie, 1937.

ETYMOLOGY.—From the Greek *ilyos* (mud) and *gynnis* (a womanish man); gender of generic name is masculine.

DIAGNOSIS.—Carapace transversely quadrangular, only slightly wider than long, with lateral margins convex. Surface of carapace flat, but regions rather well indicated by grooves. Dense pubescence covering entire carapace. Epigastric ridges distinct. Front deeply grooved longitudinally in middle, with oblique grooves extending into anterolateral angles, latter triangularly produced. Posterior margin of orbit sinuous, with distinct incision at inner end. Suborbital ridge placed below distinct lower orbital margin, but reaching farther forward. Anterolateral margin of carapace showing 2 blunt lobes behind outer orbital angle. Sharp carina placed in posterolateral part of carapace above and mesial to posterolateral margin, forming pseudo-posterolateral margin, about parallel with true posterolateral margin but not touching it. Chelipeds of male small, equal, similar to those of female; fingers with spoon-shaped tips, neither showing molariform tooth. No sexual dimorphism shown by chelipeds. Meri of walking legs lacking spines. Male abdomen about triangular in shape. First somite widest and shortest, reaching laterally as far as coxae of fifth pereiopods. Second to fifth somites fused, separated by indistinct sutures only. Second somite much narrower than first and about as wide as third. Sixth somite and telson free. Lateral margins of male abdomen from third somite to telson about straight, being only slightly concave in sixth somite. Abdomen fitting closely against thoracic sternum, entirely covering gonopods. Male gonopods recurved, ending in widened bulbous apex, lacking distal appendage.

REMARKS.—The only species that we assign to this genus is *Paracleistostoma microcheirum* Tweedie (Figure 51), of which we examined material from Singapore (USNM 137238). The genus *Ilyogynnis* is primarily distinguished from *Paracleistostoma* by the very wide first segment of the male abdomen, which reaches sideways as far as the coxae of the fifth pereiopods, the absence of sexual dimorphism in the chelipeds, and by the shape of the male gonopod, which lacks a distal appendage. In other respects the male gonopod strongly resembles that of *Paracleistostoma.* Also the shape of the orbit with the distinct incision at the inner end of the posterodorsal margin, and the rather distinct regions of the carapace serve to distinguish the new genus.

The correct spelling of the name of the present species is *Ilyogynnis microcheirum* (Tweedie). Tweedie (1937) did not give the derivation of the

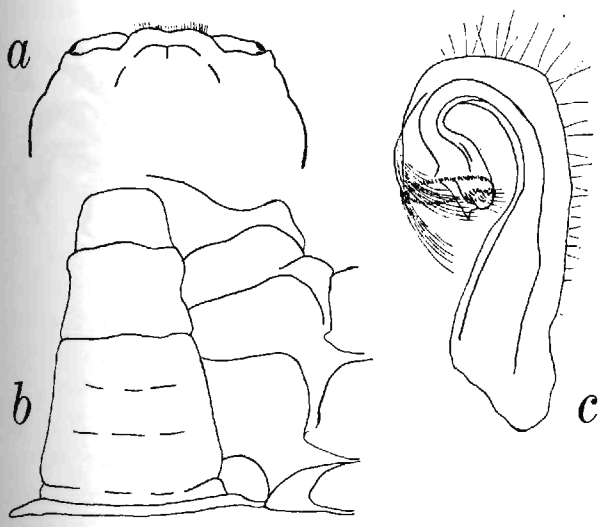

FIGURE 51.—*Ilyogynnis microcheirum* (Tweedie): *a*, anterior part of carapace of male; *b*, abdomen in situ, male, cl 6.5 mm, South China Sea; *c*, gonopod. (*a,c*, from Tweedie, 1937, fig. 6a,d).

specific epithet *microcheirum*, and since cheirum is not a known adjective, the word "microcheirum" must be considered either a noun or an arbitrary combination of letters; in either case the removal of the epithet from a neuter genus (*Paracleistostoma*) to one of which the name is masculine (*Ilyogynnis*) does not necessitate a change in spelling of the epithet.

Genus *Leipocten* Kemp, 1915

FIGURE 52

Leipocten Kemp, 1915:243 [type-species: *Leipocten sordidulum* Kemp, 1915, by monotypy; gender: neuter].

DIAGNOSIS.—Carapace subquadrangular, slightly convex in both longitudinal and transverse directions. Upper surface with regions weakly indicated and bearing hairs and granules. Epigastric lobes faint, placed on base of front. Anterolateral teeth present. Third maxilliped with merus hardly auriculate. Part of exopod of third maxilliped visible. Chelipeds with distinct sexual dimorphism. Male chela with molariform tooth on cutting edge of dactylus, but not on fixed finger. Female with strong spines on chela, fingers about as long as palm. Walking legs short, robust, with spines on lower margin of merus. Male abdomen with first somite narrow, not reaching coxae of fifth pereiopods. Second and third abdominal somites of male fused. Male gonopod strongly recurved, ending in 2 processes, one narrow, pointed, the other lobiform, with several curved spines.

REMARKS.—Only one species, the type, *L. sordidulum* (Figure 52), is known in this genus. It has an Indo-West Pacific distribution (India to Formosa and Australia).

Serène (1974:62, 64, 66) justifiably intimated that *Baruna* Stebbing, 1904, probably is a senior synonym of *Leipocten* Kemp, 1915. Unfortunately, Stebbing's (1904:3, 4, pl. 1: fig. A) description and illustrations of his new genus *Baruna* and its single new species, *Baruna socialis* Stebbing, 1904, are insufficient by modern standards. For one thing the male pleopods have neither been described nor figured. On the other hand, the great similarity of the shapes of the male chelipeds, of the peculiar pereiopods, of the male abdomen, and of the anterolateral margin of the carapace of *Leipocten* and *Baruna*, as well as the sizes and the habitats of their species, strongly suggest that the two genera might be synonymous. The differences between the two, so far as can be judged by the available data, are minor: *Baruna socialis* has the carapace wider (1.4 times as wide as long) than *Leipocten sordidulum* (1.27–1.33 times); the exopod of the third maxilliped seems wider in *Baruna* than in *Leipocten*; the posterior anterolateral tooth of the carapace in *Leipocten* is granular, whereas in *Baruna* it is smooth, having been described by Stebbing as simple (i.e., not subdivided into small teeth); the fact that Stebbing's illustration of the front and the orbit of *Baruna socialis* show these without tubercles may be due to the inaccuracy of the drawing. Should the gonopods of *Baruna* and *Leipocten* prove to be very similar there would be no good reason not to synonymize the two names and the older of them, *Baruna* Stebbing, 1904, would have to be used.

Baruna socialis Stebbing, 1904, so far the only species assigned to *Baruna*, is known only from the

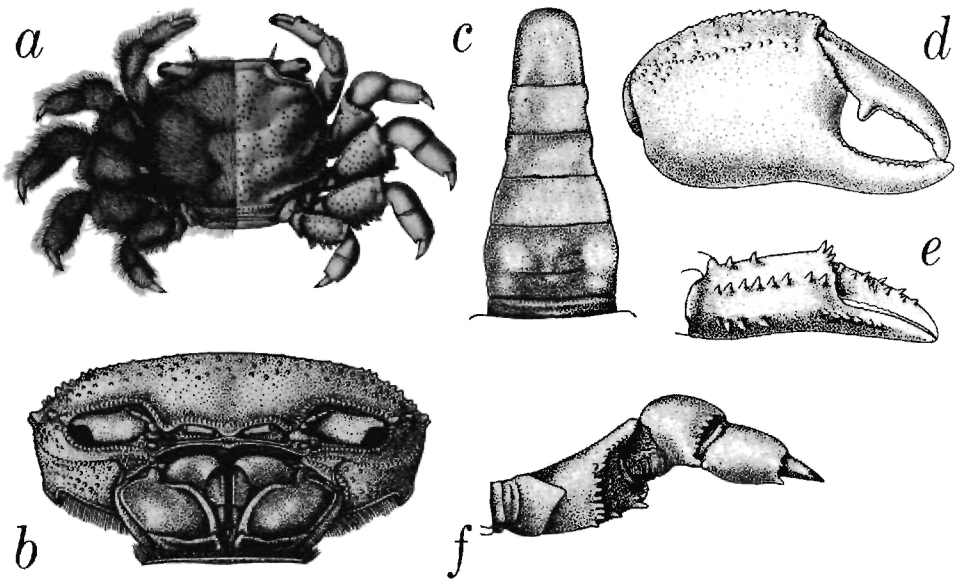

FIGURE 52.—*Leipocten sordidulum* Kemp: *a*, female, dorsal view; *b*, female, frontal view; *c*, male abdomen; *d*, male chela; *e*, female chela; *f*, fourth pereiopod. (From Kemp, 1915, figs. 16, 18, 19, 20a, and pl. 12: fig. 8.)

type-material, which originated from brackish water of Lake Negombo, Ceylon.

Genus *Paracleistostoma* De Man, 1895

FIGURE 53

Paracleistostoma De Man, 1895a:580 [type-species: *Paracleistostoma depressum* De Man, 1895, by selection by Guinot and Crosnier, 1963:608; gender: neuter].

DIAGNOSIS.—Carapace flat, being only slightly curved down at margins, lacking ridges, with only depressed H-shaped groove in center. Surface of carapace hairy or glabrous, outline quadrangular, being wider than long. Epigastric ridges indistinct, placed at base of front. Anterior margin of front with blunt or triangular projection at either lateral angle. Anterolateral margin of carapace lacking teeth. Suborbital ridge forming lower margin of orbit, true lower margin being barely visible as row of granules inside orbit. Shape and sexual dimorphism of chelipeds similar to *Cleistostoma*. Walking legs lacking spines on merus. First somite of male abdomen only slightly wider than second, failing by far to reach coxae of fifth pereiopods. Second to fifth somites of male abdomen fused, although lines separating these somites only faintly or more distinctly indicated by sutures. Male abdomen narrowing regularly distally, showing no constrictions; abdomen pressed against thorax, completely covering male gonopods. Latter recurved, strongly and bulbously widened apically, carrying distal appendage.

REMARKS.—Guinot and Crosnier (1963) listed the following species as belonging to *Paracleistostoma*: *P. depressum* De Man, 1895 (Figure 53); *P. leachii* (Audouin, 1826); *P. cristatum* De Man, 1895; *P. eriophorum* Nobili, 1903; *P. dentatum* Tesch, 1918; *P. longimanum* Tweedie, 1937; *P. fossulum* Barnard, 1955; *P. microcheirum* Tweedie, 1937; and *P. japonicum* Sakai, 1934. In our opinion only the following species actually belong to *Paracleistostoma*: *P. depressum*, *P. longimanum*, *P. wardi*, and *P. dotilliforme* (we have examined material of all except *P. longimanum*). The last two species (*P. wardi* and *P. dotilliforme*) formerly had been assigned to *Cleistostoma* (p. 200). We doubtfully refer the following two species to *Paracleistostoma*:

Cleistostoma mcneilli Ward, 1933: This species was placed by Barnes (1967:246) in *Paracleistos-*

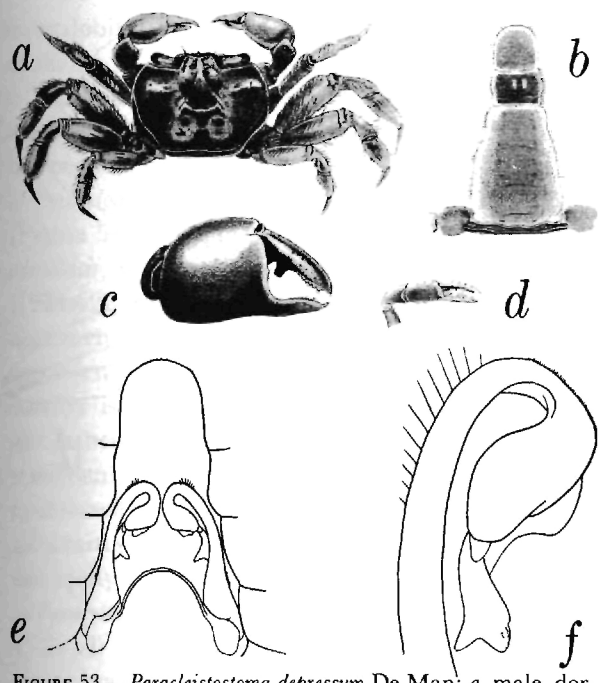

FIGURE 53.—*Paracleistostoma depressum* De Man: *a*, male, dorsal view; *b*, male abdomen; *c*, male chela; *d*, female chela; *e*, gonopods in situ; *f*, gonopod. (*a–d* from De Man, 1897, pl. 14: figs. 13, 13*d–f*; *e*, *f* from Gordon, 1931, fig. 26).

toma. However, the anterolateral margin of the carapace has distinct teeth, and the male gonopod figured by Barnes (1967, fig. 16d) differs somewhat from that of the typical *Paracleistostoma* species. It is possible that *C. mcneilli* is a true *Paracleistostoma*, and that the definition of the genus as given above should be somewhat modified.

Paracleistostoma eriophorum Nobili, 1903: Judging by Nobili's (1903:23) description of the carapace, the chelipeds, and the male abdomen, this species could well be a true *Paracleistostoma*. However, nothing is known about the shape of the male gonopods, while also some important characters of the abdomen are not mentioned by Nobili. Of this species, which so far has not been illustrated, we have not seen any material.

The following five species are excluded from the genus *Paracleistostoma*:

Paracleistostoma leachii (Audouin, 1826): The shape of the male gonopod, which ends in a narrow apex, shows that the species is not a *Paracleistostoma* and we make it the type of a new genus *Serenella* (p. 211).

Paracleistostoma cristatum De Man, 1895, and *P. japonicum* Sakai, 1934, are both placed here in the new genus *Deiratonotus* (p. 201).

Paracleistostoma microcheirum Tweedie, 1937, is made the type of a new genus, *Ilyogynnis* (p. 206).

Paracleistostoma dentatum Tesch, 1918: The general shape of the carapace is wholly unlike that of *Paracleistostoma* and resembles more that of *Camptandrium*. Since the only known specimen is a small female, very little can be said about the generic status of this species.

Paracleistostoma fossulum Barnard, 1955: In this species the dorsal surface of the carapace shows transverse ridges. The anterolateral margins of the carapace have some feeble teeth. The third maxillipeds are separated by a wide gap and the peduncle of the exopod is fully exposed. The female chelipeds are larger than those in *Paracleistostoma*, have the fingers shorter than the palm and the cutting edges of both fingers show several teeth. The species certainly is no *Paracleistostoma* and possibly not even an ocypodid. Unfortunately it is only known from a female specimen.

Genus *Paratylodiplax* Serène, 1974

FIGURE 54

Paratylodiplax Serène, 1974:62 [type-species: *Cleistostoma blephariskios* Stebbing, 1924, by original designation; gender: feminine].

DIAGNOSIS.—Carapace quadrangular or oval, wider than long, rather flat, somewhat more convex in longitudinal than in transverse direction. Dorsal surface smooth, showing only deep, H-shaped depression formed by central part of cervical groove and anterior part of cardiac grooves. Carapace pubescent or naked. Epigastric ridges present as rather indistinct rounded elevations at base of front. Latter somewhat concave in middle. Anterior margin of front with angularly rounded, but not produced, anterolateral angles. Inner orbital angle broadly rounded. Suborbital ridge lying distinctly below lower margin of orbit,

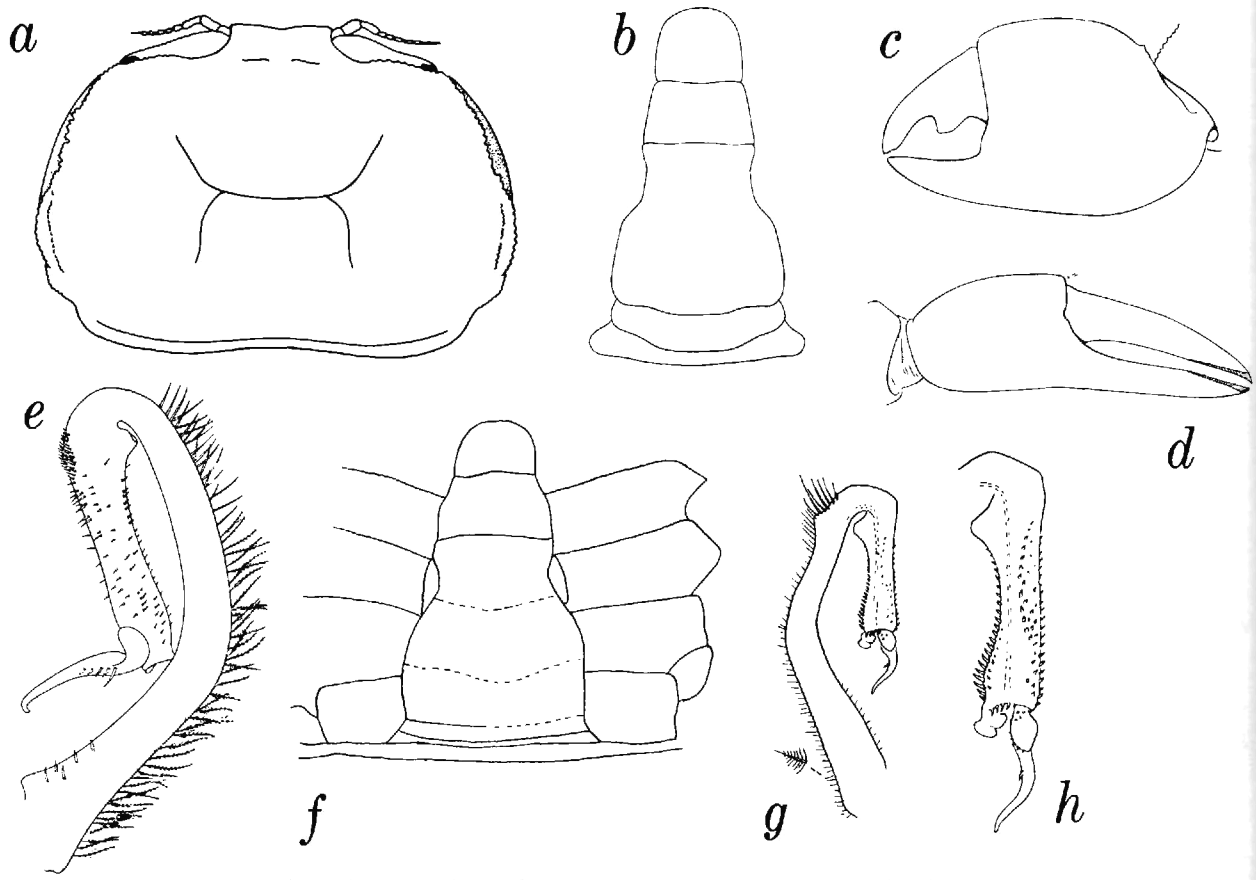

FIGURE 54.—*Paratylodiplax derijardi* (Guinot and Crosnier): *a*, carapace of male, dorsal view; *b*, male abdomen; *c*, male chela; *d*, female chela; *e*, gonopod. *Paratylodiplax edwardsii* (MacLeay): *f*, abdomen, male, cl 7.8 mm, South Africa; *g*, gonopod; *h*, tip of gonopod, enlarged. (*a–e* from Guinot and Crosnier, 1963, figs. 1–3, 8, 9; *g,h* from Barnard, 1954, fig. 2e,f).

reaching only slightly farther forward. Anterolateral teeth of carapace distinct or obscure. Anterolateral margin continuing into posterolateral; no additional ridge present posterolaterally on carapace. Chelipeds equal in female, subequal in male, showing strong sexual dimorphism, chelipeds of male being much stronger than those of female and having different shape. Dactylus of male cheliped with distinct molariform tooth in basal part of cutting edge; this tooth absent in female. Pereiopods lacking spines on merus. First somite of male abdomen widest of all abdominal somites, failing by considerable distance to reach coxae of fifth pereiopods. Second somite of male abdomen slightly narrower than first, either free (*P. derijardi*, *P. blephariskios*) or fused with abdominal somites 3 to 5. Latter fused, showing only traces of sutures between somites; sixth somite and telson free. Somites narrowing gradually from first to sixth, outline of male abdomen being bluntly triangular, except for constriction caused by concavity in lateral margin at level of fifth somite. Depressed area of thoracic sternum, which receives abdomen when latter is fully pressed against thorax, regularly triangular, leaving an opening between abdomen and thoracic sternite; through opening part of gonopod visible. Exposed part of gonopod completely filling gap between abdomen and sternum, exposed surface lying flush with lower surface of abdomen. Male gonopod strongly recurved, ending in 2 rather short appendages, inner slender, curved or sinuous,

outer lobiform; both shorter than recurved part of shaft.

REMARKS.—The following four species are here assigned to this genus; material of the first three has been examined by us:

Paratylodiplax edwardsii (MacLeay, 1838:64) (Figure 54*f–h*), originally described as *Cleistotoma edwardsii*, was included in this genus by Serène (1974:62). In it the second somite of the male abdomen is fused with the following three; in our specimen the suture between the second and third somites is rather distinct in the right half, but altogether absent in the left. Barnard's (1950:150) statement (in his definition of the genus *Cleistostoma* in which he placed the present species) that all somites of the abdomen are free certainly does not apply here.

Paratylodiplax algoensis (Barnard, 1954:122, figs. 1, 2a–d) originally described as *Cleistostoma algoense*, was correctly considered by Barnard to be close to *P. edwardsii*. Barnard (1954) described the chelipeds and the male gonopods, but gave no description or figure of the entire animal nor of the male abdomen. Examination of specimens (1 male and 1 female) from Knysna estuary, South Africa (USNM collection, uncataloged), confirmed our idea that the species belongs in *Paratylodiplax*. It fully agrees with the above-cited definition of the genus. The male abdomen has the second somite either free or, if fused with the third, separated by a deep suture. The fifth somite is constricted, so that in ventral view the gonopods show next to the closed abdomen. Serène (1974:62) believed that this species probably was conspecific with *P. edwardsii*.

Paratylodiplax blephariskios (Stebbing, 1924:3, pl. 116), the type-species, was originally described as *Cleistostoma blephariskios*. Stebbing's (1924) description was rather poor, and Barnard (1950: 816, 817) gave some additional details, e.g., of the chelipeds and the male gonopods, which agree with those of *Paratylodiplax*. A rather poorly preserved specimen at our disposal shows that the shape of the male abdomen was incorrectly described and figured by Stebbing as consisting of seven free somites. The male abdomen shows the shape typical for the present genus. There is a distinct suture between the second and third abdominal somites, but not between the third, fourth, and fifth somites. The male gonopods are visible lateral to the closed abdomen. The examined specimen came from Cape Town, South Africa, collected by J. Day, 1973, in USNM collection, uncataloged.

Paratylodiplax derijardi (Guinot and Crosnier, 1963:612, figs. 1–3, 5–11) (Figure 54*a–e*), was originally placed in the genus *Tylodiplax*. The species is well described and figured in the original publication, and shows all the characters listed in the above generic diagnosis of *Paratylodiplax*, in which genus we therefore do not hesitate to place it, following Serène (1974:62).

The present genus differs from *Cleistostoma* (1) in the less strong development of the suborbital ridges, (2) by the fact that the first abdominal segment of the male does not reach the coxae of the fifth legs, (3) in showing part of the male gonopods when the abdomen is pressed against the thorax, and (4) by the presence of distal appendages at the end of the male gonopods.

Of the four known species of *Paratylodiplax*, three (*P. algoensis*, *P. blephariskios*, and *P. edwardsii*) are known only from South Africa. The fourth, *P. derijardi*, has been reported from Madagascar.

Genus *Serenella*, new genus

FIGURE 55

TYPE-SPECIES.—*Macrophthalmus leachii* Audouin, 1826.

ETYMOLOGY.—This genus is named for Dr. Raoul Serène in recognition of his many valuable contributions to the study of Brachyura; the gender of the generic name is feminine.

DIAGNOSIS.—Carapace broadly quadrangular, being distinctly wider than long. Dorsal surface of carapace smooth, without ridges or tubercles, with only shallow grooves indicating regions. Front curved down, anterior margin at either end with 2 angular lobes, inner larger than outer and reaching farther forward. Epigastric ridges dis-

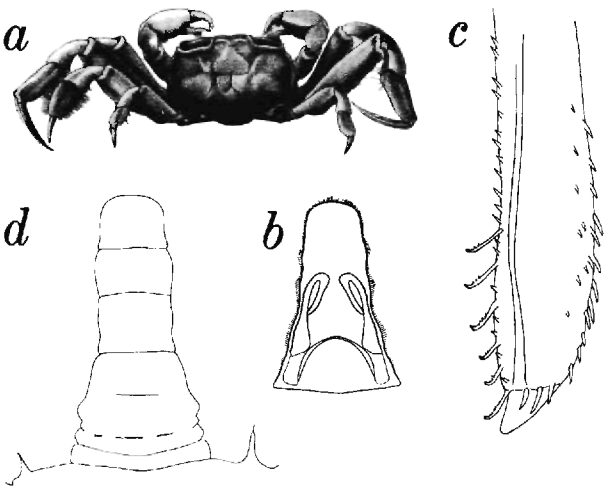

FIGURE 55.—*Serenella leachii* (Audouin), male: *a*, dorsal view; *b*, gonopods in situ; *c*, tip of gonopod (L, Crust. D. 26887), Melita Bay, Red Sea; *d*, abdomen (L, Crust. D. 26888), Museri Island, Red Sea. (*a*, from Paulson, 1875, pl. 8: fig. 6; *b*, from Gordon, 1931, fig. 27 left.)

tinct, placed before base of front. Lateral margins of carapace without teeth, converging posteriorly. Orbits transverse, situated in single straight line. Upper orbital border convex, lacking incisions. Eyes with cornea well developed although small. Antennules transversely folded. Antennae not entering orbit. Suborbital ridge fused with outer third of lower orbital margin, provided with granules. Epistome short, with transverse, smooth, sharp ridge; posterior margin produced, tonguelike, in middle between third maxillipeds, latter filling entire oral field. Merus and ischium covering part of exopod and entire flagellum; merus wider than ischium, somewhat auriculate, lacking lobe near base of carpus. Chelipeds equal, those of adult males larger than those of females and with quadrangular tooth on cutting edge of dactylus. Third pereiopod longer than other legs, fifth pereiopod shortest. No spines present on any pereiopod. Male abdomen narrow, not constricted at fifth abdominal somite. First somite only slightly wider than second and failing considerably to reach coxa of fifth pereiopod. Second, third, and fourth abdominal somites fused, only some faint grooves indicating borders between them. Fifth and sixth somites free. Female abdomen almost circular, with all somites free. Male gonopods strongly recurved, so much so that apex overlaps base of shaft. Distal part of gonopod not widened, ending in narrow, bluntly rounded apex. Morphological inner side of apex bearing strong spines, curved at tip and on one side bearing some granules. Tip of gonopod bearing short, wide triangular lobe.

REMARKS.—So far *S. leachii* is the only species known of this genus. It is possible that *Tylodiplax indica* Alcock, 1900, also should be placed here (p. 217), but this species differs in several important respects from the type-species. In the first place Alcock's species evidently shows no sexual dimorphism in the chelipeds, while also the shape of the third maxilliped and the male gonopod are different. Stephensen's (1945, fig. 58D) illustration shows the male abdomen of *T. indica* slightly constricted at the fifth somite, but no information is available on whether or not this constriction is so strong that the gonopods become visible. A closer study of Alcock's species is necessary to solve its generic position.

Genus *Telmatothrix*, new genus

TYPE-SPECIES.—*Telmatothrix powelli*, new species.

ETYMOLOGY.—The name is derived from the Greek words *telma* (mud of a pool) and *thrix* (hair) in allusion to the hairs of the animal, which are made quite conspicuous by the mud caught between them; the gender of the generic name is feminine.

DIAGNOSIS.—Carapace transversely quadrangular, being wider than long. Surface of carapace flat, but regions rather distinct, some with elevations forming blunt transverse ridges. Short, dark pubescence visible on dorsal surface, especially dense and conspicuous on ridges. Front curved down. Epigastric ridges strong, placed on base of front. Anterolateral margins of carapace with distinct teeth. Orbits transverse, situated in common straight line; upper orbital border lacking incisions. Eyes with cornea well developed. Antennules obliquely folded. Antennae entering or-

bit. Lower orbital margin and suborbital ridge visible in front view, granulated. Epistome short, with smooth, sharp, transverse ridge. Third maxillipeds filling entire oral field; merus and ischium covering palp and part of exopod. Merus longer than ischium, and with anterolateral angle rounded or somewhat flattened, not produced, but with small lobe near base of carpus. Inner anterior angle of ischium bluntly triangularly produced. Chelipeds equal; those of adult males much larger than those of females and with different shape; dactylus in males with strong molariform tooth on cutting edge, no such tooth present on fixed finger of either sex or on dactylus of female. Third and fourth pereiopods longer than second and fifth. No spine on any of segment of pereiopods, but pubescence present on several. Male abdomen narrow, with second, third, and fourth somites fused. First somite only slightly wider than second, largely failing to reach coxae of fifth pereiopods. Female abdomen almost circular, consisting of 7 free somites. Male gonopods strongly recurved, ending in cleft apex, latter narrowing gradually, lacking distal appendages.

The type and only species so far known of this genus is described below.

Telmatothrix powelli, new species

FIGURES 56, 57

"a new ocypodid".—Powell, 1976:315.

MATERIAL EXAMINED.—*Pillsbury Material:* None.

Other Material: Nigeria: Mayuku Creek at Ugbekoko (= Gbekoko), approximately 10 mi [16 km] W of Sapele, Midwest State, at about 05°54′N, 05°37′E, among mangroves (*Rhizophora*), oligohaline, 5 Oct 1975, C. B. Powell, 3♂, 3 juv ♀, 1 juv (L). Same locality, Oct–Dec 1975, C. B. Powell, 3♂, 4♀ (2 ov) (L). Same locality, 1–3 Nov 1975, C. B. Powell, 10♂ (one is holotype), 6 adult ♀, 2 juv ♀ (L). Same locality, 31 Dec 1975, C. B. Powell, 200♂, ♀, juv (L, W).—New Calabar River at Okpo waterside, Niger delta, 04°52′N, 06°54′E, 7 Aug 1978, C. B. Powell, 5♂, 2♀ (W).

DESCRIPTION.—Carapace (Figure 56) 1.3 to 1.5 times as wide as long, flat, but with regions reasonably well marked. Central part of cervical groove deeply sunken, sharply defined, forming posterior limit of mesogastric region. Carapace with several elevated areas placed in more or less distinct transverse rows, elevated areas made more conspicuous by covering of dense pubescence of short dark hairs; such hairs also present on rest of carapace, but usually much less dense there. Distinct transverse pubescent area formed by upper orbital margins and epigastric lobes. Second such area, broader than first, formed by transverse elevation in anterior part of each branchial region, as well as one in posterior part of mesogastric region. Third pubescent elevated region extending over middle of branchial regions and cardiac region, separated by narrow naked strip from less densely pubescent area covering posterior part of carapace. Some pubescence also visible on protogastric regions. Pubescent elevated area on anterior branchial region separated by wide groove from distinct tubercle placed laterally to elevated area. Also third transverse elevated pubescent area with lateral tubercle, placed behind and somewhat mediad of first-mentioned tubercle.

Basal width of front (Figure 56) slightly more and distal width of front, slightly less than 1/3 of frontorbital width. In frontal view anterior margin of front convex, in dorsal view front emarginate in middle. Margin slightly elevated and granular. Anterolateral angles of front produced beyond rim as small tooth-like processes reaching to base of antennae. Front itself twice as long as wide and directed distinctly down, upper surface longitudinally concave. Behind middle of each half of anterior margin of front dorsal surface slightly elevated, bearing group of short hairs, forming impression that 2 tubercles are placed just behind anterior margin of front (this is especially distinct when, as usual, mud particles are caught between the hairs).

Both epigastric lobes very distinct, reaching over base of front, sloping abruptly forwards and down, separated from each other and from lateral margin of front by deep grooves. Both lobes covered by heavy tomentum of short dark hairs. Left and right posterior orbital margins lying in single straight transverse line; both finely but

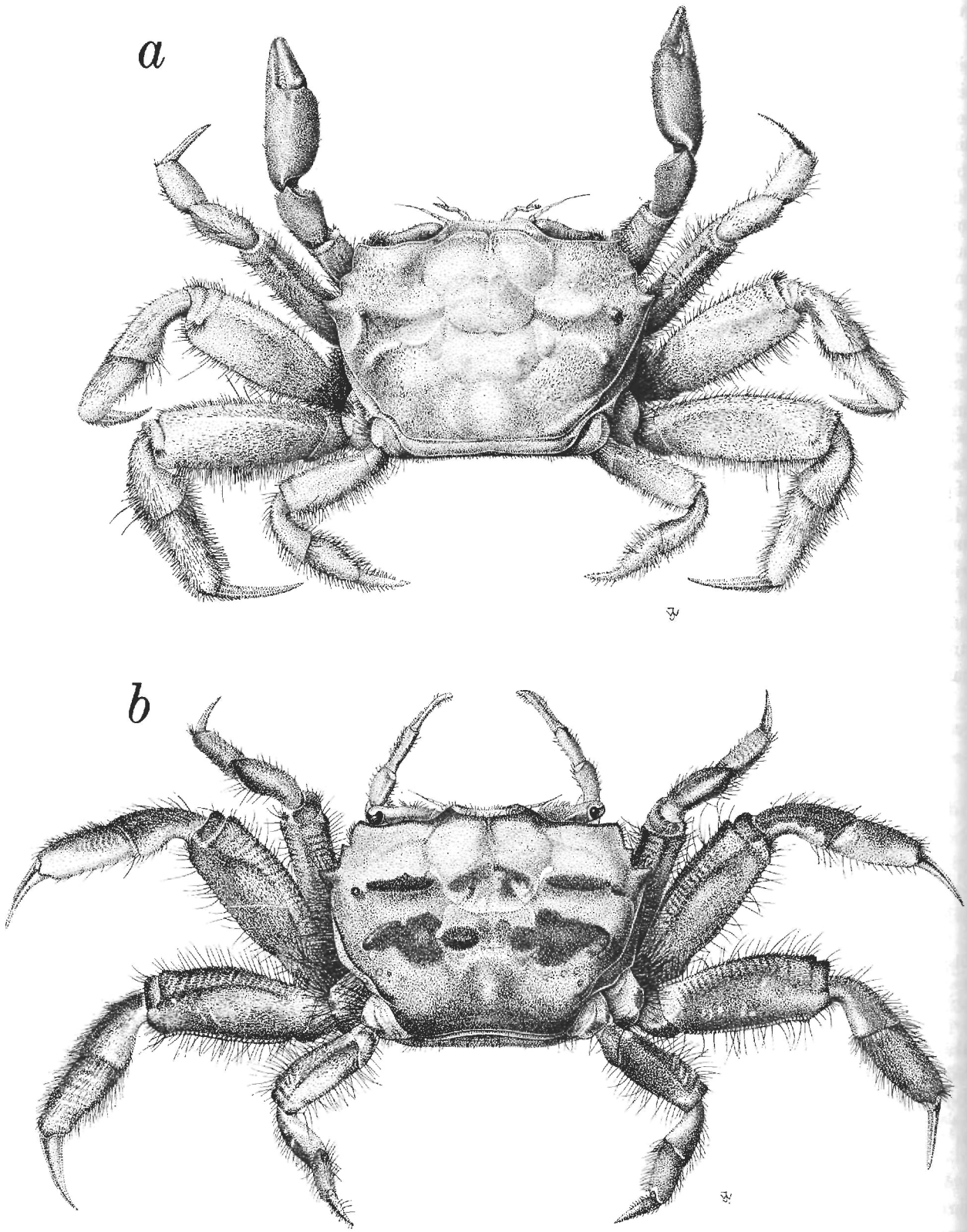

FIGURE 56.—*Telmatothrix powelli*, new genus, new species: *a*, male, dorsal view; *b*, female, dorsal view. (Drawn by J. Wessendorp.)

distinctly granular, slightly sinuous, showing no indentations. Inner half of posterior orbital margin widened ventrally, with granules in lower part of widened area. Between widened area and base of eye short sharp carina present, branching off from orbital margin. Outer orbital tooth bluntly angular. Behind this tooth anterolateral margin of carapace bearing 2 distinct teeth, anteriormost lower, more rounded than second; latter longer, more triangular, directed more sideways; lateral 3 teeth separated from each other by deep triangular incisions, margins granular. Posterolateral margin longer than anterolateral, unarmed but granular; just before reaching posterior margin row of granules curving inward, not touching posterior margin. Second granular ridge present branching off from posterolateral ridge slightly behind posterior lateral tooth, lying more medially from posterolateral ridge. This second ridge, stronger than posterolateral, extending posteriorly, ending in sharp, elongate posterolateral tubercle, lying near margin of carapace above base of fifth pereiopod. Posterolateral margin of carapace with blunt tooth protruding between bases of fourth and fifth pereiopods. Posterior margin of carapace, like posterolateral, somewhat granular and elevated; another parallel granular ridge present, placed more anteriorly.

Eyes (Figure 57*a*) elongate, cornea terminal, not surrounding stalk completely; lower margin of orbit finely granular, bearing long hairs that partly cover eye when latter retracted. Below lower orbital margin ridge present with about 11 to 16 low but distinct tubercles, outer smaller, slightly more closely placed than inner.

Antennules folding obliquely, almost transversely. Antenna entering orbit; flagellum short, consisting of about 6 segments, bearing long bristle, slightly longer than flagellum itself.

Front (Figure 57*a*) touching epistome in middle. Epistome showing smooth transverse ridge in middle, posterior margin, strongly produced posteriorly in middle, distinctly granular.

Third maxillipeds (Figure 57*d*) fill entire oral cavity. In ventral view only part of exopod and part of palp visible, slender dactylus, somewhat

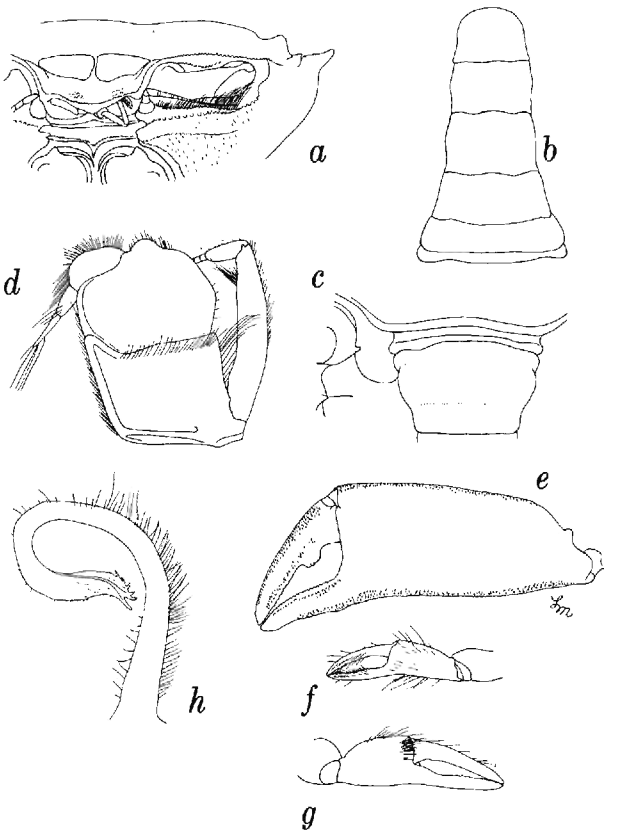

FIGURE 57.—*Telmatothrix powelli*, new genus, new species: *a*, front; *b*, male abdomen; *c*, base of male abdomen in situ; *d*, third maxilliped; *e*, male chela; *f*, female chela; *g*, chela of juvenile male; *h*, gonopod.

less slender propodus, part of carpus, and distal part of exopod hidden behind merus and ischium. Merus with anterolateral angle rounded or somewhat flattened, but not auricular, forming shallow, anteriorly directed lobe just outside base of palp. Latter articulating in middle of anterior margin of merus. Inner anterior angle of merus rectangularly rounded. Ischium almost as long as and as wide as merus. Inner margin of both segments elevated, rim-like, otherwise no longitudinal carinae or grooves present.

First legs (Figure 57*e–g*) showing conspicuous sexual dimorphism. In adult males chelipeds large, robust, being far larger than following legs and more than twice as long as carapace. Fingers slightly more than half as long as palm, gaping distinctly. Finger tips slightly spoon-shaped, each

bearing row of long hairs on inner margin. Cutting edges of fingers bearing small granules, distalmost larger than proximals. Cutting edge of dactylus with wide molariform tooth, occupying slightly more than 1/4 of length of edge; no such tooth present on cutting edge of fixed finger. Palm highest distally, narrowing proximally, bearing scattered small granules, densest dorsally. Carpus about half as long as palm, merus slightly shorter than palm. Both carpus and merus showing granules, but bearing no spines. Left and right chelipeds in male equal in shape and size. In female chelipeds much shorter than second pereiopods, of about same length as carapace, slender and equal. Fingers somewhat longer than palm, gaping and having spoon-shaped tips bordered with long hairs. Cutting edges entire. Carpus about as long as palm and less than 2/3 as long as merus.

Dactyli of following legs simple, slightly shorter than propodi, provided on both dorsal and ventral surfaces with 3 longitudinal pubescent grooves separated by 2 ridges. Propodi about twice as long as wide and longer than carpi, neither bearing any granules. Merus about as long as propodus and carpus combined but wider, bearing distinct granules on lower surface, especially along margins; some granules visible also in upper part of outer (= posterior) surface. Third and fourth pereiopods distinctly longer and wider than second and fifth; third leg largest, fifth smallest of walking legs. Outer (= posterior) surface of these legs bearing numerous short black hairs, among which some longer hairs visible, especially on upper and lower margins. Third, fourth, and fifth pereiopods showing numerous soft, long, woolly hairs on lower surface of merus; such woolly hairs also visible in outer distal part of carpus and dorsal part of propodus of third and fifth legs, and on inner, upper, and lower surfaces of propodus and distal part of carpus of fourth legs. Woolly hairs more distinct in males than in females. No teeth or spines on any of segments of legs; anterodorsal and anteroventral angles of merus bluntly rounded.

Male abdomen (Figure 57*b*,*c*) slender. First somite only slightly wider than second, largely failing to reach coxae of fifth pereiopods. Second somite slightly wider than third, of about same length as first and about half as long as third. Third somite about as long as but somewhat wider than fourth. Second, third, and fourth somites fused, but grooves indicating lines separating somites, while deep incisions in lateral margins of fused part also indicate limits of somites. Distal 3 somites of about equal width. Fifth somite longest of three, also longer than fourth; differences slight. Sixth and seventh somites of about equal length. Sixth quadrangular, seventh with tip semicircularly rounded. Weak, low transverse carina, interrupted in middle, present in distal half of exposed surface of seventh somite. Other somites not showing any carinae, except first, traversed by distinct smooth carina. In adult female abdomen with all somites free, almost semicircular, reaching to, or overlapping, bases of the pereiopods.

Male gonopods (Figure 57*h*) reaching to line between sternites of second and third pereiopods, strongly recurved, tapering gradually towards tip. Tip ending in 2 points, of which 1 minutely dentate on outer margin. Tip neither widened nor bearing any appendages. Male sexual openings placed on sternum.

MEASUREMENTS.—The largest male examined (the holotype) has the carapace 10 mm long and 14 mm wide, the largest females were of the same length and 14 and 15 mm wide. Females, with the abdomen wide and reaching to the bases of the pereiopods, ranged in length from 7 to 10 mm and in width from 9 to 15 mm. Ovigerous females had a carapace length of 9 and 9.5 mm and a carapace width of 12 and 13 mm. Juveniles (including females with a narrow abdomen and males in which the chelae still showed the female type) ranged from carapace width 2.5 to 8 mm. The eggs are numerous and have a diameter of about 0.35 mm, they are spherical.

A male with a carapace length of 6 mm and a carapace width of 8 mm showed the chelipeds very similar to those of the females, the fingers (Figure 57*g*) were longer than the palm, with only

faint traces of the molariform tooth of the dactylus and of the granulation of the cutting edge of the fixed finger are visible. In still smaller males the chelipeds are indistinguishable from those of the female, e.g., in a male with cl 3.5 mm and cb 5 mm, in which the abdomen and the gonopods showed the typical male shape.

TYPE-LOCALITY.—Mayuku Creek at Ugbekoko (= Gbekoko), approximately 10 miles [16km] west of Sapele, Midwest State, Nigeria, at 05°54′N, 05°37′E. This locality was described in detail by Powell (1976:315), who also dealt with the various animal species found in it.

DISPOSITION OF TYPES.—The holotype (Crust. D. 31508), a male collected 1–3 November 1975, forms part of the collection of the Rijksmuseum van Natuurlijke Historie, Leiden; the greater part of the paratypes are in the same museum. Series of paratypes are also deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D.C., and in the Koninklijk Museum voor Centraal Afrika, Tervuren, Belgium.

ETYMOLOGY—The specific epithet is given in honor of the collector of the material, C. B. Powell, University of Port Harcourt, Nigeria, who by careful collecting activities, and even more by his investigations, has greatly furthered the knowledge of West African fresh and brackish water Decapoda.

Genus *Tylodiplax* De Man, 1895

FIGURE 58

Tylodiplax De Man, 1895a:598 [type-species: *Tylodiplax tetratylophora* De Man, 1895, by monotypy; gender: feminine].

DIAGNOSIS.—Carapace almost semicircular, with anterolateral margins widely rounded and long, provided with 2 indistinct teeth of which anterior more pronounced than posterior. Posterolateral margins of carapace short. Dorsal surface of carapace somewhat convex, with 2 transverse ridges in anterior half and 4 tubercles in posterior half. Epigastric ridges not high, placed on base of front. Anterolateral angles of front distinct, little produced. Dorsal margin of orbit showing no incisions. Ischium and merus of third maxilliped covering part of exopod and part of palp; merus slightly longer than ischium and not auriculate, but with small lobe on anterior margin near base of carpus. Chelipeds of adult male small, not larger than those of female, and without teeth on cutting edges. Third and fourth pereiopods larger than second or fifth. First somite of male abdomen narrow, not reaching coxae of fifth pereiopods; second to fourth somites fused, fifth and sixth free. Abdomen of male not constricted at fifth somite and in reflexed position covering gonopods. Male gonopods strongly recurved, ending in somewhat swollen distal parts, the one on morphological inner half bearing broad lobe and that on morphological outer half several strong and some small spines.

REMARKS.—So far three species have been described as belonging in the genus *Tylodiplax*: *T. tetratylophora* De Man, 1895; *T. indica* Alcock, 1900; and *T. derijardi* Guinot and Crosnier, 1963. Some authors also placed *Cleistostoma blephariskios* Stebbing, 1924, in this genus. As has been explained (p. 211), both *T. derijardi* and *C. blephariskios* are assigned to the genus *Paratylodiplax*, differing from *Tylodiplax* in several important characters. Also *Tylodiplax indica* has to be removed from *Tylodiplax*; it is here provisionally placed in *Serenella* (p. 211), but its generic position is still far from clear, and can only be decided upon after examination of additional material.

The only species thus remaining in the genus *Tylodiplax* is its type-species, *T. tetratylophora* De Man, which is known only from Malaya.

Subfamily OCYPODINAE Rafinesque, 1815

Genus *Ocypode* Weber, 1795

Ocypode Weber, 1795:92 [type-species: *Cancer ceratophthalmus* Pallas, 1772, by selection by Holthuis, 1962:244, 245; gender: feminine; name 1637 on *Official List*].

Ocypode Fabricius, 1798:312, 347 [invalid junior objective synonym and homonym of *Ocypode* Weber, 1795; type-species: *Cancer ceratophthalmus* Pallas, 1772, by selection by Latreille, 1810:95, 422; gender: feminine; name 1738 on *Official Index*].

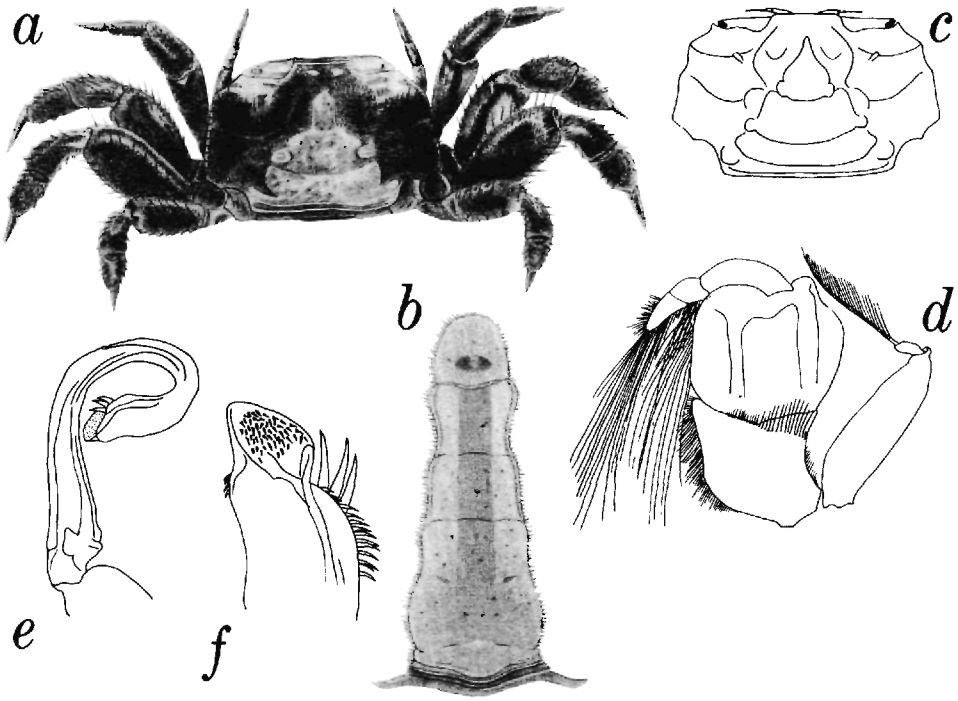

FIGURE 58—*Tylodiplax tetratylophora* De Man: *a*, male, dorsal view; *b*, male abdomen; *c*, carapace, dorsal view; *d*, third maxilliped; *e*, gonopod; *f*, tip of gonopod. (*a,b*, from De Man, 1897, pl. 14: fig. 15, 15d; *c–f*, from Serène and Kumar, 1971, figs. 1, 3–5.)

Ocypoda Lamarck, 1801:149 [incorrect spelling of *Ocypode* Weber, 1795; name 1737 on *Official Index*].

Monolepis Say, 1817:155 [type-species: *Monolepis inermis* Say, 1817, a subjective junior synonym of *Cancer quadratus* Fabricius, 1787, by selection by Fowler, 1912:457; gender: feminine].

Ceratophthalma MacLeay, 1838:64 [type-species: *Cancer cursor* Linnaeus, 1758, by monotypy; gender: feminine].

Parocypoda Neumann, 1878:26 [type-species: *Cancer ceratophthalmus* Pallas, 1772, by monotypy; gender: feminine].

Ocypode africana De Man, 1881

Ocypode africana.—Büttikofer, 1890:465, 487.—Rossignol, 1957:86.—Guinot-Dumortier and Dumortier, 1960:136.—Bott, 1964:30.—Forest and Guinot, 1966:89.—Kensley, 1970:180.—Penrith and Kensley, 1970b:252, 260.

Ocypoda africana.—Bruce-Chwatt and Fitz-John, 1951:117, 118.—Capart, 1951:176, fig. 67.—Monod, 1956:395, figs. 555–558.—Gauld and Buchanan, 1956:295, 296, 299.—Dubois, 1957:7.—Sourie, 1957:14, 31 [footnote], 45.—Rossignol, 1957:119 [key].—Longhurst, 1958:53, 88.—Gauld, 1960:71.—Rossignol, 1962:119.—Guinot and Ribeiro, 1962:66.—Uschakov, 1970:447, 455 [listed].

SYNONYM.—*Ocypoda hexagonura* Hilgendorf, 1882.

MATERIAL EXAMINED.—*Pillsbury Material:* None.

Other Material: Liberia: Grand Cape Mount, near Robertsport, 1880–1882, J. Büttikofer and J. H. Sala, 12 specimens (L). Monrovia, Apr 1894, O. F. Cook and G. N. Collins, 1 juv (W). Ocean beach in front of Camp Johnson, Monrovia, G. C. Miller, 21 Jul 1952, 1♂, 1♀ (W). Mouth of Mesurado River, Monrovia, O. F. Cook, 1♂, 1♀, 1 juv (W).—Beach at mouth of Junk River, Harbel, dug from under roots, T. C. Rutherford, 20 Jul 1968, 2♂ (W).

Ghana: Chorkor, near Accra, Dec 1950, R. Bassindale, 1♀ (L).

Dahomey: Lagoon of Lac Nokoué near Zobgo, north of Cotonou, 29 Mar 1963, H. Hoestland, 1♀ (L).

Nigeria: Lagoon side of Victoria Beach, Lagos, 5 Oct 1957, J. Crane, 8♂, 3♀ (W).—S bank of Escravos River near Ajudaibo, Niger delta, 05°34.5′N, 05°11.75′E, 30 Jul 1975, C. B. Powell, 1♂ (L). Niger delta between Brass and Port Harcourt, May–Aug 1960, H. J. G. Beets, 1♂ (L).

Cameroon: Kribi, in burrows above water line, sandy beach, caught at night, 8 Mar 1964, B. de Wilde-Duyfjes, 1♀ (L).

Zaire: Banana, mouth of Congo River, Jul–Aug 1915, American Museum Congo Expedition, 5♂, 2♀, 2 juv (W).

Angola: Musserra, P. Kamerman, lectotype, 1♂ "from Congo coast" (L, reg. no. D. 235). Musserra, P. Kamerman, 8 specimens (L).

DESCRIPTION.—Capart, 1951:176.

Figures: Monod, 1956, figs. 555–558.

Male Pleopod: Monod, 1956, figs. 557, 558 (Ghana).

MEASUREMENTS.—Our specimens have carapace widths of 8 to 34 mm.

REMARKS.—De Man (1881:253–255), when describing the present species, based it on a male (Crust. D. 235) from "Congo" [almost certainly Musserra, Angola], collected by P. Kamerman. However, De Man also assigned to his new species a specimen from Liberia, not seen by him, but reported upon by Hilgendorf (1869:81), and noted as ZMB 3118. Both specimens are syntypes of De Man's species and the one from "Congo" is now selected to be the lectotype. Monod (1956: 395) already indicated that specimen as the holotype of *Ocypode africana.*

BIOLOGY.—Like all species of *Ocypode*, *O. africana* is an inhabitant of sandy beaches, making its burrows above the tide line. Gauld and Buchanan (1956) and Gauld (1960) found the species "very common in sandy ground above high water marks, such as coconut groves; juveniles are found, with *O. cursor*, below high water mark but adults rarely so" (Gauld, 1960:71). According to Gauld and Buchanan (1956:295, 299), *O. africana* occupies a habitat more distant from the sea than *O. cursor* with, in certain places, "no evidence of overlap of the two species . . . . *O. africana* is quite terrestrial in habit, emerging from its burrows at night." Longhurst (1958:53), on the other hand, found that "in Sierra Leone—at least on the beaches examined—both species occur together and excavate burrows above H.W. of springs; from these, isolated individuals of both species emerge during the daytime to feed along the lines of foam left by the surf. At night, the beaches are crowded with feeding individuals of both species, which appear to gather—as in the daytime—at the edge of the surf."

DISTRIBUTION.—West Africa, from southern Mauritania to South-West Africa as far as 19° 23′S. Monod (1956) enumerated the records of the species then known. To these the following can now be added:

Senegal: Plage de Cambérène, N of Dakar and Plage de Bargny Gouddou (as Bargny), E of Dakar (Sourie, 1957).

Guinea: Îles de Los (Uschakov, 1970).

Sierra Leone: No specific locality (Longhurst, 1958).

Liberia: No specific locality (Büttikofer, 1890).

Ghana: No specific locality (Gauld, 1960). Denu and Labadi (Gauld and Buchanan, 1956).

Nigeria: Lagos (Bruce-Chwatt and Fitz-John, 1951).

Principe: No specific locality (Forest and Guinot, 1966).

Congo: Baie de Pointe-Noire (Rossignol, 1957, 1962).

Zaire: Banana to Vista (Dubois, 1957).

Angola: Lobito (Bott, 1964). Moçâmedes (Guinot and Ribeiro, 1962).

South-West Africa: Rocky Point, 18°59′S, 12°29′E (Penrith and Kensley, 1970; Kensley, 1970). Near Kunene River mouth, 17°15′S, 11° 45′E; *Dunedin Star* wreck site, 18°13′S, 11°56′E; False Cape Frio, 18°29′S, 12°01′E; Westies Mine Camp, 19°12′S, 12°37′E; and Möwe Point, 19° 23′S, 12°42′E (all Kensley, 1970).

**Ocypode cursor* (Linnaeus, 1758)

?*Ocypode rhomba.*—Pechüel-Loesche, 1882:287 [not *Ocypode rhombea* Fabricius, 1798].

Ocypode cursor.—Hilgendorf, 1879:802.—Büttikofer, 1890: 465, 487.—Johnston, 1906:862.—Rossignol, 1957:86, pl. 2: fig. 1.—Bott, 1964:31.—Forest and Guinot, 1966:89.—Voss, 1966:30.—Kensley, 1970:180.—Penrith and Kensley, 1970b:252, 261.—Hartmann-Schröder and Hartmann, 1974:13, 23.—Sakai and Türkay, 1977:178.

Ocypode ippeus.—Monod, 1933b: 548.

Ocypoda cursor.—Capart, 1951:178, fig. 68.—Monod, 1956: 391, 632, figs. 552–554.—Dubois, 1957:7, fig. 22.—Rossignol, 1957:119 [key].—Sourie, 1957:14, 31, 43, 45.—Longhurst, 1958:53, 88.—Gauld, 1960:71.—Nicou, 1960: 140.—Guinot and Ribeiro, 1962:65.—Rossignol, 1962: 119.—Ribeiro, 1964:14.

Ocypoda hippeus.—Gauld and Buchanan, 1956:295, 296, 298, 301; 1959:127.

Ocypode.—Voss, 1966:52.—Bayer, 1966:98, 102.

SYNONYM.—*Ocypode ippeus* Olivier, 1804.

MATERIAL EXAMINED.—*Pillsbury Material:* Nigeria: Sta 224, Lagos, sand beach, 1♂, 2 juv (W). Sta 316, Lagos, sand beach, 1♂ (L).

Annobon: Sta 273, shore, 2 juv (W). Sta 278, shore, 2♂ (W). Sta 281, shore, 4 juv (L).

Other Material: Senegal: Mboro, approximately 120 km

north of Dakar, 3 Dec 1975, W. Böhme, 1♂ (L). Ocean beach near Dakar, 3 May 1892, O. F. Cook, 2♂, 1♀ (W).

Liberia: Grand Cape Mount near Robertsport, 1882, J. Büttikofer, 2♂, 2♀ (L). Ocean beach in front of Camp Johnson, Monrovia, 21 Jul 1952, G. C. Miller, 1♂ (W). Mouth of Mesurado River, Monrovia, O. F. Cook, 1♂, 2 juv (W). Beach at mouth of Junk River near Harbel, 20 Jul 1968, T. C. Rutherford, 2♂, 3♀ (W). St. John River, Upper Buchanan, on sand at river mouth, at night, 24 Aug 1967, T. C. Rutherford, 4♂, 2♀, 3 juv, 3 damaged (W).

Ghana: Accra, 1868–1869, M. Sintenis, 1♂ (L).

Nigeria: Lagoon side of Victoria Beach, Lagos, 5 Oct 1957, J. Crane, 4♂, 1♀ (W). Niger delta between Brass and Port Harcourt, May–Aug 1960, H. J. G. Beets, 1♂, 1♀ (L).

Cameroon: Kribi, sandy beach, adults caught at night, juveniles in the daytime, 8 Mar 1964, B. de Wilde-Duyfjes, 6♂, 3♀, juv (L).

Congo: Pointe-Noire, M. Rossignol, 1♂ (W).

Zaire: Banana, Jul–Aug 1915, American Museum Congo Expedition, 6♂, 5♀, 16 juv (W).

Angola: "Congo," 1878, P. Kamerman, 3♂, 4 juv (L). Musserra, 1882, P. Kamerman, 2♀ (L). Luanda, 11 Dec 1889, U. S. Eclipse Expedition, 2♂, 1♀ (W). Lobito, P. Kamerman, 1♂ (L). Porto Alexandre, 9 Jul 1967, G. Hartmann, 1♂ (L).

DESCRIPTION.—Capart, 1951:178.

Figures: Capart, 1951, fig. 68; Monod, 1956, figs. 552–554.

Male Pleopod: Monod, 1956, figs. 557, 558 (Ghana).

MEASUREMENTS.—Carapace widths of males 14 to 55.2 mm, of females 25.9 to 53.5 mm.

BIOLOGY.—This species lives on sandy beaches and has its burrows above the tide line. According to Gauld (1960) the adults are found above and below the tide mark.

DISTRIBUTION.—West African coast from southern Mauritania to South-West Africa, as far south as 19°23′S. It is also found in the eastern Mediterranean: Egypt, Israel, Lebanon, SE Turkey, and Greece. Monod (1956) listed all of the West African records then known; to these the following can be added:

Mauritania: Portendick (Monod, 1933b).

Cape Verde Islands: Baía de Murdeira, Sal; between Ponta do Esbarradeiro and Ponta da Praia Formosa, São Antão (Guinot and Ribeiro, 1962; Ribeiro, 1964).

Senegal: No specific locality (Sakai and Türkay, 1977). Marigot de Ngor, Dakar (Nicou, 1960). Anse de Hann and Plage de Cambérène, both N of Dakar; Plage de Bargny Gouddou, E of Dakar (Sourie, 1957).

Sierra Leone: No specific locality (Longhurst, 1958).

Liberia: No specific locality (Büttikofer, 1890; Johnston, 1906).

Ghana: No specific locality (Gauld, 1960). Denu, Labadi, and Apam (Gauld and Buchanan, 1956). Tenkpobo (Gauld and Buchanan, 1959).

Nigeria: Lagos harbor (Bayer, 1966; Voss, 1966).

Cameroon: Kribi (Forest and Guinot, 1966).

Principe: Ponta da Mina (Forest and Guinot, 1966).

São Tomé: Praia Almoxarife, Diogo Nunes, and Iógoiógo (Forest and Guinot, 1966).

Annobon: No specific locality (Forest and Guinot, 1966). Between Punta del Palmor and Isleta Yebatulu, 01°24′S, 05°37′E (Bayer, 1966; Voss, 1966).

Congo: Loango (Pechüel-Loesche, 1882). Pointe-Noire (Rossignol, 1957, 1962).

Zaire: Banana to Vista (Dubois, 1957).

Angola: No specific locality (Guinot and Ribeiro, 1962). Luanda (Hilgendorf, 1879; Guinot and Ribeiro, 1962). Porto Amboim; Baía Farta, Benguela; Baía dos Tigres (Guinot and Ribeiro, 1962). Moçâmedes (Guinot and Ribeiro, 1962; Bott, 1964). Between Cacuaco and Lobito-Benguela; near Porto Alexandre (16°S) but not at Cape Cross (22°S), South-West Africa (Hartmann-Schröder and Hartmann, 1974).

South-West Africa: Rocky Point, 18°59′S, 12°29′E (Penrith and Kensley, 1970b; Kensley, 1970). Near Kunene River mouth, 17°15′S, 11°45′E; *Dunedin Star* wreck site, 18°13′S, 11°56′E; False Cape Frio, 18°29′S, 12°01′E; Westies Mine Camp, 19°12′S, 12°37′E; 4 miles [6.4 km] N of Möwe Point, 19°23′S, 12°24′E (Kensley, 1970).

Genus *Uca* Leach, 1814

Uca Leach, 1814:430 [type-species: *Uca una* Leach, 1814, an objective junior synonym of *Cancer vocans major* Herbst, 1782, by monotypy; gender: feminine; name 1648 on *Official List*].

Gelasimus Latreille, 1817b:517 [type-species: *Cancer vocans* Linnaeus, 1758, selected by H. Milne Edwards, 1841, in 1836–1844, pl. 18: fig. 1; gender: masculine].

Gelasima Latreille, 1817b:519, 520 [incorrect original spelling of *Gelasimus* Latreille, 1817, first selected as such by Schultze, et al., 1929:1350.]

Acanthoplax H. Milne Edwards, 1852:151 [type-species: *Acanthoplax insignis* H. Milne Edwards, 1852, by monotypy; gender: feminine].

Eurychelus Rathbun, 1914:126 [type-species: *Uca monilifera* Rathbun, 1914, by monotypy; gender: masculine; name invalid because originally published in synonymy].

Minuca Bott, 1954:155, 160 [type-species: *Gelasimus mordax* Smith, 1870, by original designation; gender: feminine].