

art", those who understand the various levels at which they function will look at them with the same strength of purpose. The introduction of the so-called international religions, Christianity and Islam, changed the cultural patterns and because of this the art of pattern-making among the Yoruba degenerated. The most adorned and worshipped sculptural pieces are no longer in the making simply because the former belief has changed and has given way to the economic point of view. Sincerity that prevailed no longer holds the spiritual outlook. It disappeared because of the introduction of spontaneous patterns that are always striving towards the achievement of the outward beauty to please the living and not the *alenu ma soro*, that which has mouth but can't talk—the deities. As it is for these carvers and their patterns so it is for the traditional fabric designers. Their understanding of the cultural and traditional expressions sprang from the same roots. This can be identified in their usage of imagery and their supporting decorative patterns. Whatever the changes, these people still lean backwards for a sort of support from their beliefs and their traditional training.

However, the patterned carvings of the Yoruba will ever remain one of the greatest Black African artistic achievements and will forever testify to how firm and vital a role this type of art can play in the life of man.

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²Carol F. Jopling, *Art and Aesthetics in Primitive Societies*, E. P. Dutton & Co., Inc., New York, 1971, p. 127.

Notes on Crabs from the Niger Delta

by N. J. Abby-Kalio

(Department of Zoology, University of Reading)

INTRODUCTION

Little is known about the crabs of the Niger Delta of Nigeria, though some of them are highly prized by the indigenous population. A survey of the shrimp resources of the area (Bayagbona *et al* 1971) showed that out of the four species caught, *Penaeus duorarum* was commercially the most important.

Specimens for this study were collected from the mangrove swamps and creeks surrounding Okrika, about ten to twenty nautical miles from Port Harcourt, along the Bonny River (Figs. 1 and 2), and their native Okrika Ijaw names are recorded. This preliminary investigation has shown that the most abundant crab species belong to seven genera and five families. These genera are taxonomically described and are found to resemble those from other mangrove environments, notably the Caribbean (Hartnoll, 1965; Abele,

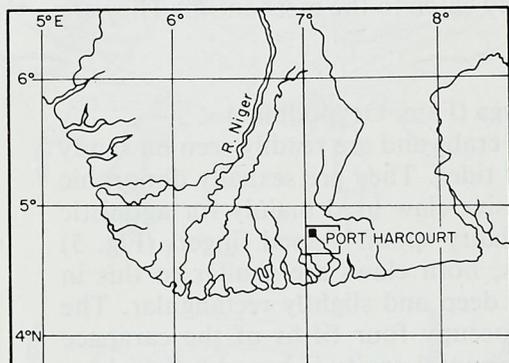


Fig. 1. Location of study area.

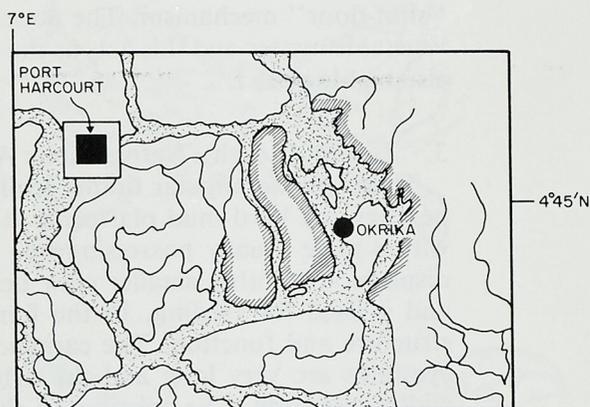


Fig. 2. Study area, hashing marks region from which crabs were collected.

1972; Hagen, 1978), the Eastern coasts of America and the Panama (Rathbun, 1918; Bright and Hogue, 1972; Abele, 1976), the Congo estuaries of South-West Africa (Rathbun, 1921) and the Malaysian swamps (Malley, 1977). Further descriptions of the various species and some aspects of their biology will be published later. Scale line for Figs. 3-9 is 1cm.

TAXONOMIC NOTES

1. *Callinectes* sp. (Stimpson). Native name: Epa (Fam. Portunidae)

This is the genus of the 'blue crabs' and the commonest species is drawn in Fig. 3. They are big crabs as adults with the abdomen of the males very narrow. The carapace is bluish, hairless, about twice as wide as it is long with usually four dorsal carinae and two transverse lines in the gastric region. There are eight strong antero-lateral teeth with a long stout spine at the lateral angle. The chela is bluish-white and generally of the cutting type. Its propodus has two spines, the carpus has one and the merus has three with a smaller one on the postero-distal end. The 4th pereopod is paddle-like and spineless. They are caught in nets set on circular metal frames, using fish or *Periophthalmus* (the mud skipper) as bait. They are of high commercial value. Ironically, any or all of these crabs when mashed (ifi) is used as bait in traps that catch *Periophthalmus*.

2. *Cardisoma* sp. (Rathbun). Native name: Olu (Fam. Gecarcinidae)

This is illustrated in Fig. 4 and like most land crabs burrows deep down in mud flats in supratidal areas. The carapace is transversely oval, deep and bluish with the antero-lateral borders strongly arched. The pereopods are reddish and their dactyls are spinous. The whitish claws are dimorphic for both sexes with each finger of the bigger claw bearing a large tubercle on the occlusive surface. The three distal podomeres of the 3rd maxilleped articulate at the inner border of the merus which covers the flagellum of the exopod. The buccal cavity is strongly elongate. They are mainly nocturnal and are caught in traps made from cans or wooden boxes which operate by a

“shut-door” mechanism. The door is hooked on the bait, which is usually vegetable matter and this acts as the safety catch to the mechanism. They are also highly prized.

3. *Uca* sp. (Leach). Native name: Akanga (Fam. Ocypodidae)

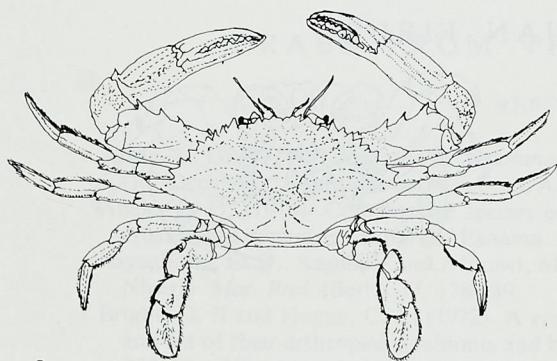
These are the popular fiddler (calling) crabs and are readily seen on sandy beaches and hard-mud platforms at low tides. They are sexually dimorphic with a male usually possessing one massive claw used mainly for agonistic displays. The other smaller claw bears hairy spoon-shaped fingers (Fig. 5) and is used for feeding. In the females, both claws are similar to this in structure and function. The carapace is deep and slightly rectangular. The eyestalks are very long and the orbits occupy four fifths of the carapace width anteriorly. The epistome is short, buccal cavity is broader than long and is completely closed by the 3rd maxillepedes which possess numerous hairs on the inner borders of the merus and ischium. Dactyls of pereopods are hairy and the hairs form a band on each propodus/dactylus joint. Hairy-edged pouches lead into the branchial cavity between the coxae of the 2nd and 3rd pereopods. Their economic value is low.

4. *Goniopsis* sp. (De Haan). Native name: Akambulo (Fam. Grapsidae)

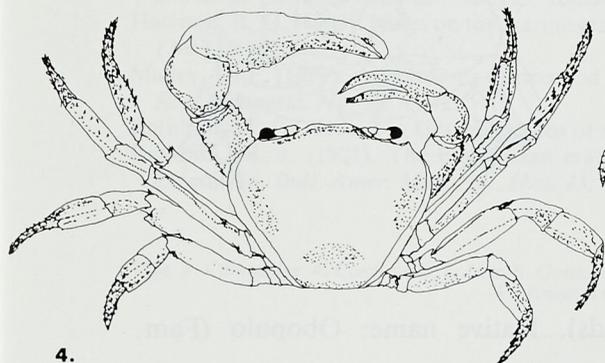
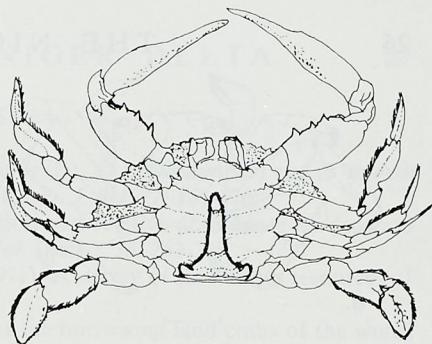
The carapace is quadrate (Fig. 6), slightly rectangular and reddish-brown. There is an acute antero-lateral tooth behind the orbit, with a similar one just below it. From these posterior teeth run two deep oblique grooves that define the two convex branchial regions. The anterior region of the carapace is transversely striated. Claws are bright yellow, dimorphic for both sexes and of the crushing type, with the inner lateral edges of the merus very spinous. Pereopods are long with the merus conspicuously flattened and bearing transverse markings. Distal podomeres possess long bristles and the dactyls are in addition spinous. They run very fast and are commonly seen around burrows in-between mangrove roots. They seldom climb higher than the tidal level, and when they do so, usually climb upwards with their anterior end pointing downwards.

5. *Chiromanthes* sp. (Milne Edwards). Native name: Akambulo (Fam. Grapsidae)

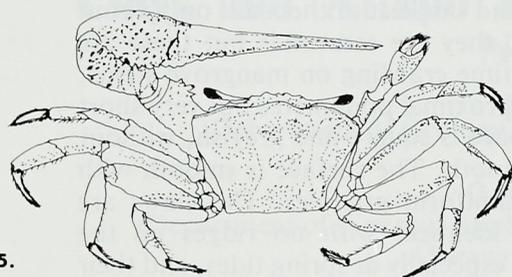
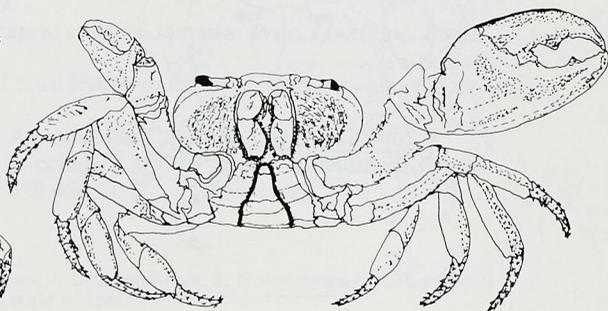
This (Fig. 7) occurs very commonly with *Goniopsis* and shares the same native name with it. However, it runs less, is a bit smaller and more yellowish; staying more beneath tidally submerged vegetation and logs than *Goniopsis*. It possesses a transverse ridge on the inner surface of the propodus of each of the identical claws. The carapace is also quadrate but with an uneven surface crossed by short thick ridges of brown hair. The claws possess longer dactyls and are far less crusher-like than those of *Goniopsis*, with each of the fingers possessing two enlarged tubercles on the occlusive surface. The legs are long with hairs on the distal podomeres which form a thick brown fur on the lower surface of the propodus of the 1st and 2nd pereopods. The dactyls are not spinous. They feed on mangrove litter and like *Goniopsis* are more ecologically than economically important.



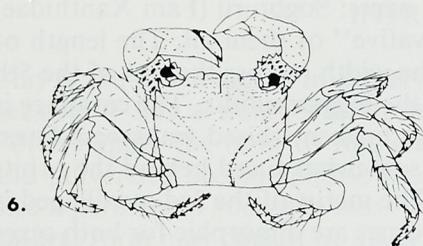
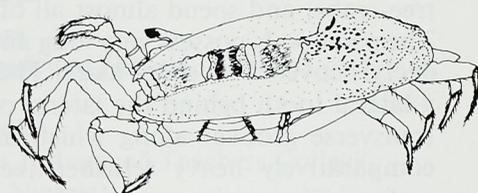
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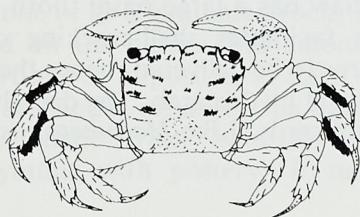
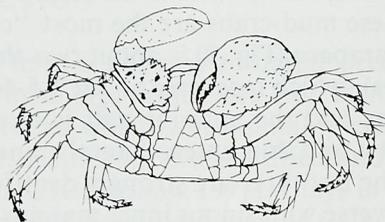
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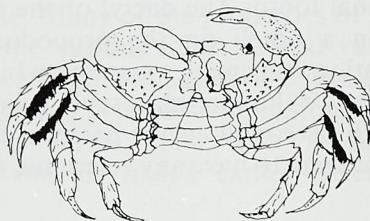
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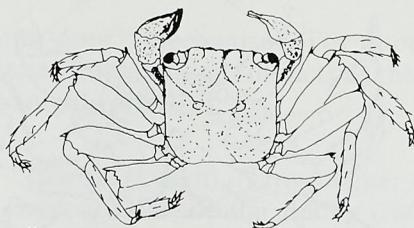


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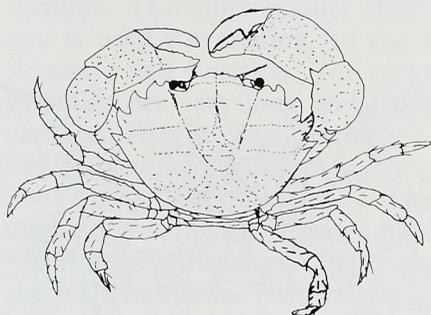
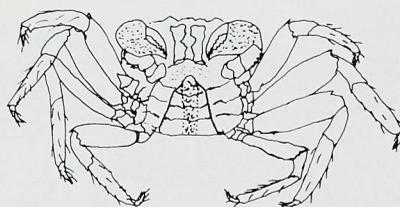


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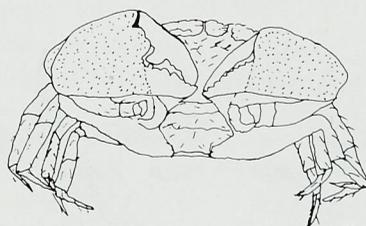




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6. *Holometopus* sp. (Milne Edwards). Native name: Obopulo (Fam. Grapsidae)

These (Fig. 8) are the most "friendly" and smallest of them all: only about 2cm wide as adults. Like *Chiromanthes*, they are sesarmids but these are tree-crabs, and spend almost all of their time crawling on mangrove stems. The pereopods possess very long and thin proximal podomeres but very short dactyls covered by short hairs. The carapace is square and greyish, without a lateral tooth behind the lateral orbital tooth. The surface is smooth with transverse grooves along which are squamiform granules. The claws are comparatively heavy (crusher-like) and identical with no ridges on the surface. The species are very "domestic", especially at spring tides, and their presence at a coastal home is erroneously taken as an ill-omen.

7. *Panopeus* sp. (Milne Edwards). Native name: Sogbruru (Fam Xanthidae)

These mud-crabs are the most "conservative" of them all. The length of the carapace (Fig. 9) is about two-thirds the width (across the tips of the 5th spines), which measures about 3.5-4cm in the biggest adults. The carapace is convex and the anterior half is crossed by broken, raised transverse lines. The 1st and 2nd antero-lateral spines are somewhat fused behind the orbits but the last three are strongly dentiform. The merus of the 3rd maxilleped is transverse with sinous inner margins. The claws are dimorphic for both sexes and strongly crusher-like. The merus and carpus each has a superior sub-terminal tooth. The dactyl of the larger claw has a large basal tooth which fits in a notch on the propodus. This facilitates shell-cracking during predation and enables maximum biting force to be delivered, hence the myth that only a thunder-blast saves a victim caught by this crab. The dactyl tip of the 4th pereopod curves backwards and upwards. Like *Holometopus*, they do not seem to have any economic value.

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Figs. 3. *Callinectes*; 4. *Cardisoma*; 5. *Uca*; 6. *Goniopsis*; 7. *Chiromanthes*; 8. *Holometopus*; 9. *Panopeus*.
Horizontal scale = 1cm.

Clays and Afikpo Pottery in South-eastern Nigeria

by I. Arua

(Department of Geology, University of Nigeria, Nsukka)

O. K. Oyeoku

(Department of Fine and Applied Art, Advanced Teachers College,
Akwanga, Jos, Nigeria)

INTRODUCTION

Clay is the raw material in pottery. The term is not easy to define precisely because it has a number of technical meanings which are not identical. Potters apply the term to fine-grained rocks which when suitably crushed and pulverised became plastic when wet, leather-hard when dried and turn into a permanent rock-like mass when fired (Grimshaw 1971). Clays in their natural form may consist of many different minerals and may be found in a variety of forms such as a soft paste known as mud or as a soft solid called mudstone or as a laminated rock, the shale. Many of the properties of clays depend on the nature and amounts of the various minerals and varying proportions of impurities in them which determine the kind of ceramic it is used for. Under ceramics one understands in a general sense materials and articles made from naturally occurring earths. The term is largely synonymous with pottery. It ranks as one of man's earliest scientific