

PLATE LIX

The interior of a mangrove forest near Malela, about 12 miles east of Banana, at low tide.

"All the trees seen here are *Rhizophora Mangle* Linnaeus. The great swampy areas in the estuary of the Congo on both sides of the main stream are divided by more or less wide creeks into numerous islands. On many of these the mangroves form real forests, and the finer trees attain a height of 75 feet, with straight columnar trunks over two feet in diameter.

"From the outside, a fairly dense curtain of foliage allows only a faint view of the interior, which is comparatively open. Progress, however, is rendered difficult by the miry condition of the ground, decaying logs, and the maze of prop-roots. By means of the latter the trees are solidly anchored into the muddy substratum, and they also serve as pneumatophores. In the foreground, mangrove seedlings, after dropping from the branches, have developed shoots with a few leaves. The holes in the fallen trunk are due to devastations by ship-worms (*Teredo navalis*) during the high water-level in the rainy season. To the right, many aerial roots from higher branches are evident.

"Among the crabs found here *Sarmatium curvatum* and *Sesarma (C.) alberti* are most numerous, with a few stray specimens of *S. (H.) büttikoferi*; in the drier places the young of *Cardisoma armatum* are also present.

"Relative sizes may be judged by comparison with the negro standing near the center. This is the inside view of the mangrove swamp shown on Plate LVIII." (H. L.)

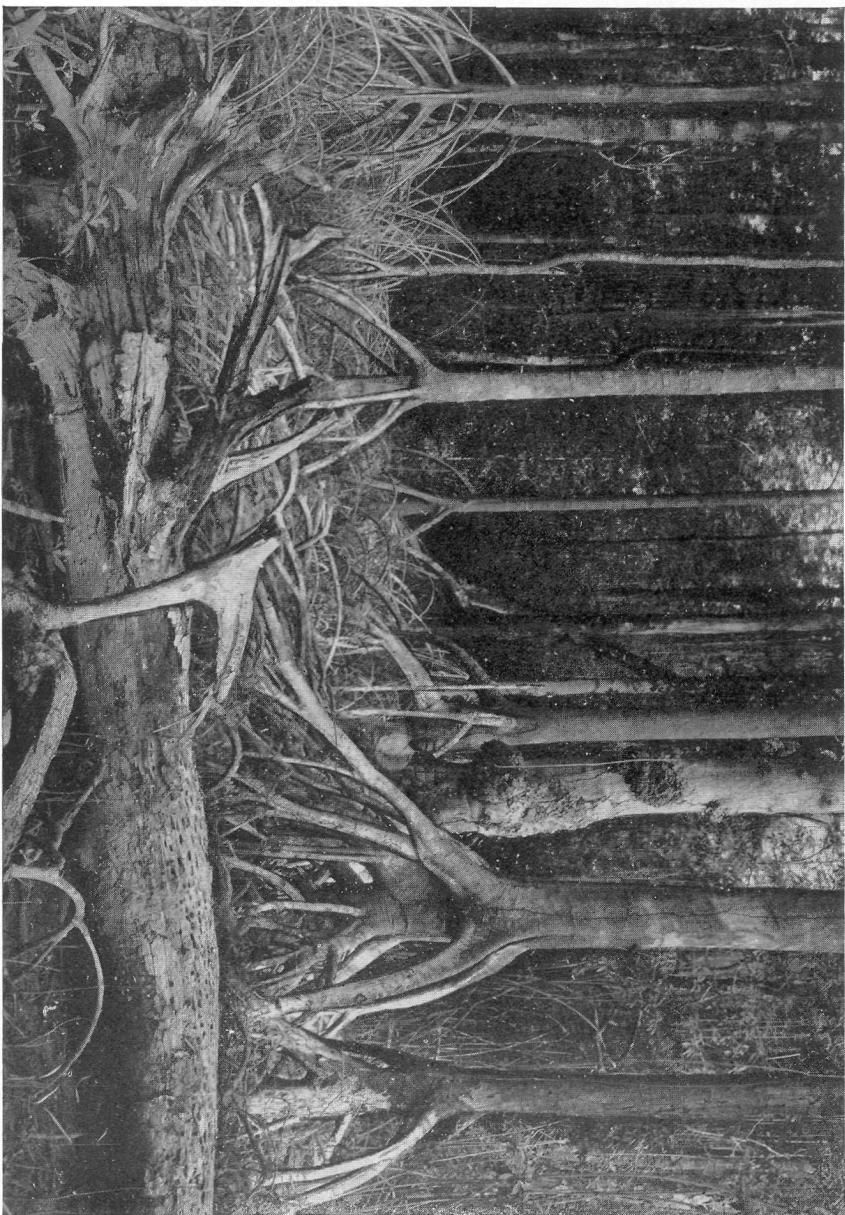


PLATE LX

Fig. 1. Forest of mangroves (*Rhizophora Mangle* Linnaeus) bordered by *Raphia* palms (probably *Raphia vinifera* Palisot de Beauvois) near Malela, about ten miles east of Banana, at incoming tide.

"The somber green walls of the mangrove forest extend for considerable distances along the narrow and gloomy creeks. Here and there the monotony of the scenery is relieved by low, impenetrable fringes of *Raphia* palms and thick clusters of long leaved screw-pines (*Pandanus*) on heavy stilt-roots.

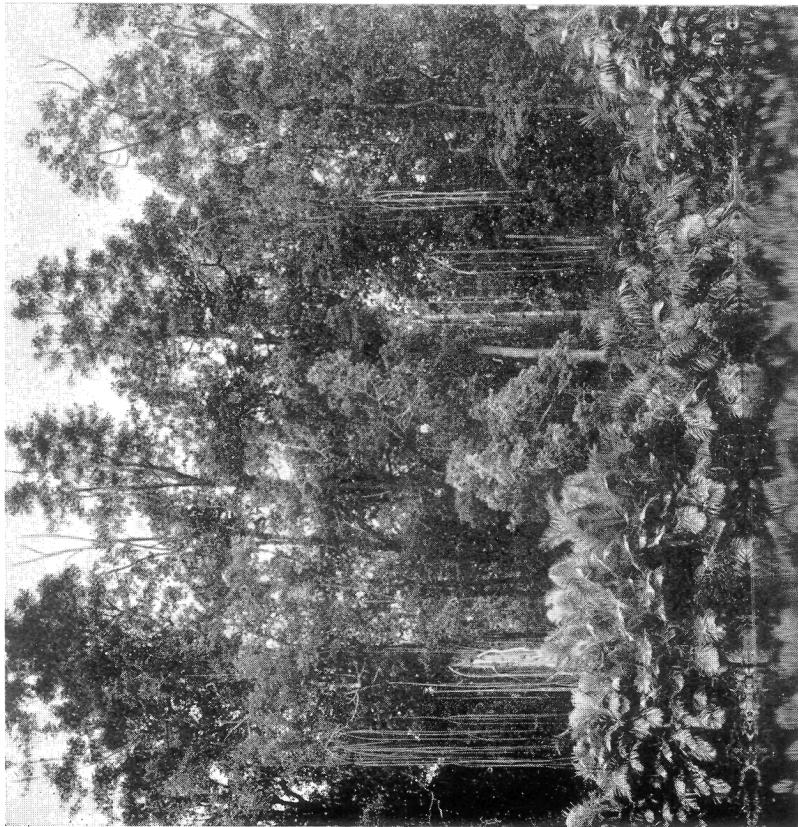
"In such muddy sites the stem of the *Raphia* remains short and stocky, the often dwarfed leaves practically emerging from the ground. On flat, more continually inundated shores, as near Malela, these palms show a remarkable adaptation to environmental conditions; their dense mass of blackish roots, exposed by the waves, send numerous vertical shoots above the water which serve as aërating roots (pneumatophores). Under favorable conditions the palms often overgrow large tracts, and the midribs then attain a length of fifteen feet or more.

"These sites are inhabited, according to their location, by the same species as are found living in landscapes pictured on Plates LVIII, LIX, and LXI." (H. L.)

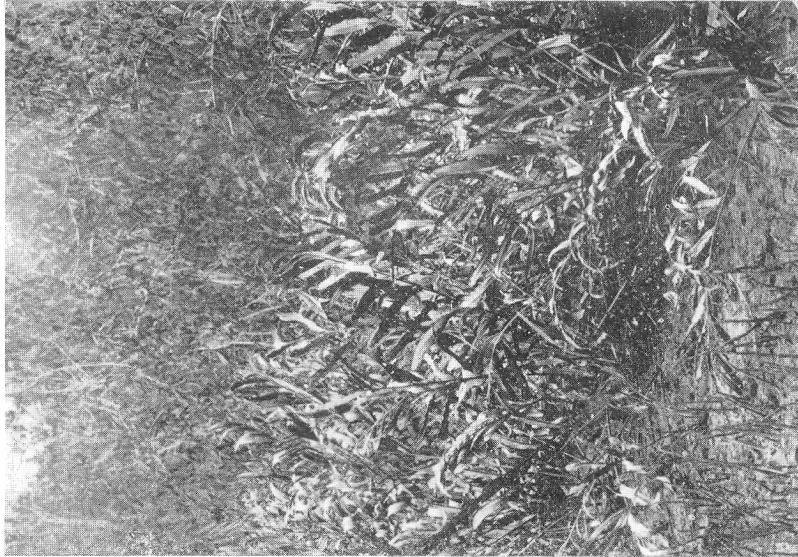
Fig. 2. The edge of bushy mangrove formation along Banana Creek at low tide.

"In many sites in the estuary of the Congo flooded by highly brackish water, mangrove ferns (*Acrostichum aureum* Linnaeus), like those conspicuous near the foreground, flourish in rather continuous thickets or occur in scattered clusters. Usually their big, rough rhizomes are imbedded in the mud to a slight depth, or they creep along the surface among the maze of prop-roots. The bushes in the background are *Avicennia africana* Palisot de Beauvois, which sends out, often to some distance, many slender, dark shoots, like those in the foreground. These are supplementary aërating roots, negatively geotropic and emerge from the soil much as the shoots of asparagus do.

"The numerous holes in the foreground are entrances to burrows of a species of fiddler crab (*Uca tangeri*), illustrating one of its various habitats." (H. L.)



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2

PLATE LXI

Bank of the Congo at low tide about 17 miles from Banana, between Malela and Ponta da Lenha.

"In the background the tall bushes mark the farthest up-stream occurrence of mangroves (*Rhizophora Mangle* Linnaeus), swamps of which on the Angolan shore extend about three miles farther east. In this zone the salinity of the water is evidently too slight to allow the development of real mangrove forests as in the vicinity of Malela. To the left a patch of stunted papyrus (*Cyperus Papyrus* Linnaeus) also demonstrates dwarfed growth as a result of unfavorable environment. In the right foreground an uprooted tussock of reeds has been stranded on the sand flat; its root stock has been completely honey-combed by the burrows of *Sesarma (Holometopus) angolense*. It is probable that such drifting 'rafts' contribute to the distribution of these crabs. In the swamps farther in-shore may be found *S. (Chiro-mantes) alberti*, *S. (H.) büttikoferi* and *S. (H.) elegans*." (H. L.)

BULLETIN A. M. N. H.

VOL. XLIII, PLATE LXI



PLATE LXII

Bank of the Congo just below Malela at outgoing tide.

"Like a promontory, reaching out into the river, a great thicket of screw-pines (*Pandanus*) has conquered and maintained its place against all currents and floods. As with mangroves, their heavy stilt roots oppose the encroachment of the water, and, once established, they form an impenetrable jungle; the edges and midribs of the long, thick leaves being serrated by curved spiny teeth. Here the masses of drift that are constantly piling up along the shore often carry with them many crabs (*Sesarma (C.) alberti*, *S. (H.) büttikoferi*, *S. (H.) elegans*, and *Sarmatium curvatum*), most of which soon make their way into the neighboring mangrove swamps, here represented by a single tree. The few oil palms (*Elaeis guineensis* Jacquin) shown are part of a fairly extensive grove that was able to flourish beyond the reach of high tides; they probably mark the former site of a native village.

"At the extreme left, the distant bank of the wide creek shows the typical aspect of mangrove forests in the estuary of the Congo, which are often fringed with a luxuriant growth of *Raphia* palms." (H. L.)

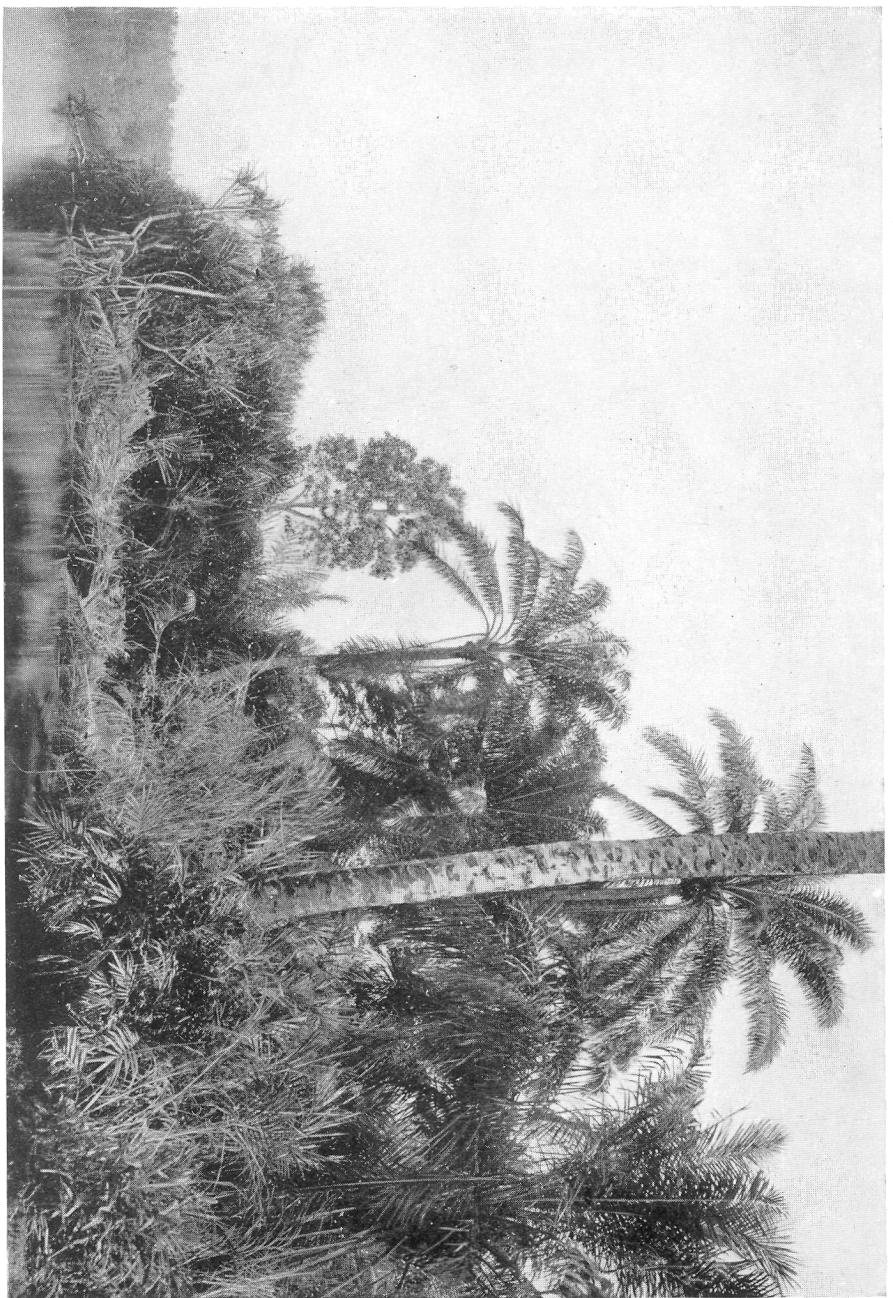


PLATE LXIII

Tshopo River near Stanleyville at low water in March.

"The crest of the well-known falls is here seen from behind. In the distance the sandflats give the appearance of a lake-like expanse, which at high water serves to temper the rush of the foaming floods.

"In so densely inhabited a region one must expect to find that primeval woods have long since been succeeded by secondary forest, as shown on the shore beyond. In many inundated portions along the banks the characteristically impenetrable aspect is evident. The rocks are often covered with a peculiar alga or moss-like growth of *Podostemaceæ*. Constant moisture in the form of spray carried by the wind has engendered a tropical luxuriance to the far side of the falls.

"Here in the shallows, swamps, boulder-fields and neighboring brooks a systematic search for crabs gave excellent results, one species collected, *Potamon (Geohelphusa) perparvus*, proving new to science, and others of this genus being common." (H. L.)

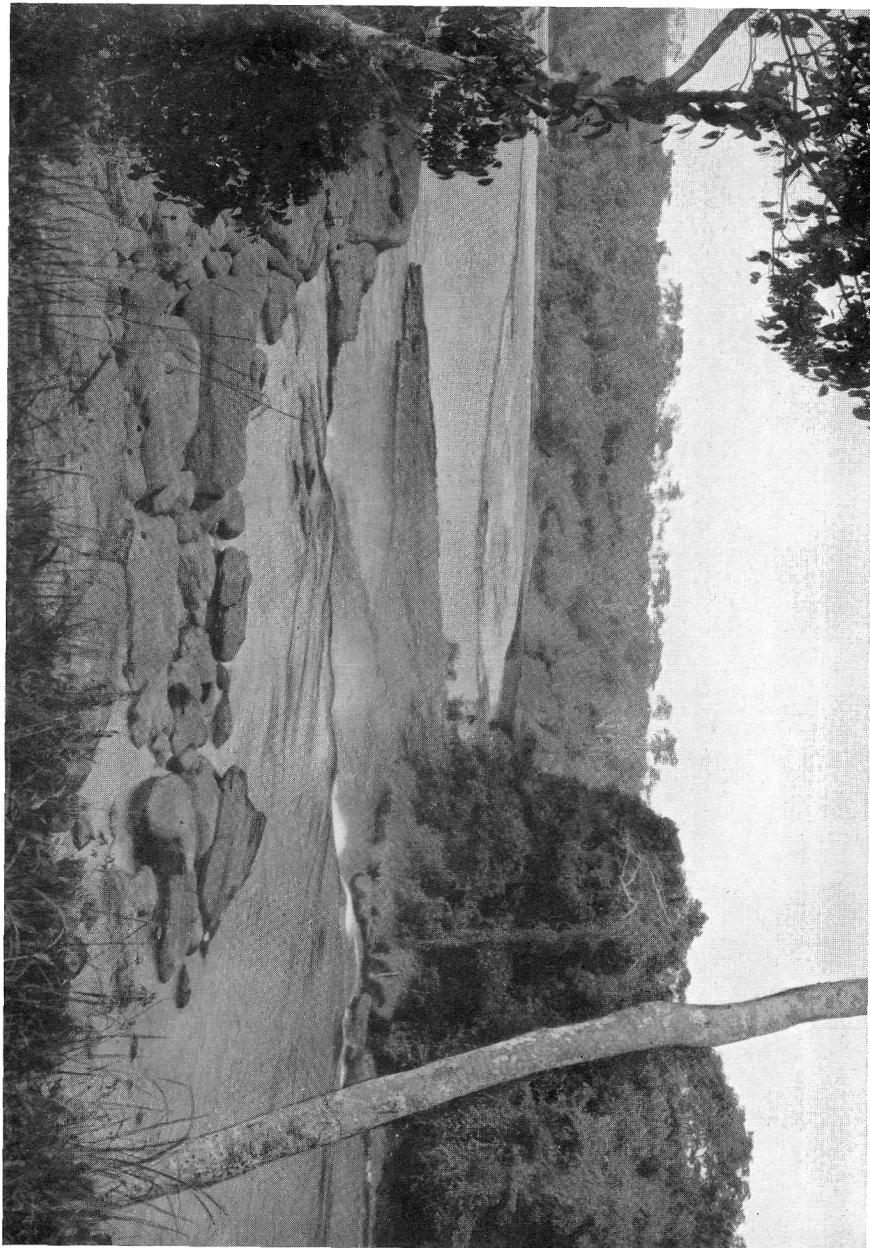


PLATE LXIV

Forest brook in the Rain Forest of the northeastern Belgian Congo south of Poko, at the end of January.

"In such low-lying parts of the forest, moisture fosters an excessive luxuriance, which is most noticeable in the greater density of the foliage. Typical features are the mass of creepers, ferns, marshaceous reeds, mosses and liverworts.

"In all the hilly, undulating regions where the headwaters of the Congo slowly gain in volume, the many, clear, meandering streamlets are the habitat of *Potamon (Potamonautes) floweri*, *P. (P.) dybowski*, and *P. (Geothelphusa) congoensis*. The torrential rush of the roiled floods after every freshet clears the beds of these brooks or chokes them with still greater masses of débris. The crabs and other creatures are thus constantly shifted. The marble-white sand in the shallow parts is generally avoided by all species of *Potamon*, but dead branches, leaves, and quiet pools beneath overhanging vegetation attract *P. (G.) congoensis* and *P. (P.) floweri*, whereas the moss-grown stones and the neighborhood of rapids are favored by *P. (P.) dybowski*.

"On the northern and southern edge of the Rain Forest a dry period of over two months may cause the forest brooklets to dwindle somewhat, thus concentrating their fauna, so that crabs can be more easily found. At low water is the opportune time for some of these creatures to invade the larger streams, which, in spite of the absence of definite dry and rainy seasons near the equator, have their periods of fluctuation. Numerous inlets of adjoining brooks and swamps aid the wide distribution of these crabs."

(H. L.)



INDEX

New names of species are printed in **heavy-faced type**, also the main references in a series of references; *synonyms* are printed in *italics*.

- abbreviatus, *Eurypanopeus*, 441.
Acanthothelphusa, 385, 386, 406, **427**.
Acrostichum aureum, Pl. LX, Fig. 2.
africana, *Avicennia*, Pl. LVI, Fig. 2; Pl. LX, Fig. 2.
Ocypode, 380, 381, 382, **462**, 464, 465.
Pl. LIII, Figs. 1-4; Pl. LV, Fig. 1.
Thalamita, 380, 382, **402**, 403 (Fig. 5).
Pl. XXIII, Figs. 1-3.
Thalamita integrata var., 402.
africanum, *Sesarma*, 380, 381, 392, **446**, 447, 448, 449, 452. Pl. XLI, Figs. 1-4; Pl. XLII, Fig. 2; Pl. LV, Fig. 2.
africanus, *Callinectes*, 384, 401.
Callinectes diacanthus var., 384, 395, 399.
Callinectes larvatus var., 395.
Eupanopeus, 438.
Panopeus, 380, 381, 382, **438**, 439 (Fig. 19). Pl. XXXVII, Figs. 1-3; Pl. LVI, Fig. 1.
Potamon, 386.
alberti, *Sesarma*, 379, 380, 381, 446, **448**, 452. Pl. XLII, Fig. 1; Pl. XLVIII, Fig. 3; Pl. LVIII; Pl. LIX; Pl. LXI; Pl. LXII.
alluaudi, *Deckenia*, 434.
aloyii-sabaudiæ, *Potamon*, 386.
anchiete, *Potamon*, 417.
angolense, *Sesarma*, 380, 381, 382, 446, 447, 449, **451**, 452. Pl. XLIII, Figs. 1-3; Pl. XLV, Fig. 1; Pl. LXI.
ankaraharæ, *Potamon*, 385.
antongilensis, *Potamon*, 385.
armatum, *Cardiosoma*, 456.
Cardisoma, 380, 381, 384, 392, 455, **456**, 457 (Fig. 21), 458, 459. Pl. XVII, Figs. 1-2; Pl. XLVIII, Figs. 1-2; Pl. XLIX; Pl. L; Pl. LI, Figs. 1-3; Pl. LVII, Fig. 1; Pl. LVIII; Pl. LIX, Fig. 3; Pl. LXI; Pl. LXII.
büttikoferi, *Sesarma*, 380, 381, 382, 446, **449**, 452. Pl. XLVII, Figs. 5-9; Pl. LVIII; Pl. LIX; Pl. LXI; Pl. LXII.
Callinectes, 383, 384, **394**, 401, 404.
africanus, 384, 401.
bocourti, 398, 401.
diacanthus, 395.
diacanthus var. *africanus*, 384, 395, 399.
gladiator, 380, 381, 384, 394, **397**, 398 (Fig. 3). Pl. XIX, Fig. 2.
hastatus, 384.

- larvatus*, 384, 395.
larvatus var. *africanus*, 395.
latimanus, 380, 381, 395, **398**, 399
 (Fig. 4), 401. Pl. XV, Fig. 2; Pl.
 XXI, Figs. 1-3; Pl. XXII, Fig. 1;
 Pl. LVI, Fig. 1.
marginatus, 380, 381, 382, 384, **395**,
 396 (Fig. 2), 397, 400, 401. Pl.
 XIX, Fig. 1; Pl. XX, Fig. 1.
sapidus, 384.
tumidus var. *gladiator*, 397.
campi, Potamon, 386.
Cancer grapsus, 441.
Cardiosoma armatum, 456.
Cardisoma, 384, **456**.
 armatum, 380, 381, 384, 392, 455, **456**,
 457 (Fig. 21), 458, 459. Pl. XVII,
 Figs. 1-2; Pl. XLVIII, Figs. 1-2;
 Pl. XLIX; Pl. L; Pl. LI, Figs.
 1-3; Pl. LVII, Fig. 1; Pl. LVIII;
 Pl. LIX.
guanhumi, 384, 456, 457, 458, 459.
guanhumi, 456.
carinimana, Pisa, 380, 382, 394, **466**, 467
 (Fig. 22). Pl. XVIII, Figs. 1-2.
Ceratogymna, 410.
chaperi, *Parathelphusa*, 429.
 Potamon, 385, 429.
chavanesii, Potamon, 386.
Chiromantes, 446.
congoënsis, *Potamon*, 380, 381, 382,
 386, 406, **422**, 423 (Fig. 11), 424,
 425, 426, 427. Pl. XXVIII, Fig. 3;
 Pl. XXIX, Figs. 1-3; Pl. LXIV.
cranchiana, *Lupa*, 384.
cruentata, *Goniopsis*, 380, 381, 392, **443**,
 444, 445. Pl. XXXIX, Figs. 1-3;
 Pl. LVI, Fig. 1.
cruentatus, *Grapsus*, 443.
Cuma, 453.
curvata, *Sesarma*, 454.
curvatum, *Sarmatium*, 380, 382, **454**,
 455. Pl. XVI, Figs. 1-2; Pl.
 XLII, Fig. 3; Pl. XLVI, Figs. 1-3;
 Pl. XLVII, Fig. 1; Pl. LVIII;
 Pl. LIX; Pl. LXII.
Cyclograpsus, 455.
occidentalis, 379, 380, 381, **455**. Pl.
- XLVII**, Figs. 2-4.
Cylindrotelphusa, 385.
macropus, 385.
perrieri, 385, 386.
Cyperus Papyrus, Pl. LXI.
decazei, Potamon, 386.
Deckenia, 385, **434**.
alluaudi, 434.
imitatrix, 434.
mitis, 380, 381, **434**, 435 (Fig. 16).
 Pl. XXXIV, Figs. 1-3.
Deckeniiinæ, 434.
diacanthus, *Callinectes*, 395.
diacanthus var. *africanus*, *Callinectes*,
 384, 395, 399.
didieri, Potamon, 385, 386, 387, 424, 425.
Dromia, 393.
atlantica, 380, 382, **393** (Fig. 1). Pl.
 XVIII, Fig. 3.
Dromiacea, 393.
Dromiidæ, 393.
dybowskii, Potamon, 380, 381, 382, 386,
410, 411 (Fig. 7), 412, 414, 415, 416,
 418. Pl. XXIV, Figs. 1-3; Pl.
 LXIV.
Elæis guineensis, Pl. LXII.
elegans, *Sesarma*, 380, 381, 392, 446,
453. Pl. XLIV, Figs. 1-3;
 Pl. XLV, Fig. 2; Pl. LVIII; Pl.
 LXI; Pl. LXII.
emini, Potamon, 386, 424, 426, 427.
Telphusa, 424.
Erimetopus, 385, **433**.
brazzae, 380, 381, 386, **433**, 434 (Fig.
 15). Pl. XXXIII, Figs. 1-3.
spinosus, 433.
Eupanopeus africanus, 438.
Eurypanopeus, 440.
abbreviatus, 441.
blanchardi, 380, 381, **440**, 441 (Fig.
 20). Pl. XXXVI, Figs. 2-3.
parvulus, 440, 441.
exotica, *Ligyda*, Pl. LVI, Fig. 1.
faradjensis, *Potamon*, 380, 381, 382,
 386, **428** (Fig. 13). Pl. XXXI, Figs.

- 1–3.
- floweri*, *Potamon*, 380, 381, 382, 386, 387, **406**, 408 (Fig. 6), 409. Pl. XX, Fig. 2; Pl. LXIV.
- fruhstorferi*, *Potamon*, 385.
- furcata*, *Upogebia*, Pl. XVI, Fig. 2.
- Gecarcinucinæ*, 385, 386, 407.
- Gelasimus tangeri*, 465.
- Geopagurus*, 442.
- lividus*, 379, 380, 381, **442**. Pl. XV, Fig. 1; Pl. XXII, Figs. 2–3; Pl. LVI, Fig. 1; Pl. LVII, Fig. 2.
- Geothelphusa*, 385, 386, 405, **422**.
- gladiator*, *Callinectes*, 380, 381, 384, 394, **397**, 398 (Fig. 3). Pl. XIX, Fig. 2.
- Callinectes tumidus* var., 397.
- Goniopsis*, 443.
- eruentata*, 380, 381, 392, **443**, 444, 445. Pl. XXXIX, Figs. 1–3; Pl. LVI, Fig. 1.
- gracilis*, *Metopograpsus*, 445.
- Pachygrapsus*, 379, 380, 381, **445**. Pl. XL, Fig. 1; Pl. LVI, Fig. 1.
- Grapsidæ*, 441.
- Grapsus*, 441.
- cruentatus*, 443.
- grapsus*, 380, 381, 392, **441**, 442. Pl. XXXVIII, Figs. 1–3; Pl. LVI, Fig. 1; Pl. LVII, Fig. 2.
- lividus*, 442.
- transversus*, 444.
- grapsus*, *Cancer*, 441.
- Grapsus*, 380, 381, 392, **441**, 442. Pl. XXXVIII, Figs. 1–3; Pl. LVI, Fig. 1; Pl. LVII, Fig. 2.
- guanhumi*, *Cardisoma*, 384, 456, 457, 458, 459.
- Cardisoma*, 456.
- guineensis*, *Elæis*, Pl. LXII.
- Hyphæne*, Pl. LV, Fig. 1.
- hastatus*, *Callinectes*, 384.
- herbstii*, *Panopeus*, 438.
- Holometopus*, 449.
- Hydrothelphusa*, 385.
- Hyphæne guineensis*, Pl. LV, Fig. 1.
- imitatrix, *Deckenia*, 434.
- Inachidæ*, 466.
- integra*, *Thalamita*, 404.
- integra* var. *africana*, *Thalamita*, 402.
- Ipomæa pes-capræ*, Pl. LV, Fig. 1.
- ippeus*, *Ocypode*, 380, 381, 382, **461**, 462, 464, 465. Pl. LII, Figs. 1–4; Pl. LV, Fig. 1.
- langi*, *Potamon*, 380, 381, 382, 386, **430**, 432 (Fig. 14). Pl. XXXII, Figs. 1–3.
- larvatus*, *Callinectes*, 384, 395.
- larvatus* var. *africanus*, *Callinectes*, 395.
- latimanus*, *Callinectes*, 380, 381, 395, 398, 399 (Fig. 4), 401. Pl. XV, Fig. 2; Pl. XXI, Figs. 1–3; Pl. XXII, Fig. 1; Pl. LVI, Fig. 1.
- Ligyda exotica*, Pl. LVI, Fig. 1.
- olfersii*, Pl. LVI, Fig. 1.
- lirrangensis*, *Potamon*, 380, 382, 386, **413**, 414 (Fig. 8), 415. Pl. XXV, Figs. 1–3; Pl. XXVI, Fig. 3.
- Littorina*, 453.
- lividus*, *Geopagurus*, 379, 380, 381, **442**. Pl. XV, Fig. 1; Pl. XXII, Figs. 2–3; Pl. LVI, Fig. 1; Pl. LVII, Fig. 2.
- Grapsus*, 442.
- lueboensis*, *Potamon*, 386.
- Lupa*, 383.
- cranchiana*, 384.
- smythiana*, 384, 397.
- macropus*, *Cylindrotelphusa*, 385.
- madagascariensis*, *Potamon*, 407.
- Mangle*, *Rhizophora*, 388, 391. Pl. XVI, Fig. 2; Pl. LV, Fig. 2; Pl. LVI, Fig. 2; Pl. LVIII; Pl. LIX; Pl. LX, Fig. 1; Pl. LXI.
- marchei*, *Potamon*, 386.
- marginatus*, *Callinectes*, 380, 381, 382, 384, **395**, 396 (Fig. 2), 397, 400, 401. Pl. XIX, Fig. 1; Pl. XX, Fig. 1.
- Neptunus*, 395.
- marginatus* var. *truncatus*, *Neptunus*, 399.
- Melampus*, 456.
- Menippe*, 436.
- nanus*, 379, 380, 381, **436** (Fig. 17).

- Pl. XXXV, Figs. 1-2.
- Metopograpsus gracilis*, 445.
- mitis, Deckenia, 380, 381, **434**, 435 (Fig. 16). Pl. XXXIV, Figs. 1-3.
- nanus*, Menippe, 379, 380, 381, **436** (Fig. 17). Pl. XXXV, Figs. 1-2.
- navalis*, Teredo, Pl. LIX.
- Neptunus*, 383.
- marginatus*, 395.
- marginatus* var. *truncata*, 399.
- sanguinolentus*, 397.
- sayi*, 384.
- Neritina*, 451.
- nigrensis*, Potamon, 385.
- niloticus*, Potamon, 385, 431.
- Varanus, 410.
- obesus*, Potamon, 406.
- occidentalis*, Cyclograpsus, 379, 380, 381, **455**. Pl. XLVII, Figs. 2-4.
- Ocypode, 392, **461**, 462.
- africana*, 380, 381, 382, **462**, 464, 465. Pl. LIII, Figs. 1-4; Pl. LV, Fig. 1.
- ippeus*, 380, 381, 382, **461**, 462, 464, 465. Pl. LII, Figs. 1-4; Pl. LV, Fig. 1.
- Ocypodidae, 461.
- olfersii, Ligyda, Pl. LVI, Fig. 1.
- Oxyrhyncha, 466.
- Oxystomata, 434.
- Pachygrapsus, 444.
- gracilis*, 379, 380, 381, **445**. Pl. XL, Fig. 1; Pl. LVI, Fig. 1.
- simplex*, 445.
- transversus*, 380, 381, 382, **444**, 445. Pl. XL, Figs. 2-3.
- pæcilei, Potamon, 386.
- Pandanus, 389, 391. Pl. LVI, Fig. 2; Pl. LX, Fig. 1; Pl. LXII.
- Panopeus, 438.
- africanus*, 380, 381, 382, **438**, 439 (Fig. 19). Pl. XXXVII, Figs. 1-3; Pl. LVI, Fig. 1.
- blanchardi*, 440.
- herbstii*, 438.
- Papyrus, Cyperus, Pl. LXI.
- Parasesarma, 449, 451.
- Parathelphusa brazzae*, 433.
- chaperi*, 429.
- parvulus*, *Eurypanopeus*, 440, 441.
- Periophthalmus, 391.
- perlatus, Potamon, 417.
- perparvus**, *Potamon*, 380, 382, 386, 406, **425**, 426 (Fig. 12), 427. Pl. XXVIII, Fig. 2; Pl. XXX, Figs. 1-3; Pl. LXIII.
- perrieri, Cylindrotelphusa, 385, 386.
- pes-caprae, Ipomæa, Pl. LV, Fig. 1.
- Phoenix, 391, 460, 461.
- reclinata*, Pl. LV, Fig. 2; Pl. LVI, Fig. 2; Pl. LVII, Fig. 1.
- Pilumnus, 437.
- verrucosipes*, 380, 382, **437** (Fig. 18). Pl. XXXV, Fig. 3; Pl. XXXVI, Fig. 1.
- Pinna, 394, 467, 468.
- Pisa, 466.
- carinimana*, 380, 382, 394, **466**, 467 (Fig. 22). Pl. XVIII, Figs. 1-2.
- Platyhelphusa, 385.
- pobeguini, Potamon, 386.
- Podostemaceæ, Pl. LXIII.
- Pontunidæ, 394.
- Portunus sayi, 384.
- Potamides, 390, 448.
- Potamogale velox, 410.
- Potamon, 385, 386, **405**, 406, **418**, 427, 433. Pl. LXIV.
- africanus*, 386.
- alloysii-sabaudiae*, 386.
- anchietæ, 417.
- ankaraharæ, 385.
- antongilensis, 385.
- aubryi, 386, 408.
- ballayi, 380, 382, 385, 386, 406, **419**, 420 (Fig. 10). Pl. XXVII, Figs. 1-3; Pl. XXVIII, Fig. 1.
- brazzae, 433.
- campi, 386.
- chaperi, 385, 429.
- chavanesii, 386.
- congoënsis**, 380, 381, 382, 386, 406, **422**, 423 (Fig. 11), 424, 425, 426, 427. Pl. XXVIII, Fig. 3; Pl.