GUSTAVO PULITZER-FINALI

A COLLECTION OF MARINE SPONGES FROM EAST AFRICA

ESTRATTO dagli ANNALI del MUSEO CIVICO di STORIA NATURALE "G. DORIA"
VOL. LXXXIX - 15 DICEMRE 1992

GENOVA
ERREDI GRAFICHE EDITORIALI
1993

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A COLLECTION OF MARINE SPONGES FROM EAST AFRICA

Between 1971 and 1973 dredging operations have been carried out from the r/s "Manihine", on the North Kenya Banks, by the East African Marine Fisheries Research Organization (EAMFRO) of Zanzibar. The sponges collected are here recorded. I have added to the collection some further specimens of the East African sponge fauna, from shallower waters, that I mostly obtained by diving.

Each specimen has received a register number (R.N.) which refers to my files and preparations. Colours indicated as C.C. refer to Séguy's «Code Universel des Couleurs».

The collection has been deposited at the Museum of Natural History of Genoa (MSNG).

DEMOSPONGIAE

HOMOSCLEROMORPHA

HOMOSCLEROPHORIDA

PLAKINIDAE

Plakortis simplex Schulze

Plakortis simplex Schulze, 1880: 430

Occurrence: Mombasa, Ras Iwetine, depth 0.3-4 m, rocky shore, diver, 18 January 1974. R.N. MBA.15, MBA.114.

Mombasa, Shelly Beach, depth 12-16 m, diver, 23 January 1974. R.N. MBA.170, MBA.186, MBA.272, MBA.273.

MBA.15: the living specimen was small, cushion shaped, smooth, slippery, dark brown outside, reddish dark brown (C.C.113) inside.

MBA.170: the living specimen was small, tough, not compressible, slippery, reddish brown (C.C.176).

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MBA.186: the living specimen was small, smooth, tough, brown outside, reddish dark brown inside.

MBA.272: the living specimen was small, almost sphe smooth, tough, fragile, reddish dark brown (C.C.112 outside, C.C inside).

In the various specimens shape and size of the diacts are unif the central bend or swelling is scarcely conspicuous, the spicules r a thickness of about 3 µm and a maximum length of 95-115 µm, th a little less than in the Mediterranean specimens (120-150 µm). triacts, asymmetric, are extremely rare.

Plakortis copiosa sp. n.

Occurrence: Mombasa, Shelly Beach, outer reef slope, depth 16 m, div January 1974. MBA.188.

Mombasa, Bamburi, outer reef slope, depth 7-12 m, diver, 24 January MBA.210.

Holotype (MBA.188): MSNG 48287

MBA.188: cushion shaped, 50 × 25 × 12 mm. In life it fragile, brown (C.C.131) outside, cream inside.

MBA.210: shapeless fragments in the dry state. The sponge ir was noted as hard, greyish (C.C.233).

The spicules are diacts measuring 55-110 µm and triods with 18-37 µm long, mostly 4-4.5 µm thick at the base. The latter spic besides being more numerous than the diactines, are markedly regu symmetrical, with few exceptions, unlike the irregular ones occasio found in *Plakortis simplex*.

Plakortis kenyensis sp. n.

Occurrence: Mombasa, Shelly Beach, outer reef slope, depth 12 m, div January 1974. R.N. MBA.293.

Holotype: MSNG 48288

The specimen is irregularly massive, 45 × 25 × 15 mm, with oscule 3 mm wide. It was very tough, buff-cream in life. The spi are diacts measuring 80-260 × 2-7 µm.

Extremely rare triacts have been observed, with rays 30-60 long. This sponge does not appear attributable to *Plakortis sim* owing to the large size reached by its spicules. It is possible tha specimens recorded by VACELET *et al.* (1976: 14) from Madag belong to the present species.

Plakinastrella ceylonica (Dendy)

Dercitopsis ceylonica Dendy, 1905: 66

Occurrence: Mombasa, Bamburi Beach, lagoon, depth 1-1.5 m, 19 January 1974. R.N. MBA.58.

Two small fragments, in the dry state, are available. The sponge was stony hard in life.

The spicules are 1) Diacts measuring 25-330 μm, up to 7 μm thick. 2) Triacts symmetrical, rays 22-35 μm long. 3) Tetracts (calthrops), rays 9-26 μm long.

TETRACTINOMORPHA

ASTROPHORIDA

ANCORINIDAE

Stelletta purpurea Ridley

Stelletta purpurea Ridley, 1884: 473

Occurrence: North Kenya Banks (02°24.7'S-40°54.4'E), depth 50 m, dredge, 20 January 1973. R.N. KEN.122.

Off Mombasa, drop-off on channel, depth 20-25 m, diver, 27 February 1974. R.N. MBA.449.

The spicules are 1) Oxeas up to 1600 × 45 μm. 2) Orthoplagiotriaenes, rhabdome 200-1200 × 15-50 μm. 3) Anatriaenes, rhabdome 1400-1900 × 25 μm, cladome 90-200 μm. 4) Tylasters without centrum, 9-11.5 μm in diameter, rare.

Stelletta herdmani Dendy

Stelletta herdmani Dendy, 1905: 77

Occurrence: Mombasa, Nyali Bridge pontoons, depth 0.5-2 m, diver, 2 February 1974. R.N. MBA.338.

The spicules are 1) Oxeas measuring 1450-1800 × 30-40 μm. 2) Plagiotriaenes, rhabdome 750-910 μm, cladome 200-230 μm. 3) Euasters very variable, mostly with centrum, 8-12 μm in diameter.

Stelletta brevioxea sp. n. (Fig. 1)

Occurrence: Mombasa, Ras Iwetine, depth 0.5-4 m, diver, 18 January 1974. R.N. MBA.38.

Holotype: MSNG 48289

The specimen, 6 × 4 × 2 cm, is very irregular, partly encrusting, partly incorporating foreign materials. In spirit, its colour is brown, the consistency hard.

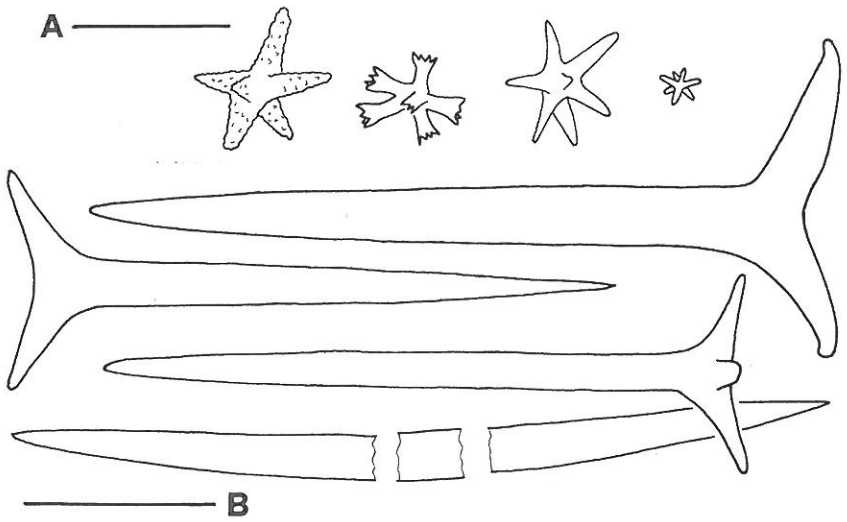

Fig. 1 - Spicules of *Stelletta brevioxea* sp. n. Scale A: 50 µm, B: 100 µm.

The spicules are 1) Oxeas curved, measuring 600-790 × 16-27 µm. 2) Orthotriaenes with a rhabdome of 380-510 × 20-25 µm and a cladome 80-110 µm wide. They are generally not well formed. 3) Strongylasters irregular, rough, with a diameter of 18.5-32 µm, 5 to 7 rays. 4) Oxyasters multirayed, with a diameter of 18.5 µm, not frequent. 5) Anthasters with a diameter of 11-16 µm. 6) Chiasters 4.5-7 µm in diameter.

Stelletta tulearensis Vacelet, Vasseur, Lévi

Stelletta tulearensis Vacelet Vasseur, Lévi, 1976: 18

Occurrence: Mombasa, Bamburi, outer reef slope, depth 7-12 m, diver, 24 January 1974. R.N. MBA.243.

Mombasa, Ras Iwetine, depth 0.5-4 m, diver, 18 January 1974. R.N. MBA.54.

Shimoni (4°43'S-39°23'E), depth 16 m, dredge, 25 February 1974. R.N. SHI.176.5, SHI.170, SHI.152.

Shimoni, depth 4-7 m, diver, 25 February 1974. R.N. SHI.131.

The spicules are 1) Oxeas measuring 680-950 × 18-30 µm. 2) Plagiotriaenes or dichotriaenes or both, rhabdome 300-500 × 15-25 µm, cladome 100-160 µm. The deuteroclads are generally very short. 3) Strongylasters rough, with few thick rays, 9-27 µm in diameter. 4) Oxyasters to tylasters, variable and irregular, 5-9.5 µm in diameter.

Ancorina acervus (Bowerbank)

Ecionemia acervus Bowerbank, 1862: 1101

Occurrence: North Kenya Banks (02°20.5'S-41°03'E), depth 50 m, dredge, 17 June 1971. R.N. KEN. 59bis, KEN.70.
Zanzibar, Ras Fumba, exposed reef, 10 February 1974. R.N. ZBR.26.
Mombasa, Ras Iwetine, depth 0.3-1 m, 18-21 January 1974. R.N. MBA.20, MBA.127.
Shimoni (4°43'S-39°23'E), 4-7 m, diver, 25 February 1974. R.N. SHI.116.

KEN.59bis: hemispherical, diameter 10 mm.

KEN.70: hemispherical, diameter 30 mm.

ZBR.26: hemispherical, diameter 12 mm.

MBA.20: hemispherical, diameter 18 mm, light brown to middle brown in life, a cluster of oscules near the base.

MBA.127: hemispherical, diameter 3 mm, cream in life.

SHI.116: fragment of large, massive sponge. Brown to orange brown in life; brown in alcohol, stony hard.

The spicules are 1) Oxeas measuring up to 2500 × 60 μm. 2) Plagiotriaenes with a rhabdome 500-2300 μm long, clads 140-170 μm. 3) Anatriaenes up to 2500 μm long, very thin, clads 32-74 μm. 4) Protriaenes of the same size, observed in specimen SHI.116 only. 5) Microrhabds rough, measuring 7-14 μm. 6) Tylasters without centrum, rays thin, total diameter 11-15 μm. These spicules may be very rare.

Rhabdastrella globostellata (Carter)

Stelletta globostellata Carter, 1883: 353

Occurrence: Mombasa, off Bamburi, outer reef, depth 7-12 m, 24 January 1974. R.N. MBA.208, MBA.202, MBA.245.
Shimoni (4°43'S-39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.70.

MBA.208 (in spirit): fragment of specimen 20 cm high. Smooth, soft, cheese-like in life, orange-brown (C.C.176) outside, orange-yellow (C.C.212) inside. The cortex is about 250 μm thick; internal cavities are abundant, up to 4 mm wide.

MBA.202 (dry) very small, was noted as tough, light dirty yellow (C.C.225) in life.

MBA.245 (dry) very small, was noted as greenish yellow in life.

SHI.70 (dry) was noted as yellow to brown in life.

The spicules are 1) Oxeas measuring 800-1000 × 10-19 μm. 2) Ortho-plagiotriaenes, rhabdome 450-800 × 9-13 μm, clads 60-150

× 6-8 μm. 3) Spheroxyasters 16-50 μm in diameter. The pointed actines are about as long as the centrum is wide. 4) Strongylasters 16-25 μm in diameter, without centrum, with 5 to 11 thin rays mostly spined at their ends. These spicules are very rare. 5) Raphides about 100 μm long.

Ecionemia laviniensis Dendy

Ecionemia laviniensis Dendy, 1905: 81

Occurrence: Mombasa, Bamburi Beach, outer reef slope, depth 7-12 m, 24 January 1974. R.N. MBA.209.

The sample, small, shapeless, was found attached at the base of a specimen of *Rhabdastrella globostellata* (Carter). In life it was hard, cream.

The spicules are 1) Oxeas up to 1200 × 55 μm. 2) Dichotriaenes, rhabdome 450-600 μm, cladome 140-230 μm. Some plagiotriaenes of the same size are present; no anatriaenes have been observed. 3) Microrhabds rough, measuring 70-100 × 3.5-7 μm. 4) Oxyasters with a diameter of 9-14 μm. 5) Strongylasters with a diameter of 5-6 μm.

Penares intermedia (Dendy)

Plakinastrella intermedia Dendy, 1905: 67

Occurrence: North Kenya Banks (02°37.5'S-41°00'E), depth 110 m, dredge, 11 August 1971. R.N. KEN.80.

The specimen is irregularly massive, 45 mm across. In the dry state, it is stony hard, reddish.

The spicules are 1) Oxeas measuring 1000-1500 × 33-62 μm. 2) Dichotriaenes, rhabdome 190 μm, protoclads 95 μm, deuteroclads 160 μm. 3) Oxeas measuring 75-410 × 5.5-22 μm. 4) Oxyasters with a diameter of 12-23 μm.

Calthropella digitata sp.n. (Fig. 2, 3)

Occurrence: North Kenya Banks (02°43'S-40°45'E), depth 120 m, dredge, 18 June 1971. R.N. KEN.76.

Holotype: MSNG 48290

The specimen is about 5 cm across. It consists of a cylindrical shaft 5 mm in diameter, which was probably growing repent, with only two

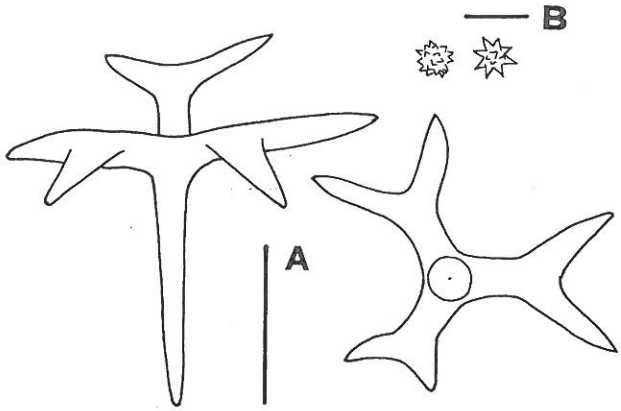

Fig. 2 - Dichotriaenes and spherasters of *Calthropella digitata* sp. n. Scale A: 200 µm, B: 20 µm.

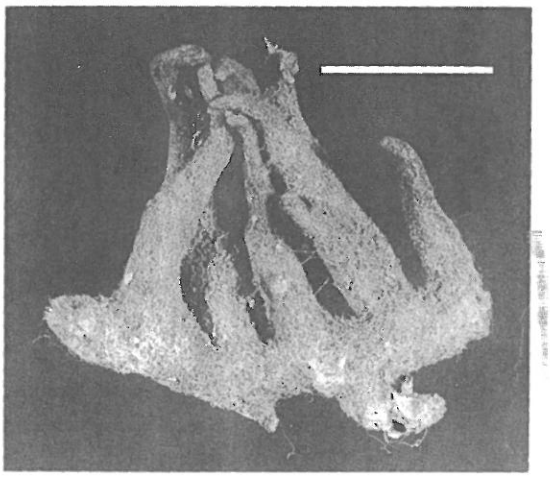

Fig. 3 - *Calthropella digitata* sp. n., the holotype. Scale: 2 cm.

small points of attachment. From it five parallel digitations arise, about 3 cm long, partly branching, all tapering toward the extremity. The sponge is in the dry state, hard and brittle. The skeleton, made by spicules in confusion, is extremely dense. There is apparently no ectosomal differentiation.

The spicules are 1) Oxeas up to 2700 µm long and 90 µm thick. A peculiar oxea is also present in the preparations. It has dissimilar ends, one more elongated and sinuous. Its size is in general 150-270 × 3-4.5 µm, but a few larger ones have been observed. I cannot say whether this spicule is proper, as the specimen is not susceptible of being sectioned, but it shows some affinity with the oxea recorded for *Calthropella inopinata* Pulitzer-Finali (1983: 464). 2) Dichotriaenes with short rhabdome. This is about 400-650 µm long and 35-45 µm thick, the cladome being 400-550 µm wide. 3) Spherasters to spheroxyasters with a diameter of 8-14 µm.

Chelotropella sphaerica Lendenfeld

Chelotropella sphaerica Lendenfeld, 1907: 302

Occurrence: North Kenya Banks (02°37.5'S-41°00'E), depth 100 m, dredge, 11 August 1971. R.N. KEN.89.

The specimen is in the dry state, spherical, 25 mm in diameter. The surface is smooth. The separable ectosome is supported by the cladomes of radiating dichotriaenes. The choanosomal spaces between the ascending dichotriaenes and oxeas are densely filled by calthrops.

The spicules are: 1) Oxeas measuring 3500-4500 × 27-45 µm. 2) Dichotriaenes with a rhabdome of about 2400 × 80 µm, cladome about 1600 µm, protoclads 270 µm, deuteroclads 500 µm. 3) Anatriaenes measuring 4000 µm and more, 20-36 µm thick, with a cladome of 150-170 µm. 4) Calthrops with rays mostly 300-760 µm long. 5) Strongyloacanthasters with 5 to 7 thick rays, a diameter of 33-40 µm, very abundant. 6) Spheroxyasters with a diameter of 23-45 µm, not abundant. 7) Strongylasters with thin rays, a diameter of 9-12 µm, not abundant.

Anatriaenes were not mentioned in the original description.

Monosyringa plurima sp.n. (Fig. 4, 5)

Occurrence: North Kenya Banks (02°34.5'S-40°46.5'E), depth 130 m, dredge, 5 December 1971. R.N. KEN.40.

Holotype: MSNG 48291

The specimen is roughly globular, 5 cm across, with a base of attachment 1.5 cm wide. In spirit, it is stony hard. It bears a number of processes, some incipient, the most developed ones 30 mm long,

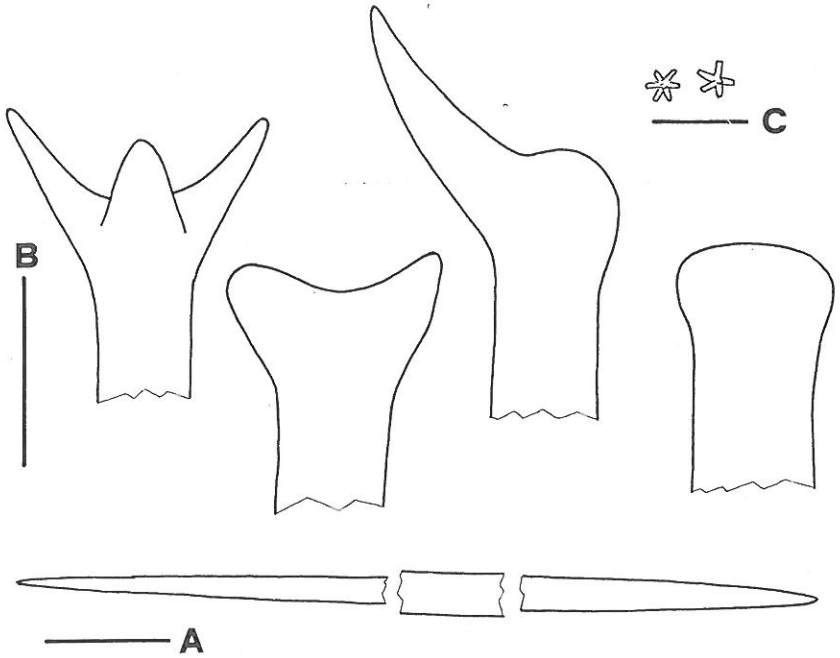

Fig. 4 - Spicules of *Monosyringa plurima* sp. n. Scale A: 250 µm, B: 100 µm, C: 20 µm.

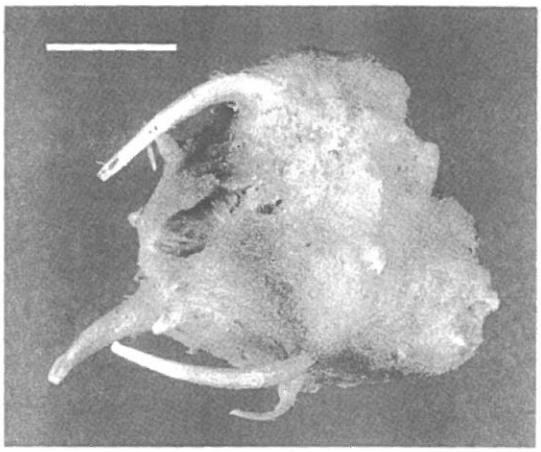

Fig. 5 - *Monosyringa plurima* sp. n., the holotype. Scale: 2 cm.

tapering from a base 5 mm wide. The surface is encrusted with sand. The skeleton is very dense, radiate. There is no differentiated cortex.

The spicules are 1) Oxeas up to 3400 × 90 μm. They are fusiform, with very elongated points, one longer than the other. 2) Plagiotriaenes up to 1800 × 60 μm, with a cladome which is generally much reduced or rudimentary. 3) Chiasters 6-9 μm in diameter.

GEODIIDAE

Isops sollasi Lendenfeld

Isops sollasi Lendenfeld, 1888: 34

Occurrence: Mombasa, Ras Iwetine, depth 0-1 m, rocky shore, 17 February 1974. R.N. MBA.413.

The specimen, white in life and in the dry state, is a very small irregular mass.

The spicules are 1) Oxeas measuring about 1000 × 9 μm. 2) Plagiotriaenes with cladome reduced or rudimental. The rhabdome is 600-1000 μm long. 3) Sterrasters mostly spherical, 46-65 μm in diameter. 4) Anthasters irregular, 14-18 μm in diameter. 5) Oxyasters about 16 μm in diameter.

Erylus lendenfeldi Sollas

Erylus lendenfeldi Sollas, 1888: 239

Occurrence: Off Mombasa, drop-off on channel, depth 20-25 m, diver, 27 February 1974. R.N. MBA.459.

Mombasa, Shelly Beach, outer reef slope, depth 16 m, diver, 23 January 1974. R.N. MBA.87.

Mombasa, Bamburi Beach, depth 7-12 m, diver, 24 January 1974. R.N. MBA.237.

The spicules are 1) Oxeas 850-1000 × 27 μm. 2) Orthotriaenes, rhabdome 370-470 × 12-30 μm, clads 130-190 × 7-18 μm. 3) Aspidasters measuring 150-190 × 56-75 μm. 4) Microrhabds measuring 26-75 μm. 5) Oxyasters with 3-4 rays, diameter 65-85 μm. 6) Oxyasters multirayed, diameter 15-23 μm. 7) Oxyasters to tylasters, paucirayed, diameter 12-23 μm.

Erylus globulifer sp. n.

Occurrence: North Kenya Banks, depth 150-270 m, dredge, 6 August 1971. R.N. KEN.94.

Holotype: MSNG 48292

The specimen, measuring 5 × 3 × 2 cm, is in the dry state. The cortex is white, the choanosome, contracted, is middle brown.

The spicules are 1) Oxeas more than 3400 µm long, up to 27 µm thick. 2) Dichotriaenes with short rhabdome (broken in the preparations), cladome 750-1300 µm, protoclads 135-220 µm, deuteroclads 100-550 µm. 3) Aspidasters measuring 110-130 × 70-90 µm. 4) Spherasters-spherules very abundant, 7-11.5 µm in diameter. The rays of the spherasters are reduced to small knobs; in the choanosome many of these microscleres are in the form of smooth spherules. 5) Chiasters with a diameter of about 7 µm, not abundant. 6) Oxyasters with a small centrum and 6 to 7 rays 7-11.5 µm long, rare.

This species differs from *Erylus gilchristi* Burton (1926: 22) from South Africa mainly for the absence of the microstyles.

Geodia spheranthastra sp. n. (Fig. 6)

Occurrence: Mombasa, Ras Iwetine, depth 0.3-0.5 m, 21 January 1974. R.N. MBA.142.
Mombasa, Bamburi Beach, depth 0.5-1m, 16 January 1974. R.N. MBA.481.

Holotype (MBA.142): MSNG 48293

MBA.142 is massive, 7 × 3 cm, stony hard; the cortex is about 3 mm thick.

MBA.481 is stony hard, globular, 2 cm across. The cortex is less than 1 mm thick.

The spicules are 1) Oxeas measuring 2300-2800 × 37 µm. 2) Orthotriaenes with a rhabdome measuring 1900-2300 × 38-40 µm,

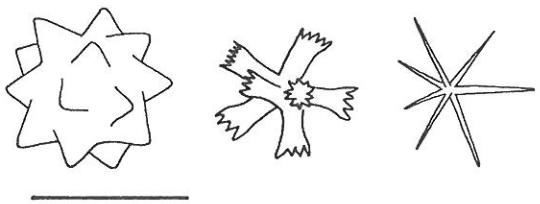

Fig. 6 - Spherasters, anthasters and oxyasters of *Geodia spheranthastra* sp. n. Scale: 20 µm.

clads 240-570 μm. 3) Sterrasters measuring 95-120 × 84-105 μm. 4) Spherasters up to 32 μm in diameter. 5) Anthasters with a diameter of 14-18 μm. 6) Oxyasters without centrum, 14-23 μm in diameter.

Pachastrellidae

Poecillastra compressa (Bowerbank)

Ecionemia compressa Bowerbank, 1866: 55

Occurrence: North Kenya Banks, depth 210 m, dredge, 10 October 1971. R.N. KEN.46.
North Kenya Banks, dredge, 25 February 1971. R.N. KEN.64.

The specimens are fragments of lamellar sponges, about 6 mm thick.

The spicules are 1) Oxeas up to 3500 × 60 μm. 2) Calthrops, rays 190-650 μm. 3) Microxeas slightly rough, 100-135 μm long, about 5.5 μm thick. 4) Metasters measuring 26-28 μm. 5) Spirasters measuring about 14 μm.

Thrombidae

Thrombus abyssi (Carter)

Corticium abyssi Carter, 1873: 18

Occurrence: Tanzanian coast (07°49.7S-39°53.9E), depth 190 m, dredge, 14 November 1971. R.N. KEN.10.

The specimen, very small, was found within the skeletal frame of a dead hexactinellid. Only a spicule slide is available.

The spicules are 1) Trichotriaenes spiny, cladome 440-510 μm, rhabdome 260-300 μm. 2) Amphiasters measuring 4.5-6 μm.

Coppatiidae

Asteropus simplex (Carter)

Stellettinopsis simplex Carter, 1879: 349

Occurrence: Mombasa, Ras Iwetine, depth 1 m, 18 January 1974. R.N. MBA.16.
Off Mombasa, drop off on channel, depth 20-25 m, diver, 27 February 1974. R.N. MBA.464.
Off Mombasa, depth 117-138 m, dredge, 13 May 1974. R.N. KEN.143.
Shimoni (04°43'S-39°23'E), depth 4-7 m, diver, 25 February 1974. R.N. SHI.122.

MBA.16: fragment of a sponge irregularly cushion shaped, filling rock crevices. Noted in life as dark grey outside, light grey inside, tough, harsh to the touch.

MBA.464: fragment of large sponge, greenish black in life.

KEN.143: fragment. Field notes indicate that the colour of the cut surfaces was a deep prussian blue.

The spicules are 1) Oxeas measuring 950-2500 × 40-85 µm. 2) Sanidasters measuring 11-20 µm. 3) Oxyasters 25-50 µm in diameter. They may be rare.

Jaspis bouilloni Thomas

Jaspis bouilloni Thomas, 1973: 65

Occurrence: Mombasa, off Shelly Beach, depth 16 m, diver, 23 January 1974. R.N. MBA.165, MBA.254, MBA.287.
Shimoni (04°43'S-39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.42.
Zanzibar, Chapani Island, depth 2-3 m, diver, 8 February 1974. R.N. ZBR.7.

MBA.165: in life: tough, compressible, orange (C.C.196).

MBA.254: in life: medium consistency, orange (C.C.196).

MBA.287: in life: compressible, resilient, fragile, orange (C.C.196).

MBA.445: in life: massive, orange (C.C.196).

SHI.42: in life: dull yellow (C.C.256) to dull violet (C.C.178). Very irregularly branching.

ZBR.7: encrusting, light orange.

The spicules are 1) Oxeas measuring 640-850 × 6-18 µm. 2) Strongylasters to oxyasters spiny, for the most part with a diameter between 9 and 16 µm. Much larger ones, with a reduced number of rays, reaching 70 and 100 µm in diameter are also present; they are rare (not observed in specimen SHI.42).

Jaspis manihinei sp.n. (Fig. 7)

Occurrence: North Kenya Banks, depth 200 m, dredge, 11 October 1971. R.N. KEN.41.

Holotye: MSNG 48295

The specimen is cake shaped, with a flattened base, about 20 mm in diameter and 14 mm high. The colour in spirit is light brown, the

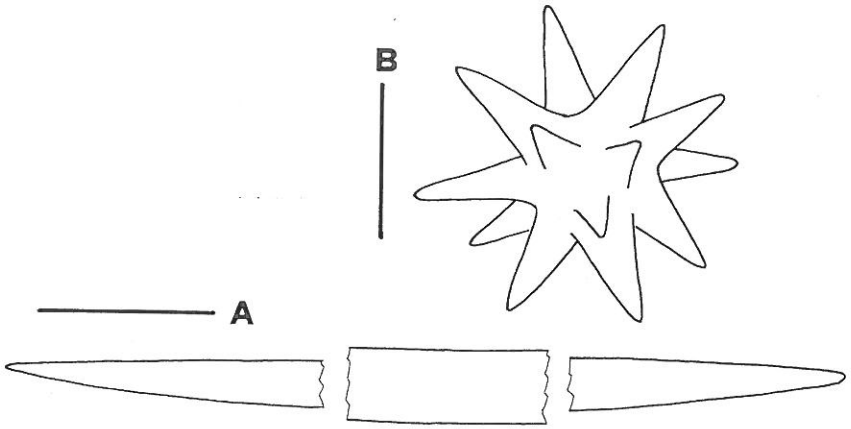

Fig. 7 - Spicules of *Jaspis manihinei* sp. n. Scale A: 200 μm, B: 20 μm.

consistency hard, incompressible. The skeleton is dense, in confusion, tangentially arranged at the surface, where the spheroxyasters are more numerous.

The spicules are 1) Oxeas straight or slightly curved, measuring 2200-3400 × 65-100 μm. 2) Spheroxyasters very numerous, with uniform and regular shape, with a diameter of 33-44 μm.

SPIROPHORIDA

TETILLIDAE

Paratetilla bacca (Selenka)

Stelletta bacca Selenka, 1867: 569

Occurrence: Mombasa, Bamburi, lagoon, depth 1-1.5 m, 19 January 1974. R.N. MBA.61.
Mombasa, Ras Iwetine, depth 0.3-0.5 m, 21 January 1974. R.N. MBA.100, MBA.120.
Mombasa, Old Harbour, depth 12 m, dredge, 2 February 1974. R.N. MBA.361.
Mombasa, Nyali Bridge, pontoons, depth 2-3 m, diver, 15 February 1974. R.N. MBA.367.
Zanzibar, Chapani Island, depth 2-3 m, diver, 8 February 1974. R.N. ZBR.3.
Shimoni (04°43'S-39°23'S) Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.4.

The spicules are 1) Oxeas measuring 1900-3000 μm. 2) Calthrops, rays 250-400 μm. 3) Anatriaenes 3000 μm and more long, cladome 70 μm. 4) Protriaenes of the same size, cladome generally malformed. 5) Oxeas raphidioid 200-300 × 1.5-2 μm. 6) Sigmaspires 14-16 μm across.

Fangophilina submersa Schmidt

Fangophilina submersa Schmidt, 1880: 73

Occurrence: North Kenya Banks, depth 150 m, dredge, 25 April 1971. R.N. KEN.92.

North. Kenya Banks (02°35.5'S-41°10'E), depth 100 m, dredge, 10 August 1971. R.N. KEN.92.

Six speximens are available, measuring from 10 to 28 mm across. Their characteristic shape makes them identifiable at sight.

The spicules are 1) Oxeas up to several mm long, up to 90 µm thick. 2) Oxeas measuring 700-1100 µm. 3) Orthodiaenes, orthomonaenes, plagiodiaenes, rhabdome several mm long, up to 35 µm thick, clads up to 700 µm long. 4) Anatriaenes very long, up to 12 µm thick, cladome 65 µm. 5) Protriaenes very long, about 23 µm thick, cladome 60 µm. Sigmaspires spiny, chord up to 46 µm.

LITHISTIDA

THEONELLIDAE

Theonella swinhoei Gray

Theonella swinhoei Gray, 1868: 565.

Occurrence: Mombasa, off Shelly Beach, outer reef slope, depth 12-16 m, diver, 23-26-31 January 1974. R.N. MBA.174, MBA.182, MBA.262, MBA.274, MBA.303.

Off Mombasa, drop-off on channel, depth 25 m, diver, 27 February 1974, R.N. MBA.453, KEN.44.

North Kenya Banks (02°25.5'S - 40°52.5'E) depth 48 m, dredge, 19 January 1973. R.N. KEN.137.

MBA.174: fragment, dry, light and fragile. Abundant locally. Colour in life brown (C.C.176 on top, C.C.171 on the sides), interior light cream.

MBA.182: fragment of large, tough, resilient sponge. Exterior colour in life brown (C.C. 701), the interior turned to all shades of brown, green and blue.

MBA.262: fragment, dry, light and fragile. Locally abudant, large size. Colour in life violet (C.C. 111) outside, blue (C.C. 481) inside.

MBA.274: fragment of large massive sponge, fragile. Colour in life drab brown externally, light cream internally.

MBA.303: fragment of large sponge, friable. Colour in life brown (C.C. 708) outside, cream inside.

MBA.453: fragment of very large sponge, with low digitations. Light, fragile. Colour in life dark blue (C.C. 476).

KEN.44: fragment in spirit, digitate, 35 mm in diameter, small oscule on top. The preserved specimen is incompressible but fragile, dark brown.

KEN.137: irregular fragment in spirit.

The spicules are 1) Desmas tetracrepid, actines up to 500 μm, scarcely tuberculated. 2) Phyllotriaenes, cladome up to about 200 μm. 3) Strongyles slightly curved, measuring 390-600 × 4.5-7 μm, extremities faintly tylote. 4) Microstrongyles rough, curved or bent, measuring 14-18.5 × 2.5 μm.

Theonella conica (Kieschnick)

Discodermia conica Kieschnick, 1896: 530

Occurrence: Mombasa, Bamburi Beach, depth 7-12 m, diver, 24 January 1974. R.N. MBA. 234.

Mombasa, Shelly Beach, depth 12-14 m, diver, 26 January 1974. R.N. MBA.270.

Off Mombasa, drop off on channel, depth 20-25 m, diver, 27 February 1974. R.N. MBA 458.

MBA.270: a fragment, noted as fragile, not compressible in life, dull blue (C.C. 464), internally yellowish grey.

MBA.234: fragments, rounded lobes with oscules about 3 mm wide. Noted as blue in life.

MBA.458: coalescent digitations up to 5 cm high, with apical oscules 1-3 mm wide. Noted as dark green in life.

The spicules are 1) Desmas tetracrepid of uniform shape and size, 160-180 μm across. 2) Phyllotriaenes. 3) Oxeas-strongyles slightly curved, 370-470 μm long, about 7 μm thick. 4) Acanthorhabds 7-11.5 μm.

Manihinea gen. n.

Theonellidae with tetracrepid desmas and ectosomal phyllotriaenes. The microsclere is a spheraster.

Type species: *Manihinea conferta*.

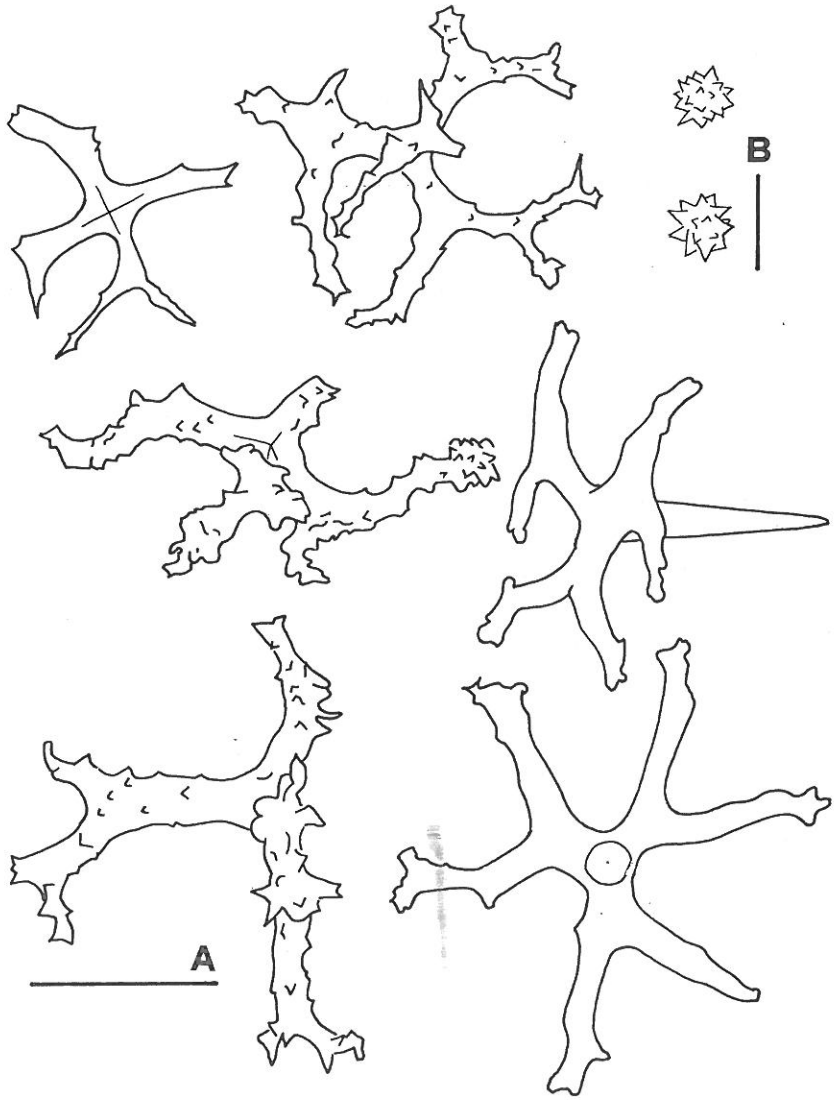

Fig. 8 - Spicules of *Manihinea conferta* sp. n. Scale A: 100 µm, B: 10 µm.

Manihinea conferta gen. n., sp. n. (Fig. 8)

Occurrence: North Kenya Banks (02°43'S - 40°40.5'E), depth 115 m, dredge, 17 January 1973. R.N. KEN. 129.

North Kenya Banks (02°37.5'S - 41°00'E), depth 110 m, dredge, 10 August 1971. R.N. KEN. 75.

Holotype (KEN.129): MSNG 48296.

Paratype (KEN.75): MSNG 48297.

KEN.129, in the dry state, claviform with a lateral outgrowth, is 10 cm high, 6.5 cm in maximum diameter, 3.5 cm at the base. Numerous oscules, 1000-1750 μm wide, open on a shallow, narrow atrium.

KEN.75, also in the dry state, is almost spherical with a flattened base, 45 mm in diameter, also with a short outgrowth on one side.

The spicules are 1) Desmas tetracrepid measuring 330-430 μm across. 2) Phyllotriaenes, rhabdome 180 μm, cladome 400-465 μm. 3) Spherasters 6-8 μm in diameter.

CORALLISTIDAE

Macandrewia clavatella (Schmidt)

Corallistes clavatella Schmidt, 1870: 23

Occurrence: North Kenya Banks, depth 160 m, dredge, 17 June 1971. R.N. KEN.2, KEN.34.

KEN.2 has the shape of a pedunculated shallow cup, very similar to Schmidt's illustration. The specimen is 25 mm high, 27 mm wide. KEN.34 is a very small fragment.

The spicules are 1) Desmas monocrepid and tetracrepid. 2) Phyllotriaenes. 3) Oxeas about 460 × 12, rare. 4) Microxeas uniformly curved, peculiar: their concave side is more or less uniformly swollen. They measure 37-65 μm by up to 4.5 μm.

Callipelta thoosa Lévi

Callipelta thoosa Lévi, 1964: 384

Occurrence: North Kenya Banks (02°23'S - 41°04'E), dredge, 17 June 1971. R.N. KEN.87

The specimen (dry) has approximately the shape of a mushroom with a depressed top. It is 20 mm high and 23 mm wide, stony hard.

The spicules are 1) Phyllotriaenes with a rhabdome of 130-180 μm, a cladome 270-330 μm wide. 2) Desmas monocrepid. 3) Amphiasters and tylamphiasters measuring 9-12 μm. The latter tend to become irregular spherasters.

Corallistes bowerbanki (Johnson)

Dactylocalyx bowerbanki Johnson, 1863: 257

Occurrence: North Kenya Banks, depth 110 m, dredge, 10 August 1971. R.N. KEN.65.

The specimen (dry) has the shape of a cup 5 cm high, 9 cm wide, base of attachment narrow, wall about 5 mm thick. The consistency is stony hard.

The spicules are 1) Dichotriaenes with a cladome of 100-250 μm, rhabdome short. 2) Desmas monocrepid. 3) Oxeas about 450 μm. 4) Spirasters 9-17 μm, regular, pluribent.

LEIODERMATIIDAE

Leiodermatium lynceus Schmidt

Leiodermatium lynceus Schmidt, 1870: 22

Occurrence: North Kenya Banks, dredge, 25 February 1971. R.N. KEN.63.

The specimen, dry, has the shape of a cup with the wall repeatedly folded. The height is 11 cm, the maximum width 12 cm, the wall is rather uniformly 8 mm thick. The outer surface is partly pilose. The consistency is stony hard, the colour ochre.

The spicules are 1) Oxeas mostly sinuous, measuring 350-1800 × 4.5-11.5 μm. 2) Desmas monocrepid.

SCLERITODERMIDAE

Aciculites tulearensis Vacelet & Vasseur

Aciculites tulearensis Vacelet & Vasseur, 1965: 86

Occurrence: North Kenya Banks (02°56.5'S - 40°53.9'E), depth 230 m, dredge, 8 December 1971. R.N. KEN.67.

North Kenya Banks (02°41.5'S - 40°38.5'E), depth 55 m, dredge, 19 January 1973. R.N. KEN.121.

KEN.67: the specimen, dry, has the shape of a very irregularly folded cup, 8 cm high, 11 cm wide, with narrow base of attachment. The thickness of the wall is not uniform, 1 to 2 cm. The consistency is stony hard. The skeleton at the outer surface (inhalant) of the cup is regularly reticulated with meshes about 200 μm wide. On the inner surface the oscules are numerous, 0.5-1 mm wide, 3-5 mm apart, on rounded elevations about 1 mm high.

KEN.121: the specimen, dry, is a large fragment of a very large sponge, plate-like, 3 cm thick. The consistency is stony hard. The skeleton on the inhalant face is regularly reticulated, with meshes about 100 μm wide. Numerous oscules, variable in size (1 to 3 mm), flush with the surface, are on the exhalant face.

The spicules are 1) Strongyles anisodiametric, the thicker end spiny, measuring 250-400 × 7-11 μm. 2) Desmas monocrepid.

SIPHONIDIIDAE

Gastrophanella cribrophora (Schmidt)

Azorica cribrophora Schmidt, 1880: 89

Occurrence: North Kenya Banks, depth 200 m, dredge, 11 October 1971. R.N. KEN.45.

The specimen, dry, is roughly hemispherical, with wide base of attachment, 6 cm across. From the surface cylindrical digitations, open at the top, about 1.5 mm high and 1-1.5 mm in diameter, arise. The consistency is stony, the colour ochre.

The spicules are 1) Styles-subtylostyles, sometimes polytylote, measuring 280-400 μm by about 9 μm. 2) Tylotes thin, 260-310 μm long. 3) Desmas monocrepid.

HADROMERIDA

SUBERITIDAE

Suberites carnosus (Johnston)

Halichondria carnosa Johnston, 1842: 146

Occurrence: Shimoni (04°43'S - 39°23'E), depth 16 m, dredge, 25 February 1974. R.N. SHI.144, SHI.176.4, SHI.178.5.

The spicules are tylostyles measuring 180-820 × 4.5 - 9.5 μm. Vesicle of the tyle apparent.

POLYMASTIIDAE

Polymastia megasclera Burton

Polymastia megasclera Burton, 1934: 567

Occurrence: Mombasa, Ras Iwetine, depth 0.1-4 m, diver, 18 January 1974. R.N. MBA.56, MBA.393.

MBA.56: the sponge is cushion shaped, agglomerating foreign materials. In life it was yellow internally, darker outside.

The spicules are 1) Tylostyles 450-550 × 20-40 µm. 2) Tylostyles 370-800 × 5-16 µm. 3) Tylostyles 130-250 × 3.5-5 µm. In the larger spicules the tyle does not exceed 9-12 µm in diameter.

MBA.393: the sponge was insinuating, with exposed papillae, wide-spread, abundant. The colour in life was orange (C.C.252 externally, C.C.246 internally).

The spicules are 1) Tylostyles measuring 550-650 × 23-35 µm. 2) Tylostyles measuring 410-570 × 7-16 µm. 3) Tylostyles measuring 220-300 × 4.5-7 µm.

Aaptos aaptos (Schmidt)

Ancorina aaptos Schmidt, 1864: 33

Occurrence: Mombasa, off Shelly Beach, depth 12-14 m, diver, 26 January 1974. R.N. MBA.253.

Zanzibar, Ras Fumba, exposed reef, 10 February 1974. R.N. ZBR.37.9.

MBA.253: in life, was light orange (C.C.183) on one side, cream on the other one and in the interior.

The spicules are 1) Strongyloxeas 580-1300 × 12-35 µm. 2) Styles 210-290 × 2.5-4 µm.

ZBR.37.9: a small, dry fragment.

The spicules are 1) Strongyloxeas 520-820 × 9-26 µm. 2) Styles 200-400 × 4-7 µm.

Hemiasterellidae

Hemiasterella complicata Topsent

Hemiasterella complicata Topsent, 1919: 8

Occurrence: North Kenya Banks (02°26.3'S-40°53'E), depth 70 m, dredge, 19 January 1973. R.N. KEN.136.

The available specimen is a fragment in the dry state. It is laminar, folded, with a very thin rim.

The spicules are 1) Oxeas with variously modified points, 450-810 µm long, very variable in thickness, 4.5 to 16 µm. 2) Oxyasters extremely abundant, measuring 5-23 µm. For the most part they have obtuse and spiny rays.

Hemiasterella intermedia Dendy (Fig. 9)

Hemiasterella intermedia Dendy, 1921: 145

Occurrence: North Kenya Banks (02°43'S - 40°45'E), depth 115 m, dredge, 18 June 1971. R.N. KEN.102.

The specimen, in the dry state, has the shape of a pedunculated cup. Its height is 38 mm, of which 15 belong to the stalk. The width at the top is 28 mm. The wall is about 2 mm thick. The surface is hispid.

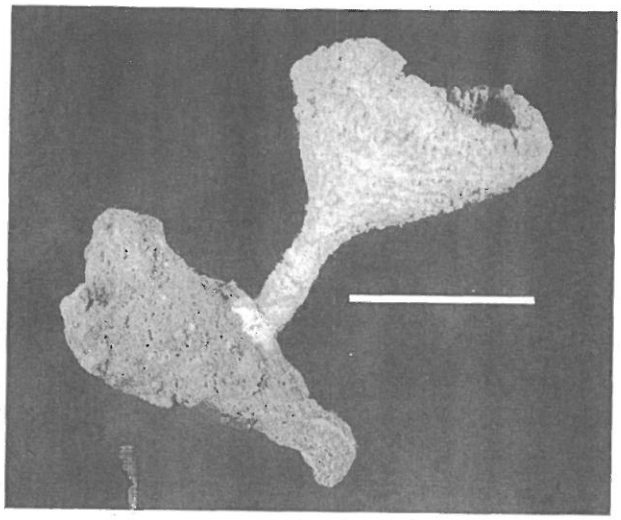

Fig. 9 - *Hemiasterella intermedia* Dendy, specimen KEN.102 (dry). Scale: 2 cm.

The spicules are 1) The megascleres are mostly styles, not quite regular, variable in thickness, measuring 1100-1600 μm by up to 40 μm. Oxeas are present, with evenly elongated ends, of about the same length, but generally very thin. Owing to intermediate forms, there are no clearly separable categories. 2) Oxyasters extremely abundant, with 9-11 rays mostly with obtuse and spiny points. They have a diameter of 20-24 μm. Smaller ones are rare.

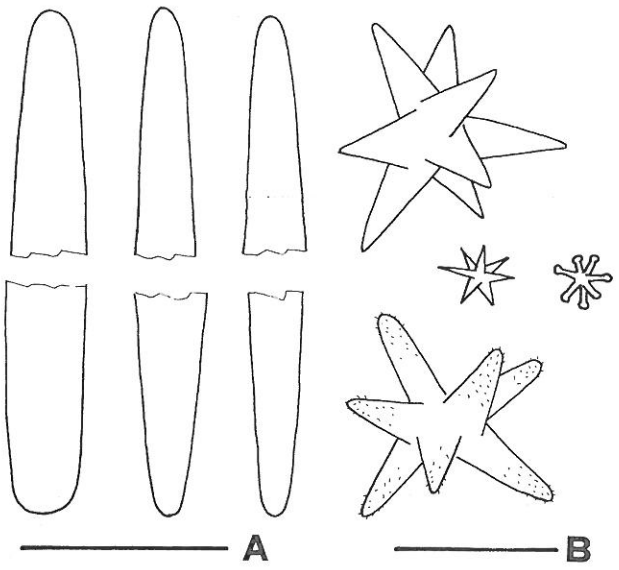

Fig. 10 - Spicules of *Hemiasterella magna* sp. n. Scale A: 100 µm, B: 20 µm.

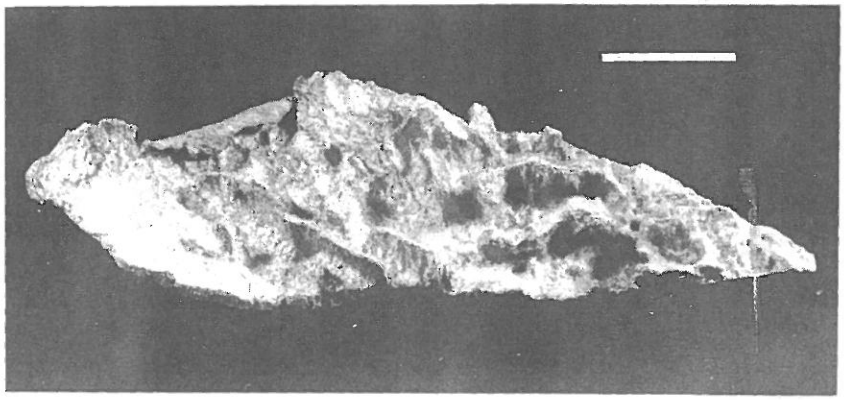

Fig. 11 - *Hemiasterella magna* sp. n., the holotype (fragment, dry). Scale: 4 cm.

Hemiasterella magna sp. n. (Fig. 10, 11)

Occurrence: North Kenya Banks (02°30'S - 40°52.5'E), depth 100 m, dredge, 19 January 1973. R.N. KEN.130.

Holotype: MSNG 48302.

The specimen had the shape of a cup open at one side, was 40 cm high and about as much wide at the top. Available now is only a section,

dry. The outer surface is even, the interior surface is beset with high laminar perpendicular foliaceus outgrowths.

The spicules are: 1) The megascleres are slightly curved, often irregularly. They have a form intermediate between an oxea and a strongyle. Their size is 1100-1500 × 25-50 µm. 2) Oxyasters extremely abundant, with a diameter of 7-75 µm. The points of the rays may be sharp or rounded. In the latter case the distal part of the ray is spined or rough.

Among the smaller asters there are tylasters measuring 7-11 µm.

SPIRASTRELLIDAE

Spirastrella excentrica Burton

Spirastrella excentrica Burton, 1931: 351

Occurrence: Mombasa, off Shelly Beach, depth 12-16 m, diver, 23-26 January 1974. R.N. MBA.257, MBA.177, MBA.483.

MBA.483: a small specimen cut in two, dry. Cup shaped, the cup 5 cm deep and 7.5 cm wide at the border, the stalk 2.5 cm thick at the base. Total height 10 cm.

MBA.177: fragment of a large cup, moderately flexible and elastic. Colour in life brown (C.C.336), internally cream.

MBA.257: cup shaped (only a fragment of the border is preserved). The colour in life was light brown (C.C.338), lighter internally.

The spicules are 1) Tylostyles mostly trilobate, slightly curved, sometimes flexuous, measuring 260-460 × 4.5-9.3 µm. 2) Spirasters (only two observed in my preparations) 5-11.5 µm.

Spirastrella vagabunda Ridley

Spirastrella vagabunda Ridley, 1884: 468

Occurrence: Mombasa, Ras Iwetine, depth 0.3-4 m, diver, 18-21 January 1974. R.N. MBA.157, MBA.36, MBA.119, MBA.141, MBA.155, MBA.412, MBA.52.

Mombasa, Bamburi Beach, depth 0.5-1 m, 16 January 1974. R.N. MBA.473.

Shimoni (04°43'S - 39°23'E), Mawa Reef, exposed, 24 February 1974, R.N. SHI.99.

MBA.52: firm, fleshy, colour in life between grey and light yellow.

MBA.157: in cavities of rock.

MBA.36: incompressible, tough, fragile. Colour in life dark brown to greenish buff.

MBA.119: in cavities of rock. Tough. Colour in life greyish brown, interior lighter.

MBA.141: in cavities of rock.

MBA.155: in cavities of rock.

MBA.412: pale yellow in life.

SHI.99: colour in life orange (C.C.246).

The spicules are: 1) Tylostyles with well-formed tyle. They reach a length of 500-540 μm and a thickness of 15-18 μm. 2) Spirasters measuring 11-22 μm. They are generally rare.

Spirastrella inconstans (Dendy)

Suberites inconstans Dendy, 1887: 154

Occurrence: Mombasa, off Shelly Beach, depth 16 m, diver, 23 January 1974. R.N. MBA.180, MBA.181, MBA.185, MBA.179, KEN.157.

Off Mombasa, drop off on channel, depth 20-25 m, diver, 27 February 1974. R.N. MBA.461.

North Kenya Banks (02°26.3'S - 40°53'E), depth 70 m, dredge, 19 January 1973. R.N. KEN.120.

North Kenya Banks (02°44.4'S - 40°15.5'E), depth 11 m, dredge, 29 March 1973. R.N. KEN.145.

Shimoni (04°43'S - 39°23'E), depth 16 m, dredge, 25 February 1974. R.N. SHI.163, SHI.176.3.

MBA.180: fragment of very large specimen. Colour in life brown (C.C.701), interior lighter brown (C.C.337).

MBA.461: fragment of large, massive sponge. Colour in life brown with yellow tinges.

KEN.120: a large fragment, dry.

SHI.163: fragment of very large sponge, papillate, bluish upon collection.

MBA.181: fragment of very large sponge, greenish black outside upon collection, with streaks of blue and green inside.

MBA.185: fragment of very large sponge, tough, brown. In the interior various shades of green, brown and yellow.

MBA.179: fragment of very large, massive sponge, tough, incompressible. Colour in life brown (C.C.701-692), lighter internally (C.C.336).

The spicules are 1) Tylostyles to subtylostyles generally reaching 650 μm by 12-16 μm. 2) Styles of variable size, up to about 250 μm long

and less than 4.5 μm thick. These spicules are present in all the specimens. 3) Spirasters which may be rare, reaching 12-13 μm in length, rarely 20 μm.

CLIONIDAE

Cliona viridis (Schmidt)

Vioa viridis Schmidt, 1862: 77

Occurrence: Shimoni (04°43'S-39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.69.

Boring in dead coral.

The spicules are: 1) Tylostyles measuring 180-410 × 4.5-11.5 μm. 2) Spirasters measuring 32-70 μm by about 2 μm (spines not included).

Cliothosa hancocki (Topsent)

Thoosa hancocci Topsent, 1888: 81

Occurrence: Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.75.

The specimen was orange, boring in dead coral.

The spicules are 1) Tylostyles measuring 230-410 × 5.5-11.5 μm. 2) Ramose amphiasters measuring 22-33 μm in diameter. Nodulose amphiasters have not been observed.

TETHYIDAE

Tethya seychellensis (Wright) (Fig. 12)

Alemo seychellensis Wright, 1881: 13

Occurrence: Mombasa, Nyali Bridge, depth 0.5-2 m, diver, 2 February 1974. R.N. MBA.336.

Six specimens are available, collected on the steel pontoons which support the bridge. They measure (in spirit) from 20 to 30 mm. Their colour in life was violet-orange (C.C.171) outside, orange-brown (C.C.193) inside. They were very soft, but contracted with surprising rapidity upon collection.

The spicules are 1) Strongyloxeas reaching about 1500 × 30 μm. 2) Spherasters up to 70 μm in diameter. The ratio of ray to centrum is about 0.5. 3) Oxyasters 30-40 μm in diameter, normally with six rays which may be smooth or spiny at the tip, sometimes bifid. 4 Tylasters

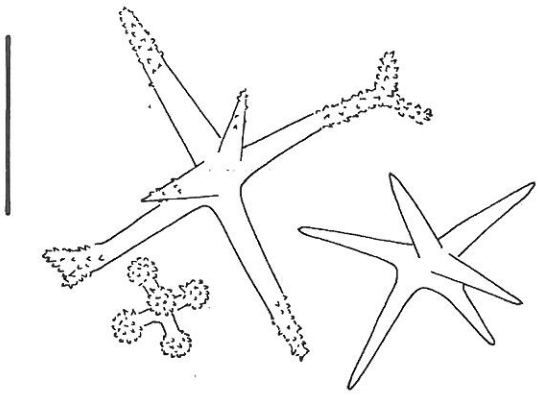

Fig. 12 - Oxyasters and tylasters of *Tethya seychellensis* (Wright). Scale: 20 µm.

with five or six short thick rays with large spiny tyle. Total diameter 7-10 µm.

CHONDRILLIDAE

Chondrilla sacciformis Carter

Chondrilla sacciformis Carter, 1879: 299

Occurrence: Mombasa, Ras Iwetine, depth 0.3-0.5 m, 21 January 1974. R.N. MBA.118.

The specimen was small, cushion shaped, light to dark grey, hard.

The spicules are spherasters having a diameter of 37 up to 160 µm.

PLACOSPONGIIDAE

Placospongia carinata (Bowerbank)

Geodia carinata Bowerbank, 1858: 308

Occurrence: Mombasa, Ras Iwetine, depth 0.3-4 m, diver, 18-21 January 1974. R.N. MBA.10, MBA.18, MBA.19, MBA.144.

Mombasa, Nyali Bridge, pontoons, depth 1-1.5 m, diver, 19 January 1974. R.N. MBA.371.

Mombasa, Bamburi Beach, lagoon, depth 1-1.5 m, diver, 19 January 1974, R.N. MBA.87 bis, MBA.88.

MBA.10: finger-like processes, various shades of orange (about C.C.193).

MBA.19: encrusting.

MBA.371: encrusting, pale orange (C.C.249) outside, darker orange (C.C.192) inside.

MBA.67 bis: encrusting on *Erylus lendenfeldi*, brown (C.C.701).

MBA.88: light brown (C.C.338).

The spicules are 1) Tylostyles 400-1200 × 5-18 μm. 2) Selenasters 50-75 μm. 3) Spinispires 16-32 μm. 4) Microrhabds 4.5-11 × 1.5-2.5 μm. 5) Spherasters 16-25 μm (only in specimens MBA.10, 18 and 19).

Placospongia melobesioides Gray

Placospongia melobesioides Gray, 1867a: 128

Occurrence: Mombasa, Ras Iwetine, depth 0.5-4 m, diver, 18-21 January 1974. R.N. MBA.6, MBA.9, MBA.111.

Mombasa, off Shelly Beach, depth 12-14 m, diver, 26 January 1974. R.N. MBA.251.

Zanzibar, Chapani Island, exposed reef, 9 February 1974. R.N. ZBR.30.

MBA.9: repent, irregularly branching, brown (C.C.702) outside, orange (C.C.196) inside.

MBA.111: various shades of brown (C.C.706, 701, 177).

MBA.251: repent, branching, brown (C.C.696).

The spicules are 1) Tylostyles 400-910 × 7-14 μm. 2) Selenasters 50-70 μm. 3) Spherules 1-2 μm.

TIMEIDAE

Diplastrella gardineri Topsent

Diplastrella gardineri Topsent, 1918: 549

Occurrence: Shimoni (04°43'S-39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.85.

Encrusting, reddish violet in life.

The spicules are 1) Tylostyles measuring up to 510 × 11.5 μm. 2) Diplasters up to 39 μm in maximum diameter. Pseudoeuasters are frequent.

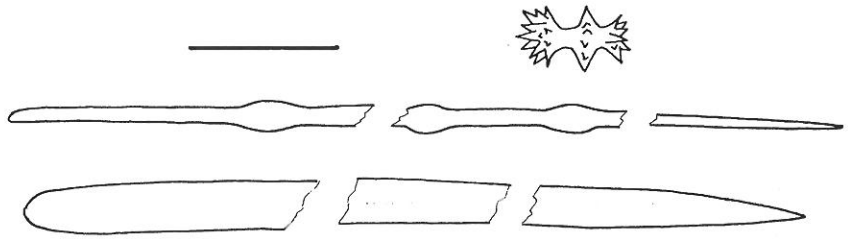

Fig. 13 - Spicules of *Latrunculia kenyensis* sp. n. Scale: 50 µm.

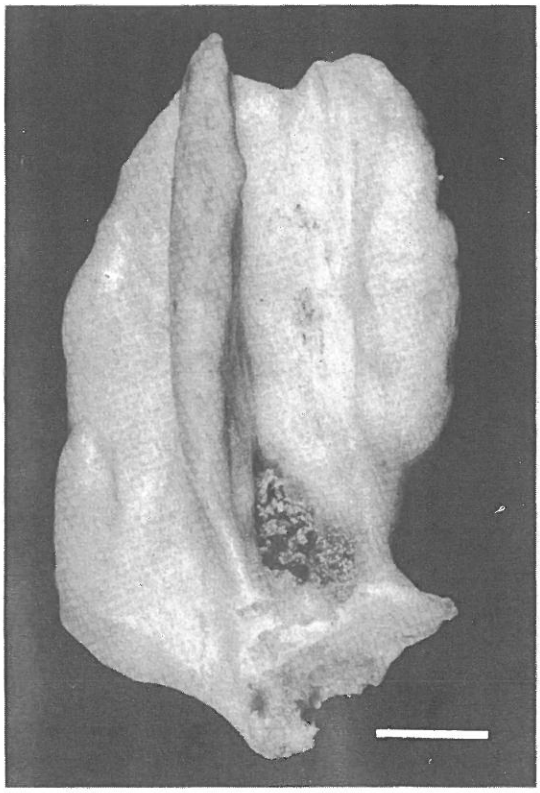

Fig. 14 - *Latrunculia kenyensis* sp. n., the holotype. Scale: 1 cm.

LATRUNCULIIDAE

Latrunculia kenyensis sp. n. (Fig. 13, 14)

Occurrence: Off Mombasa, drop off on channel, depth 20-25 m, diver, 27 February 1974, R.N. MBA.447.

Holotype: MSNG 48298.

The specimen is erect, lamellate, 8 cm high, of tough consistency (in spirit). It was orange (C.C.198) in life.

The spicules are 1) Styles 320-400 × 11-16 μm. 2) Styles with narrowed base, with several elongated swellings more or less marked, 370-440 × 4.5-7 μm. 3) Discasters with three whorls of spines, 27-39 μm, spines included.

AGELASIDAE

Agelas spp.

Occurrence: Mombasa, off Bamburi, depth 7-12 m, diver, 24 January 1974, MBA.206.

The specimen is subcylindrical, tubular at one extremity, cavernous at the other, looking like the fistule of an *Oceanapia*. It is 8 cm high, about 2 cm in diameter. As in life, the consistency in spirit is tough. The colour in life was orange (C.C.181 - 186 externally, C.C.196 internally).

Occurrence: North Kenya Banks (02°20.5'S - 41°03'E), depth 55 m, dredge, 17 June 1971, KEN.100.

The specimen (dry) is extremely irregular, with mamillate outgrowths bearing a terminal oscule 3 mm wide. Other oscules about 2 mm wide are sparse and abundant. A larger outgrowth, 15 mm in diameter, 4 cm long, is fistular. The sponge is extremely cavernous.

Occurrence: North Kenya Banks (02°32.5'S - 40°53'E), depth 90 m, dredge, 19 January 1973, KEN.106.

The specimen (dry) is part of a large irregular plate growing erect, 1 to 2 cm thick, with even surface, lobate margin. The structure is compact, the consistency tough.

Occurrence: North Kenya Banks (02°04.2'S - 40°39'E), depth 110 m, dredge, 8 January 1972, KEN.99.

The specimen is a fragment of a large plate growing erect, 1 to 2 cm thick. The surface is even, the structure is compact, the consistency tough.

Occurrence: North Kenya Banks (02°24.8'S - 40°54.8'E), depth 80 m, dredge, 20 January 1973, KEN.107.

The specimen is part of a large, very irregular plate (or cup) 2 to 3.5 cm thick. One face, apparently the inhalant one, is sulcated by

meandriform slits deeply penetrating inside and forming wide chambers. The other face is roughly mamellonate and bears abundant oscules 1 to 2 mm wide. The consistency (in the dry state) is as wood.

6 Occurrence: Coast of Kenya, Wasin Channel (04°43.8'S - 39°24'E), depth 115 m, dredge, 12 January 1972. KEN.16.

The specimen is a small fragment, tough, cavernous.

7 Occurrence: North Kenya Banks (02°32.5'S - 40°57.5'E), depth 100 m, dredge, 10 October 1971. KEN.55.

The specimen is a small irregular mass agglomerating various debris. The structure is discontinuous, cavernous.

8 Occurrence: Mombasa, off Bamburi, depth 7-12 m, diver, 24 January 1974, MBA.216.

The specimen is small, irregular, very cavernous. The colour in life was orange (C.C.181, brighter).

9 Occurrence: Mombasa, off Shelly Beach, depth 12-14 m, diver, 26 January 1974. MBA.248.

The sponge is deeply furrowed. It was noted in life as tough, resilient, orange (C.C.301 externally, C.C.196 internally).

10 Occurrence: Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. SHI.5.

The surface of the dry specimen is deeply furrowed. The colour in life was orange (C.C.201 outside, C.C.246 inside).

11 Occurrence: Mombasa, off Shelly Beach, depth 12 m, diver, 31 January 1974. MBA.304.

The specimen is a small fragment. Wide irregular openings lead to interior cavities.

12 Occurrence: Mombasa, off Shelly Beach, depth 16 m, diver, 23 January 1974. MBA.172.

A fragment. The surface is incised by thickly-set, meandering furrows which penetrate deeply in the interior. The sponge was noted in life as elastic, tough, difficult to tear, orange (C.C.191 outside, C.C.250 inside).

The growth form of these specimens, extremely variable, does not appear correlated with differences in skeletal structure and details of spiculation. It would be inappropriate, at the moment, to try to identify some of them with established species and to propose some new species. It may be only observed that, judging from their appearance, KEN.99 and KEN.108 are probably conspecific and that MBA.172, MBA.248

and SHI.5 certainly belong to the same species. The size and number of whorls of the verticillated acanthostyles are indicated in Table 1.

Table 1. *Specimens of* Agelas *spp.*

Specimen	Depth m	Acanthostyles	
		Size in µm (spines included)	Number of whorls
MBA.216	7-12	160-190 × 20-25	11-13
MBA.206	7-12	160-220 × 15-23	11-13
SHI.5	2-4	100-260 × 7-21	16-21
MBA.248	12-14	140-230 × 7-18	16-20
MBA.304	12	160-210 × 18-25	14-18
MBA.172	16	150-220 × 18-23	15-18
KEN.100	55	190-280 × 13-27	16-22
KEN.107	80	200-250 × 20-27	18-22
KEN.106	90	160-230 × 16-23	15-20
KEN.55	100	190-290 × 18-32	14-17
KEN.99	110	160-220 × 18-27	13-15
KEN.16	115	140-240 × 18-27	16-21

CERACTINOMORPHA

HALICHONDRIDA

HALICHONDRIIDAE

Spongosorites topsenti Dendy

Spongosorites topsenti Dendy, 1905: 182

Occurrence: Mombasa, Port Tudor, depth 30-40 m, dredge, 21 February 1974. R.N. MBA.437.

The specimen, small, now dry, was noted in life as white, hard, harsh to the touch.

The spicules are 1) Large and stout oxeas measuring up to 1500 × 75 µm. They are curved, with mostly regular points. Abnormal ones, as figured by Dendy, are extremely rare. 2) Small oxeas measuring about 200 × 7 µm. They are very abundant, often slightly biangulate or asymmetrical. 3) Intermediate oxeas of all sizes, not separable in categories.

Halichondria lendenfeldi Lévi

Halichondria lendenfeldi Lévi, 1961: 25

Occurrence: Mombasa, Bamburi Beach, depth 1-1.5 m, 19 January 1974. R.N. MBA.59.

The small specimen consists of delicate irregular tubes with thin walls. The colour in life was yellow (C.C.256).

The spicules are oxeas slightly, uniformly curved, measuring 320-560 × 7-12 µm.

Myrmekioderma granulata (Esper)

Alcyonium granulatum Esper, 1830: 71

Occurrence: Mombasa, Bamburi Beach, lagoon, depth 1-1.5 m, 19 January 1974. R.N. MBA.86.

Mombasa, Nyali Bridge, pontoons, depth 2-4 m, diver, 15 February 1974. R.N. MBA.372.

Mombasa, Port Tudor, depth 30-40 m, dredge, 21 February 1974. R.N. MBA.429.

Shimoni (04°43'S - 39°23'E), depth 4-7 m, diver, 25 February 1974. R.N. SHI.150.

Mombasa, Ras Iwetine, depth 0.5-4 m, diver, 18 January 1974. R.N. MBA.17, MBA.27, MBA.117, MBA.152.

Mombasa, off Shelly Beach, depth 12-14 m, diver, 26-31 January 1974. R.N. MBA.296, MBA.256.

MBA.86: very large, insinuating in coral heads, cheese-like, orange yellow (C.C.212).

MBA.372: massive, tough, compressible, surface mamillate, orange (C.C.246).

MBA.429: tough, not compressible, mamillate, orange (C.C.248).

SHI.150: very large, enclosing foreign material, surface mamillate, orange (C.C.196).

MBA.17: very large, filling cavities, irregular, sedimented, orange (C.C.196).

MBA.27: digitiform.

MBA.296: very small, tough, orange (C.C.212).

MBA.256: brown externally, orange (C.C.196) internally.

The spicules are 1) Styles or oxeas very variable, measuring mostly 700-1000 × 9-15 µm, but strongyles may occur, up to 30 µm in diameter. 2) Acanthoxeas measuring for the most part 500 × 14.5 µm, but they are much smaller in specimen MBA.86 (300 × 9 µm). 3) Extremely few raphides have been observed.

Topsentia halichondrioides Dendy

Trachyopsis halichondrioides Dendy, 1905: 147

Occurrence: Mombasa, off Bamburi, depth 7-12 m, diver, 24 January 1974. R.N. MBA.236.

Massive, hard but fragile, with wide channels, short hispidation, off-white.

The spicules are oxeas measuring 680 × 20 μm to 870 × 32 μm.

Amorphinopsis foetida (Dendy)

Hymeniacidon (?) *foetida* Dendy, 1889: 87

Occurrence: Mombasa, Nyali Bridge, pontoons, depth 0.5-1.5 m, diver, 2 February 1974. R.N. MBA.318.

This small sponge was noted in life as incompressible, dull green (C.C.302).

The spicules are 1) Oxeas measuring 200-750 × 7-23 μm. 2) Styles measuring 130-190 × 4-7 μm.

Hymeniacidon sanguinea (Grant)

Spongia sanguinea Grant, 1826: 135

Occurrence: Bamburi Beach, depth 1-1.5 m, diver, 19 January 1974. R.N. MBA.83.

The specimen was small, insinuating, sticky, pale yellow (C.C.250).

The spicules are styles measuring 350-470 × 7-9 μm.

Acanthostylotella cornuta (Topsent)

Stylotella cornuta Topsent, 1897: 464

Occurrence: Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.44.

The specimen was encrusting on dead coral. The surface appeared meandrous; the consistency was weak; the colour orange yellow (C.C. 246).

The spicules are 1) Styles measuring 240-260 × 9 μm. 2) Acanthostyles measuring 230-280 × 9-14 μm.

AXINELLIDAE

Axinella sp. (Fig. 15)

Occurrence: Zanzibar, Chapani Island, depth 0.5 m, 9 February 1974. R.N. ZBR.18.

The sponge is irregularly massive, with low, thickly-set conules. The colour was orange (C.C.247) in life.

The spicules are 1) Styles measuring 450-600 × 11.5-23 µm. 2) Styles measuring 370-930 × 5.5-10 µm. A slight tylotysm is not rare.

This sponge appears to correspond to those described as *Acanthella carteri* by VACELET & VASSEUR (1965: 99) and later regarded as belonging to a distinct species by VACELET *et al.* (1976: 44). The species was left unnamed.

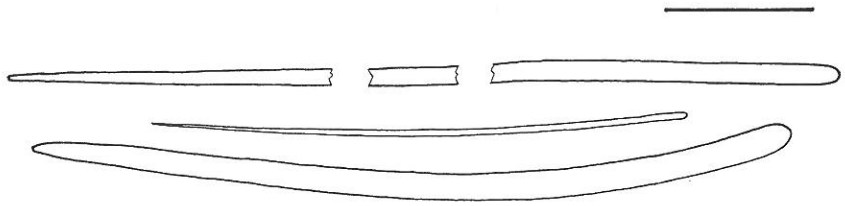

Fig. 15 - Spicules of *Axinella* sp. Scale: 100 µm.

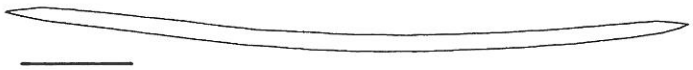

Fig. 16 - Spicules of *Axinomimus tenax* sp. n. Scale: 50 µm.

Axinyssa tenax sp. n. (Fig. 16, 17)

Occurrence: North Kenya Banks (02°24.8'S-40°54.8'E), depth 80 m, dredge, 20 January 1973. R.N. KEN.123.

Holotype: MSNG 48294

The specimen is massive, probably claviform (it had been sectioned), 8 cm high, 4.5 cm in maximum diameter. The colour in spirit is black outside, middle brown inside. The consistency is rubber-like. The surface is smooth and wrinkled. No pores and oscules are distinguishable. There is no differentiated ectosomal skeleton. The main skeleton consists of stout but rather loose ascending multispicular

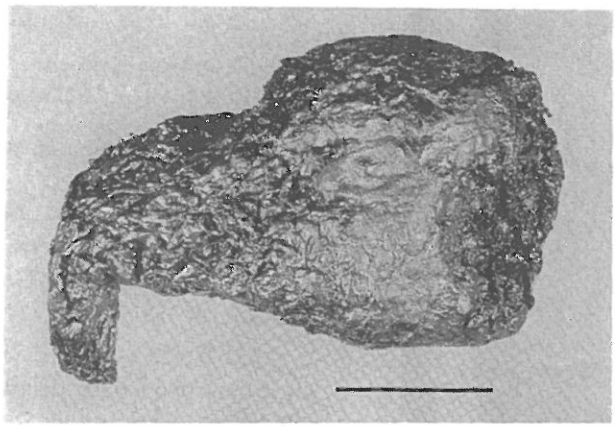

Fig. 17 - *Axinomimus tenax* sp. n., the holotype. Scale: 2 cm.

fibres up to 1 mm thick. Between them numerous scattered spicules occur.

The spicules are oxeas measuring 450-530 × 11.5-16 μm.

Axinyssa aplysinoides (Dendy)

Halichondria aplysinoides Dendy, 1921: 39

Occurrence: Mombasa, Bamburi, depth 7-12 m, diver, 24 January 1974. R.N. MBA.244.

A small, shapeless fragment is available, which was hard, cream in life.

The spicules are oxeas evenly curved, measuring 550-900 × 18-28 μm.

Phakellia donnani (Bowerbank)

Isodictya donnani Bowerbank, 1873a: 28

Occurrence: North Kenya Banks, dredge, 25 February 1971. R.N. KEN.79.

The specimen, not entire, is flabellate, thin, with lobes and outgrowths.

The spicules are styles measuring 420-520 × 20-30 μm.

Phakellia aruensis Hentschel

Phakellia aruensis Hentschel, 1912: 420

Occurrence: Mombasa, Port Tudor, depth 30-40 m, dredge, 21 February 1974. R.N. MBA.441.

Off Mombasa, drop off on channel, depth 20-25 m, diver, 27 February 1974. R.N. MBA.454.

MBA.441 is erect, flabellate with lobes, 8 cm high, almost 1 cm thick, tough and resilient. The colour in life was orange (C.C.246). Its aspect corresponds to Hentschel's figure. The spicules are 1) Styles 280-325 × 18-23 µm. 2) Oxeas 310-325 × 16-21 µm.

MBA.454 is only 3.5 cm high, erect, consisting of three thick lobes on a narrowed base of attachment. The colour in life was orange red (C.C.181). The spicules are 1) Styles 305-350 × 18-25 µm. 2) Oxeas 325-370 × 16-27 µm.

Phakellia ridleyi Dendy

Phakellia ridleyi Dendy, 1887: 159

Occurrence: Mombasa, off Shelly Beach, depth 16 m, diver, 23 January 1974. R.N. MBA.171.

Mombasa, off Bamburi, depth 7-12 m, diver, 24 January 1974. R.N. MBA.213, MBA.214, MBA.215.

Mombasa, drop off on channel, depth 20-25 m, diver, 27 February 1974. R.N. MBA.456.

Mombasa, Port Tudor, depth 30-40 m, dredge, 21 February 1974. R.N. MBA.415.

Zanzibar, Chapani Island, depth 2-3 m, diver, 8 February 1974. R.N. ZBR.5.

North Kenya Banks (02°25.5'S - 40°52.5'E), depth 48 m, dredge, 19 January 1973. R.N. KEN.110.

The specimens are erect on a short peduncle, up to 17 cm high, irregularly flabellate and frondose. The lamellae are about 3 mm thick, with marked aculeated longitudinal ridges on both sides. The colour in life was orange (C.C.181, 196, 199) with the exception of specimen MBA.415 which had the unusual colour of very dark green (C.C.426).

The spicules are styles of rather dissimilar size in the various specimens: 390-460 × 16-23 µm, 420-520 × 11.5-23 µm, 440-500 × 16-27 µm, 390-460 × 15-23 µm, 410-465 × 18-26 µm, 344-437 × 9-16 µm, 306-410 × 9-27 µm, 380-480 × 7-25 µm.

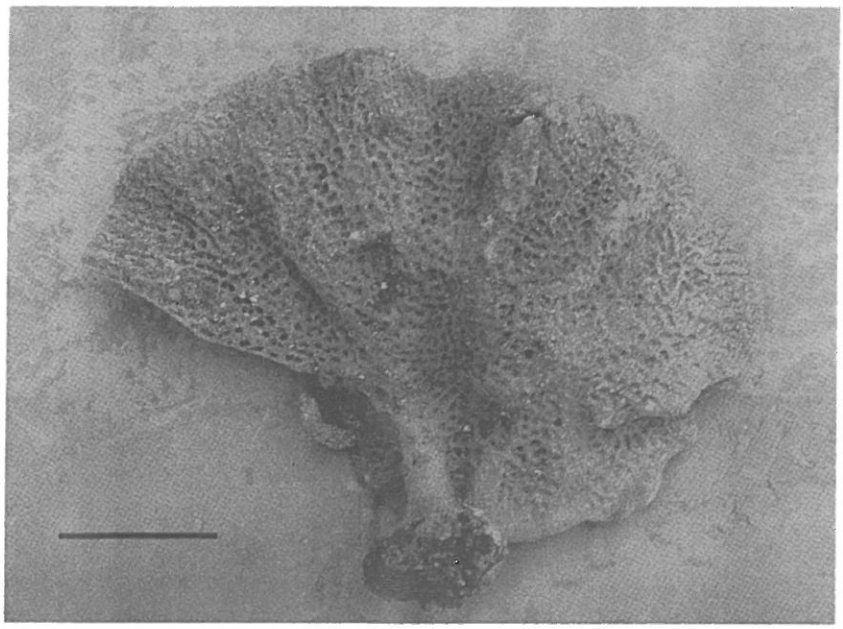

Fig. 18 - *Phakellia flabelloreticulata* (Burton), specimen KEN.103 (dry). Scale: 5 cm.

Phakellia flabelloreticulata (Burton) (Fig. 18)

Axinella flabelloreticulata Burton, 1959: 261

Occurrence: North Kenya Banks (02°32'S - 40°51.5'E), depth 100 m, dredge, 10 October 1971. R.N. KEN.43.

North Kenya Banks (02°24.8'S - 40°54.8'E), depth 80 m, dredge, 20 January 1973. R.N. KEN.103.

Specimen KEN.103 is an erect, stipitate, curved lamella, 17 cm high and 22 cm wide, about 1 cm thick, with few irregularities and small outgrowths. The margin is thin and undulated. The convex surface is marked by a reticulation of ridges, appearing as a honeycomb. Specimen KEN.43 has the same characters, but its size is 9 × 9 × 0.2-0.3 cm. The skeleton consists of ascending spiculo-fibres made by 2 to 4 spicules in front bound by spongin, connected by single spicules. They ramify and diverge, becoming parallel near the margin.

The spicules are styles measuring 510-600 × 18-39 μm. Some thinner styles (465-560 × 5-12 μm) are present; they may be regarded as immature forms.

Homaxinella arborescens (Ridley & Dendy) (Fig. 19)

Axinella arborescens Ridley & Dendy, 1886: 479

Occurrence: North Kenya Banks (02°43'S - 40°35'E), depth 40 m, dredge, 17 January 1973, R.N. KEN.131.

The specimen is erect, stalked, with flattened branches partly anastomosing. Oscules minute, arranged in stellate groups. The height of the specimen is 22 cm, its aspect is very close to Ridley & Dendy's figure.

The spicules are styles measuring 190-320 × 3.5-14 μm.

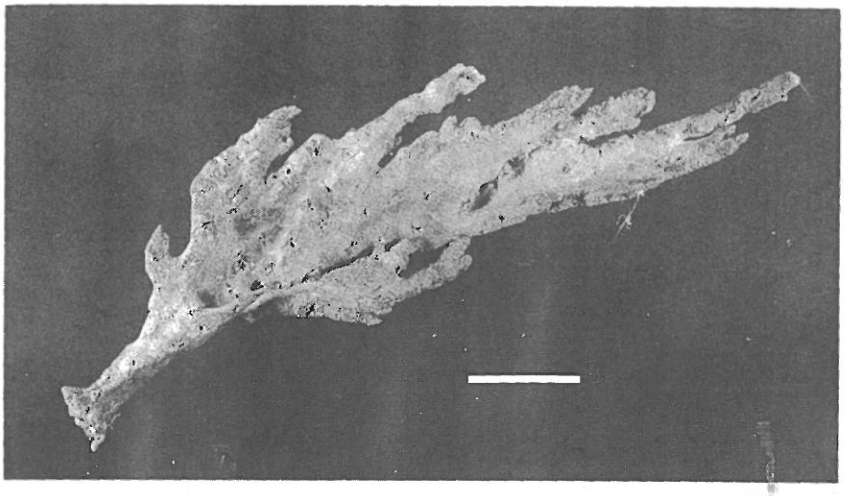

Fig. 19 - *Homaxinella arborescens* (Ridley & Dendy), specimen KEN.131 (dry).

BUBARIDAE

Bubaris conulosa Vacelet & Vasseur

Bubaris conulosa Vacelet & Vasseur, 1971: 79

Occurrence: Mombasa, off Bamburi, depth 7-12 m, diver, 27 February 1974. R.N. MBA.193.

Off Mombasa, drop off on channel, depth 30 m, diver, 27 February 1974. R.N. MBA.468.

North Kenya Banks (02°23'S - 41°04'E), dredge, 17 June 1971. R.N. KEN.82.

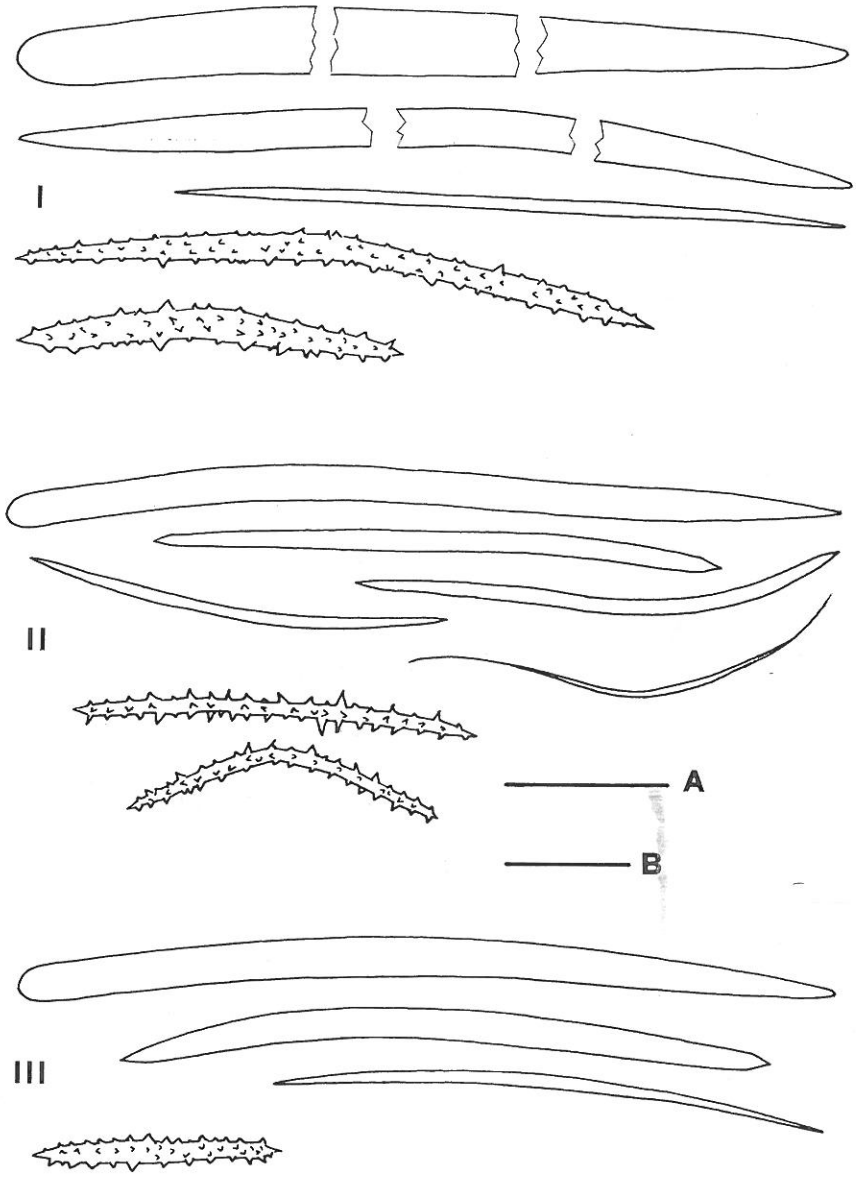

Fig. 20 - Spicules of I: *Higginsia pulcherrima* sp. n., II: *Higginsia kenyensis* sp. n., III: *Higginsia lamella* sp. n. Scale A: 100 μm, B: 20 μm.

The colour in life of MBA.193 and of MBA.468 was noted as bright orange.

The spicules are: MBA.193 and MBA.468: 1) Styles measuring 460-650 × 9-14 μm. 2) Strongyles vermiculoid measuring 500-950 × 4.5-9 μm. KEN.82: 1) Styles measuring 490-950 × 14-21 μm. 2) Strongyles vermiculoid measuring about 1000 × 14 μm.

DESMOXYIDAE

Higginsia pulcherrima sp. n. (Fig. 20, 21)

Occurrence: North Kenya Banks (02°42.7'S-40°39.5'E), depth 70 m, dredge, 17 January 1973. R.N. KEN.138.

Holotype: MSNG 48299.

The specimen, now in the dry state, entire, was growing erect, on a peduncle 2.5 cm thick. It is flabellate, 24 cm high, 34 cm wide. The thickness is less than 1 cm, the margin is lobate. On the surface,

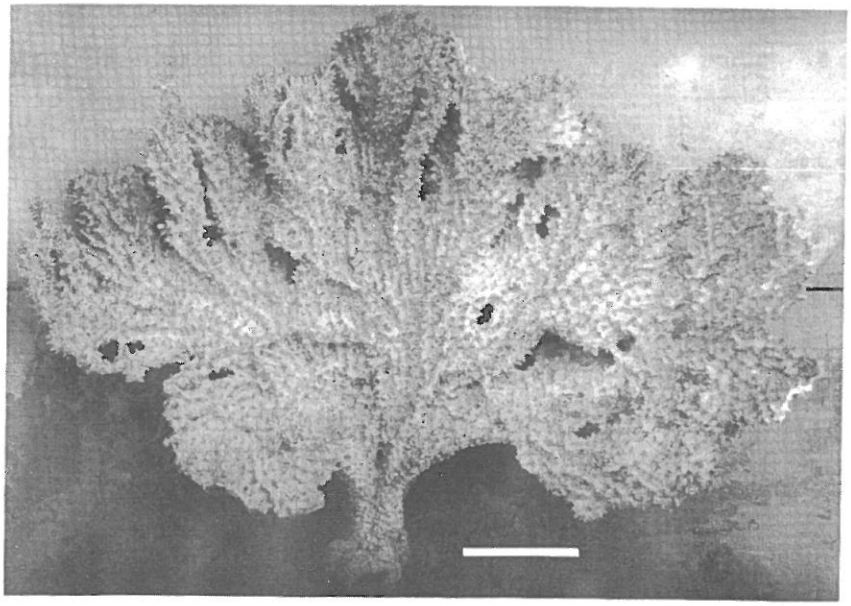

Fig. 21 - *Higginsia pulcherrima* sp. n., the holotype (dry). Scale: 5 cm.

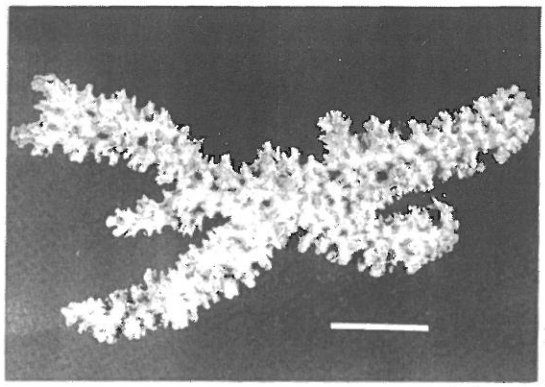

Fig. 22 - *Higginsia kenyensis* sp. n., the holotype (dry). Scale: 2 cm.

projecting papillae 3 to 8 mm high form ascending rows separated by valleys about 5 mm wide.

The spicules are 1) Styles measuring 420-520 × 20-23 μm. 2) Oxeas measuring 330-490 × 14-16 μm. 3) Oxeas straight or slightly curved measuring 250-325 × 4-4.5 μm. 4) Microacanthoxeas straight, measuring 30-48 × 2-3 μm, spines not included.

Higginsia kenyensis sp. n. (Fig. 20, 22)

Occurrence: North Kenya Banks (02°25.5'S - 40°52.5'E), depth 50 m, dredge, 19 January 1973. R.N. KEN.132.

Holotype: MSNG 48300.

The specimen, in the dry state, apparently a fragment, consists of anastomosed cylindrical digitations 1 cm thick. The papillae are about 5 mm high and as much apart.

The spicules are 1) Styles measuring 450-580 × 18-23 μm. 2) Oxeas measuring 260-370 × 9-12 μm. 3) Oxeas slightly curved, often flexuous, measuring 240-370 × 2-2.5 μm. 4) Microacanthoxeas straight, curved or bent, measuring 30-60 × 1.5-2.5 μm, spines not included.

Higginsia lamella sp. n. (Fig. 20)

Occurrence: North Kenya Banks (02°30'S - 40°52.5'E) , depth 100 m, dredge, 19 January 1973. R.N. KEN.126.

Holotype: MSNG 48301.

The available specimen, in the dry state, is a section of a pedunculate, flabelliform sponge, about 22 cm high, 4 mm thick toward the base. The papillae, in ascending rows, are about 3 mm high.

The spicules are 1) Styles measuring 550-1000 × 19-40 µm. 2) Oxeas measuring 400-600 × 18-23 µm. 3) Oxeas straight, measuring 370-450 × 4.5-7 µm. 4) Microacanthoxeas slightly curved or slightly bent, measuring 55-85 × 2.5-4 µm, spines not included.

Ptilocaulis spiculifer (Lamarck)

Spongia spiculifera Lamarck, 1813: 449

Occurrence: Mombasa, drop off on channel, depth 30 m, diver, 17 March 1974. R.N. MBA.469.

Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.23.

The specimens are subcylindrical, irregularly branching, characteristically conulose, up to 10 cm high. The colour in life was orange.

The spicules are styles curved, measuring 260-340 × 11.5-16 µm and 230-290 × 9-14 µm respectively in my two specimens. Their base is often very faintly tylote, as figured by Lévi (1965: 14). Longer, superficial styles appear to be absent (only two or three, measuring 750-800 µm, are present in my preparations). I would observe that neither RIDLEY (1884: 617) nor DENDY (1921: 115) mentioned this category of styles in their *Axinella spiculifera*. It is also very rare in all my specimens from the West Indies (PULITZER-FINALI, 1986: 103).

POECILOSCLERIDA

MYCALIDAE

Mycale crassissima (Dendy)

Esperella crassissima Dendy, 1905: 160

Occurrence: Mombasa, Ras Iwetine, depth 0.3-2 m, diver, 18-21 January 1974. R.N. MBA.39, MBA.154, MBA.397.

Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.15, SHI.34.

Mombasa, Bamburi Beach, depth 0.5-1 m, 16 January 1974. R.N. MBA.489.

Zanzibar, Ras Fumba, exposed reef, 10 February 1974. R.N. ZBR.37.10.

Colour noted in life:

SHI.15: very light greenish blue (C.C.500, 505, 420).

SHI.34: very light greenish blue (C.C.444).

MBA.397: light orange (C.C.246).

The spicules are 1) Tylostyles 370-400 × 5.5-11.5 μm. The distal end of the tylostyles of specimen SHI.15 is often more or less rounded. 2) Anisochelas 47-58 μm. 3) Anisochelas 24-29 μm. 4) Anisochelas 14-15 μm. 5) Sigmas 38-43 μm. 6) Sigmas 15-19 μm. 7) Trichodragmata about 20 μm long.

Mycale multisclera sp. n.

Occurrence: Mombasa, Nyali Bridge, pontoons, depth 0.5-2 m, diver, 2 February 1974. R.N. MBA.316.

Holotype: MSNG 48309.

Dry fragments are available of this sponge which was grey (C.C.233) in life.

The spicules are: 1) Styles 180-220 × 7-8 μm, slightly curved, slightly thinner at the basal end than at the middle. 2) Styles-subtylostyles 235-310 × 3 μm, straight. 3) Strongyles 190-210 × 3-4 μm, straight. 4) Anisochelas 37-47 μm. 5) Anisochelas 17-20 μm. 6) Sigmas 80-90 μm. 7) Toxas 60-300 μm. 8) Raphides 150 μm. All types of megascleres are abundant. With the exception of the raphides, the microscleres are scarse.

For its complex spicular content this species may be compared with *Mycale japonica* Koltun, 1959: 68 from Hokkaido (North Japan).

Mycale sulevoidea (I. Sollas)

Esperella sulevoidea I. Sollas, 1902: 213.

Occurrence: Mombasa, Nyali Bridge, pontoons, depth 0.5-2 m, diver, 2 February 1974. R.N. MBA.319, 325, 342, 346, 376, 390, 339, 349.

The colour in life of the various specimens was either light violet (C.C.612, 660, 180, 240) or light orange (C.C.189, 194).

The spicules (various specimens) are: 1) Subtylostyles 290-330 × 6.5-11.5 μm. 2) Anisochelas 46-50 μm. 3) Anisochelas 20-26 μm. 4) Anisochelas 14-17 μm. 5) Sigmas 70-90 μm. 6) Sigmas 14.5-30 μm. 7) Toxas 40-90 μm.

Mycale grandis Gray

Mycale grandis Gray, 1867: 533

Occurrence: Shimoni (04°43'S - 39°23'E), Mawa Reef, exposed, 24 February 1974. R.N. SHI.108.

Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.11, SHI.18, SHI.19, SHI.29.

Mombasa, Ras Iwetine, depth 0.5-4 m, diver, 18 January 1974. R.N. MBA.212.

Mombasa, Bamburi Beach, depth 0.5-1 m, 16-18 January 1974. R.N. MBA.487, MBA.495.

The colour in life, noted for the specimens marked SHI, was orange (C.C.151, 168, 181).

The spicules are 1) Subtylostyles-styles 450-560 × 7-17 µm. 2) Anisochelas 110-130 µm. 3) Anisochelas 55-70 µm. 4) Anisochelas 23-29 µm. 5) Anisochelas 14.5-17 µm. 6) Sigmas 45-63 µm. 7) Sigmas 14.5-23 µm. 8) Trichodragmata 30-45 µm.

Mycale imperfecta Baer

Mycale imperfecta Baer, 1906: 24

Occurrence: Mombasa, Nyali Bridge, pontoons, depth 0.5-2 m, diver, 2 February 1974. R.N. MBA.324.

Shimoni (04°43'S - 39°23'E), depth 4-7 m, diver, 25 February 1974. R.N. SHI.133.

MBA.324, measuring 10 by 5 cm, is presently reduced to its skeleton, with only traces of flesh. The fibres are up to 300 µm thick and form irregular meshes up to 4 mm wide. There is no ectosomal differentiation. SHI.133 is a small fragment.

The spicules are 1) Tylostyles 270-280 × 4-5.5 µm. 2) Anisochelas 19-23 µm. 3) Sigmas 60-94 µm.

Zygomycale plumosa (Carter)

Esperia plumosa Carter, 1882: 299

Occurrence: Mombasa, Port Reitz, depth 18 m, diver, 20 June 1974, coll. J. Wood. R.N. KEN.148.

The specimen was growing erect on a restricted base, 8 cm high, 3.5 cm in maximum width. It is clathrous, made of more or less flattened anastomosing branches. Its colour in the dry state is off white. The ectosomal skeleton is tangential, distinct, made of multispicular fibres 50-70 µm thick, forming meshes 120-140 µm wide.

The spicules are 1) Subtylostyles 300-320 µm. 2) Anisochelas about 54 µm. 3) Anisochelas 17.5-20 µm. 4) Isochelas 11-12 µm. 5) Sigmas about 90 µm. 6) Sigmas 23-30 µm. 7) Toxas 23-120 µm, very rare.

DESMACELLIDAE

Biemna bihamigera (Dendy)

Sigmaxinella bihamigera Dendy, 1921: 112

Occurrence: Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.51, SHI.76.

The spicules are 1) Styles 640-820 × 15-21 µm. 2) Sigmas 50-52 µm. 3) Sigmas 15-17.5 µm. The size of the styles is considerably smaller than in the type from Providence; it agrees with the specimens from Aldabra (LÉVI, 1961: 18) and from Madagascar (VACELET & VASSEUR, 1971: 91).

Biemna fortis (Topsent)

Desmacella fortis Topsent, 1897: 463

Occurrence: Mombasa, Ras Iwetine, depth 0.5-4 m, diver, 18 January 1974. R.N. MBA.32.

Mombasa, Nyali Bridge, depth 2-5 m, diver, 15 February 1974. R.N. MBA.365.

The colour in life of specimen MBA.365 was noted as dull yellow (C.C.339).

The spicules are 1) Styles 930-1050 × 14.5-29 µm. 2) Sigmas 85-105 µm. 3) Sigmas 11.5-30 µm. 4) Trichodragmata about 100 µm.

Biemna microstrongyla (Hentschel)

Tylodesma microstrongyla Hentschel, 1912: 354

Occurrence: Mombasa, Ras Iwetine, depth 0.5-4 m, diver, 18 January - 17 February 1974. R.N. MBA.25, MBA.409.

The specimens are amorphous fragments. The colour of MBA.25 was orange (C.C.246), that of MBA.409 was orange yellow (C.C.211).

The spicules are 1) Styles 400-470 × 8.5-12 µm. 2) Sigmas 9-10 µm. 3) Microxeas 30-45 µm. 4) Raphides up to 250 µm. All the microscleres are abundant. There are no microstrongyles: those observed by Hentschel were probably foreign.

Biemna fistulosa (Topsent)

Desmacella peachi var. *fistulosa* Topsent, 1897: 462

Occurrence: Mombasa, Ras Iwetine, depth 0.5 m, 21 January 1974. R.N. MBA.122, MBA.103.

Mombasa, off Shelly Beach, depth 12-14 m, diver, 26-31 January 1974. R.N. MBA.285, MBA.264.

Zanzibar, Chapani Island, exposed reef, 9 February 1974. R.N. ZBR.22.

Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.77, SHI.35, SHI.58.

Mombasa, Bamburi Beach, depth 0.5-1 m, 16 January 1974. R.N. MBA.476.

Colour in life: MBA.285: brown (C.C.336); MBA.264: light olive brown (C.C.262); MBA.122, MBA.103, ZBR.22, SHI.35, SHI.58: yellow (C.C.214).

The spicules are 1) Styles 270-310 × 8.5-11.5 µm. 2) Sigmas 15-52 µm. 3) Microxeas 100-120 µm. 4) Microxeas 25-30 µm. 5) Raphides about 120 µm.

Biemna trirhaphis (Topsent)

Desmacella peachi var. *trirhaphis* Topsent, 1897: 461

Occurrence: Mombasa, Shelly Beach, outer reef slope, depth 12-14 m, diver, 26 January 1974. R.N. MBA.265, MBA.266.

Zanzibar, Ras Fumba, exposed reef, 10 February 1974. R.N. ZBR.35.10, ZBR.37.11.

The spicules are 1) Styles 280-320 × 9- 15 µm. 2) Sigmas 90-100 µm. 3) Sigmas 30-45 µm. 4) Sigmas 17-23 µm. There are some intermediates between the categories of sigmas. 5) Microxeas 90-110 µm. 6) Microxeas 30 µm. 7) Raphides.

Desmacella humilis (Thiele)

Biemna humilis Thiele, 1903: 944

Occurrence: Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.6.

Shimoni (04°43'S - 39°23'E), Mawa Reef, exposed, 24 February 1974. R.N. SHI.6.

Zanzibar, Chapani Island, depth 2-3 m, diver, 8 February 1974. R.N. ZBR.6.

All the specimens were associated with a tangled coralline alga. Colour in life of SHI.6: orange (C.C.196), of SHI.104: orange (C.C.182), of ZBR.6: light greenish yellow.

The spicules are 1) Subtylostyles 230-250 × 5-6 µm. 2) Sigmas 20-26 µm. 3) Toxodragmata 35-45 µm. The toxas, abundant, are

extremely thin and seem to be generally arranged as two opposed sheaves (as in *Kerasemna tenuityla* Pulitzer-Finali, 1982: 107). When dissociated in the preparations, under balsam, they are practically invisible.

DESMACIDIDAE

Strongylacidon fasciculatum sp. n. (Fig. 23, 24)

Occurrence: Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.54.

Holotype: MSNG 48310.

The specimen (dry) consists of a bundle of cylindrical processes about 4 mm thick, anastomosing along their length. The bundle, measuring 9 × 4 × 2 cm, was probably growing erect (the base is not

Fig. 23 - Spicules of *Strongylacidon fasciculatum* sp. n. Scale: 50 µm.

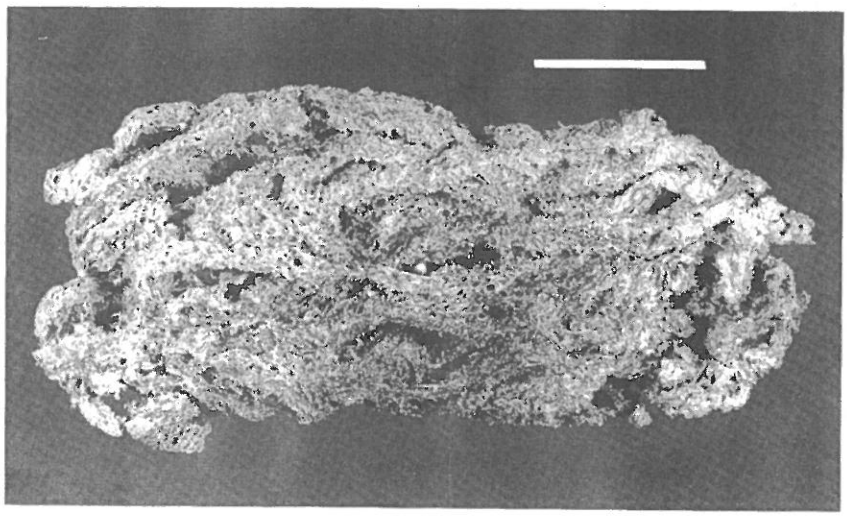

Fig. 24 - *Strongylacidon fasciculatum* sp. n., the holotype (dry). Scale: 2 cm.

recognizable); its colour in life was light brown (C.C.338). The skeleton is made by ascending and branching multispicular fibres, hispidating the surface.

The spicules are 1) Strongyles perfectly straight and isodiametric measuring 185-205 × 4.5 μm. 2) Sigmas with a chord of 10-11 μ, very thin.

The genus *Strongylacidon* is here used as construed by VAN SOEST (1984: 44).

Desmapsamma anchorata (Carter)

Fibularia anchorata Carter, 1882: 283

Occurrence: Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 6 March 1974. R.N. SHI.181.

Only a small fragment is available.

The spicules are 1) Oxeas 140-186 × 3-5.5 μm. 2) Isanchoras 10-16 μm. 3) Sigmas 12-33 μm.

Crambe erecta sp. n. (Fig. 25, 26)

Occurrence: North Kenya Banks (02°37.5'S - 41°00'E), depth 110 m, dredge, 11 August 1971. R.N. KEN.57.

Holotype: MSNG 48311.

The specimen is thickly, irregularly laminar, apparently growing erect on a narrowed base, 9 cm high, 10 cm wide. The two faces are identical, consisting of crested, indented processes 10-15 mm high. The colour, in the present dry state, is light brown.

The spicules are 1) Subtylostyles measuring 350-500 × 14-38 μm. The tyle is very slightly marked. 2) Subtylostyles measuring 230-340 × 6-9 μm. The tyle is very slightly marked. 3) Isanchoras measuring 40-46 μm, abundant. 4) Isanchoras measuring about 33 μm, not abundant. 5) Isanchoras rudimentary, measuring 16-19 μm, rare, not certainly proper. 6) Desmoids measuring 120-180 μm across, fairly abundant.

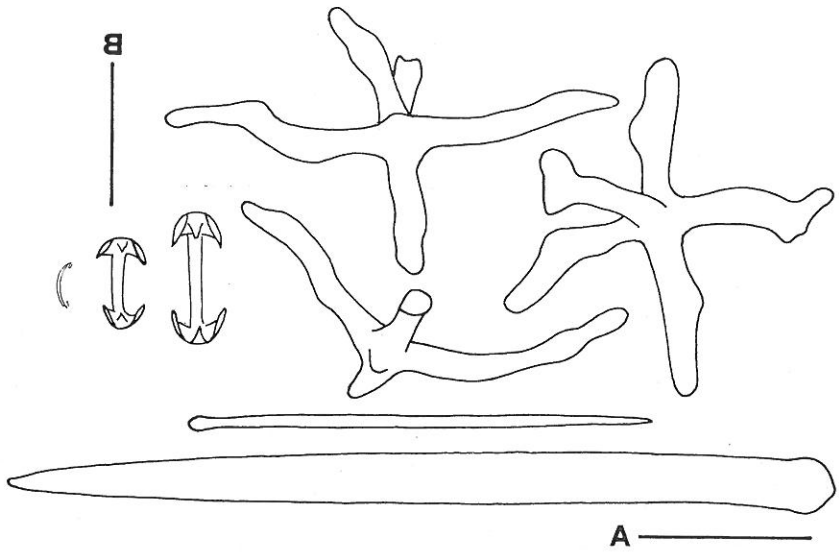

Fig. 25: Spicules of *Crambe erecta* sp. n. Scale A; 100 µm, B: 50 µm.

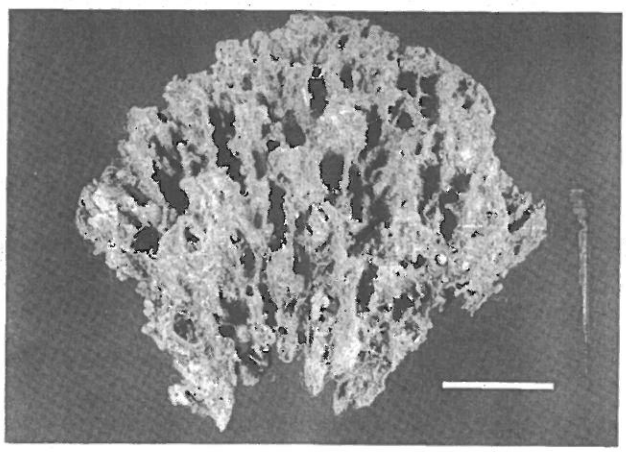

Fig. 26 - *Crambe erecta* sp. n., the holotype (dry). Scale: 2 cm.

Tetrapocillon minor sp. n. (Fig. 27)

Occurrence: Zanzibar, Chapani Island, depth 2-3 m, diver, 8 February 1974. R.N. ZBR.1.

Holotype: MSNG 48312.

The specimen (now a small dry amorphous mass) was partly encrusting, partly spreading with few points of attachment, very thin and extremely delicate, almost insubstantial between the fingers. The colour was black outside and greenish yellow inside.

The spicules are 1) Oxeas straight or slightly sinuous, with one end sharp, the other dull, measuring 265-300 × 2.5-3 μm. 2) Tetrapocilli measuring 17.5-26 μm, mostly 20-23 μm.

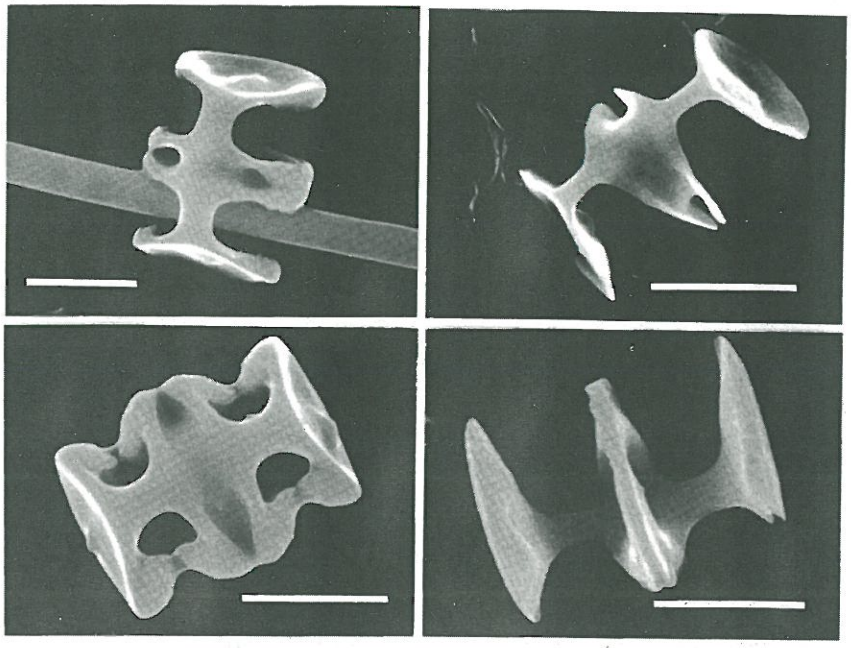

Fig. 27 - Tetrapocilli of *Tetrapocillon minor* sp. n. Scales: 10 μm.

COELOSPHAERIDAE

Coelosphaera navicelligera (Ridley)

Crella navicelligera Ridley, 1885: 571

Occurrence: Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.20.

The specimen is a very small fragment; it was yellow in life (C.C.213).

The spicules are 1) Tylotes 280-480 × 5.5-9 μ, moderately sinuous. 2) Isochelas 16-18.5 μm. 3) Isochelas 7-9 μm. 4) Sigmas 35-50 μm. 5) Sigmas 21 μm. 6) Raphides 200-220 × 0.5 μm.

Coelosphaera crumena sp. n. (Fig. 28)

Occurrence: North Kenya Banks, depth 160 m, dredge, 6 August 1971. R.N. KEN.71.

Holotype: MSNG 48313.

The specimen, dry, is a flattened hollow bag enclosed by a thin, fragile membrane. It has a narrow base of attachment and reaches a height of 8.5 cm and a width of 3.5 cm.

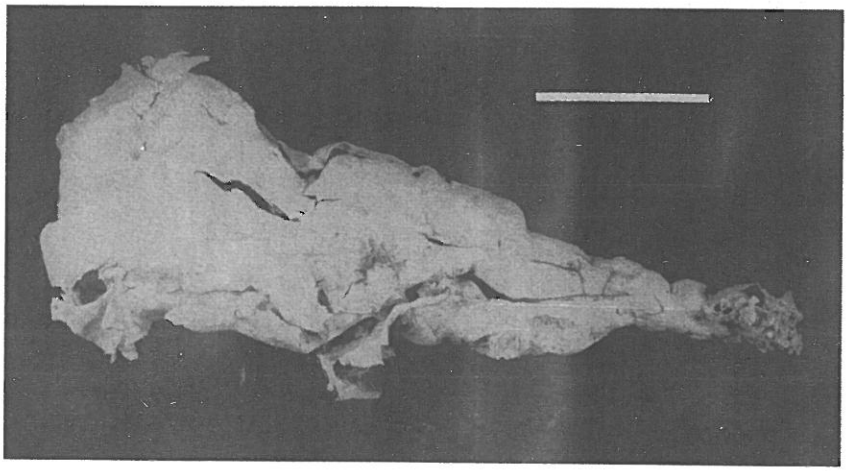

Fig. 28 - *Coelosphaera crumena* sp. n., the holotype (dry). Scale: 2 cm.

The spicules are 1) Tylotes 250-280 × 4.5-10 μm. 2) Isochelas arcuate 40-44 μm, very scarce in the preparations. 3) Raphides sinuous, about 250 μm.

CRELLIDAE

Crella shimonii sp.n. (Fig. 29)

Occurrence: Shimoni (04°43'S - 39°23'E), depth 16 m, dredge, 25 February 1974. R.N. SHI.161.

Holotype: MSNG 48314.

The specimen, now in the dry state, is amorphous; it was, apparently, a thick encrustation.

The spicules are 1) Tornotes 295-325 × 4.5 μm. 2) Acanthoxeas 130-150 × 3.5-5.5 μm. 3) Acanthostyles 210-240 × 4.5 μm. 4) Acanthostyles 130-150 × 4.5 μm. 5) Isochelas arcuate 16-23 μm.

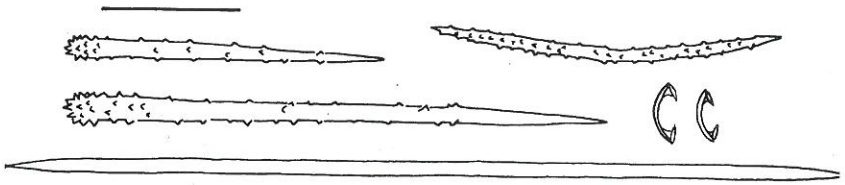

Fig. 29 - Spicules of *Crella shimonii* sp. n. Scale: 50 μm.

Grayella cyatophora Carter

Grayella cyatophora Carter, 1869: 190

Occurrence: North Kenya Banks (02°32.5'S - 40°53'E), depth 90 m, dredge, 19 January 1973. R.N. KEN.139.

The specimen is fan shaped, pedunculate, about 8 mm thick, 10 cm wide, 12 cm high. In the dry state, the surface is white. The ectosomal skeleton is distinct, made of tangential acanthoxeas.

The spicules are 1) Styles 270-310 × 4.5-7 μm. They are rarely faintly tylote, sometimes they bear an elongate swelling at about one third of their length. Their point is rather short; they are slightly thicker at the middle than at the base. 2) Acanthoxeas 110-140 × 4.5-7 μm, spines not included.

MYXILLIDAE

Iotrochota baculifera Ridley

Iotrochota baculifera Ridley, 1884: 435

Occurrence: Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.3, 22, 62.

Shimoni (04°43'S - 39°23'E), depth 16 m, dredge, 25 February 1974. R.N. SHI.176.2.

Mombasa, off Shelly Beach, depth 12 m, diver, 31 January 1974. R.N. MBA.295.

The spicules are 1) Styles 170-210 × 6-11.5 µm. 2) Strongyles 250-290 × 5-6. 3) Birotules 14.5 µm; they may be rare.

Iotrochota purpurea (Bowerbank)

Halichondria purpurea Bowerbank, 1875: 293

Occurrence: Shimoni (04°43'S - 39°23'E), depth 16 m, dredge, 25 February 1974. R.N. SHI.156.

Shimoni (04°43'S - 39°23'E), Mawa Reef, depth 0-1 m, 24 February 1974. R.N. SHI.92.

Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.38, SHI.39.

Mombasa, Ras Iwetine, depth 0.5-2 m, diver, 18-21 January 1974. R.N. MBA.28, MBA.149.

Mombasa, off Shelly Beach, depth 16 m, diver, 23 January 1974. R.N. MBA.164.

The spicules are 1) Styles curved 140-180 × 3-8.5 µm. 2) Styles straight 210-260 × 4-6 µm. 3) Birotules 14.5 µm, rare.

Damiriana schmidti (Ridley)

Crella schmidti Ridley, 1884: 432

Occurrence: Shimoni (04°43'S - 39°23'E), depth 16 m, dredge, 25 February 1974. R.N. SHI.177.5, 178.7, 178.11, 183, 147, 169.

Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.63.

The colour of SHI.169 was noted as orange red (C.C.171).

The spicules are 1) Oxeas 170-210 × 4-7 µm. 2) Tylotes 180-210 × 2.5-5 µm. 3) Isochelas 29-35 µm. 4) Isochelas 15-17.5 µm. 5) Sigmas 11-24 µm.

Acarnus ternatus Ridley

Acarnus ternatus Ridley, 1884: 453

Occurrence: Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.73.

Off Mombasa, drop off on channel, depth 20-25 m, diver, 27 February 1974. R.N. MBA.463.

Mombasa, Bamburi Beach, depth 1-1.5 m, diver, 19 January 1974. R.N. MBA.97.

Mombasa, Nyali Bridge, depth 2-5 m, diver, 15 February 1974. R.N. MBA.370.

The spicules are 1) Styles 315-375 × 17-20 µm (they reach a thickness of 30 µm in specimen MBA.370). 2) Tylotes 220-240 × 3 µm. 3) Cladotyles 220-260 µm. 4) Toxas thin 35-700 µm. 5) Toxas thick 35-170 µm. 6) Isochelas 19 µm.

Lissodendoryx isodictyalis (Carter)

Halichondria isodictyalis Carter, 1882: 285

Occurrence: South Mafia Channel (08°S - 39°48.8'E), depth 70 m, dredge, 13 November 1971. R.N. KEN.19.

The specimen is a small fragment, dry.

The spicules are: 1) Styles 190-210 × 4.5-6 µm. 2) Tylotes 210-240 × 3-6 µm. 3) Isochelas arcuate 27-30 µm, extremely rare; 4) Sigmas 20-32 µm.

Antho involvens (Schmidt)

Myxilla involvens Schmidt, 1864: 37

Occurrence: North Kenya Banks (02°32'S - 40°51.5'E), depth 100 m, dredge, 10 October 1971. R.N. KEN.93.

North Kenya Banks (02°04.2'S - 40°39'E), depth 110 m, dredge, 8 January 1972. R.N. KEN.97.

KEN.97, dry, is branching and anastomosing, 21 cm high. The surface is hispid, the diameter of the branches is 6-8 mm. KEN.93, much smaller, has an identical habit.

The spicules are 1) Styles curved 320-630 × 11-21 µm. The base of the smaller ones is finely spined. 2) Acanthostrongyles 135-150 × 9-13.5 µm, anisodiametric. 3) Subtylostyles straight 400-600 × 3.5-8 µm, finely spined at the base. 4) Toxas with very deep flexion, 170-240 × 4.5 µm. The points bear a mucronate swelling. 5) Toxas 40-70 µm, thin. 6) Isochelas palmate 12.5-15 µm.

TEDANIIDAE

Tedania anhelans (Lieberkuehn)

Halichondria anhelans Lieberkuehn, 1859: 521

Occurrence: Mombasa, Bamburi Beach, depth 0.5-1 m, 16 January 1974. R.N. MBA.480, MBA.2, MBA.4.

Mombasa, Nyali Bridge, on pontoons, depth 0.5-2 m, diver, 2 February 1974. R.N. MBA.309, 308, 306, 332, 322, 331, 315.

Mombasa, Nyali Bridge, depth 2-5 m, diver, 15 February 1974. R.N. MBA.369, 381, 384, 385.

Zanzibar, Chapani Island, depth 2-3 m, diver, 8 February 1974. R.N. ZBR.9, 36, 17, 19.

Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, 23 February 1974. R.N. SHI.36, 60.

Shimoni (04°43'S - 39°23'E), Mawa Reef, exposed, 24 February 1974. R.N. SHI.100.

Zanzibar, Ras Fumba, exposed reef, 10 February 1974. R.N. ZBR.33.

The spicules are 1) Styles 200-245 × 6-8 µm. 2) Tylotes 190-205 × 2.5-5 µm. 3) Onychaetes 110-138 µm, in few specimens up to 300 µm.

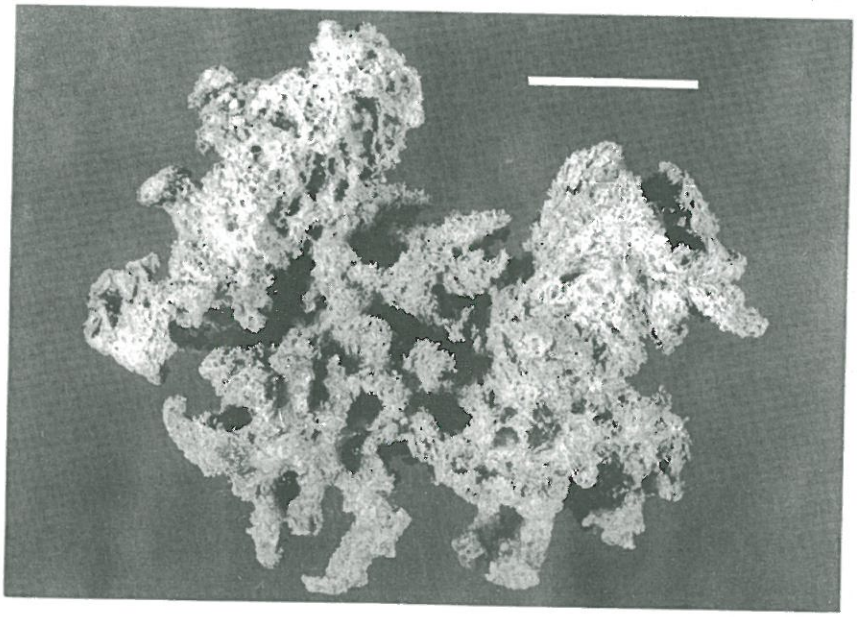

Fig. 30 - *Phorbas frutex* sp. n., the holotype (dry). Scale: 1 cm.

ANCHINOIDAE

Phorbas frutex sp.n. (Fig. 30)

Occurrence: Shimoni (04°43'S - 39°23'E), depth 16 m, dredge, 25 February 1974. R.N. SHI.148.

Holotype: MSNG 48315.

The specimen is bushy, 6 cm wide, 3.5 cm high; the colour in life was dark red to orange yellow.

The spicules are 1) Acanthostyles 60-150 × 4.5-9 μm. 2) Anisotornotes 155-170 × 3.5 μm. 3) Isochelas arcuate 33-37 μm. 4) Isochelas arcuate 18.5 μm.

Phorbas palmatus sp.n. (Fig. 31, 32)

Occurrence: North Kenya Banks (02°43'S - 40°40.5'E), depth 110 m, dredge, 17 January 1973. R.N. KEN.116.

Holotypes: MSNG 48316.

The specimen, incomplete, in the dry state, is roughly lamellate with irregular outgrowths, 18 × 9 × 1 cm. The plumoreticulate choanosomal skeleton consists of tracts of acanthostyles echinated by acanthostyles; the ectosomal skeleton is made of sparse tufts of styles and very abundant chelas.

The spicules are: 1) Acanthostyles 160-190 × 2) Styles with faintly swollen base 160-185 × 3.5 μm. 3) Isochelas arcuate 18-25 μm.

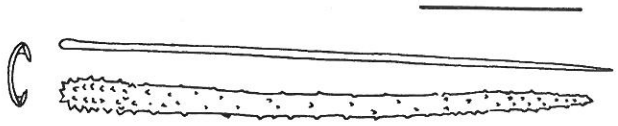

Fig. 31 - Spicules of *Phorbas palmatus* sp. n. Scale: 50 μm.

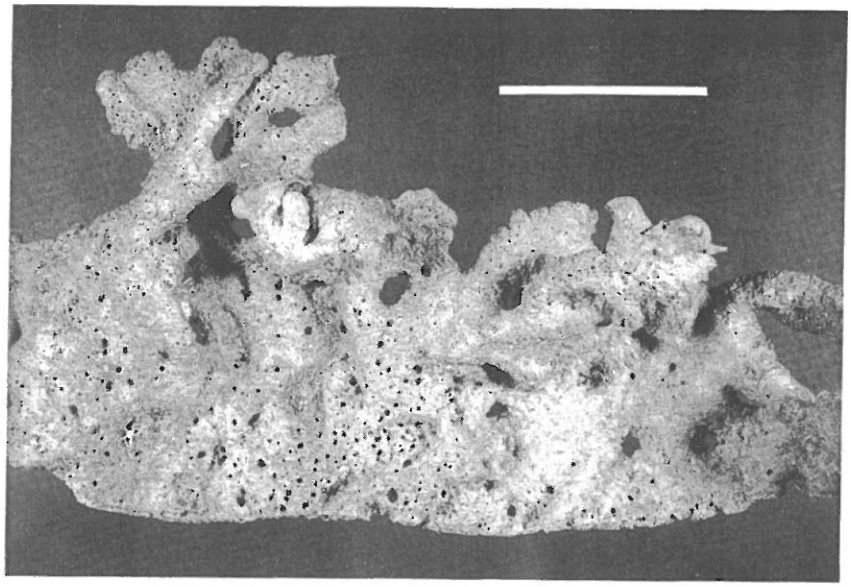

Fig. 32 - *Phorbas palmatus* sp. n., the holotype (dry). Scale: 4 cm.

RASPAILIIDAE

Lithoplocamia indica sp. n. (Fig. 33, 34)

Occurrence: North Kenya Banks (02°37.5'S - 41°00'E), depth 110 m, dredge, 11 August 1971. R.N. KEN.52.

Holotype: MSNG 48303.

The specimen, dry, is lobate, roughly conical, 6 cm wide at the base, 7 cm high, with a terminal oscule 8 mm wide. The skeleton is an isodictyal reticulation of acanthostrongyles forming mostly triangular meshes. There is no ectosomal differentiation .

The spicules are acanthostrongyles 190-260 × 13-17.5 μm, spines not included.

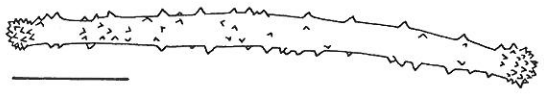

Fig. 33 - Spicules of *Lithoplocamia indica* sp. n. Scale: 50 μm.

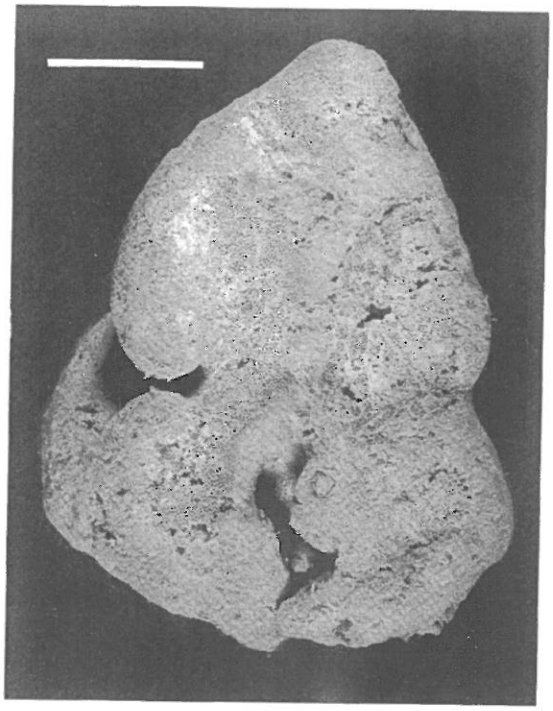

Fig. 34 - *Lithoplocamia indica* sp. n., the holotype. Scale: 2 cm.

Lithoplocamia tuberculata sp. n. (Fig. 35, 36)

Occurrence: North Kenya Banks, depth 110-244 m, dredge, 25 February 1971. R.N. KEN.5.

Holotype: MSNG 48304.

The specimen, dry, is hemispherical, 4 cm wide at the base, 3 cm high, hard, tuberculated, the tubercles measuring about 2 mm, about

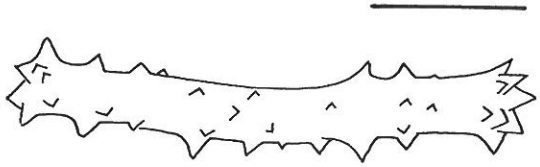

Fig. 35 - Spicules of *Lithoplocamia tuberculata* sp. n. Scale: 50 μm.

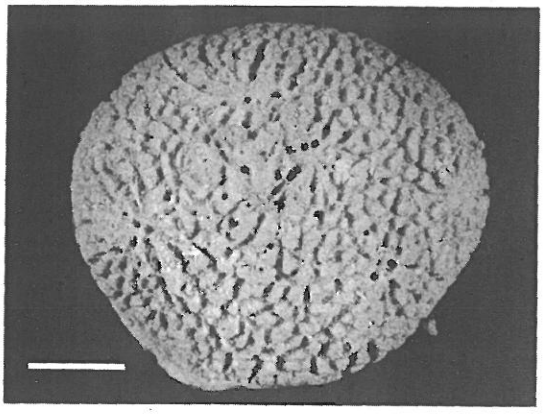

Fig. 36 - *Lithoplocamia tuberculata* sp. n., the holotype (dry). Scale: 1 cm.

1 mm apart. The skeleton is made by an isodictyal reticulation of acanthostrongyles forming triangular meshes. There is no dermal specialization.

The spicules are acanthostrongyles 155-170 × 14.5-20 μm, spines not included.

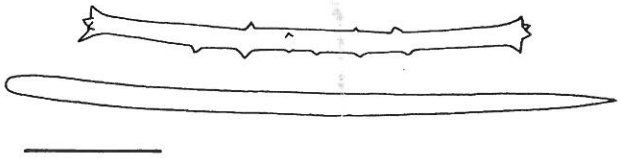

Fig. 37 - Spicules of *Lithoplocamia minor* sp. n. Scale: 50 μm.

Lithoplocamia minor sp. n. (Fig. 37)

Occurrence: Mombasa, Shelly Beach, outer reef slope, depth 12-14 m, diver, 26 January 1974. R.N. MBA.271.

Holotype: MSNG 48308.

The small specimen, dry, is massive. In life it had the consistency of crumb of bread and was slightly mucous. The colour was dark

orange (C.C.191) outside, light orange (C.C.213) inside. The skeleton consists of a subisodictyal reticulation of acanthostrongyles to which styles are associated.

The spicules are 1) Acanthostrongyles 115-165 × 7-8.5 μm, spines not included. 2) Styles 210-250 × 6.5-8 μm.

This species differs from *Lithoplocamia lithistoides* Dendy (1921: 79) mainly for the lesser size of its spicules.

Endectyon hamatum (Schmidt)

Raspailia (?) *hamata* Schmidt, 1870: 62

Occurrence: North Kenya Banks (02°25.5'S - 40°52.5'E), depth 50 m, dredge, 19 January 1973. R.N. KEN.135.

The specimen is dichotomously branching, with cylindrical branches 6 mm thick at their base, tapering toward the extremities. The height of the sponge, which was certainly growing erect, is 12 cm.

The spicules are 1) Styles measuring 280-390 × 11.5-12.5 μm. 2) Styles measuring 400-750 × 7-9 μm. 3 Acanthostyles typical, measuring 150-250 × 9-11.5 μm, spines not included. 4) Raphides abundant, measuring 180-220 × 1.5 μm.

In spite of the wide geographical separation, the specimen does not appear distinguishable from Schmidt's West Indian species.

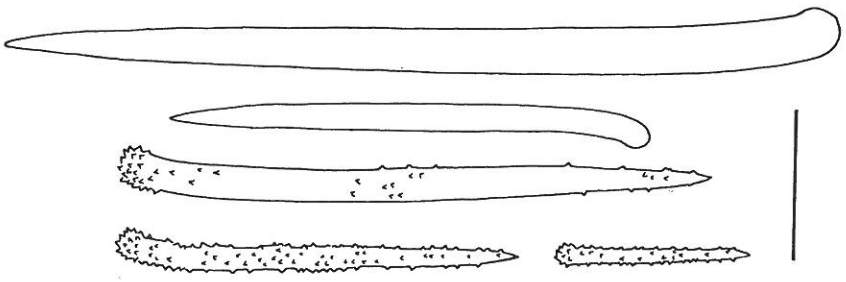

Fig. 38 - Spicules of *Aulospongus flabellum* sp. n. Scale: 100 μm.

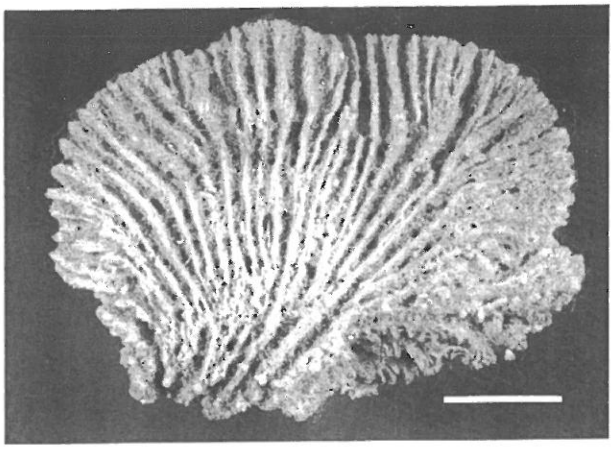

Fig. 39 - *Aulospongus flabellum* sp. n., the holotype (dry). Scale: 2 cm.

Aulospongus flabellum sp.n. (Fig. 38, 39)

Occurrence: North Kenya Banks (02°23'S - 41°04'E), depth 110-170 m, dredge, 17 June 1971. R.N. KEN.4, KEN.42.

Holotype (KEN.42): MSNG 48305.

Paratype (KEN.4): MSNG 48306.

The two specimens are flabellate, 4.5 and 5.5 cm high respectively, about 4 mm thick, microscopically hispid. One surface bears very regular ridges running from the base toward the border; the ridges on the other surface form an irregular reticulation.

The spicules are 1) Styles measuring 340-570 × 16-34 μm. 2) Acanthostyles measuring 120-370 × 11.5-18.5 μm.

Aulospongus involutus (Kirkpatrick) (Fig. 40)

Stylostichon involutum Kirkpatrick, 1903: 250

Occurrence: North Kenya Banks (02°24.8'S - 40°54.8'E), depth 80 m, dredge, 20 January 1973. R.N. KEN.108.

North Kenya Banks, dredge, 25 February 1971. No further data available. R.N. KEN.83.

Mombasa, off Bamburi, depth 7-12 m, diver, 24 January 1974. R.N. MBA.231.

KEN.108: dry, pedunculated plate 12 cm high, 10 cm wide, about 1 cm thick.

KEN.83: dry, cup shaped, 10 cm high, 1 cm thick.

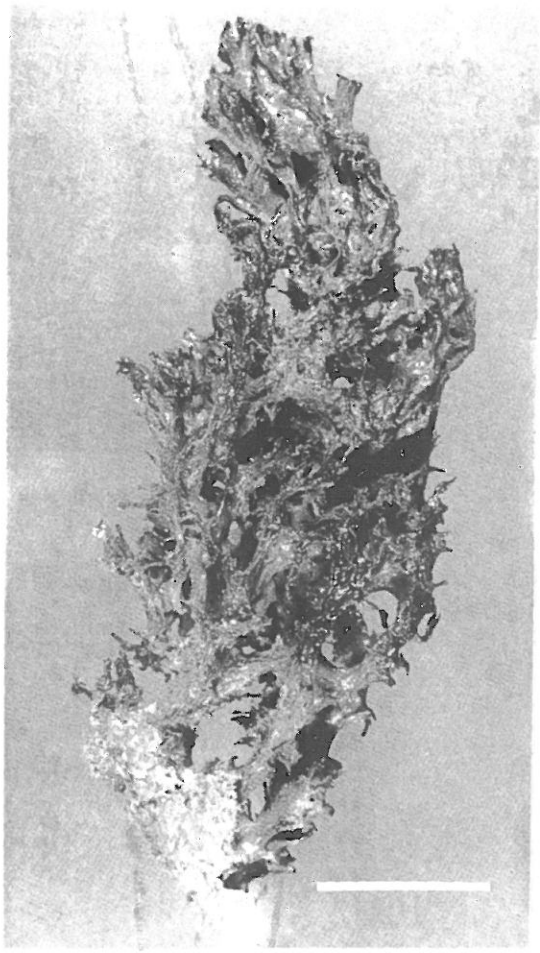

Fig. 40 - *Aulospongus involutus* (Kirkpatrick), specimen KEN.108 (dry). Scale: 2 cm.

MBA.231: in spirit, incomplete, roundish with inner cavity, 4 cm in diameter, colour in life orange yellow (C.C.246).

The spicules are 1) Acanthorhabdostyles characteristic, measuring 270-420 × 18-24 μm. 2) Acanthorhabdostyles echinating, characteristic, measuring 130-220 × 6-9 μm. 3) Styles rare, measuring 560-720 × 9 μm in KEN.108; very rare, measuring 800-1000 μm in MBA.231; not observed in KEN.83. 4) Oxeas inequiended, abundant in MBA.231, measuring 240-600 μm; very rare in KEN.108, measuring about 260 μm; not observed in KEN.83.

Raspailia colorans sp. n. (Fig. 41)

Occurrence: Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.10.

Holotype: MSNG 48307.

The specimen is 11 cm high, 4 cm wide, bushy, consisting of ascending, compressed, indented fronds, based on several short stems. The colour in life was brown (C.C.701). The sponge tinges the preserving spirit dark violet.

The spicules are 1) Tylostyles slightly curved, 690-870 × 8.5-14.5 µm. 2 Anisoxeas generally straight, 250-320 × 2.5-6 µm. 3) Acanthotylostyles 135-170 × 4-8.5 µm with very scarse spines; the thinner ones almost smooth. 4) Acanthotylostyles 85-120 × 4.5-9 µm, spines scarcely developed. The two latter categories are not clearly distinguishable: intermediates are present.

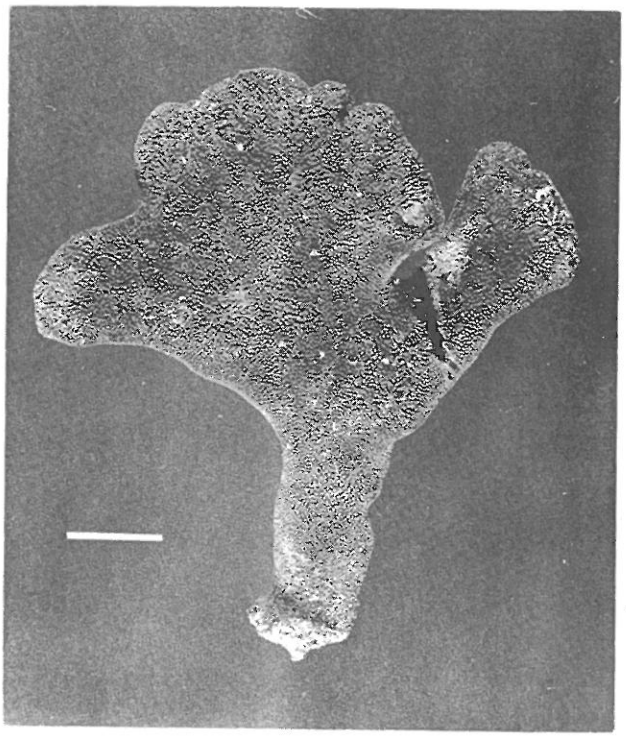

Fig. 41 - *Raspailia colorans* sp. n., the holotype. Scale: 2 cm.

Echinodictyum jousseaumei Topsent (Fig. 42)

Echinodictyum jousseaumei Topsent, 1892: 24

Occurrence: North Kenya Banks (02°26.3'S - 40°53'E), depth 70 m, dredge, 19 January 1973. R.N. KEN.112.

Starting from a short, narrow peduncle, the sponge, 13 cm high, consists of a tangled mass of branches having a rather uniform thickness of about 5 mm. The ends of the fibres form at the surface thickly-set projections about 1.5 mm high.

The spicules are 1) Oxeas measuring 230-470 × 9-14 µm. 2) Acanthostyles with short spines, measuring 100-135 × 6.5-7 µm.

It seems possible that the specimens recorded from Madagascar by VACELET & VASSEUR (1971: 82) and by VACELET *et al.* (1976: 47) as *Echinodictyum conulosum* Kieschnick really belong to *E. jousseaumei* Topsent.

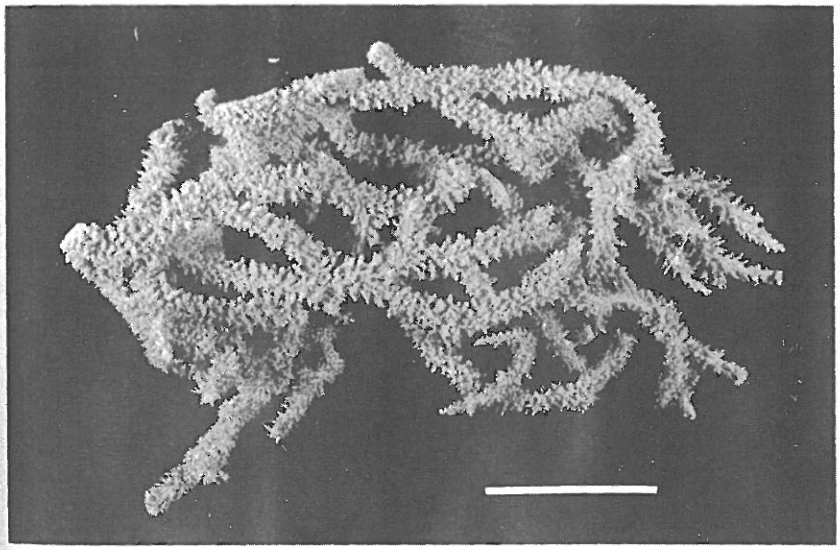

Fig. 42 - *Echinodictyum jousseaumei* Topsent, specimen KEN.112 (dry). Scale: 3 cm.

PETROSIDA

PETROSIIDAE

Petrosia seychellensis Dendy (Fig. 43)

Petrosia seychellensis Dendy, 1921: 35

Occurrence: Mombasa, Shelly Beach, depth 22 m, diver, 15 August 1974. R.N. KEN.144.

Shimoni (04°43'S - 39°23'E), depth 16 m, dredge, 25 February 1974. R.N. SHI.179.

The spicules are 1) Strongyles 240-390 × 16-20 µm (mostly 370-380 µm). 2) Oxeas 240-370 × 8-10 µm.

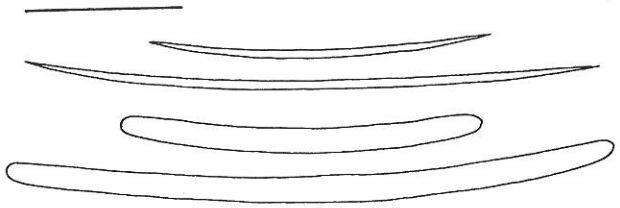

Fig. 43 - Spicules of *Petrosia seychellensis* Dendy. Scale: 100 µm.

Petrosia nigricans Lindgren (Fig. 44)

Petrosia nigricans Lindgren, 1897: 480

Occurrence: North Kenya Banks (02°42'S - 40°39'E), depth 70 m, dredge, 17 January 1973. R.N. KEN.128.

The spicules are oxeas measuring 55-280 × 4.5-19.5 µm, points slightly mucronate. Their characteristic shape is as figured by THIELE (1903, Pl. XXVIII, Fig. 3) for his *Petrosia cancellata*, regarded as a synonym of *P. nigricans*.

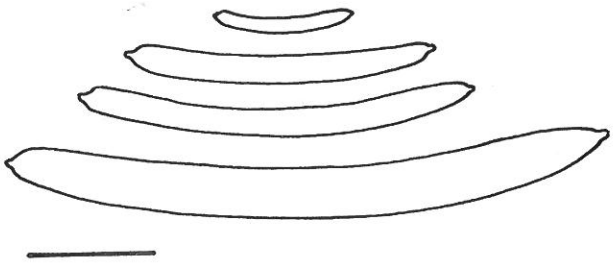

Fig. 44 - Spicules of *Petrosia nigricans* Lindgreen. Scale: 50 µm.

Petrosia shellyi sp.n. (Fig. 45)

Occurrence: Mombasa, off Shelly Beach, depth 16 m, diver, 23 January 1974. R.N. MBA.176.

Mombasa, off Bamburi, depth 7-12 m, diver, 24 January 1974. R.N. MBA.201.

Holotype (MBA.176): MSNG 48317.

Paratype (MBA.201): MSNG 48318.

MBA.176 is a fragment of a large sponge irregularly cup shaped, 40 cm in diameter; MBA.201 is a fragment. Both specimens are cream white in the dry state, hard and incompressible. The ectosomal skeletal reticulation forms meshes rather uniformly 230-280 µm wide; the side of the mesh is made by several (3 to 6, sometimes more) spicules arranged in a disorderly way without spongin. The plurispicular tracts of the choanosome are 70-370 µm thick, without apparent spongin, and form meshes 370-550 µm wide.

The spicules are strongyles measuring from 170 × 9 µm to 370 × 21 µm, not separable in categories.

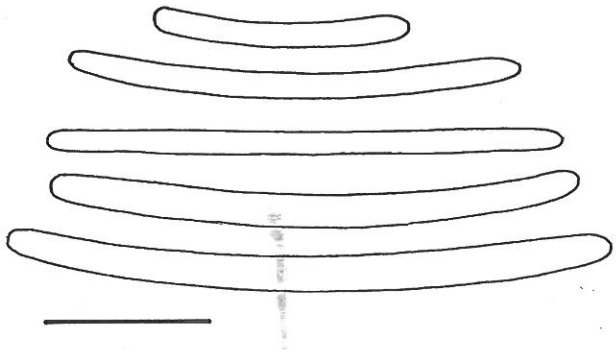

Fig. 45 - Spicules of *Petrosia shellyi* sp. n. Scale: 100 µm.

Xestospongia tuberosa sp.n. (Fig. 46, 47)

Occurrence: North Kenya Banks (02°25.5'S - 40°52.5'E), depth 48 m, dredge, 19 January 1973. R.N. KEN.134.

Holotype: MSNG 48319.

The sponge is massive, lobate, with sparse oscules 5 mm wide. The consistency is incompressible, brittle. The skeleton consists of thick, disordinate bundles of spicules tending to form roundish meshes 180-280 µm wide. This arrangement is rendered confused by the

irregularity of the bundles and by the presence of a large quantity of loose spicules. The ectosome is not separable and has a skeletal frame not distinguishable from the choanosomal one.

The spicules are oxeas rather variable, measuring 130-270 × 7-13 µm.

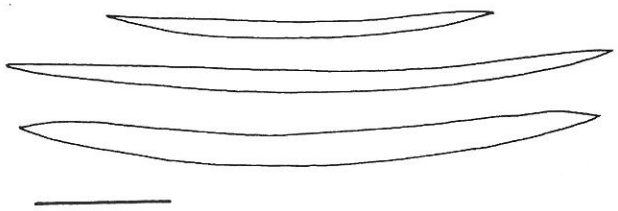

Fig. 46 - Spicules of *Xestospongia tuberosa* sp. n. Scale: 50 µm.

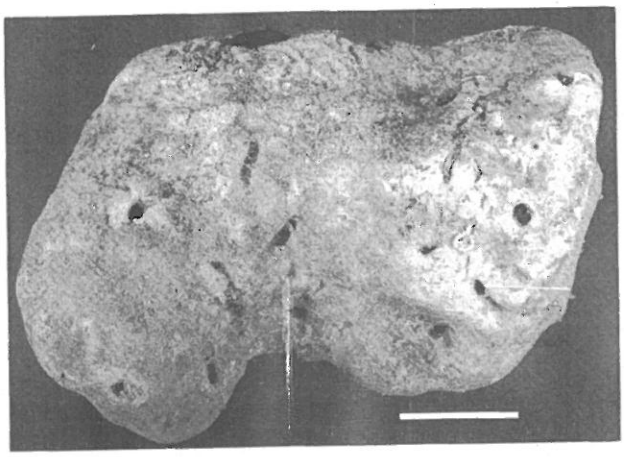

Fig. 47 - *Xestospongia tuberosa* sp. n., the holotype (dry). Scale: 2 cm.

Xestospongia informis sp.n. (Fig. 48)

Occurrence: North Kenya Banks (02°31'S - 40°46.6'E), depth 70 m, dredge, 18 January 1973. R.N. KEN.114.

Holotype: MSNG 48320.

The specimen, devoid of recognizable base of attachment, is massive, without definite shape, measuring 17 × 10 cm. The consisten-

Fig. 48 - Spicules of *Xestospongia informis* sp. n. Scale: 100 μm.

cy is firm but friable. The ectosome is distinct and easily separable. It consists of a tangential reticulation of intercrossing single spicules, with some irregular tracts one to four spicules thick. The choanosomal skeleton is a reticulation of plurispicular tracts 50-100 μm thick forming irregular meshes 380-530 μm wide. This is rather confused, as the spicules are irregularly arranged in the tracts.

The spicules are strongyles measuring 345-390 × 16-23 μm.

Xestospongia clavata sp. n. (Fig. 49, 50)

Occurrence: North Kenya Banks, depth 130 m, dredge, 5 December 1971. R.N. KEN.77.

Holotype: MSNG 48321.

The specimen is claviform, 7 cm high, 3 cm in maximum diameter. In the dry state, it is incompressible, brittle. The ectosome is easily

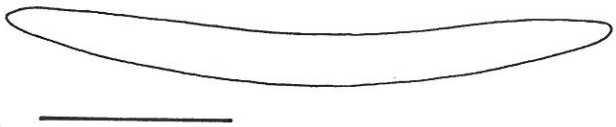

Fig. 49 - Spicules of *Xestospongia clavata* sp. n. Scale: 100 μm.

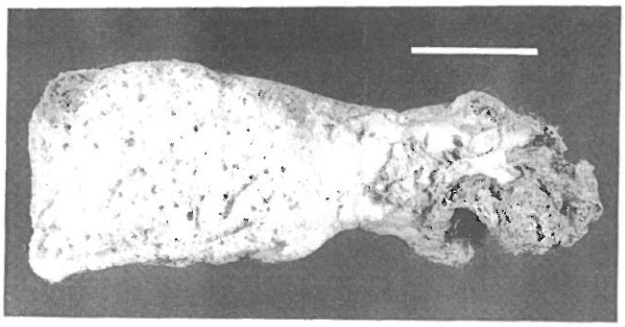

Fig. 50 - *Xestospongia clavata* sp. n., the holotype (dry). Scale: 2 cm.

detachable, roofing large subdermal canals. It comprises a tangentially arranged reticulation of intercrossing single spicules. There is no apparent spongin. The choanosomal skeleton consists of bundles of spicules arranged as to form roundish meshes about 380 µm wide. This arrangement is often obscured by spicules in confusion. Also some ascending rather loose plurispicular tracts, about 150 µm thick, are present.

The spicules are oxeas measuring 300-335 × 25-30 µm.

Strongylophora mauritiana (Carter) (Fig. 51)

Chalina polychotoma var. *mauritiana* Carter, 1885: 402

Occurrence: Mombasa, drop off on channel, depth 20-25 m, diver, 27 February 1974. R.N. MBA.443, 444.

The spicules are strongyles measuring 25-300 × 4.5-11.5 µm.

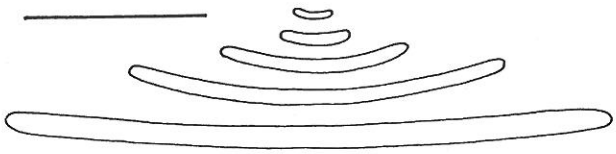

Fig. 51 - Spicules of *Strongylophora mauritiana* (Carter). Scale: 100 µm.

Oceanapiidae

Oceanapia fistulosa (Bowerbank) (Fig. 52)

Desmacidon fistulosa Bowerbank, 1873: 19

Occurrence: North Kenya Banks (02°24.8'S - 40°54.8'E), depth 80 m, dredge, 20 January 1973. R.N. KEN.105.

The specimen, in the dry state, is globular, with a diameter of 10 cm, and bears a number of fistules, now partly broken, that were at least up to 10 cm in length and 1 cm in diameter. The spicules in the ectosome are arranged tangentially, in disorder, very densely. The choanosomal skeleton is made by a dense irregular reticulation of plurispicular tracts up to 350 µm in diameter. Many scattered spicules are also present.

The spicules are oxeas measuring 210-240 × 12.5-14 µm. In the preparations some smaller oxeas are present, not abundant. They measure 102-112 × 6.9 µm.

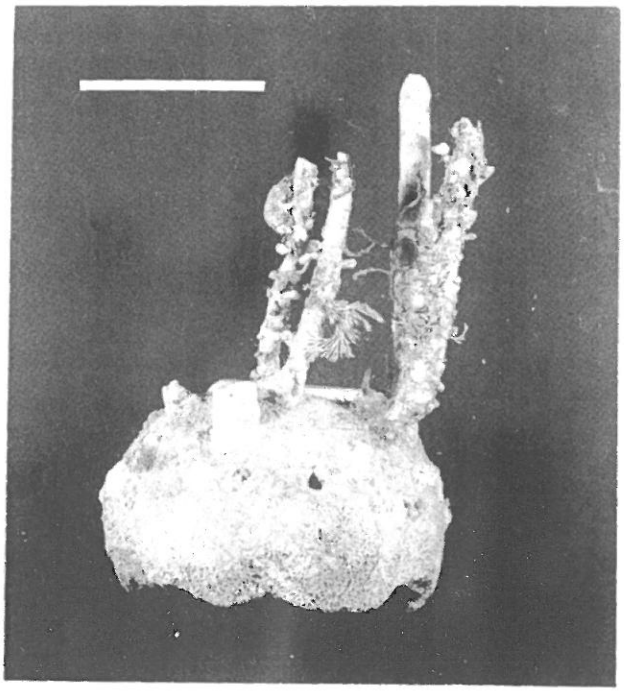

Fig. 52 - *Oceanapia fistulosa* (Bowerbank), specimen KEN.105 (dry). Scale: 5 cm.

Oceanapia minuta (Vacelet, Vasseur, Lévi)

Rhizochalina minuta Vacelet, Vasseur, Lévi, 1976: 94

Occurrence: Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.72.

The specimen consists of two tubes united at the base, 7 cm high, tapering toward closed ends. The colour in life was white.

The spicules are oxeas measuring 145-160 × 9-9.5 µm. The points are short, slightly mucronate, as originally figured.

Oceanapia exigua sp.n. (Fig. 53)

Occurrence: North Kenya Banks (02°40'S - 40°49'E), depth 140 m, dredge, 10 October 1971. R.N. KEN.50.

North Kenya Banks, depth 120 m, dredge, 12 October 1971. R.N. KEN.58.

Holotype (KEN.58): MSNG 48322.

Only fistules in mediocre conditions are available. They are up to 7 cm high and 0.5-1.5 cm in diameter, also branching (KEN.50). They

Fig. 53 - Spicules of *Oceanapia exigua* sp. n. Scale: 50 μm.

are buff coloured (dry) and fragile. The wall of the fistules is about 0.5 mm thick. Its skeleton consists of plurispicular tracts 180-300 μm thick which form a rather regular reticulation with meshes 380-550 μm wide and support tangential dermal single spicules confusedly arranged. In the inside of the fistule's wall the strong network is apparent to the unaided eye.

The spicules are oxeas measuring 195-210 × 15-16 μm (KEN.50) and 218-229 × 16-17 μm (KEN.58).

Oceanapia polysiphonia (Dendy)

Phloeodictyon polysiphonia Dendy, 1921: 50

Occurrence: Shimoni (04°43'S - 39°23'E), Mawa Reef, exposed, 24 February 1974. R.N. SHI.88, 89, 90.

SHI.89, the more complete of the three specimens, consists of several fistules, broken, partly anastomosed, arising from a common base that was buried in sand. The buried part was off white in life, the fistules light pinkish yellow. SHI.88 consists of several broken fistules, the largest one being 10 cm high and about 12 mm in diameter. It is closed at the tip. SHI.90 is a broken fistule.

The spicules are oxeas measuring 120-136 × 5.5-7 μm.

Oceanapia globosa sp. n. (Fig. 54)

Occurrence: North Kenya Banks (02°25.5'S - 40°52.5'E), depth 50 m, dredge, 19 January 1973. R.N. KEN.111.

Holotype: MSNG 48323.

The main body is globose, 15 cm high and 12 cm in diameter. It is borne by a subcylindrical, knotty stem 13 cm high, 3.5-4.5 cm thick, bifurcating at the base. The surface of the main body gives off short fistules, in average 1.5 cm high and 0.5 cm thick. They are about 1 to 1.5 cm apart. The dermal skeleton is a tangential unilayered reticulation of intercrossing single spicules. The chanosomal skeleton is a strong

Fig. 54 - *Oceanapia globosa* sp. n., the holotype (dry). Scale: 5 cm.

network of plurispicular fibres 100-250 μm thick forming irregular meshes 100-350 μm wide. Between them many scattered single spicules are present.

The spicules are slightly curved oxeas rather variable, measuring 150-200 × 4.5-9 μm.

Calyx infundibulum sp.n. (Fig. 55, 56)

Occurrence: North Kenya Banks, dredge, 25 February 1971. R.N. KEN.72. North Kenya Banks, depth 130 m, dredge, 11 August 1971. R.N. KEN.47.

Holotype (KEN.72): MSNG 48324.

KEN.72 is funnel shaped, 4 cm high and 4 cm in diameter; the wall is 2 to 3 mm thick. In the dry state, the specimen is cream coloured, fragile. KEN.47 is a fragment, lamellar, 3-4 mm thick. The ectosomal skeleton is a confused reticulation of tangential spicule bundles. The choanosomal skeleton consists of a dense reticulation of single spicules reinforced by stout multispicular tracts, 190-380 μm thick, which run through the mass, ascending, branching, anastomosing. They are about 400-700 μm apart.

The spicules are oxeas measuring 225-270 × 14 μm.

Fig. 55 - Spicules of *Calyx infundibulum* sp. n. Scale: 50 μm.

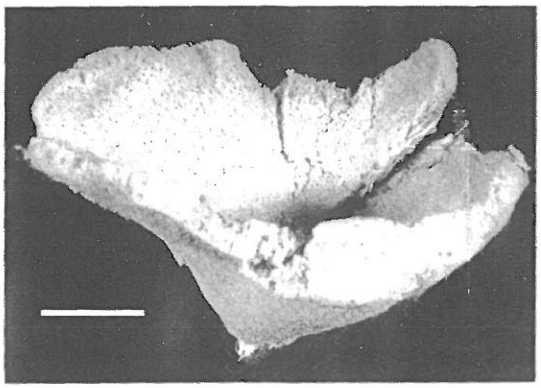

Fig. 56 - *Calyx infundibulum* sp. n., the holotype. Scale: 1 cm.

Calyx nyaliensis n.sp. (Fig. 57, 58)

Occurrence: Mombasa, Nyali Bridge, pontoons, depth 0.5-2 m, diver, 2 February 1974. R.N. MBA.334.

Holotype: MSNG 48325.

Fig. 57 - Spicules of *Calyx nyaliensis* sp. n. Scale: 50 μm.

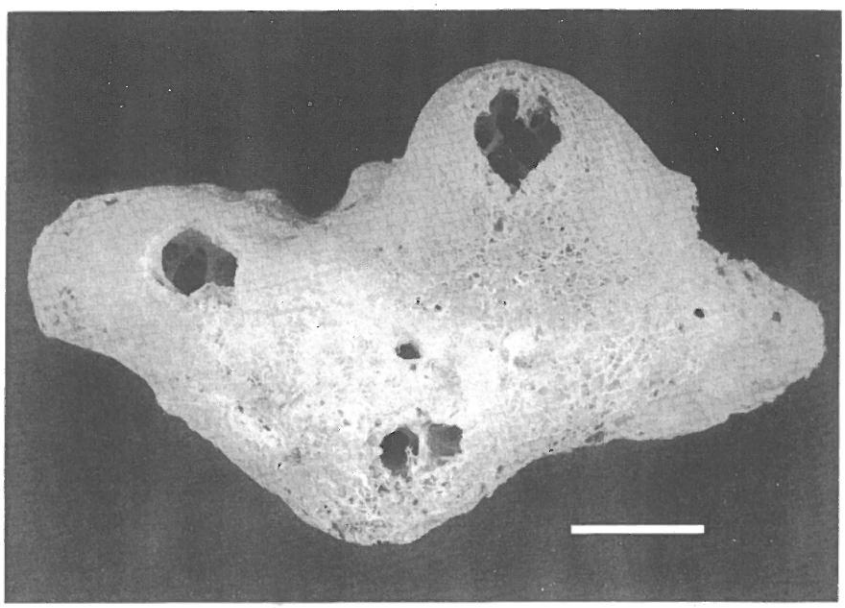

Fig. 58 - *Calyx nyaliensis* sp. n., the holotype. Scale: 1 cm.

The specimen consists of lobate eminences bearing at their top an oscule 5 to 7 mm wide. The colour in life, not uniform, was greenish to bluish (C.C.424 to 589). The specimen, now dry, is cream coloured, compressible and fragile. The ectosomal skeleton, not separable, is a very fine tangential reticulation of single oxeas joined at their apices. The choanosomal skeleton consists of strong plurispicular tracts of oxeas running irregularly, joined by a reticulation of single oxeas. The tracts are 450-1200 μm thick. Spongin is not apparent.

The spicules are oxeas slightly curved, measuring 160-180 × 9 μm.

Pellina cavernosa sp.n. (Fig. 59, 60)

Occurrence: Mombasa, Port Tudor, depth 30-40 m, dredge, 21 February 1974. R.N. MBA.428.

Holotype: MSNG 48326.

The specimen is irregularly massive, with some now broken fistules. The consistency is brittle, the colour in life was light orange (C.C.250). The structure of the choanosome is microcavernous. The ectosomal skeleton is made by tangentially arranged oxeas in loose irregular groups showing not more than a tendency to form a reticulation. The subdermal lacunae are 400-600 μm wide. The choanosomal skeleton consists of irregular tracts or loose sheafs of oxeas forming meshes 600-800 μm wide, with many spicules in confusion.

The spicules are oxeas variable, measuring 245-390 × 16-23 μm, with frequent stylote or strongylote modifications.

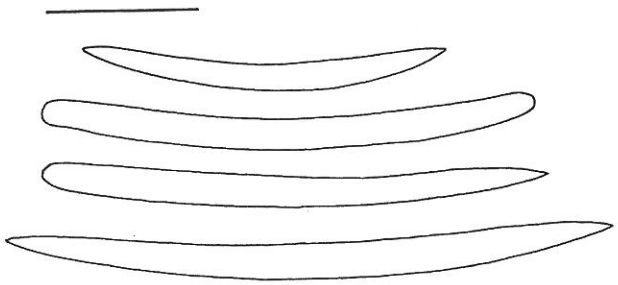

Fig. 59 - Spicules of *Pellina cavernosa* sp. n. Scale: 100 μm.

Tabulocalyx gen. n.

Oceanapiidae. Ectosomal skeleton a crust made by a single tangential layer of oxeas in confusion, occasionally forming vague thin tracts. It is supported by a strong, two-dimensional network of plurispicular fibres. Below it the skeleton is a dense mass of oxeas in confusion, cut across by several two-dimensional networks like the one mentioned above, separate from each other, more or less parallel to the surface. Deeper into the body, the skeleton consists of the mass of oxeas in confusion, traversed without regularity by strong plurispicular fibres.

Type species: *Tabulocalyx pedunculatus* sp. n.

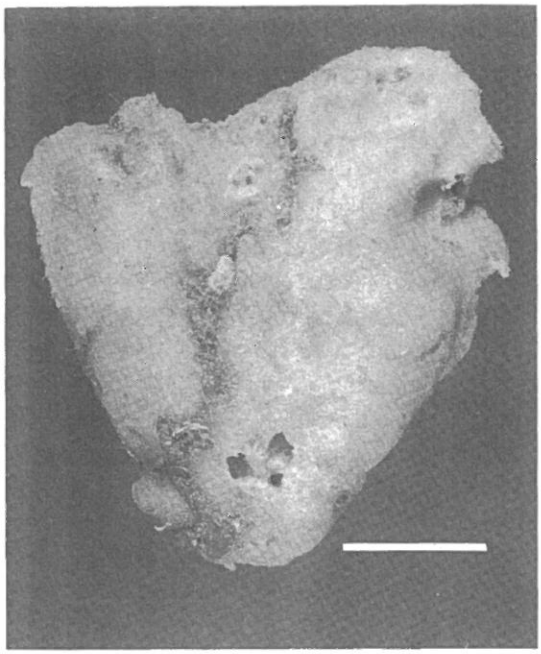

Fig. 60 - *Pellina cavernosa* sp. n., the holotype. Scale: 2 cm.

Tabulocalyx pedunculatus gen. n., sp. n. (Fig. 61, 62)

Occurrence: North Kenya Banks (02°47.5'S - 41°00'E), depth 110 m, dredge, 11 August 1971. R.N. KEN.68.

Holotype: MSNG 48327.

The body of the sponge is globose, 5.5. cm in diameter; it is supported by a stalk 1-1.5 cm thick, 6 cm long. The oscules are numerous, 3 to 5 mm wide, on crateriform elevations. The ectosome is a smooth crust made by oxeas in confusion, tangentially arranged in a single layer. Occasionally they form uncertan tracts. This crust is not easily separable from an underlying network of multispicular fibres 230-280 μm thick, forming meshes 360-450 μm wide. This network, apparent to the naked eye, is uniform, strictly two-dimensional. Below it, the skeleton is a dense mass of oxeas without orientation, traversed by two or three reticulations like the one mentioned above, a couple of millimeters apart, more or less parallel to the surface. Still deeper in the body, the skeleton consists of the dense mass of oxeas in confusion

Fig. 61 - Spicules of *Tabulocalyx pedunculatus* gen. n., sp. n. Scale: 50 μm.

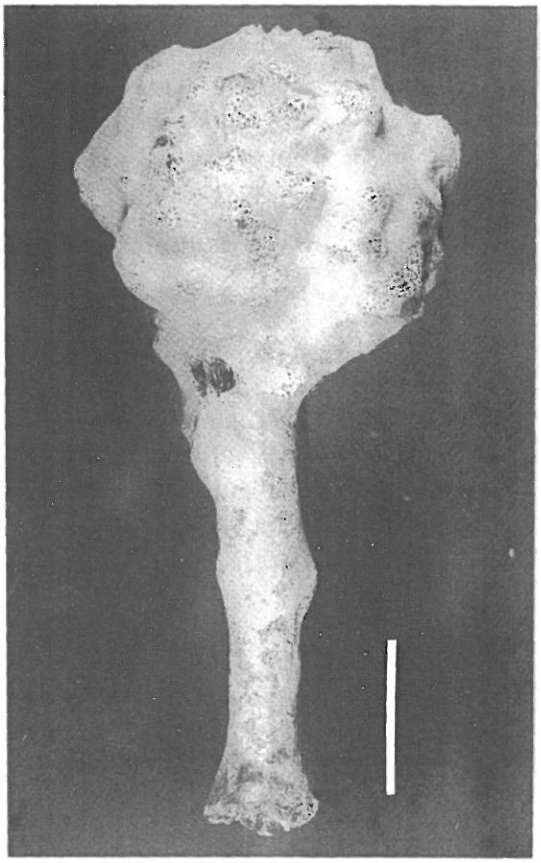

Fig. 62 - *Tabulocalyx pedunculatus* gen. n., sp. n., the holotype. Scale: 2 cm.

traversed, without regularity, by numerous multispicular fibres 140-370 μm thick.

The spicules are oxeas, slightly curved, measuring 185-200 × 10.5 -11.5 μm.

HAPLOSCLERIDA

HALICLONIDAE

Haliclona implexa (Schmidt)

Reniera implexa Schmidt, 1868: 27

Occurrence: Shimoni (04°43'S-39°23'E), muddy flats, 20 October 1971. R.N. KEN.8.

The specimen consists of a cluster of anastomosing, branching tubes, 7-8 mm in diameter, wall about 2 mm thick. The colour, in the dry state, is cream, the consistency extremely fragile.

The spicules are oxeas measuring 90-115 × 4.5-5.5 μm.

Haliclona debilis sp. n. (Fig. 63)

Occurrence: Mombasa, Ras Iwetine, depth 0-1 m, 21 August 1974. R.N. KEN.158.

The specimen consists of a cluster of coalescing tubes, 3 cm high, from 7 to 15 mm wide, wall very thin. The sponge is extremely soft and fragile. The colour, in the dry state, is light brownish yellow. The skeleton is made by unispicular fibres forming meshes which are more or less rectangular. Primary and secondary fibres are not readily distinguishable.

The spicules are oxeas measuring 70-85 × 3-4.5 μm.

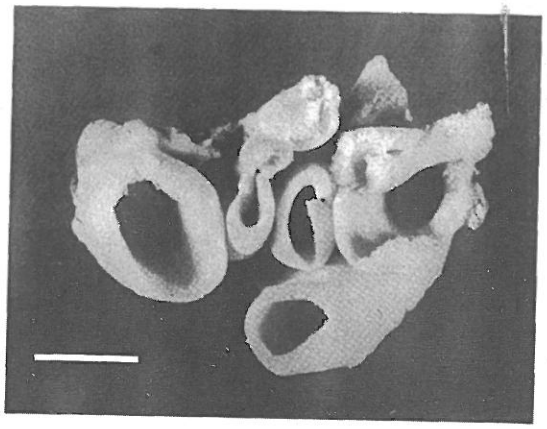

Fig. 63 - *Haliclona debilis* sp. n., specimen KEN.158. Scale: 1 cm.

Gellius cellarius (Rao)

Callyspongia cellaria Rao, 1941: 437

Occurrence: Mombasa, Nyali Bridge, pontoons, depth 0.5-2 m, diver, 2 February 1974. R.N. MBA.340, MBA.321.

Mombasa, Nyali Bridge, depth 2-5 m, diver, 2 February 1974. R.N. MBA.377.

Mombasa, Port Tudor, depth 30-40 m, dredge, 21 February 1974. R.N. MBA.432.

All the specimens have the characteristic aspect illustrated by Rao. Their colour in life was noted as follows:

MBA.340: pink (C.C.254)

MBA.377: violet (C.C.674)

MBA.321: violet (C.C.586)

MBA.432: light orange (C.C.249)

The spicules are 1) Oxeas 190-220 × 7-9 μm. 2) Sigmas 20.5-26 μm.

Cladocroce tubulosa sp. n. (Fig. 64)

Occurrence: Mombasa, off Shelly Beach, depth 16 m, diver, 23 January 1974. R.N. MBA.162.

Holotype: MSNG 48328.

The specimen consists of four erect tubes open at the top, starting from a common base. They are 8-10 cm high and about 2 cm in diameter; their wall is 1 to 2 mm thick. The sponge is softly resilient (as it was in life); its colour in spirit is a very light, dull yellow. The main skeleton is a reticulation of tracts 8-12 μm thick, made by 2 to 4 spicules

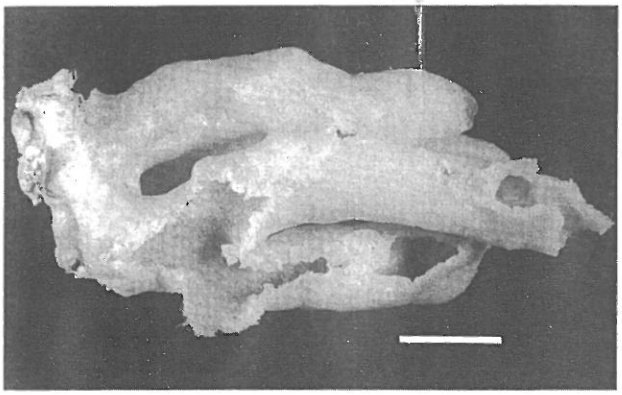

Fig. 64 - *Cladocroce tubulosa* sp. n., the holotype. Scale: 2 cm.

in front, bound by not overlapping spongin, rather irregular, forming meshes 180-280 µm wide. The tracts are connected by a reticulation of single spicules forming triangular meshes. The skeleton is reinforced by ascending, dendritic spongin fibres 16-32 µm thick, cored by 1 to 3 spicules in front.

The spicules are oxeas measuring 64-74 × 3.5 µm.

ADOCIIDAE

Toxadocia toxia (Topsent)

Gellius toxius Topsent, 1897: 470

Occurrence: Mombasa, Shelly Beach, depth 12 m, diver, 31 January 1974. R.N. MBA.282, MBA.283.

Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.50.

The colour in life of these specimens was noted as light orange for MBA.282 and 283; light violet to light orange yellow for SHI.50.

The spicules are 1) Oxeas measuring 145-170 × 5.5-7 µm. 2) Toxas measuring 35-80 µm, thin.

Sigmadocia flagellifer (Ridley & Dendy)

Gellius flagellifer Ridley & Dendy, 1886: 333

Occurrence: Mombasa, off Ras Iwetine, depth 117-138 m, dredge, 13 May 1974. R.N. KEN.143a.

The specimen is an encrustation on *Asteropus simplex* (KEN.143).

The spicules are 1) Oxeas measuring 310-370 × 13-17 µm. 2) Sigmas measuring 50-70 × 3.5-5.5 µm. 3) Sigmas flagellate measuring 90-125 × 3 µm.

Adocia atra sp. n. (Fig. 65)

Occurrence: Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.86.

The specimen is irregularly cylindrical, branching from the base. The longest branch measures 20 cm and is about 1 cm thick. The colour, in spirit and dry, is black. The consistency in spirit is very soft, limp; when dry, it is friable. The ectosomal skeleton is a tangential

Fig. 65 - *Adocia atra* sp. n., the holotype. Scale: 2 cm.

reticulation of single oxeas arranged in triangular meshes. The choanosomal skeleton is alike.

The spicules are oxeas measuring 160-180 × 9 μm.

Adocia fistulosa sp. n. (Fig. 66)

Occurrence: Wasin Island (04°40.9'S - 39°19.2'E), depth 2-3 m, diver, 7 October 1971. R.N. KEN.7.

Holotype: MSNG 48330.

The specimen is tubular, 14 cm long, 11-15 mm in diameter, with a wall 1-2 mm thick. It is not complete, as the base of attachment is missing. The consistency is softly elastic, the colour is light yellow (C.C.258) in spirit. The ectosomal skeleton is an isodictyal tangential network of single spicules with scarce spongin at the knots. forming triangular to rectangular meshes. Just below there is a tangential reticulation of plurispicular fibres forming irregular meshes 280-380 μm wide. These fibres are irregular in thickness (28-47 μm) and in spicule content. The main skeleton is made by strong ascending fibres

of pale spongin, 30-50 μm thick, containing a variable but limited number of spicules. They are connected by secondary lines and by an irregular reticulation of single spicules.

The spicules are oxeas measuring 70-78 × 2.5-3.5 μm.

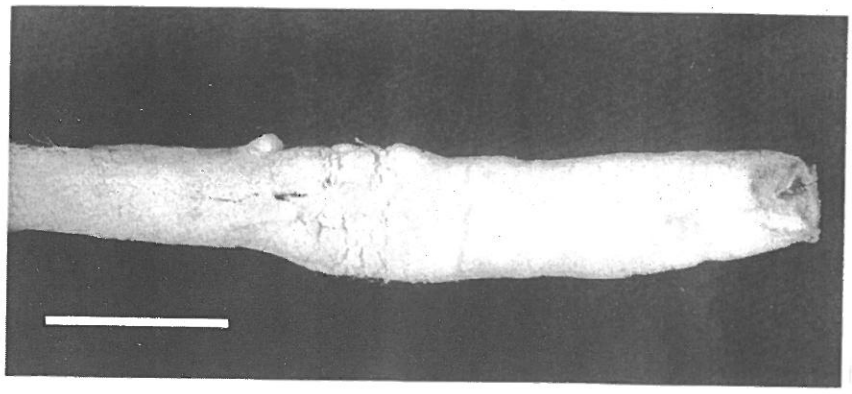

Fig. 66 - *Adocia fistulosa* sp. n., the holotype. Scale: 2 cm.

Niphatidae

Amphimedon navalis sp. n. (Fig. 67, 68)

Occurrence: Mombasa, Nyali Bridge, pontoons, depth 0.5-2 m, diver, 2-15 February 1974. R.N. MBA.320, MBA.374.

Holotype (MBA.374): MSNG 48331.

The specimens are cushion shaped, hard and fragile. Their colour in life was respectively dark blue (C.C.487) and dark violet (C.C.592). The surface is smooth. The oscules are numerous, 4-8 mm wide, with

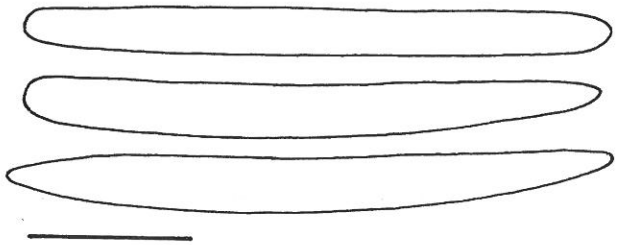

Fig. 67 - Spicules of *Amphimedon navalis* sp. n. Scale: 50 μm.

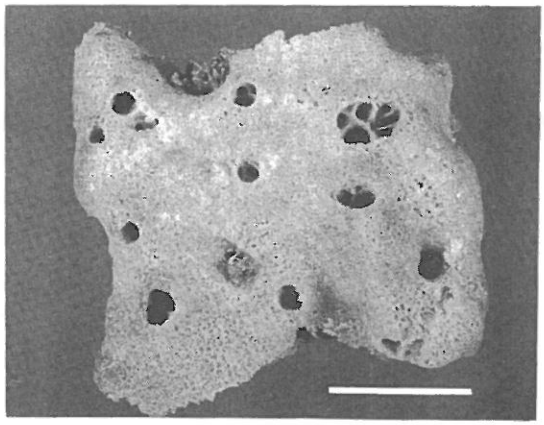

Fig. 68 - *Amphimedon navalis* sp. n., the holotype. Scale: 2 cm.

elevated rim. The ectosomal skeleton is a plurispicular reticulation forming meshes about 350 μm wide. The choanosomal skeleton is a rather confused reticulation of plurispicular tracts.

The spicules are oxeas measuring 160-210 × 11-15 μm, with points more or less rounded.

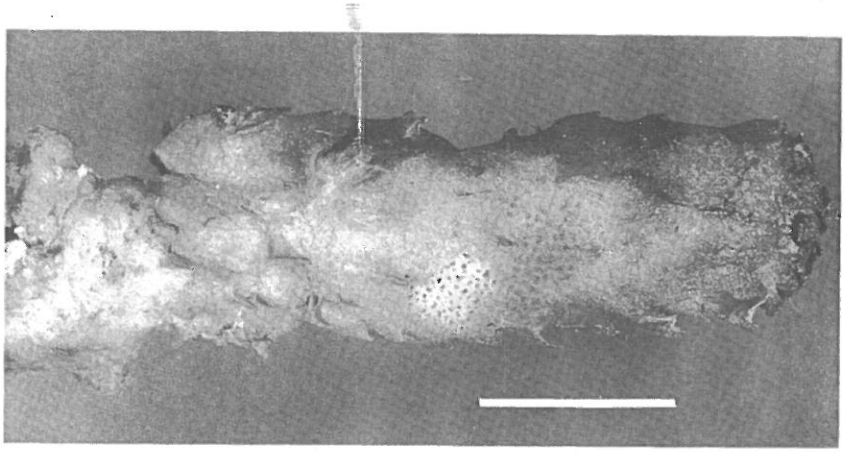

Fig. 69 - *Amphimedon spinosa* sp. n., the holotype. Scale: 2 cm.

Amphimedon spinosa sp.n. (Fig. 69)

Occurrence: Mombasa, drop off on channel, depth 30 m, diver, 17 March 1974. R.N. MBA.466.

Holotype: MSNG 48332.

The specimen was probably growing erect; it is tubular, with a uniform diameter of 3 cm. Its length is 11 cm, but the base is missing. The wall is 5 mm thick. The surface bears sparse acute conules 5 to 7 mm high. In spirit, the consistency is resilient, the colour middle brown; it was blue-grey in life. The ectosomal skeleton is a reticulation of plurispicular tracts about 25 µm thick forming roundish meshes of the rather uniform size of 135-140 µm. The choanosomal skeleton is a dense reticulation, rather confused, of clear spongin fibres 3.5-11 µm thick, forming polygonal meshes 50-100 µm wide. The fibres are mostly cored by a single spicule in cross section.

The spicules are oxeas measuring 90-105 × 3-4 µm.

Amphimedon rubida sp.n. (Fig. 69)

Occurrence: North Kenya Banks (02°32'S - 40°51.5'E), depth 100 m, dredge, 10 October 1971. R.N. KEN.62.

Holotype: MSNG 48333.

The sponge (in fragments, dry) is cylindrical, 10-15 mm thick, incompressible. Its colour is brownish red (C.C.131). The surface is smooth. The choanosomal skeleton is a rather confused reticulation of irregular plurispicular tracts forming roundish meshes 220-360 µm wide. Spongin is not apparent. The ectosomal skeleton, not separable, is differentiated, consisting of a much denser and more confused reticulation of uni- to plurispicular tracts.

The spicules are oxeas measuring 185-230 × 11.5-18 µm.

Amphimedon rubiginosa sp.n. (Fig. 70)

Occurrence: Mombasa, Ras Iwetine, depth 0.5-4 m, diver, 18 January - 17 February 1974. R.N. MBA.13, MBA.411.

Zanzibar, Chapani Island, depth 2-3 m, diver, 8 February 1974. R.N. ZBR.4.

Holotype (MBA.13): MSNG 48334.

The specimens are massive to irregularly digitate, incompressible but fragile; dark brown in life, they are dark reddish brown in spirit. On specimen MBA.13 the oscules have a surelevated rim, are about 3 mm

wide and 10 to 15 mm apart. The ectosomal skeleton consists of a reticulation of plurispicular tracts 45-90 μm thick, forming meshes 180-300 μm wide. The choanosome is cavernous; its skeleton is a reticulation of close-set, ill-defined plurispicular tracts.

The spicules are oxeas slightly curved, measuring 180-210 × 5-12 μm (the most common thickness is 9 μm, but very thin oxeas are numerous).

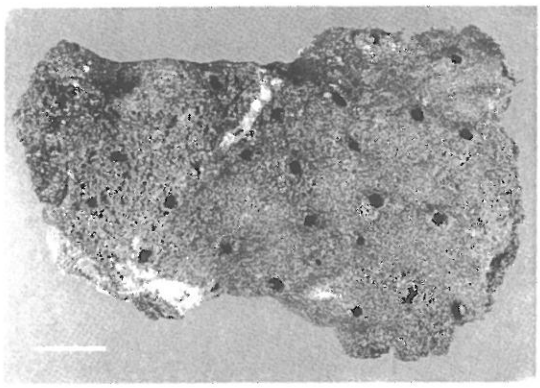

Fig. 70 - *Amphimedon rubiginosa* sp. n., the holotype. Scale: 1 cm.

CALLYSPONGIIDAE

Callyspongia perforata sp. n. (Fig. 71)

Occurrence: Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.71, SHI.65.

Holotype (SHI.71): MSNG 48335.

SHI.71: The specimen (not entire) is subcylindrical, 10 cm long, 1.5-2 cm thick, bifurcating at the top in tapering processes. The surface bears acute conules about 2 mm high. The numerous oscules are on one side only, in a row, 4 to 8 mm wide, with elevated rim. The sponge, in life, was slightly mucous. The colour in spirit is ochre (C.C.338), the consistency resilient, harsh to the touch. The ectosomal skeleton is a reticulation of plurispicular fibres 27-37 μm thick, forming meshes 370-560 μm wide. Inside them there is a secondary reticulation of spongin fibres cored by one to several spicules in cross section. They

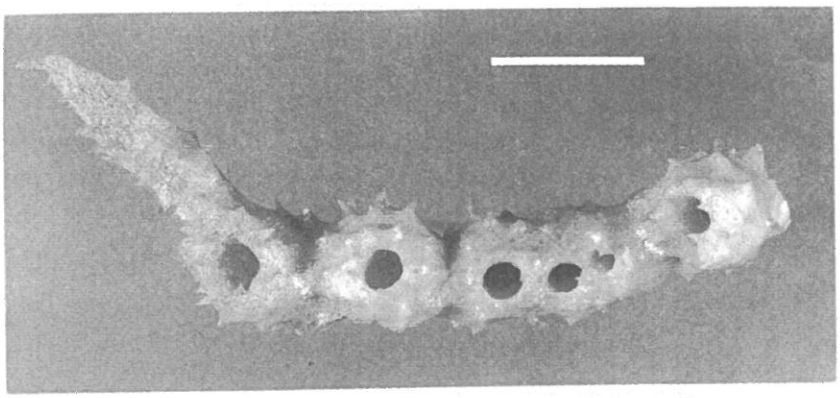

Fig. 71 - *Callyspongia perforata* sp. n., the holotype. Scale: 2 cm.

are from 4 to 10 µm thick and form meshes 50-80 µm wide. The choanosomal skeleton is a reticulation of plurispicular fibres 23-37 µm thick (spongin not overlapping), only occasionally joined by thinner fibres.

The spicules are oxeas measuring 90-95 × 2.5 µm.

SHI.65: The specimen is erect, subcylindrical, giving off three digitate processes tapering to a sharp point. The surface is conulose, harsh to the touch. The consistency is resilient. The colour in life was grey to buff; it is light brown in spirit. The ectosomal reticulation is made by primary spongin fibres about 45 µm thick, entirely filled by spicules, forming meshes about 450 µm wide, secondary fibres about 28 µm thick, cored by several spicules, forming meshes about 280 µm wide, tertiary fibres about 10 µm thick, mostly cored by a single spicule in cross section, forming meshes about 60 µm wide.

The spicules are oxeas measuring 80-88 × 2.5 µm.

Callyspongia reticulata (Keller) (Fig. 72)

Siphonochalina reticulata Keller, 1889: 382

Occurrence: Wasin Channel (04°39'S - 39°22.5'E), depth 25 m, diver, 23 January 1972. R.N. KEN.20.

The specimen is claviform, 4.5 cm high, 3.5 cm in diameter, with wide apical vent. The surface is conulose, with obtuse conules about 5 mm apart, about 3 mm high. The consistency in the dry state is firmly

resilient. The ectosomal skeleton consists of a reticulation of spongin fibres, plurispicular, about 60 µm thick, forming meshes 1100-1600 µm wide. Within it there is a secondary reticulation of spongin fibres forming irregular meshes about 100 µm wide. They contain from one to few spicules. The choanosomal skeleton is a very irregular reticulation of spongin fibres, the thickest ones measuring 150 µm, all densely packed with spicules.

The spicules are strongyles measuring 88-96 × 2-2.5 µm.

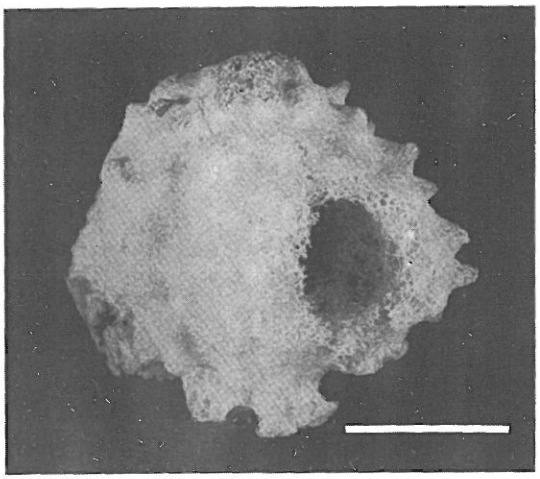

Fig. 72 - *Callyspongia reticulata* (Keller), specimen KEN.20. Scale: 2 cm.

Callyspongia hirta sp.n. (Fig. 73)

Occurrence: Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.1, SHI.2.

Shimoni (04°43'S - 39°23'E), depth 16 m, dredge, 25 February 1974. R.N. SHI.160.

Mombasa, Nyali Bridge, depth 2-5 m, diver, 15 February 1974. R.N. MBA.368.

Mombasa, drop off on channel, depth 20-25 m, diver, 27 February 1974. R.N. MBA.462.

Holotype (SHI.2): MSNG 48336.

All the specimens were growing erect, irregularly cylindrical, up to 9 cm high and 7 cm in diameter. An apical vent, up to 2.5 cm wide, gives access to a tubular cavity. The outer surface bears strong acute conules, up to 1 cm high. The colour in life of the various specimens

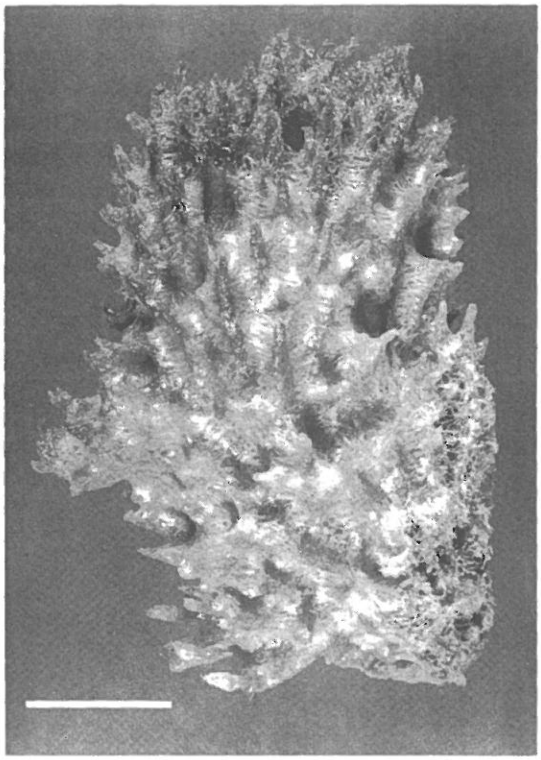

Fig. 73 - *Callyspongia hirta* sp. n., the holotype. Scale: 2 cm.

varied from light brown to light orange (C.C.338, 198, 250, 246); in spirit they have the same light brown colour, C.C.337. The ectosomal skeleton is a tangential reticulation in which the primary fibres are plurispicular, 75-120 μm thick, forming irregular meshes about 1100 μm wide.

Secondary fibres of pale spongin, 20-28 μm thick, cored by one to several spicules, are irregularly present. A tertiary reticulation consists of pale spongin fibres all cored by a single spicule in cross section, forming meshes as wide as the length of a spicule. The choanosomal skeleton is an irregular, dense reticulation of fibres 30-110 μm thick, all entirely packed with spicules. Ascending thick fibrofascicles converge in the aculei.

The spicules are strongyles not quite straight, measuring 80-100 × 2.5 μm.

Callyspongia violacea sp. n. (Fig. 74)

Occurrence: Shimoni (04°43'S - 39°23'E), Howards Rocks, depth 2-4 m, diver, 23 February 1974. R.N. SHI.55, SHI.81.

Holotype (SHI.55): MSNG 48337.

The specimens are thickly digitate, branching, erect. The oscules are sparse, about 6 mm wide. The consistency is resilient. In life the colour of SHI.55 was light violet (C.C.253, 254), that of SHI.81 was violet to buff. In spirit the specimens are light brown (C.C.337). The ectosomal skeleton is made by primary spongin fibres 35-45 μm thick forming irregular meshes and by secondary fibres 10-19 μm thick forming meshes about 140 μm wide. All the fibres are cored by a single spicule in cross section. The choanosomal skeleton is a rather irregular reticulation of spongin fibres 30-50 μm thick, occasionally connected by

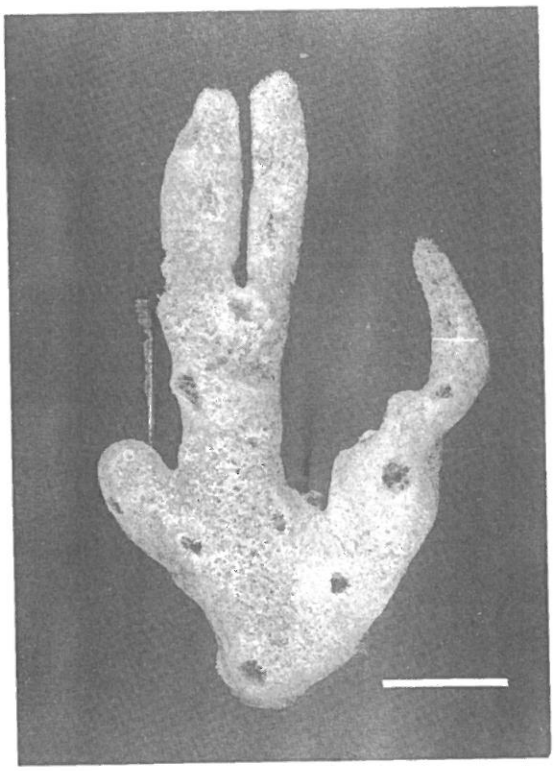

Fig. 74 - *Callyspongia violacea* sp. n., the holotype. Scale: 2 cm.

much thinner fibres, forming irregular meshes 90-190 µm wide. All the fibres are cored by single spicules in cross section.

The spicules are oxeas measuring 100-110 × 2.5-3.5 µm.

Callyspongia confoederata (Ridley) (Fig. 75)

Tuba confoederata Ridley, 1884: 400.

Occurrence: Zanzibar, Murogo Reef (06°11.2'S - 39°07.5'E), depth 3 m, diver, 2 December 1971. R.N. KEN.9.

The specimen is erect, subcylindrical, hollow, slightly widening toward the top. It is 7 cm high (but apparently not entire) and up to 3 cm in diameter. The terminal vent is 15 mm wide. The surface is conulose, with acute conules 4-7 mm high, 7-12 mm apart. In the dry state the colour is cream, the consistency stiffly resilient. The main

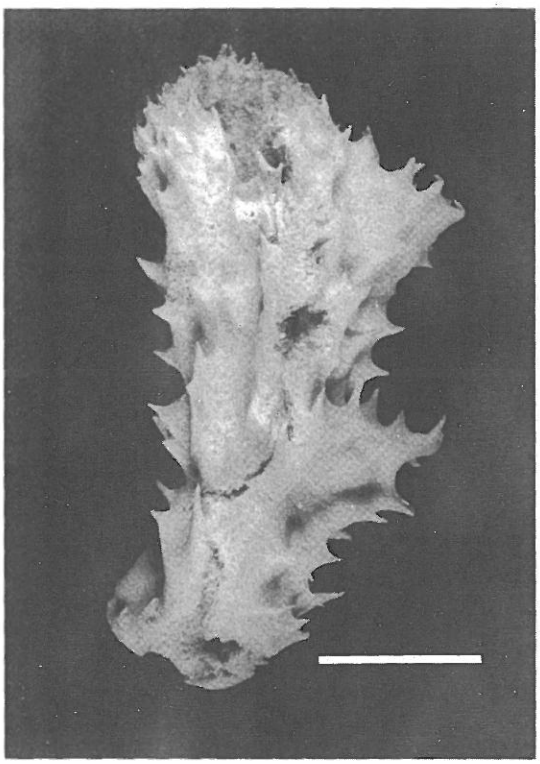

Fig. 75 - *Callyspongia confoederata* (Ridley), specimen KEN.9. Scale: 2 cm.

fibres of the ectosome are plurispicular, 37-47 μm thick, forming meshes 280-460 μm wide. The secondary fibres are cored by a single spicule across and form meshes about 90 μm wide. The main fibres of the chanosome are plurispicular, up to 50 μm thick, have a very irregular course and form irregular meshes. The secondary fibres are cored by 1 to 3 spicules across.

The spicules are oxeas measuring 80-90 × 2.5 μm.

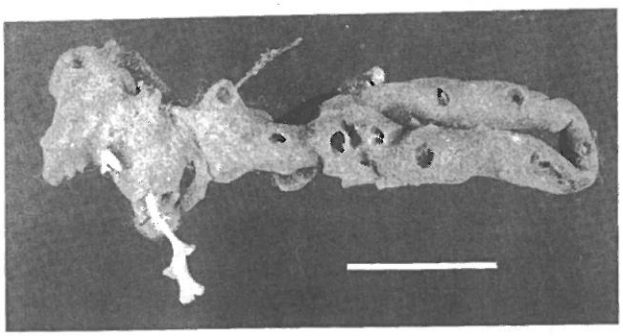

Fig. 76 - *Callyspongia subtilis* sp. n., the holotype. Scale: 2 cm.

Callyspongia subtilis sp. n. (Fig. 76)

Occurrence: North Kenya Banks (02°20.5'S - 41°03'E), depth 55 m, dredge, 17 June 1971. R.N. KEN.59.

Holotype: MSNG 48338.

The sponge is subcylindrical, 15 cm long, about 8 mm thick. The oscules are numerous, aligned on one side of the sponge, with markedly elevated rim, 2-3 mm wide. The consistency is elastic, the ectosomal skeleton is formed by a reticulation of amber coloured spongin fibres 27-47 μm thick within which there is a secondary reticulation of spongin fibres 9-18 μm thick. The resulting meshes are about 190 μm wide. All the fibres are cored by a single spicule in front. The main fibres of the choanosomal reticulation are 55-75 μm thick and are cored irregularly by several spicules. The secondary fibres, cored by a single spicule, are 28-38 μm thick, forming very irregular meshes 190-350 μm wide.

The spicules are oxeas measuring 81-88 × 2.5 μm.

Callyspongia contorta sp.n. (Fig. 77)

Occurrence: Mombasa, off Bamburi, depth 7-12 m, diver, 24 January 1974. R.N. MBA.197.

Holotype: MSNG 48339.

The specimen consists of irregularly digitate, elongated, contorted branches 1-1.5 cm thick, with oscules with elevated rim, 3-4 mm in diameter, arranged in a row on one side. No base of attachment is recognizable. In the dry state the sponge is very soft and fragile, mustard coloured. The ectosomal skeleton is a tangential reticulation of amber coloured spongin fibres 18-36 µm thick forming rather irregular meshes. A secondary reticulation of spongin fibres 9-20 µm thick forms meshes 90-140 µm wide. Both primary and secondary fibres are cored by a single spicule in cross section. The choanosomal skeleton consists of ascending main spongin fibres about 750 µm apart, 50-90 µm thick, connected by secondary and tertiary fibres, 20 to 40 µm thick, forming irregular meshes. The main fibres are cored by several spicules in cross section; the secondary and tertiary ones by single spicules in a row.

The spicules are oxeas measuring 90-110 × 1-2.5 µm.

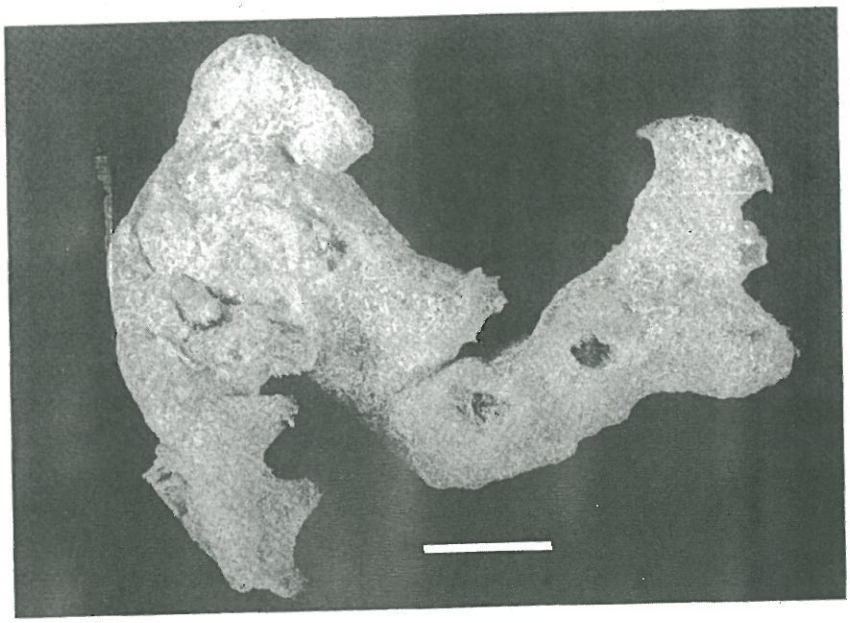

Fig. 77 - *Callyspongia contorta* sp. n., the holotype. Scale: 1 cm.

Callyspongia abnormis sp. n. (Fig. 78)

Occurrence: Mombasa, off Shelly Beach, depth 16 m, diver, 23 January 1974. R.N. MBA.167.

Holotype: MSNG 48340.

The specimen consists of creeping, twisted branches, more or less flattened, extremely irregular, approximately 1 cm thick, occasionally expanding in a wide lamina 4-5 mm thick. The colour in life was bright red (C.C.167); in spirit it is dull orange yellow (about C.C.246). The consistency is resilient. The ectosomal skeleton is a reticulation of spongin fibres 18-30 μm thick, cored by one to several (few) spicules in cross section. These fibres are not distinguishable in primary and secondary. They form irregular meshes approximately 280 μm wide. The choanosomal reticulation is alike, but the fibres are 28-45 μm thick and contain for the most part a larger number of spicules.

The spicules are oxeas measuring 100-110 × 4.5 μm.

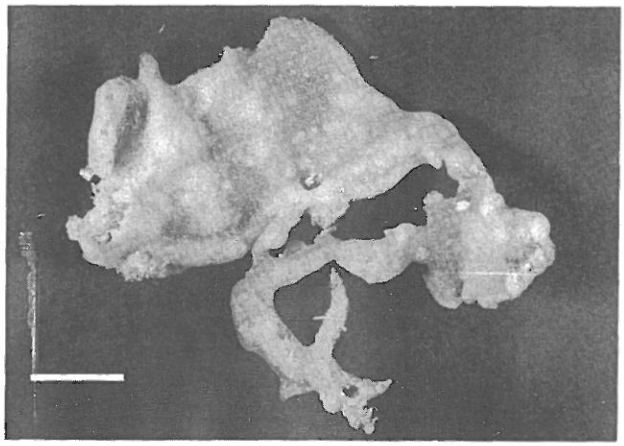

Fig. 78 - *Callyspongia abnormis* sp. n., the holotype. Scale: 2 cm.

Toxochalina robusta Ridley

Toxochalina robusta Ridley, 1884: 403

Occurrence: Mombasa, off Shelly Beach, depth 12 m, diver, 31 January 1974. R.N. MBA.290.

The specimen, irregularly cylindrical and branching, was growing repent; it was noted as very tough but resilient, light orange (C.C.250).

In spirit its colour is orange brown (C.C.337). The oscules are sparse, 4-5 mm in diameter. The main skeleton is a network of spongin fibres 40-65 μm thick, variably, mostly scarcely, cored by oxeas. They form roughly quadrangular meshes 230-320 μm wide. At the surface there is a secondary and tertiary reticulation of fibres 14-20 μm in diameter, cored by a single spicule, forming meshes 65-95 μm wide.

The spicules are 1) Oxeas measuring 75-90 × 4.5 μm. 2) Toxas measuring 30-60 μm, thin.

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ABSTRACT

A collection of East African marine sponges is recorded. It consists of 145 species, of which 52 are described as new, namely *Plakortis copiosa, Plakortis kenyensis, Stelletta brevioxea, Calthropella digitata, Monosyringa plurima, Erylus globulifer, Geodia spheranthastra, Axinomimus tenax, Jaspis manihinei, Manihinea conferta, Latrunculia kenyensis, Higginsia pulcherrima, Higginsia kenyensis, Higginsia lamella, Hemiasterella magna, Monectyon indicus, Monectyon tuberculatus, Aulospongus flabellum, Raspailia colorans, Lithoplacamia minor, Mycale multisclera, Strongylacidon*