Biol. Jaarb. Dodonaea, 67 (1), 1999 (2000), 31-93.

ANNOTATED LIST OF NEW RECORDS OF MARINE MACROALGAE FOR KENYA AND TANZANIA, SINCE ISAAC'S AND JAASUND'S PUBLICATIONS

by

Eric COPPEJANS, Frederik LELIAERT & Olivier DE CLERCK *

SUMMARY. — 48 species of Rhodophyta, 10 species of Phaeophyta and 38 species of Chlorophyta, newly reported since Isaac's publications on seaweeds from Kenya and Jaasund's papers on macroalgae from Tanzania, are listed with bibliographic, taxonomic and biogeographic comments. Some of these species were previously published in more detailed taxonomic studies by this paper's authors.

INTRODUCTION

A short historical review on phycological research along the East African coast is given in Coppejans *et al.* (1999). Isaac's publications (1967, 1968, 1971), based on his own seaweed collections from Kenya are extremely important for the knowledge of the algal flora of that area. Likewise was Jaasund's work (1969, 1970 a-c, 1976, 1977 a-d, 1979) crucial for our understanding of the marine benthic algal flora of Tanzania. His Field Guide for the Seaweeds of Tanzania (including 291 taxa) still is the only algal identification work for the East African coast. Lawson (1980) compiled a species list of macroalgae from the entire East African coast, but this list contains numerous species mentioned under different synonyms. A complete overview of the marine algae of the region is provided by Silva *et al.* (1996).

* Research Group Phycology, Department of Biology, Ghent University, K.L. Ledeganckstraat 35, 9000 Ghent, Belgium.

Since 1985 the phycology research group of the Ghent University has been carrying out taxonomic, autecological and biogeographical research on macroalgae along the Kenyan and Tanzanian coasts. This resulted in papers on *Caulerpa* (Coppejans & Beeckman 1989, 1990), the Codiales (Van den heede & Coppejans 1996, Coppejans & Van den heede 1996), macroalgae associated with mangroves (Coppejans & Gallin 1989, De Schryver 1990) and seagrasses (Coppejans *et al.* 1992), and a chapter on seaweeds (Coppejans *et al.* 1997) in the 'Guide to the seashores of Eastern Africa'. Next to these published data, numerous new species, and even new genera, have been discovered for the East African coast or even for the Indian Ocean.

MATERIALS AND METHODS

Seaweed specimens were collected during several field trips : 9 along the Kenyan coast between 1985 and 1992, 5 along the Tanzanian coast (including Zanzibar, Pemba and Mafia Islands) between 1993 and 1999. At all localities (map 1), both intertidal and subtidal SCUBA collections were made to depths of 35 m. This resulted in approximately 1890 herbarium vouchers and numerous formalin preserved specimens from Kenya and 1560 from Tanzania. The main collection is deposited in the herbarium of the Ghent University (GENT). Some duplicate specimens are deposited in the Kenya Marine and Fisheries Research Institute (KMFRI, Mombasa, Kenya) or in the Institute of Marine Sciences (IMS, Zanzibar, Tanzania). Small species (turf algae, epiphytic species) as well as non-geniculate Corallinaceae have been collected only sporadically.

ARRANGEMENT AND FORMAT OF THE LIST

The arrangement of orders and families essentially follows that of Silva *et al.* (1996) except for the recognition of the Halymeniales Saunders & Kraft (1996). For each species, references are given to publications where a description and or illustration can be found corresponding to our specimen(s), and the type locality is given as a minimal distributional record. References for each species are restricted to those where relevant descriptions and illustrations are given (records in tables or lists are not included). In these references 'as' refers to misapplied names and '=' where they are synonyms. Voucher specimens (HEC = Herbarium Eric Coppejans), ODC

(Olivier De Clerck), FL (Frederik Leliaert), RT (Tim Roels) and HIMS (= Herbarium Institute of Marine Sciences) filed in GENT and possibly KMFRI or IMS are then cited. Only a single voucher specimen is mentioned per sampling site, except for rare species. Remarks regarding various aspects of taxonomy, systematics, nomenclature, or aberrant characters, and distribution are added in the notes. Collecting sites along the Kenyan and Tanzanian coasts are indicated on fig. 1 and 2. Some rare species are illustrated.

Results

Class **Rhodophyta**
Subclass Florideophycideae
Order NEMALIALES
Family Liagoraceae

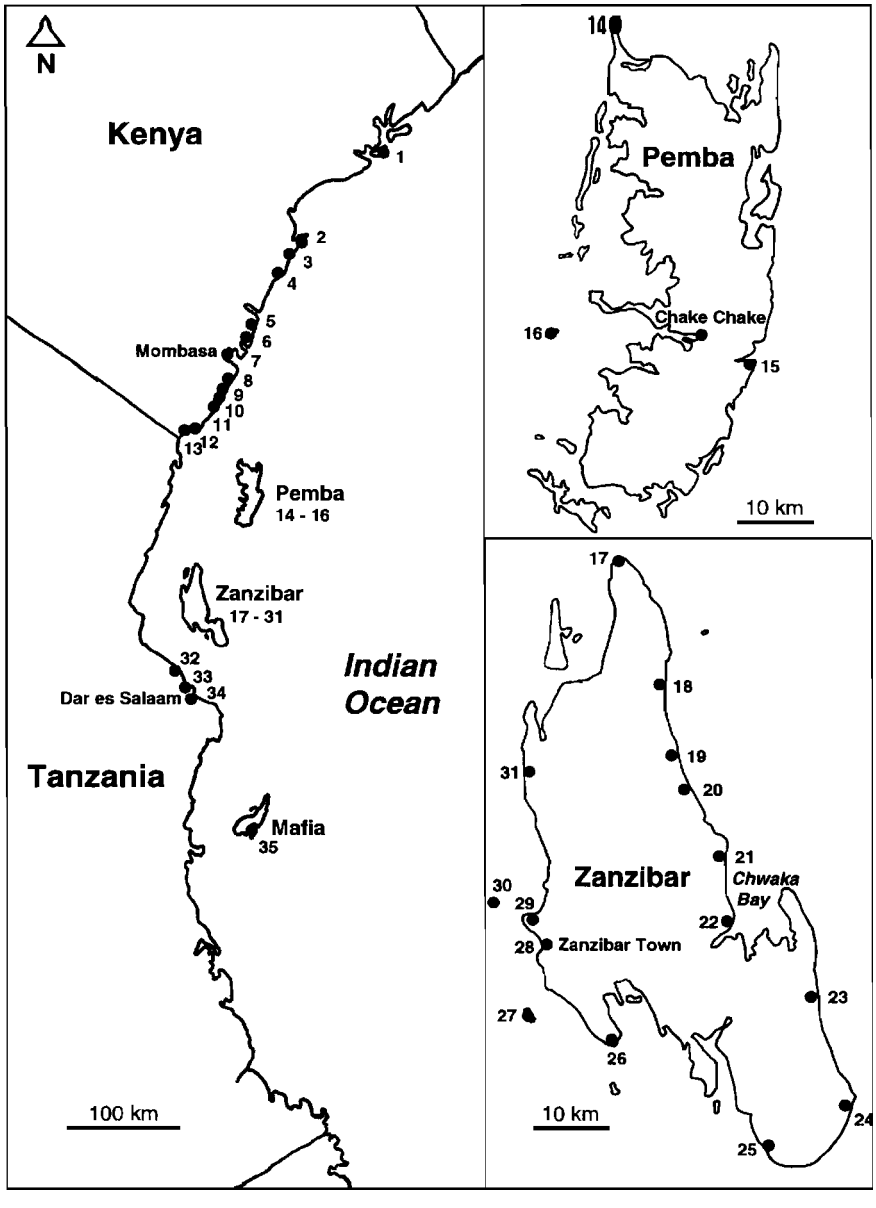
Trichogloea Kützing

Trichogloea requienii (Montagne) Kützing 1847 : 54
References : Børgesen (1952 : 16-21, figs 8, 9, pls I and II) ; Magruder and Hunt (1979 : 95, fig. 3, p. 94) ; Cribb (1983 : 23-24, pl. 47, fig. 3-4, pl. 48, fig. 2) ; Littler *et al.* (1989 : 166, fig. 1, p. 167) ; Ohba and Enomoto (1992 : 30) ; Millar *et al.* (1999 : 553, fig. 1D).
Type locality : Red Sea.
Vouchers : Tanzania: HEC 12212, 16.8.1997 : Zanzibar, Matemwe, Mnemba reef, on dead coral surface, from -1 to -2 m ; ODC 379, 5.9.1994 : Zanzibar, Chumbe Island, epilithic, from -2 to -7 m.
Indian Ocean distribution : Kenya, Madagascar, Mauritius, Tanzania (this paper).
Note : New for Tanzania.

Order HALYMENIALES
Family Halymeniaceae

Polyopes J. Agardh

Polyopes ligulatus (Harvey *ex* Kützing) De Toni 1905 : 1596 Fig. 1
References : Kützing (1869 : 23-24, t. 63, figs a, b = *Gymnogongrus ligulatus* Harvey *ex* Kützing) ; Desikachary *et al.* (1990 : 266, pl. 41) ; Coppejans & Millar (2000 : fig. 11, 12).



Map 1. — Collecting sites. Kenya: 1. Lamu, Ras Kitau ; 2. Mambrui ; 3. Malindi ; 4. Watamu, Turtle Bay ; 5. Mida Creek ; 6. Vipingo ; 7. Kanamai ; 8. Mombasa ; 9. Tiwi ; 10. Diana ; 11. Gazi Bay ; 12. Msambweni ; 13. Shimoni. - Tanzania: 14. Pemba Island, Verani ; 15. Pemba Island, Vitongoji ; 16. Pemba Island, Mesali Island ; 17. Zanzibar, Nungwi ; 18. Zanzibar, Matemwe ; 19. Zanzibar, Cairo (Kiwengwa) ; 20. Zanzibar, Pongwe ; 21. Zanzibar, Uroa ; 22. Zanzibar, Chwaka

Type locality : Sri Lanka.

Vouchers : Kenya: HEC 5579, 2.7.1985 : Mombasa, Mc Kenzie Point, vertical shaded walls of lowest intertidal rock pools ; HEC 8168, 27.12.1988 : Mambrui, similar biotope ; HEC 8266, 5.8.1989 : Diani, in front of Moana, horizontal, strongly shaded bottom of low intertidal reef pool ; HEC 8624, 19.9.1990 : Mombasa, Ras Iwetine, similar biotope ; HEC 8809, 22.9.1991 : Msambweni, similar biotope ; HEC 9448, 14.9.1992 : Chale Island, similar biotope. — Tanzania : HEC 11102, 3.1.1996 : Kunduchi, Bahari Beach ; vertical rock wall in seagrass bed, -2 m.

Indian Ocean distribution : Indonesia (Java), Kenya (this paper), Sri Lanka, Tanzania (this paper).

Notes : The African specimens agree in all respects with our material from Papua New Guinea and Sri Lanka. New for the East African coast.

Sebdenia (J. Agardh) Berthold

Sebdenia flabellata (J. Agardh) Parkinson 1980 : 12

References : Millar *et al.* (1999 : 558, fig. 3F) ; Coppejans & Millar (2000 : fig. 13).

Type locality : Guadeloupe, West Indies.

Vouchers : Kenya: HEC 8630, 21.9.1990 : Mombasa, Mc Kenzie Point, epilithic as undergrowth of larger algae, -4 m. — Tanzania : HEC 10484, 20.8.1994 : Zanzibar, Uroa, lagoon (sheltered) side of the fringing reef, epilithic, -2 m.

Indian Ocean distribution : Australia, India, Kenya, Oman, Pakistan, South Africa, Sri Lanka, Tanzania (this paper).

Note : New for Tanzania.

Order CERAMIALES

Family Ceramiaceae

Anotrichium Nägeli

Anotrichium secundum (Harvey *ex* J. Agardh) Furnari *in* Cormaci, Furnari *et* Pizzuto 1994 : 635

References : Seagrief (1980 : 27, fig. on pl. 10) ; Seagrief (1988 : 64, fig. 5 : 14).

Bay ; 23. Zanzibar, Paje ; 24. Zanzibar, Makunduchi ; 25. Zanzibar, Kizinkazi ; 26. Zanzibar, Ras Fumba ; 27. Zanzibar, Chumbe Island ; 28. Zanzibar, Zanzibar Town, Mbweni Cliffs ; 29. Zanzibar, Zanzibar Town ; 30. Zanzibar, Bawe Island ; 31. Zanzibar, Mangapwani ; 32. Dar es Salaam, Kunduchi ; 33. Dar es Salaam, Oyster Bay ; 34. Dar es Salaam ; 35. Mafia Island, Chole Bay.

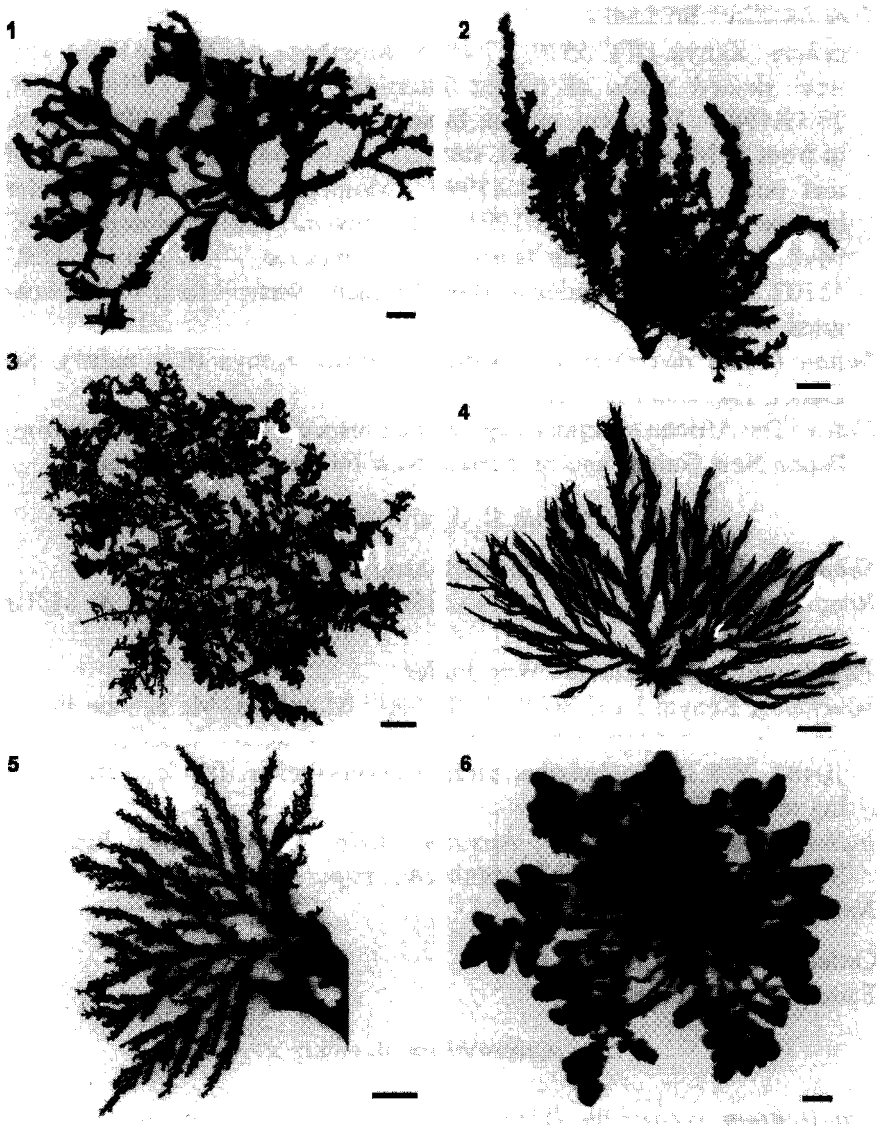


Fig. 1. — *Polyopes ligulatus* (Harvey *ex* Kützing) De Toni (HEC 5579) (1 cm).
Fig. 2. — *Ceramium multijugum* Jaasund (HEC 11980) (1 cm).
Fig. 3. — *Euptilota fergusonii* Cotton (HEC 6922) (1 cm).
Fig. 4. — *Microcladia gloria-spei* Stegenga, tetrasporophyte (HEC 8433) (1 cm).
Fig. 5. — *Microcladia gloria-spei* Stegenga, female gametophyte with marginal cystocarps (HEC 9531) (1 cm).
Fig. 6. — *Amphisbetema indica* (J. Agardh) Weber-van Bosse (HEC 9890) (1 cm).

Type locality : Muizenberg, False Bay, Cape Province, South Africa.
Voucher : Tanzania : HEC 9823, 2.8.1993 : Zanzibar, Uroa, epiphytic on other algae in high intertidal pools.
Indian Ocean distribution : Australia, Mauritius, South Africa, Sri Lanka, Tanzania (this paper).
Notes : According to Furnari (*in* Cormaci, Furnari *et* Pizzuto 1994 : 635) *A. tenue* (C. Agardh) Nägeli is characterised by the presence of less than 8 tetrasporangia per whorl and their terminal insertion on the pedicels ; *A. secundum* [including *A. tenue* (C. Agardh) Nägeli var. *thyrsigerum* (Thwaites *ex* Harvey) Baldock] on the other hand is characterised by the presence of 8-50 tetrasporangia per verticil, inserted subterminally and adaxially on the pedicels. Our material bears up to 11, subterminally inserted tetrasporangia per verticil, whereas Jaasund (1976 : 113, fig. 229, as *Griffithsia tenuis* C. Agardh) illustrates less than 8 tetrasporangia, agreeing with *A. tenue*. This indicates that both species, in the concept of Cormaci (*loc. cit.*), are present along the Tanzanian coast.

Balliella Itono *et* Tanaka

Balliella crouanioides (Itono) Itono *et* Tanaka 1973 : 250
Reference : Itono *et* Tanaka 1973 : 244-247, figs 9-14.
Type locality : Mage Island, Southern Japan.
Voucher : Kenya : HEC 5940, 21.1.1986 : Mombasa, Mc Kenzie Point, epipsammic, -4 m.
Indian Ocean distribution : Kenya (this paper).
Notes : Identified by Athanasiadis. New for the Indian Ocean ; previously recorded from S Japan and present in our recent collections from South Africa (Kwazulu Natal).

Ceramium Roth

Ceramium multijugum Jaasund (*nom. inval.*) 1970b : 68-69, figs 1 C-E, H, 2 Fig. 2
Reference : Jaasund (1976 : 107, figs 219A-C).
Intended type locality : Tanzania.
Vouchers : Kenya : HEC 7331, 15.3.1988 : Mombasa, Nyali reef, mostly epiphytic, wave beaten zone of the fringing reef at low tide ; HEC 7402, 19.3.1988 : Malindi, Casuarina Point National Park, undergrowth of seagrasses, -0,5 m at extreme low water ; HEC 8166, 27.12.1988 :

Mambrui, low midlittoral reef tidepools, epiphytic on different algae [mainly on *Chondrophycus papillosus* (C. Agardh) Garbary *et* Harper and *Gelidiella acerosa* (Forsskål) J. Feldmann *et* G. Hamel]. — Tanzania : HEC 9895, 4.8.1993 : Zanzibar, Matemwe, surf exposed seaward reef slope ; HEC 9928, 5.8.1993 : Zanzibar, Paje, on dead shells in mid intertidal pools ; HEC 11256, 16.1.1996 : Dar es Salaam, Oyster Bay, epilithic, just under low water mark ; HEC 11980, 22.7.1997 : Zanzibar, Kiwengwa, similar biotope.

Indian Ocean distribution : Tanzania, Kenya (this paper).

Note : New for the Kenyan coast.

Episporium Möbius

Episporium centroceratis Möbius 1885 : 77-80, pl VII

References : Pocock (1956 : 13-21, figs 1, 2, pl. 1: figs C-J.) ; Seagrief (1988 : 70, fig. 5: 17) ; Roels (1998 : 19, pl. 13, figs A-F).

Type locality : Dirk Hartog Island, Western Australia.

Vouchers : Tanzania, Zanzibar, Nungwi : RT 26 & 31, 20.7.1997 ; RT 67, 25.7.1997. This adelphoparasite was always observed on *Centroceras clavulatum* (C. Agardh) Montagne.

Indian Ocean distribution : Australia, South Africa, Tanzania (this paper).

Notes : Some material (RT 67) is tetrasporic. New for the East African coast.

Euptilota (Kützing) Kützing

Euptilota fergusonii Cotton 1907 : 262-264, pl. *s.n.* Fig. 3

References : Børgesen (1936 : 88-90, figs 9, 10) ; Jaasund (1976 : 117, fig. 237).

Type locality : "Pantura", Sri Lanka.

Vouchers : Kenya : HEC 5535, 1.7.1985 : Mombasa, Mc Kenzie Point, epilithic, -3 m ; HEC 7033, 29.7.1987 : Kanamai, under overhang in low intertidal pool ; HEC 7292, 10.3.1988 : Shimoni, Wasini Island, under overhanging coral boulder, -3 m ; HEC 9451, 14.9.1992 : Chale Island, epilithic, reef side of lagoon, -1 m. — Tanzania: HEC 11082, 5.1.1996 : Dar es Salaam, Kunduchi (Fungi Reef), vertical rock wall, -14 m ; HEC 10554, 23.8.1994 : Zanzibar, Nungwi, seaward side of the reef, epilithic, -5 m ; HEC 11416, 23.1.1996 : Pemba Island, Vitongoji, Watangwe Beach, vertical wall of low intertidal pool, -0,5 m.

Indian Ocean distribution : India, Kenya (this paper), Mozambique, Sri Lanka, Tanzania.

Note : New for the Kenyan coast.

Haloplegma Montagne

Haloplegma duperreyi Montagne 1842 : 258-261, pl. 7, fig. 1

References : Cribb (1983 : 92, pl. 28, figs 1-3) ; Tseng (1984 : 130, pl. 68, fig. 4) ; Littler *et al.* (1989 : 168, lower) ; Price and Scott (1992 : 127-129, figs 43A-D), Millar (1999 : 515, fig. 39).

Type locality : Martinique, West Indies.

Vouchers : Tanzania : HEC 9713, 26.7.1993 : Zanzibar, Uroa, epiphytic on *Avrainvillea amadelpha* (Montagne) A. Gepp *et* E. Gepp, -1 m in the lagoon between the 2 reefs ; HEC 11079, 5.1.1996 : Kunduchi, Fungi Reef, vertical or overhanging walls, -14 m ; HEC 12112, 29.7.1997 : Borabo Reef, outer reef slope, horizontal coral substrate, -18 m.

Indian Ocean distribution : Aldabra Islands, Cargados Carajos, India, Kenya, Maldives, Mauritius, Réunion, Seychelles, South Africa, Sri Lanka, Tanzania (this paper).

Note : New for Tanzania.

Microcladia Greville

Microcladia gloria-spei Stegenga 1986 : 60, pls 18, 19, 49 Figs 4, 5

Reference : Stegenga *et al.* (1997 : 440, pl. 151: 4-5, colour pl. 48).

Type locality : Platboombaai, Cape Peninsula, South Africa.

Vouchers : Kenya : HEC 8433, 19.8.1989 : Mambrui, epiphytic on *Sarcodia*, spring low water level, exposed to extreme surf ; HEC 9531, 20.9.1992 : same place and ecology.

Indian Ocean distribution : Kenya (this paper).

Note : This is a first record of the species out of its type locality : a female gametophyte with cystocarps (HEC 8433), and several tetrasporophytes (HEC 9531). New for the Indian Ocean.

Pleonosporium Nägeli

Pleonosporium caribaeum (Børgesen) R. Norris 1985 : 61

References : Jaasund (1976 : 113, figs 228A,B = *Mesothamnion caribaeum* Børgesen) ; Stegenga (1986 : 92-94, pl. 31), Stegenga & Bolton (1992 : fig. 3, table I).

Type locality : Off Annaberg, St. John, Virgin Islands.

Voucher : Kenya : HEC 7019, 28.7.1987 : Mombasa, Nyali reef, on sand-covered rock, infralittoral fringe.

Indian Ocean distribution : Australia, India, Kenya (this paper), Mozambique, South Africa, Tanzania.

Note : New for Kenya.

Family Dasyaceae

Amphisbetema Weber-van Bosse

Amphisbetema indica (J. Agardh) Weber-van Bosse 1913b : 133-135, fig. 1, pl. 13 : fig. 24 ; pl. 14: fig. 34 Fig. 6

Reference : Weber-van Bosse (1914 : 297-295, fig. 1, pl. 17 : fig. 24, pl. 18 : fig. 34).

Type locality : Diego Garcia Atoll.

Vouchers : Kenya : HEC 7421, 21.3.1988 : Casuarina Point National park, Malindi, landward side of outer reef, on coral debris in pot-holes, -1 m. – Tanzania : HEC 9890, 4.8.1993 : Zanzibar, Matemwe, seaward reef slope, surf exposed horizontal surface of the infralittoral fringe ; HEC 10555, 23.8.1994 : Zanzibar, Nungwi, seaward slope of the fringing reef, epilithic, -5 m ; HEC 11974, 22.7.1997 : Zanzibar, Cairo (Kiwengwa), seaward slope of the landward fringing reef, just under low water mark ; HEC 12054, 26.7.19987 : Zanzibar, Matemwe, Mnemba Reef, Kichwani, sand-covered coral substrate between coral heads, seaward reef slope, -15 m ; HEC 12196, 24.8.1997 : Zanzibar, Makunduchi, in low intertidal reef pools.

Indian Ocean distribution : Aldabra Islands, Diego Garcia Atoll, Kenya, Maldives, South Africa, Tanzania (this paper).

Note : New for Tanzania.

Tapeinodasya Weber-van Bosse

Tapeinodasya bornetii Weber-van Bosse 1904 : 96, figs 1, 2

Reference : De Clerck *et al.* (2000).

Lectotype locality : S-E side of Pearl Bank, Sulu Archipelago, Philippines ; syntype: Indonesia, Moearas Reef, inner side, East coast of Borneo.

Vouchers : Tanzania : HEC 9783, 30.7.1993 : Mafia Island, Chole Bay, Juani Islet, epilithic, subtidal, -2 m ; HEC 11392, 21.1.1996 : Pemba Island, Misali Island, epiphytic on *Laurencia* sp., shallow, low intertidal pools on coral platform ; HEC 11475, 24.1.1996 : Pemba Island, Tondooni, Verani (NW-point of Pemba), epiphytic on *Laurencia* sp., low intertidal rock pool ; HEC 12018, 23.7.1997 : Zanzibar, Paje, epilithic, seaward slope of the fringing reef, just exposed at spring low tide.

Indian Ocean distribution : Tanzania (this paper).

Notes : This species is discussed in detail and compared to *T. etheliae*

Weber-van Bosse (described from the Seychelles) in De Clerck *et al.* (2000). New for the Indian Ocean.

Family Delesseriaceae

Duckerella Wynne

Duckerella ferlusii (Hariot) Wynne 1982 : 236-242, figs 1-17 Fig. 7
Reference : Wynne (1988 : 520, fig. 5).
Type locality : Madagascar.
Voucher : Tanzania : HEC 12185, 21.8.1997 : Zanzibar, Cairo (Kiwengwa), epiphytic on *Thalassodendron* stems, lagoon between the two reefs, from -1 to -2 m.
Indian Ocean distribution : Kenya, Madagascar, Tanzania (this paper).
Notes : Our material from Kenya was lost by the mail. New for Tanzania.

Hypoglossum Kützing

Hypoglossum androlamellare Wynne *et* De Clerck 2000: 114-116, figs 8-10
Type locality : Tanzania, Kunduchi, Fungi Reef.
Voucher : Tanzania : ODC 634, 10.7.1997 : Kunduchi, Fungi Reef, epilithic, -15 m.
Indian Ocean distribution : Tanzania.
Note : Recently described as a new species to science.

Hypoglossum simulans Wynne, I. Price *et* Ballantine 1989 : 31-32, figs 12-26
Reference : Wynne (1993 : 15).
Type locality : Guadeloupe, West Indies.
Voucher : Tanzania : ODC 711, 17.7.1997 : Zanzibar, Chwaka Bay, mangrove tide channel, epiphytic on *Thalassodendron* leaf.
Indian Ocean distribution : Maldives, Tanzania (this paper).
Note : New for the East African coast.

Myriogramme Kylin

Myriogramme marginifructa R. Norris *et* Wynne 1987 : 381-385, figs 1-16 Fig. 8
Type locality : Sodwana Bay, Natal, South Africa.
Vouchers : Tanzania : HEC 11956, 22.7.1997 : Zanzibar, Cairo (Kiwengwa), vertical wall of coral head, lagoon between both fringing reefs, -2 m ; HEC 12061, 26.7.1997 : Zanzibar, Matemwe, Kombe

South, horizontal and vertical rock walls, outer reef slope, from -10 to -20 m ; HEC 12093, 27.7.1997 : Zanzibar, Matemwe, fringing reef of Mlango, ecology as previous nr ; HEC 12107, 29.7.1997 : Borabo Reef, ecology as previous nr.

Indian Ocean distribution: South Africa, Tanzania (this paper).

Notes: First record out of its type locality: tetrasporic, male and female gametophytes. New for the East African coast and locally frequent.

Vanvoorstia Harvey

Vanvoorstia incipiens De Clerck, Wynne *et* Coppejans 1999 : 394-400, figs 1-27

Type locality : Pongwe, Zanzibar, Tanzania.

Vouchers : Tanzania : HEC 11888, 19.7.1997 : Zanzibar, Pongwe, epiphytic on diverse algae [mainly *Gelidiella acerosa* (Forsskål) J. Feldmann *et* G. Hamel and *Cystoseira myrica* (S. Gmelin) C. Agardh] in shallow mid- to low intertidal pools ; HEC 12592, 26.6.1999 : ecology as previous nr.

Indian Ocean distribution : Tanzania.

Note : Recently described as new to science.

Family Rhodomelaceae

Chondria C. Agardh

Chondria collinsiana Howe 1920 : 568 Fig. 9

Reference : Jaasund (1976 : 135, figs 275A,B).

Type locality : Mariguana, Bahamas.

Vouchers : Kenya : HEC 6017, 27.1.1986 : Mombasa, Mc Kenzie Point: epiphytic on leaves of *Halodule wrightii* Ascherson, low intertidal sandy pool. - Tanzania: HEC 10563, 23.8.1994 : Zanzibar, Nungwi, epiphytic on *Caulerpa cupressoides* (Vahl) C. Agardh, in tide channel, -1 m ; HEC 10711, 27.8.1994 : Zanzibar, Chwaka, epiphytic on *Gracilaria salicornia* (C. Agardh) Dawson, high intertidal, shallow mangrove channel ; HEC 11189, 10.1.1996 : Mafia Island, channel between Mafia and Chole Island, epiphytic on *Tolypiocladia*, just above low water mark ; HEC 11987, 22.7.1997 : Zanzibar, Cairo (Kiwengwa), epiphytic on leaves of *Thalassia hemprichii* (Ehrenberg) Ascherson, mid intertidal sand covered pool ; HEC 12597, 26.6.1999 : Zanzibar, Pongwe, ecology as previous nr.

Indian Ocean distribution : Kenya (this paper), Qatar, Tanzania.

Note : New for Kenya.

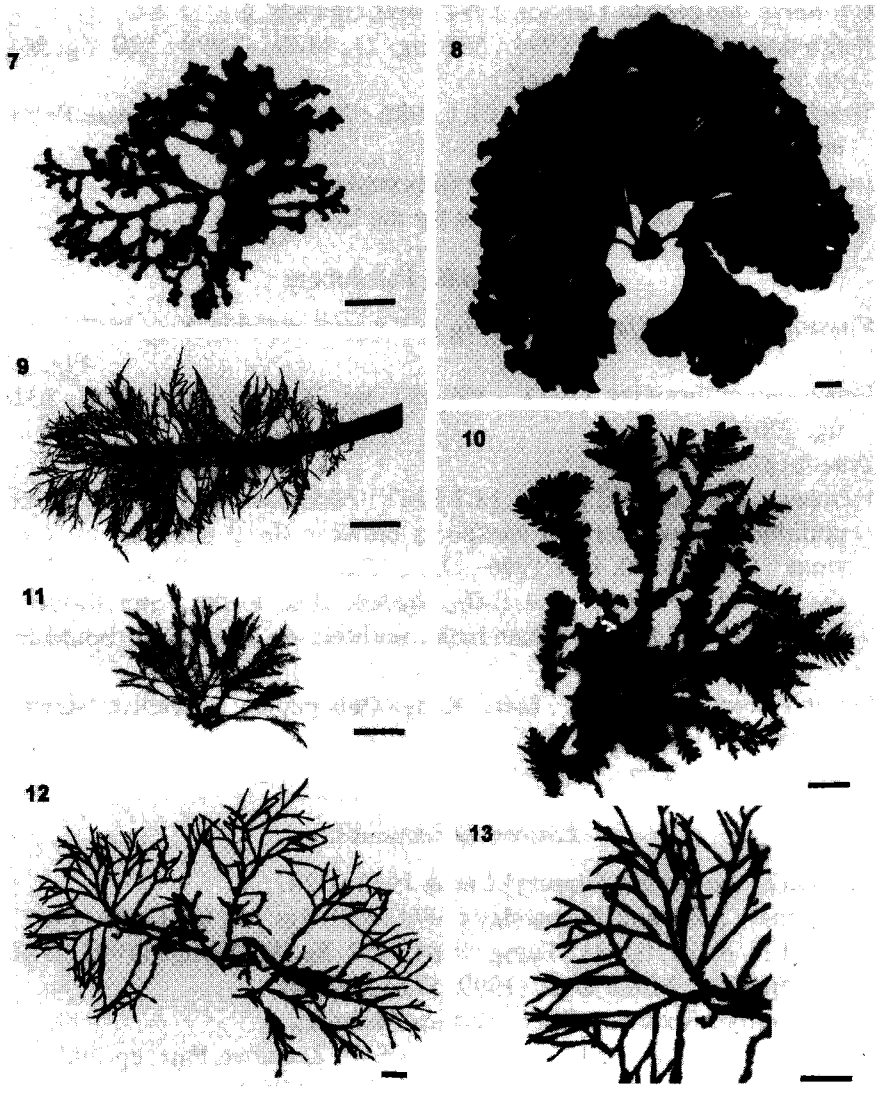


Fig. 7. — *Duckerella ferlusii* (Hariot) Wynne (HEC 12185) (1 cm).
Fig. 8. — *Myriogramme marginifructa* R. Norris *et* Wynne (HEC 12107) (1 cm).
Fig. 9. — *Chondria collinsiana* Howe, epiphytic on a seagrass leaf (HEC 11987) (1 cm).
Fig. 10. — *Enantiocladia prolifera* Falkenberg (HEC6941) (1 cm).
Fig. 11. — *Lophocladia kuetzingii* (Kuntze) P. Silva (HEC 11113) (1 cm).
Fig. 12. — *Osmundaria spiralis* (Lamouroux) R. Norris (HEC 11248) (1 cm).
Fig. 13. — *Osmundaria spiralis* (Lamouroux) R. Norris, detail (HEC 11248) (1 cm).

Chondria dangeardii Dawson 1954 : 460, figs 62f, g

References : Ballesteros (1994 : 538, fig. 2) ; Millar (1999 : 520, fig. 56).
Type locality : Dakar, Senegal.
Voucher : Kenya : HEC 5943, 21.1.1986 : Mombasa, Mc Kenzie Point, epiphytic on Gelidiaceae, -4 m.
Indian Ocean distribution : Kenya (this paper), Mauritius.
Note : Identified by A. Millar. New for the East African coast.

Enantiocladia Falkenberg

Enantiocladia prolifera Falkenberg *in* Schmitz *et* Falkenberg 1897 : 467
Fig. 10

References : Børgesen (1937 : 355-357, fig. 20), Jaasund (1976 : 133, fig. 270).
Type locality : India.
Voucher : Kenya: HEC 6941, 13.7.1987 : Mombasa, Mc Kenzie Point, epilithic in low intertidal rockpools between the 2 obelisks. — Tanzania : HEC 11290, 16.1.1996 : Dar es Salaam, Oyster Bay, in pools at the foot of the fossil coral cliffs, shaded, close to the water surface ; HEC 12210, 5.8.1997 : Kunduchi, epilithic on dead coral boulders, -1 m.
Indian Ocean distribution : India, Kenya (this paper), Laccadive Islands, Tanzania.
Note : New for Kenya.

Laurencia Lamouroux

Laurencia majuscula (Harvey) Lucas 1935 : 223.
References : Saito and Womersley (1974 : 820, figs 1A, 6) ; Cribb (1983 : 120-121, pl. 37, fig. 3) ; Tseng (1984 : 152, fig. 3) ; Wynne (1995 : 310, 316, fig. 63) ; Millar *et al.* (1999, 572 : fig. 6B).
Type locality : Rottnest Island, Western Australia.
Voucher : Tanzania : HEC 12017, 23.7.1997 : Zanzibar, Paje, epilithic on seaward slope of the fringing reef, infralittoral fringe.
Indian Ocean distribution : Australia, India, Indonesia (Sumba), Iran, Kenya, Maldives, Seychelles (Mahé Island), Sri Lanka, Tanzania (this paper).
Notes : Identified by A. Millar. New species for Tanzania.

Laurencia poiteaui (Lamouroux) Howe 1918 : 518 (*'poitei'*)
References : Jaasund (1970a : 63, figs 1D, 2D) ; Jaasund (1976 : 143, fig. 288).

Type locality : Santo Domingo, Domenican Republic.
Vouchers : Kenya : HEC 5945, 21.1.1986 : Mombasa, Mc Kenzie Point, epilithic, -2 m ; HEC 8440, 19.8.1989 : Mambrui, horizontal bottom of low intertidal reef pools.
Indian Ocean distribution : India, Kenya (this paper), Réunion, Sri Lanka, Tanzania.
Note: New for Kenya.

Lophocladia (J. Agardh) Schmitz

Lophocladia kuetzingii (Kuntze) P. Silva *in* Silva, Basson *et* Moe 1996 : 524 Fig. 11
Reference : Kützing (1864 : 26, pl. 71, figs e,f = *Dasya harveyi* Kützing).
Type locality : Fremantle, Western Australia.
Voucher : Tanzania : HEC 11113, 7.1.1996 : Dar es Salaam, epilithic on horizontal substrate, -1,5 m at spring low tide.
Indian Ocean distribution : Australia, Tanzania (this paper).
Notes : New for the East African coast. This record is a major range extension of this species.

Lophocladia sp.
Voucher : Tanzania : HEC 11173, 10.1.1996 : Mafia Island, channel between Mafia Lodge and Chole Island, epiphytic on *Thalassodendron* stems, -1 m.
Notes : The basal parts of the main axes are densely corticated and the apices are beset with densely clustered branchlets, as opposed to *L. kuetzingii* where the basal parts are uncorticated and the apices are covered with openly spaced branchlets.

Osmundaria Lamouroux

Osmundaria spiralis (Lamouroux) R. Norris 1991 : 17-20, figs 22, 26-31 Figs 12, 13
References : Kützing [1864 : 35, pl. 100 : figs a-c = *Epineuron spirale* (Lamouroux) Harvey].
Type locality : probably Western Australia.
Voucher : Tanzania : HEC 11248, 14.1.1996 : Mafia Island, Shangani Reef, vertical drop-off from -6 to -20 m, epilithic on the lower part of the wall.
Indian Ocean distribution : Australia, Tanzania (this paper).

Notes : According to Norris (1991 : 17) this species is only known from S and W-Australia ; specimens in the National Herbarium of New South Wales, Sydney (NSW) have a very well developed and thick, perennial stipe, 10-15 cm long, 2-3 mm in diameter ; var. *cliftonii* (Harvey) R.E. Norris (1991: 20) is characterised by a more delicately membranous thallus having much broader marginal teeth and with no to few spirals on the branch axes. Our specimens have no developed stipe, are markedly spirally twisted, have a thin (1-2 layers) cortex as opposed to the illustrations of Norris (1991 : 18, fig. 29: 4-5 layers). The fertile branchlets are formed on the midrib (as in *O. spiralis*). Our specimens might therefore be an African variety of this species. The material is sterile. New for the East African coast and a major range extension for this species.

Osmundaria sp.

Vouchers : Kenya : HEC 8192, 27.12.1988 & HEC 8436, 19.8.1989 : Mambrui, under an overhang in a low midlittoral rock pool.

Note: These specimens grossly resemble *O. melvillii* (J. Agardh) R.E. Norris, but differ by the tetrasporic stichidia being mainly formed in marginal proliferations (outgrowths of marginal teeth) ; the more or less pinnate branching is in a single plane. This might be a new species or a different growth form of *O. melvillii* (under study).

Polysiphonia Greville

Polysiphonia howei Hollenberg *in* W.R. Taylor 1945 : 302-303, fig. 3

References : Sartoni (1975 : 302, fig. 22) ; Sartoni (1976 : 141, fig. 22).

Type locality : Whale Cay, Berry Islands, Bahamas.

Voucher : Kenya : HEC 8745, 12.9.1991 : Mombasa, Mwamba Beach, Bostrychietum, vertical fossil coral wall, supralittoral fringe.

Indian Ocean distribution : Chagos Archipelago (Egmont Atoll), Indonesia (Timor), Kenya (this paper), Maldives, Singapore, Somalia, Sri Lanka.

Note : New species for Kenya.

Polysiphonia scopulorum Harvey var. ***villum*** (J. Agardh) Hollenberg 1968 : 81, 83

Reference : Basson [1979 : 79, pl. XVI: fig. 92 = *Lophosiphonia villum* (J. Agardh) Setchell & Gardner].

Type locality : 'ad litus Americae tropicae' (Mexico).

Vouchers : Kenya : HEC 6707, 1.7.1987 : Gazi Bay, vertical sides of dead, more or less rotten mangrove trees ; high intertidal. – Tanzania : HEC

9855, 3.8.1993: Zanzibar town, Mbweni Cliffs, epiphytic on *Thalassodendron* stems, -1 m at extreme low water.

Indian Ocean distribution : Aldabra Islands, Bahrain, Diego Garcia Atoll, Kenya (this paper), Maldives, Saudi Arabia, Seychelles, Tanzania (this paper).

Note : New for the East African coast.

Tolypiocladia Schmitz

Tolypiocladia condensata (Weber-van Bosse) P. Silva 1952 : 308 Fig. 14

References : Weber-van Bosse (1923 : 359-362, pl. V: fig. 3) ; Børgesen (1953 : 58-59, fig. 20 = *Roschera condensata* Weber-van Bosse).

Syntype localities : various in Indonesia and the Philippine Islands.

Vouchers : Kenya : HEC 8173, 29.7.1989 : Vipingo: on sand-covered coral, backreef, close to low water mark. Tanzania: HEC 10617, 24.8.1994 : Zanzibar, Ras Fumba, on sand-covered rock, mid intertidal shallow pool ; HEC 11359, 21.1.1996 : Pemba Island, Misali Island, intertidal coral platform, shallow rock pools close to low water mark ; ODC 736, 20.7.1997 : Zanzibar, Nungwi: on sand-covered rock, mid-intertidal pools.

Indian Ocean distribution : India, Kenya, Mauritius, Réunion, Tanzania (this paper).

Notes : Morphology like a supple, branched *Dictyurus* thallus. New for Tanzania.

Order GIGARTINALES

Family Solieriaceae

Callophycus Trevisan

Callophycus serratus (Harvey *ex* Kützing) P. Silva 1957 : 143 Fig. 15

References : Womersley and Bailey (1970 : 319) ; Kraft (1984 : 54-58, figs 2-16, 50) ; Millar *et al.* (1999 : 564, fig. 4B).

Type locality : Tonga.

Vouchers : Kenya : HEC 8402, 16.8.1989 : Tiwi : vertical coral wall, -1 m at low tide, close to lagoon inlet. – Tanzania : HEC 10536, 22.8.1994 : Zanzibar, Matemwe, epilithic, seaward slope of the reef, from -3 to -5 m, locally abundant ; HEC 11930, 21.7.1997 : as previous nr ; HEC 12051, 26.7.1997 : Zanzibar, Matemwe, Mnemba Reef, Kichwani, mainly on horizontal rock walls under overhangs, outer reef slope, from

-5 to -15 m ; ODC 692, 13.7.1997 : Kunduchi, Pongojo Island, washed ashore.

Indian Ocean distribution : Kenya (this paper), Tanzania (this paper).

Notes : Agreeing very well with the type specimens in NSW (Sydney). New for the Indian Ocean.

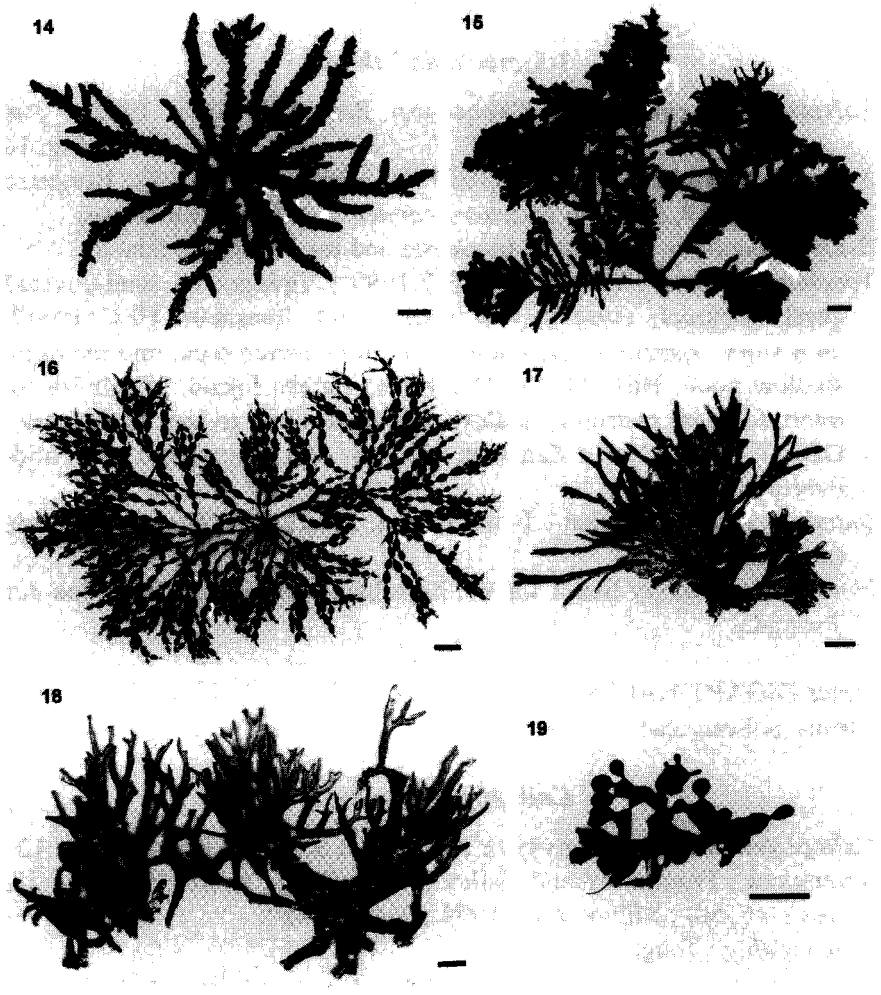


Fig. 14 — *Tolypiocladia condensata* (Weber-van Bosse) P. Silva (HEC 10617) (1 cm).
Fig. 15 — *Callophycus serratus* (Harvey *ex* Kützing) P. Silva (HEC 10536) (1 cm).
Fig. 16 — *Solieria jaasundii* Mshigeni *et* Papenfuss (HEC 12175) (1 cm).
Fig. 17 — *Rhodopeltis borealis* Yamada (HEC 10630) (1 cm).
Fig. 18 — *Titanophora pikeana* (Dickie) J. Feldmann (HEC 11141) (1 cm).
Fig. 19 — *Chamaebotrys boergesenii* (Weber-van Bosse) Huisman (HEC 5812) (1 cm).

Solieria J. Agardh

Solieria jaasundii Mshigeni *et* Papenfuss: 1981 : 1-7, figs 1-15 Fig. 16
Reference : Jaasund [1976 : 95, fig. 195 = *Rhabdonia africana* Jaasund *nom. inval.*].
Type locality : Kigombe, Tanzania.
Vouchers : Kenya : HEC 5662, 11.7.1985 : Mombasa, Mc Kenzie Point, epilithic, -4 m ; HEC 8189, 27.12.1988 : Mambrui, drifting in a tide pool. — Tanzania : HEC 11053, 3.1.1996 : Kunduchi, Bahari Beach, horizontal rock substrate under overhangs between seagrasses, from -0,5 to -2 m ; HEC 12175, 3.8.1997 : Kunduchi, Silversands, epiphytic on seagrasses, shallow subtidal.
Indian Ocean distribution : Kenya (this paper), Tanzania.
Note : New for Kenya.

Family Dumontiaceae

Dudresnaya P. Crouan *et* H. Crouan

Dudresnaya capricornica Robins *et* Kraft 1985 : 23, figs 90-129
Reference : Millar (1999 : 504, fig. 18).
Type locality : One Tree Island, Capricorn Group, Queensland, Australia.
Vouchers : Tanzania : HEC 12066, 26.7.1997 : Zanzibar, Matemwe, Kombe South, sand-covered coral substrate, between coral heads, outer reef slope, -15 m ; HEC 12195, 17.8.1997 : Zanzibar, Matemwe, outer reef slope, -5 m.
Indian Ocean distribution : Australia, Tanzania (this paper).
Notes : Identified by A. Millar. New for Tanzania.

Gibsmithia Doty

Gibsmithia hawaiiensis Doty 1963 : 458-465, figs 1-17
References : Magruder and Hunt (1979 : fig. 2, p. 70) ; Millar *et al.* (1999 : 560, fig. 2A).
Type locality : Honolulu, Oahu, Hawaiian Archipelago.
Vouchers : Kenya : HEC 7315, 10.3.1988 : Shimoni, Wasini Island, Mukwiro, deep under an overhang, -3 m at mid tide. — Tanzania : HEC 11084, 5.1.1996 : Kunduchi, Fungi Reef, -14 m, horizontal rock substrate ; HEC 12122, 29.7.1997 : Borabo Reef, reef slope, horizontal rock substrate, -18 m ; ODC 380, 5.9.1994 : Zanzibar, Chumbe Island, on vertical wall of coral head, -5 m at low tide, wave exposed shore.

Indian Ocean distribution : Australia, Kenya (this paper), Seychelles, Tanzania (this paper).

Note : New for the East African coast.

Gibsmithia sp.

Vouchers : Tanzania : HEC 11085, 5.1.1996 : Kunduchi, Fungi Reef, -14 m, horizontal rock substrate ; HEC 12213, 16.8.1997 : Zanzibar, Matemwe, Mnemba Reef, epilithic on the outer reef slope, from -1 to -3 m.

Notes : Macromorphologically this species differs from *G. hawaiiensis* by the presence of a very short stipe (instead of one several cm long), and the absence of peripheral filaments visible with the naked eye. The same entity was also collected in Papua New Guinea. Possibly a new species, according to G. Kraft (oral comm.). Under study.

Rhodopeltis Harvey

Rhodopeltis borealis Yamada 1931 : 75-76, pl. 19, fig. 1 Fig. 17

Reference : Nozawa 1970 : 102-107, figs 1A-C, 2, 3.

Vouchers : Kenya : HEC 6797, 13.7.1987 : Tiwi, bottom of deep, low intertidal rock pools. — Tanzania : HEC 11945, 21.7.1997 : Zanzibar, Matemwe, seaward slope of the reef, epilithic, from -3 to -5 m ; HEC 11992, 22.7.1997 (specimen with carpogonial nemathecia) and HEC 12630, 2.7.1999 : Zanzibar, Cairo (Kiwengwa), vertical wall of coral head in the lagoon between both fringing reefs, from -2 to -3 m ; HEC 12099, 27.7.1997 : Zanzibar, Matemwe, Mlango Reef, vertical and horizontal rock substrate, under overhangs, outer reef slope, -10 m ; HEC 12199, 21.8.1997 : Zanzibar, Makunduchi, vertical wall of coral head in the lagoon between both fringing reefs, -2 m ; ODC 717, 19.7.1997 : Zanzibar, Pongwe, vertical wall of a coral head, -1,5 m.

Notes : Macromorpholigically our specimens look like a *Galaxaura* species with a funnel-shaped, calcified thallus with dichotomous, recurved branches in young stages, becoming more spread in one plane when older, 5 cm, but up to 9 cm high. Combination of cylindrical and compressed segments, up to 8 x 3 mm, with marked constrictions at the dichotomies, but without uncalcified articulations (as opposed to *Amphiroa* with which it also has morphological similarities). Older segments are more markedly compressed and greyish because of the numerous small epiphytes (mostly crustose Corallinaceae) ; young segments are more cylindrical and pinkish. Remarkable is the parenchymatous (uncalcified) stipe which is short in young specimens, reaching

1,5 cm length and becoming branched in old thalli. Huisman and Walker (1990 : 410) mention two species of *Rhodopeltis* from Rottnest Island: *R. australis* Harvey and *R. borealis* Yamada . Based on their identification key our material belongs to *R. borealis*, *R. australis* having larger segments (to 35 x 8 mm), often with more segments arising from each node and the nodes being non-calcified.
New for the western Indian Ocean.

Family Nemastomataceae

Predaea De Toni fil.

Predaea sp. 1
Vouchers : Tanzania : HEC 9812, 30.7.1993 : Mafia Island, Chole Bay, Juani Islet, epilithic at –2 m ; HEC 12123, 29.7.1997 : Borabo Reef, reef slope, on horizontal rock substrate, -18 m.
Note : To be studied in detail.

Predaea sp. 2
Voucher : Tanzania : HEC 11086, 5.1.1996 : Kunduchi, Fungi Reef, horizontal coral substrate, -14 m.
Notes : Female specimen. Not corresponding with any described species ; possibly a new species. Under study.

Family Schizymeniaceae

Titanophora (J. Agardh) J. Feldmann

Titanophora pikeana (Dickie) J. Feldmann 1942 : 111 Fig. 18
References : Mshigeni & Papenfuss (1980 : 786, fig. 2), R. Norris (1992 : 5-8, figs 11-19), Abbott (1999 : 169, fig. 41C).
Type locality : Mauritius.
Vouchers : Tanzania : HEC 11141, 9.1.1996 : Mafia Island, Chole Bay, close to Juani Islet, horizontal coral substrate close to *Thalassodendron* bed, -1 m at spring low tide ; HEC 11487, 26.1.1996 : Kunduchi, Big T-Reef, epilithic on horizontal substrate at the foot of the drop off, -35 m ; ODC 628, 10.7.1997 : Kunduchi, Fungi Reef, -17 m.
Indian Ocean distribution : Madagascar, Mauritius, Réunion, South Africa, Tanzania (this paper), Sri Lanka.
Note : New for Tanzania.

Family Phacelocarpaceae

Phacelocarpus Endlicher *et* Diesing

Phacelocarpus tristichus J. Agardh 1885 : 57-58

References : Kylin (1932 : 51, pl. 19: fig. 45) ; Børgesen (1943 : 65-66, fig. 33) ; Searles (1968 : 22, fig. 8) ; Jaasund (1976 : 89, fig. 181) ; Farghaly (1980 : 163, pl. XX: fig. 3).

Type locality : Mauritius.

Vouchers : Kenya : HEC 5561, 2.7.1985 : Mombasa, Mc Kenzie Point, epilithic, -3 m ; HEC 7059, 30.7.1987 : Diani, shaded vertical walls of low intertidal pools ; HEC 8843, 24.9.1991 : Msambweni, epilithic in the lagoon, exposed to surf, -1 m. — Tanzania : HEC 9719, 26.7.1993 : Zanzibar, Uroa, epilithic in the wave exposed zone at low tide, -0,5 m ; HEC 10535, 22.8.1994 : Zanzibar, Matemwe, epilithic, seaward side of the reef, from -3 to -5 m, locally abundant ; HEC 11034, 3.1.1996 : Kunduchi, vertical walls of coral heads in *Thalassodendron* beds, from -0,5 to -2 m ; HEC 11247, 14.1.1996 : Mafia Island, Shangani Reef, hanging down from a drop off, -20 m ; HEC 11494, 26.1.1996 : Kunduchi, Big T-Reef, lower part of vertical drop-off, -35 m ; HEC 11985, 22.7.1997 : Zanzibar, Cairo (Kiwengwa), vertical wall of coral head in the lagoon between the two fringing reefs, -2 m ; ODC 725, 19.7.1997 : Zanzibar, Pongwe, on coral head, -2 m.

Indian Ocean distribution : Kenya (this paper), Madagascar, Mauritius, Mozambique, Tanzania.

Notes : A deepwater collection (HEC 11494) is more elegant (less bushy) and is partly distichous instead of tristichous. New for Kenya.

Order GRACILARIALES

Family Gracilariaceae

Gracilaria Greville

Gracilaria vieillardii Silva *in* Silva *et al.* 1987 : 44

References : Kützing (1869 : 19. t. 51, figs e-g = *Sphaerococcus denticulatus* Kützing) ; Weber-van Bosse [1928 : 432-433, fig. 175 = *Gracilaria denticulata* (Kützing) Weber-van Bosse *nom. illeg.*] ; Withell *et al.* (1994 : 307, figs 22-24).

Type locality : New Caledonia.

Voucher : Kenya : HEC 7305, 10.3.1988 : Shimoni, Wasini Island, Mukwiro, deep under an overhang, -2 m.

Indian Ocean distribution : Indonesia, Kenya (this paper), South Africa.
Notes : Identified by A. Millar. New for the East African coast.

Order RHODYMENIALES
Family Champiaceae

Champia Desvaux

Champia compressa Harvey 1838 : 402
References : Cribb (1954 : 25, pl. 4, fig. 3) ; Millar (1990 : 371-373, figs 30A-D) ; Stegenga *et al.* (1997 : 368, pl. 135, colour pl. 143).
Type locality : Muizenberg, False Bay, South Africa.
Vouchers : Kenya : HEC 6021, 27.1.1986 : Mombasa, Mc Kenzie Point, epilithic, under *Thalassodendron* canopy, -1 m ; HEC 6721, 6.7.1987 : Mombasa, in front of KMFRI, epiphytic on *Gelidiopsis repens* (Kützing) Weber-van Bosse, -3 m. - Tanzania: HEC 9866, 4.8.1993 : Zanzibar, Matemwe, seaward reef slope, epiphytic on *Laurencia* sp.
Indian Ocean distribution : Amirante Islands, Australia, Diego Garcia Atoll, India, Kenya, Mauritius?, Mozambique, Oman, Pakistan, Réunion, Seychelles (Coetivy Reef), South Africa, Sri Lanka, Tanzania (this paper).
Notes : Identified by A. Millar. New for Tanzania.

Family Lomentariaceae

Lomentaria Lyngbye

Lomentaria baileyana (Harvey) Farlow 1976 : 698
References : Harvey (1853 : 185-186, pl. 20c, fig. 1 = *Chylocladia baileyana* Harvey), Schneider & Searles (1991 : 353-354, fig. 414).
Syntype localities : various, in Massachusetts, Rhode Island, and New York, USA.
Voucher : Kenya : HEC 8282, 7.8.1989 : Gazi, pool between *Sonneratia* pneumatophores, high midlittoral.
Indian Ocean distribution : Kenya (this paper).
Notes : Identified by A. Millar. Previously recorded from the East coast of N America (Searles, loc. cit.) and from the Philippines (Silva *et al.* 1987). New for the Indian Ocean.

Asteromenia Huisman *et* Millar

Asteromenia peltata (W. R. Taylor) Huisman *et* Millar 1996 : 138, figs 1-17.

References : Taylor (1942 : 113-114, pl. 3, fig. 9, pl. 16, figs 1-5 ; 1960 : 477, pl. 54, figs 5-7 = *Fauchea peltata* W.R. Taylor) ; Nizamuddin and Gessner (1970 : 10, pl. 14, figs 41, 42, pl. 19, fig. 56 = *Fauchea peltata* W. R. Taylor) ; Schneider [1975 : 133-134, figs 2, 5, 6 = *Weberella peltata* (W.R. Taylor) Schneider] ; Schneider and Searles [1991 : 345, figs 406, 407 = *Halichrysis peltata* (W.R. Taylor) P. Huvé *et* H. Huvé] ; Millar (1999 : 508, fig. 35) ; Coppejans & Millar (2000 : figs 22-24).

Type locality : Tortuga Island, Venezuela.

Voucher : Tanzania: HEC 9721, 26.7.1993: Zanzibar, Uroa, vertical and overhanging wall, -2 m, between both reefs.

Indian Ocean distribution : Australia, Iran, Maldives, Tanzania (this paper).

Note : New for the East African coast.

Chamaebotrys Huisman

Chamaebotrys boergesenii (Weber-van Bosse) Huisman 1996 : 106-109, figs 35-38 Fig. 19

References : Weber-van Bosse (1928 : 473, figs 207-208 = *Coelarthrum boergesenii* Weber-van Bosse), Abbott (1999 : 228-229, fig. 63 E-G).

Type locality : Borneo Bank, Makassar Strait, Indonesia

Voucher : Kenya : HEC 5812, 10.1.1986 : Mombasa, Mc Kenzie Point, on vertical wall, -2 m.

Indian Ocean distribution : Kenya (this paper).

Notes : Identified by A. Millar. New for the Indian Ocean.

Ceratodictyon Zanardini

Ceratodictyon spongiosum Zanardini 1878 : 37

References : Jaasund (1976 : 89, fig. 179) ; Cribb (1983 : 55-56, pl. 12, fig. 3-4) ; Tseng (1984 : 100, pl. 53, fig. 3) ; Price and Kraft (1991 : 107-109, figs 1-13).

Type locality : Wokam, Aru Islands, Indonesia.

Vouchers : Kenya : HEC 5870, 15.1.1986 : Mombasa, between English Point and Mc Kenzie Point, on dead coral covered by sand, -1 m ; HEC

6725, 6.7.1987 : Mombasa, in front of KMFRI, -0,5 m. — Tanzania : HEC 9939, 3.8.1993 : Zanzibar town, Mbweni Cliffs, on sand, between *Thalassia hemprichii* (Ehrenberg) Ascherson, infralittoral fringe ; HEC 11399, 21.1.1996 : Pemba Island, Misali Island, intertidal coral platform, pools at low tide level.

Indian Ocean distribution : Aldabra Islands, Australia, India, Indonesia (Sumba), Kenya (this paper) Laccadive Islands, Madagascar, Malaysia, Maldives, Mauritius, Seychelles, Singapore, Sri Lanka, Tanzania.

Note : New for Kenya.

Chrysymenia J. Agardh

Chrysymenia glebosa Abbott *et* Littler 1970 : 167, fig. 3

Reference : Abbott (1999 : 230, fig. 64A).

Type locality : Waikiki, O'ahu, Hawaiian Islands.

Voucher : Tanzania : HEC 10638, 25.8.1994 : Zanzibar, Ras Fumba, vertical wall, -1 m, strong current.

Indian Ocean distribution : Tanzania (this paper).

Notes : Identified by A. Millar. New species for the Indian Ocean.

Unknown family in the Order Gigartinales

Corynocystis Kraft

Corynocystis prostrata Kraft *in* Kraft *et al.* 1999 : 26, figs 16, 45-60
Fig. 20

Type locality : Bulusan, Sorsogon province, Philippines.

Vouchers : Tanzania : HEC 9875, 4.8.1993 : Zanzibar, Matemwe: low tide reef pools, under overhangs ; HEC 11162, 10.1.1996 : Mafia Island, in front of Juani Island: seaward reef slope, under rock overhangs, -15 m ; ODC 361, 3.9.1994 : Zanzibar, Chumbe Island: in coral crevice, -5 m.

Indian Ocean distribution : Tanzania (this paper).

Notes : Recently described as new to science. New for the Indian Ocean.

Class **Phaeophyta**
Order DICTYOTALES
Family Dictyotaceae

Dictyota Lamouroux

A recent monographic study of the genus *Dictyota* in the Indian Ocean (De Clerck 1999), based on a morphometric approach, resulted in reduc-

ing the total number of *D.* species for that region from 43 to 23 (including 2 newly described species). The study of type specimens showed that many species names were misapplied: of the 9 species recorded by Jaasund (1970c) from the Tanzanian coasts only one (*D. ciliolata* Sonder *ex* Kützing) remains without nomenclatural or taxonomic changes (Coppejans *et al.* 2000). Biogeographical conclusions on the distribution of *Dictyota* species based on data from literature are therefore extremely difficult to interpret.

Dictyota adnata Zanardini 1878 : 34-35

References : Weber-van Bosse (1926 : 101-102, fig. 19) ; Coppejans (1990 : 371-380, figs 1-15) ; De Clerck & Coppejans (1997 : 33-36, figs 2, 4, 6).

Type locality : Pulau Faur, Bomberai Peninsula, Irian Jaya, Indonesia.

Vouchers : Kenya : HEC 6739, 8.7.1987 & HEC 7182, 25.2.1988 & HEC 8163, 21.12.1988 & HEC 8470, 23.8.1989 : Gazi Bay, sandy-silty substrate between and also on mangrove pneumatophores (close to high tide). – Tanzania : HEC 12151, 30.7.1997 & 12607, 27.6.1999 : Zanzibar, Chwaka, in Bostrychietum, vertical fossil cliff wall along the mangrove tide channel, supralittoral fringe ; HEC 12164, 30.7.1997 : Zanzibar, Chwaka, on *Laurencia perforata* (Bory de Saint Vincent) Montagne, between rhizophores and pneumatophores of the mangrove, close to high tide level ; ODC 351, 29.8.1994 : Zanzibar, Mangapwani, on *Laurencia perforata*, shaded rock crevices, supralittoral fringe ; ODC 443, 13.1.1996 : Mafia Island, Chole Bay, ecology as HEC 6739.

Indian Ocean distribution : Kenya, Malaysia, Tanzania (this paper).

Note : The specimens identified as *D. adnata sensu* Weber-van Bosse by Jaasund in fact belong to *D. humifusa* [see De Clerck (1999 : 57-61, pls 1, 2) and Coppejans *et al.* (1999)]. New for the East African coast.

Dictyota friabilis Setchell 1926 : 91-92, pl 13 : figs 4-7 ; pl. 20, fig. 1

References : Weber-van Bosse (1913a : 185, pl. 3, fig. 7, as *D. ceylanica* var. *rotundata*) ; De Clerck (1999 : 155-161, pls 22-23).

Type locality : Tafaa Point, Tahiti.

Vouchers : Tanzania : HEC 12132, 29.7.1997: Borabo Reef, reef slope, from -15 to -20 m ; ODC 360, 30.8.1994 : Zanzibar, Bawe Island, on coral heads, -2,5 m ; ODC 411, 6.1.1996 : Kunduchi, Fungi Reef, from -12 to -16 m ; ODC 421, 9.1.1996 & ODC 441, 442, 13.1.1996 : Mafia Island, Chole Bay, Kinasi Passage, vertical wall of coral head, -2 m, from -7 to -12 m ; ODC 426, 10.1.1996 : Mafia Island, Juani Islet, outer

fringing reef slope, from -10 to -20 m ; ODC 476, 21.1.1996 : Pemba Island, Mesali Island, epiphytic on *Turbinaria decurrens* Bory de Saint Vincent, -1 m ; ODC 483, 23.1.1996 : Pemba Island, Vitongoji, in pools of the infralittoral fringe and subtidal.

Indian Ocean distribution : Aldabra Islands, Bangladesh, Diego Garcia Atoll, Egypt, Kenya, Maldives, Mauritius, Malaysia, Réunion, Saudi Arabia, Seychelles, Sri Lanka, Tanzania (this paper).

Notes : The specimens previously identified as *D. friabilis* and mentioned as such in Jaasund (1976 : 39) and Silva *et al.* (1996 : 593) in fact belong to *D. crispata* Lamouroux (see De Clerck 1999 : 155, De Clerck & Coppejans 1999 : 189 and Coppejans *et al.* 2000). New for the East African coast.

Dictyota grossedentata De Clerck *et* Coppejans 1999 : 185-189, figs 1-9

Reference : De Clerck (1999 : 171-175, pls 25, 26).

Type locality : Kombe South, Matemwe, Zanzibar, Tanzania.

Vouchers : Tanzania : HEC 12060, 26.7.1997 : Zanzibar, Matemwe, Kombe South, vertical walls of coral heads, from -10 to -15 m ; HEC 12130, 29.7.1997 : Borabo Reef, from -10 to -15 m ; HEC 12587, 24.6.1999 : Zanzibar, Panga Reef, on *Acropora* branch, -15 m ; ODC 367, 5.9.1994 : Zanzibar, Chumbe Island, on *Acropora* branches, -1 m.

Indian Ocean distribution : Maldives, Sri Lanka (De Clerck & Coppejans 1999), Tanzania.

Note: Recently described as new to science.

Dictyota hamifera Setchell 1926 : 92, pl. 14, figs 1-6

References : Coppejans *et al.* (1995 : 182, figs 11, 12), De Clerck (1999 : 179-181, pls 27, 28).

Type locality : Tahiti, between Papenu and Huau.

Vouchers : Kenya : HEC 8255, 5.8.1989 : Diani, epiphytic in reef pool. — Tanzania : ODC 495, 24.1.1996 : Pemba Island, Tondooni, Verani, epiphytic in tide channels of low intertidal pools.

Indian Ocean distribution : Kenya, Tanzania.

Note : New for the Indian Ocean.

Dictyota humifusa Hörnig, Schnetter *et* Coppejans *in* Hörnig *et al.* 1992 : 57-58, fig. 6

References : Jaasund (1970 : 78, figs 1G, 2G, 3J, as *D. adnata*) ; Schnetter & Bula-Meyer (1982 : 60-61 ; pl. 9, figs B, D, as *D. adnata*).

Type locality : Punta Chengue, Santa Marta, Departamento del Magdalena, Colombia.

Vouchers : Kenya : HEC 7206, 1.3.1988 : Mombasa, Mc Kenzie Point ; HEC 8223, 29.12.1988 : Mida Creek, epiphytic on seagrasses ; HEC 8426, 18.8.1989 : Watamu, Turtle Bay, epiphytic on *Thalassodendron* stems, subtidal ; HEC 8495, 24.8.1989 : Diani, epiphytic on diverse algae, from -0,5 to -1 m ; HEC 8504, 24.8.1989 : Gazi Bay, epiphytic on *Thalassodendron* stems, subtidal ; HEC 8593, 17.9.1990 : Mombasa, Bamburi Bay, epiphytic, in low intertidal pools ; HEC 8719, 5.9.1991 : Mombasa, Mwamba Beach: on *Thalassodendron* stems, subtidal ; HEC 8888, 10.9.1991 : Gazi, Kidogoweni Creek, epiphytic in mangrove tide channel ; HEC 9406, 11.9.1992 : Mombasa, Iwatine Bay, mainly epiphytic, in pools of the infralittoral fringe. — Tanzania : HEC 12011, 23.7.1997 : Zanzibar, Paje, vertical walls of back-reef pools ; HEC 12146, 30.7.1997 : Zanzibar, Chwaka, on *Thalassodendron* stems, mangrove tide channel ; ODC 292, 19.8.1994 : Zanzibar town, Mbweni Cliffs, epiphytic on *Ventricaria ventricosa* (J. Agardh) Olsen *et* J. West, -2 m ; ODC 296, 20.8.1994 : Zanzibar, Uroa, epiphytic on algal turf, low intertidal pool ; ODC 309, 22.8.1994 : Zanzibar, Matemwe, epiphytic in low intertidal pools ; ODC 374, 5.9.1994 : Zanzibar, Chumbe Island ; ODC 420, 9.1.1996 : Mafia Island, Kinasi Passage ; ODC 429, 10.1.1996 : Mafia Island, Chole Bay ; ODC 470, 18.1.1996 : Kunduchi, Mbudya IslandODC 482, 23.1.1996 : Pemba Island, Vitongoji ; ODC 494, 24.1.1996 : Pemba Island, Tondooni, Verani,

Indian Ocean distribution : Kenya, Madagascar, Tanzania.

Note : Previously misidentified as *D. adnata sensu* Weber-van Bosse by Jaasund (1976 : 43, fig. 85).

Dictyota rigida De Clerck *et* Coppejans 1999 : 189-191, figs 10-17

Type locality : Kunduchi, Dar es Salaam.

Vouchers : Kenya : HEC 5537, 1.7.1985 : Mombasa, Mc Kenzie Point, epiphytic on stems of *Thalassodendron*, -3 m ; HEC 6878, 16.7.1987 : Mombasa, Fort Jesus, vertical walls of high midlittoral pools. — Tanzania : HEC 11110, 3.1.1996 : Kunduchi, Bahari Beach, on *Thalassodendron* stems ; HEC 11959, 22.7.1997 : Zanzibar, Cairo (Kiwengwa), vertical wall of coral head in lagoon between both fringing reefs, -2 m ; ODC 338, 27.8.1994 : Zanzibar, Chwaka, mangrove tide channel, epiphytic on *Enhalus* and *Thalassodendron*, from -1 to -3 m ; ODC 465, 18.1.1996 : Kunduchi, Mbudya Island, as previous nr.

Indian Ocean distribution : Kenya, Tanzania.

Note : Recently described as new to science.

Dictyota stolonifera Dawson 1962 : 392, pl. 5, fig. A

Reference : Schnetter & Bula-Meyer [1982 : 62-63, pl. 9, figs H-O = *Dilophus stoloniferus* (Dawson) Schnetter & Bula-Meyer].

Type locality : Masachapa, Nicaragua, Pacific Ocean.

Vouchers : Kenya : HEC 5906, 20.1.1986 : Mombasa, under KMFRI, epiphytic on *Amphiroa*-tuft, -3 m ; HEC 6913, 21.7.1987 : Mombasa, Mc Kenzie Point, from -3 to -5 m ; HEC 7210, 2.3.1988 : Mombasa, Fort Jesus, -2 m ; HEC 8625, 19.9.1990 : Mombasa, Ras Iwetine, low intertidal reef pools. — Tanzania : HEC 12050, 26.7.1997 : Zanzibar, Matemwe, Mnemba Reef, Kichwani, from -10 to -20 m ; HEC 12090, 27.7.1997 : Zanzibar, Matemwe, Mlango Reef, from -10 to -20m ; ODC 314, 23.8.1994 : Zanzibar, Nungwi, seaward reef slope, from -5 to -10 m ; ODC 334, 26.8.1994 : Zanzibar, Kizinkazi, vertical walls of coral heads, epiphytic, from -2 to -4 m ; ODC 372, 5.9.1994 : Zanzibar, Chumbe Island, from -4 to -7m ; ODC 414, 6.1.1996 : Kunduchi, Fungi Reef, -12 m ; ODC 427, 10.1.1996 : Mafia Island, Chole Bay, Juani Islet, from -10 to -20 m ; ODC 444, 14.1.1996 : Mafia Island, Shangani Reef, -20 m.

Indian Ocean distribution : Kenya, Tanzania.

Note : New for the Indian Ocean.

Stypopodium (Kützing) J. Agardh

Stypopodium flabelliforme Weber-van Bosse 1913 : 176-178, pl. II : fig. 10, pl. III : fig. 2 Fig. 21

Reference : Verheij & Prud'homme van Reine (1993 : 430, pl. 11: 6).

Syntype localities : Rotti, Indonesia ; Sulu Archipelago, Philippines.

Vouchers : Kenya : HEC 7294, 10.3.1988 : Shimoni, Wasini Island, deep under overhang, -3 m at mid-tide. — Tanzania : HEC 10534, 22.8.1994 : Zanzibar, Matemwe, seaward reef slope, from -3 to -5 m ; HEC 12091, 27.7.1997 : Zanzibar, Matemwe, Mlango fringing reef, outer reef slope, from -15 to -20 m ; HEC 12106, 29.7.1997 : Borabo Reef, from -15 to -20 m ; ODC 445, 14.1.1996 : Mafia Island, Shangani Reef, from -10 to -25 m.

Indian Ocean distribution : Australia, Indonesia, Kenya (this paper), Tanzania (this paper).

Notes : *Stypopodium zonale* (Lamouroux) Papenfuss has been reported from the East African coast by several authors. The latter, however, differs markedly from *S. flabelliforme* by its erect thallus attached by a stupose basis. *S. flabelliforme* has a typical ascending habit, with rhi-

zoids being formed on the downward side of the thallus wherever it is in contact with the substrate. New for the East African coast.

Order SCYTOSIPHONALES
Family Scytosiphonaceae

Hydroclathrus Bory de Saint-Vincent

Hydroclathrus tenuis Tseng *et* Baoren 1983 : 185, fig. 1 ; pl. 1: fig. 1a Fig. 22

References : Tseng (1984 : 186, pl. 94, fig. 3) ; Verheij & Prud'homme van Reine (1993 : 430, pl. 11: fig. 6) ; Trono Jr (1997 : 123, fig. 83).

Type locality : Xisha Island, Guandong Province, China.

Vouchers : Tanzania : HEC 9805, 31.7.1993 : Mafia Island, Chole Bay, Utende Beach, shallow pool of the infralittoral fringe, intertwined with other algae ; HEC 10695, 27.8.1994 : Zanzibar, Chwaka, shallow, low intertidal pools, close to the mangrove tide channel, as previous nr ; HEC 11356, 21.1.1996 : Pemba Island, Misali Island, shallow pools at low tide level on coral platform.

Indian Ocean distribution : Tanzania (this paper).

Note : New for the Indian Ocean.

Order FUCALES
Family Sargassaceae

Turbinaria Lamouroux

Turbinaria tanzaniensis Jaasund 1976 : 51, fig. 103, *nom. inval.* Fig. 23

Reference : Jaasund (1977d : 517, fig. 2).

Intended type locality : Tanzania.

Vouchers : Kenya : HEC 6844, 15.7.1987 : Diani, seaward reef slope, infralittoral fringe ; HEC 7166, 24.2.1988 : Mombasa, Nyali Reef at Ras Iwetine, landward reef slope, just under low water level ; HEC 7436, 22.3.1988 : Malindi, Silversands, seaward reef slope, just above low water mark. — Tanzania : HEC 10526, 21.8.1994 : Zanzibar, Bawe Island, infralittoral fringe ; HEC 10703, 27.8.1994 & HEC 12153 & HEC 12154, 30.7.1997 & HEC 12613, 27.6.1999 : Zanzibar, Chwaka, intertidal flat along the mangrove tide channel, shallow pools and channels close to low water mark.

Indian Ocean distribution : Kenya (this paper), Tanzania.

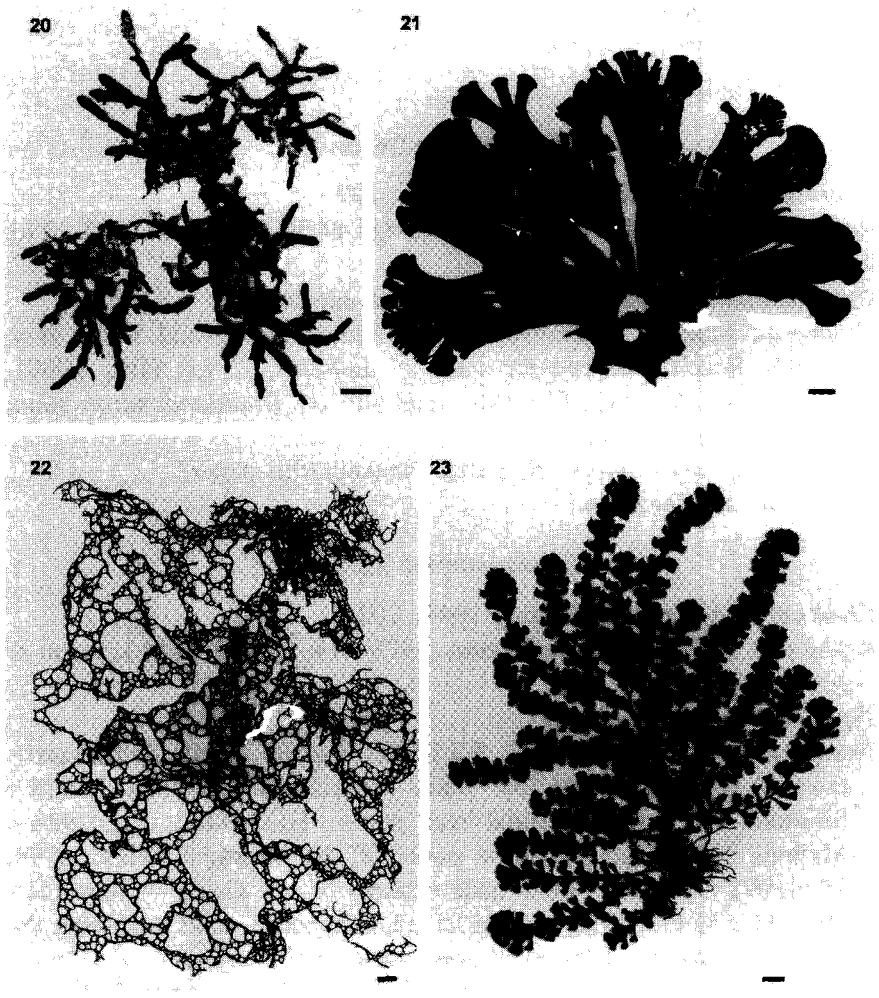


Fig. 20 — *Corynocystis prostrata* Kraft (HEC 11162) (1 cm).
Fig. 21 — *Stypopodium flabelliforme* Weber-van Bosse (ODC 445) (1 cm).
Fig. 22 — *Hydroclathrus tenuis* Tseng *et* Lu (HEC 10695) (1 cm).
Fig. 23 — *Turbinaria tanzaniensis* Jaasund (HEC 12154) (1 cm).

Notes : New for Kenya. The specimens from Chwaka are large (up to 30 cm high), bear numerous side branches (8-12 cm long) along the main axis which are densely set with rather strongly inflated peltate branchlets ; front view of the branchlets triangular with a smooth or slightly dentate margin. They do not really match Jaasund's description and illustration.

Class **Chlorophyta**

Order CLADOPHORALES
Family Cladophoraceae

Microdictyon Decaisne

Microdictyon japonicum Setchell 1925 : 107
References : Setchell (1929 : 528-534, figs 49-56) ; Sartoni (1992 : 296, figs 4 A, B).
Type locality : Tateyama, Chiba Prefecture, Japan.
Vouchers : Tanzania : HEC 9808, 31.7.1993 : Mafia Island, Chole Bay, Utende Beach, between the basis of *Enhalus*, -2 m ; HEC 10691, 27.8.1994 : Zanzibar, Chwaka, epiphytic on *Thalassodendron* stem, mangrove tide channel, -1 m.
Indian Ocean distribution : Somalia, Tanzania (this paper).
Note : New for Tanzania.

Chaetomorpha Kützing

Chaetomorpha gracilis Kützing 1845 : 203
References : Nizamuddin & Begum (1973 : 14, figs 63, 64) ; Lawson & John (1987 : 68).
Type locality : Trieste, Italy.
Vouchers : Kenya : HEC 6115, 5.2.1986 : Malindi, White Sands, sand-covered rocks, close to low water mark ; HEC 7317, 10.3.1988 : Shimoni, hot, high intertidal reef pools ; HEC 7432, 22.3.1988 : Malindi, Silversands, shallow pools of the intertidal ; HEC 8798, 18.9.1991 : Vanga, in man-made channel of salt plain. — Tanzania : HEC 11238, 13.1.1996 : Mafia Island, attached to sand just under the lowermost pneumatophores of *Sonneratia*, mid intertidal.
Indian Ocean distribution : Bangladesh, Diego Garcia Atoll, Indonesia (Java), Kenya, Maldives (Addu Atoll), Mauritius, Pakistan, Réunion, Seychelles (Mahé Island), Singapore, Sri Lanka, Tanzania (this paper).
Note : New for Tanzania.

Chaetomorpha spiralis Okamura 1903a: n° 94, 1903b : 131-132.
Fig. 24
References : Tseng (1984 : 262, pl. 130, fig. 3) ; Sartoni (1992 : 299, fig. 5A).
Type locality : Japan (Nemoto, Chiba prefecture).
Vouchers : Kenya : HEC 5982, 23.1.1986 : Mombasa, Mc Kenzie Point, shaded rock walls of low intertidal pools ; HEC 6893, 16.7.1987 :

Mombasa, Fort Jesus, mid intertidal pools ; HEC 7036, 29.7.1987 : Kanamai, sand-covered bottom of infralittoral fringe rock pool ; HEC 7419, 21.3.1988 : Malindi, Casuarina Point, on coral debris in pot-holes in *Thalassodendron* bed, -1 m ; HEC 8863, 24.9.1991 : Msambweni, epiphytic (!) and epilithic in infralittoral fringe ; HEC 9539, 20.9.1992 : Mambrui, shallow mid-intertidal pools.

Indian Ocean distribution : India, Indonesia (Bali), Kenya (this paper), Laccadive Islands, Malaysia, Pakistan, Somàlia.

Note : New for Kenya.

Rhizoclonium Kützing

Rhizoclonium africanum Kützing 1853 : 21, pl. 67: fig. II

References : Womersley & Bailey (1970 : 265) ; Egerod (1974 : 135-136, figs 10-12) ; Sartoni (1986 : 361, fig. 3C) ; Lawson & John (1987 : 80, pl. 5, figs 2-3) ; Sartoni (1992 : 305, fig. 7A).

Type locality : 'Senegambien' (Senegal or Gambia).

Vouchers : Kenya : HEC 5848, 14.1.1986 : Mombasa, between English Point and Mc Kenzie Point ; HEC 8742, 12.9.1991 : Mombasa, Mwamba Beach ; HEC 9392, 11.9.1992 : Mombasa, Iwatine Bay. — Tanzania : HEC 9759, 27.7.1993 : Zanzibar, Chapwani Island ; HEC 12601, 27.6.1999 : Zanzibar, Chwaka ; ODC 350, 29.8.1994 : Mangapwani ; FL 604, 15.7.1997 : Zanzibar town, Mbweni Cliffs ; FL 703, 26.7.1997 : Zanzibar, Nungwi.

Indian Ocean distribution : Australia, Bangladesh, Burma, Indonesia (Java and Sumatra), Kenya, Laccadive Islands, Madagascar, Nicobar Islands, Singapore, Somalia, South Africa, Tanzania (this paper), Thailand.

Notes : Ecology very homogeneous all over the collections: hanging down from the vertical fossil coral cliff walls (and in cavities), supralittoral fringe, above the Bostrychietum. New for Tanzania.

Chamaedoris Montagne

Chamaedoris auriculata Børgesen 1933a : 5-9, figs 3-5 Fig. 25

References : Sartoni (1976 : 118, fig. 3) ; Sartoni (1992 : 308, figs 8A, 9A).

Type locality : Dwarka, Gujarat, India.

Vouchers : Kenya : HEC 8169, 27.12.1988 : Mambrui, low intertidal pool ; HEC 8760, 13.9.1991 : Kanamai, seaward reef slope, -1 m ; HEC 8877, 26.9.1991 : Mombasa, Nyali Reef, seaward reef slope, pool chan-

nel exposed to strong surf. — Tanzania : HEC 10556, 23.8.1994 : Zanzibar, Nungwi, seaward reef slope, -5 m ; HEC 10635, 25.8.1994 : Zanzibar, Ras Fumba, -1 m ; HEC 11046, 3.1.1996 : Kunduchi, Bahari Beach, rocky substrate under *Thalassodendron* cover, from -1,5 to -2 m ; HEC 11155, 9.1.1996 : Mafia Island, Chole Bay, Utende Beach.

Indian Ocean distribution : India, Kenya, Somalia, Tanzania (this paper).

Note : New for Tanzania.

Siphonocladus Schmitz

Siphonocladus tropicus (P. Crouan *et* H. Crouan) J. Agardh 1887 : 105

References : Børgesen (1913 : 61-66, figs 44-51) ; Sartoni (1992 : 315, 317, fig. 12A) ; Millar (1999 : 485, fig. 2).

Syntype localities : various in Guadeloupe, West Indies.

Vouchers : Kenya : HEC 8248, 5.8.1989 : Diani, vertical wall of low intertidal reef pool ; HEC 8859, 24.9.1991 : Msambweni, infralittoral coral head. — Tanzania : HEC 9795, 30.7.1993 : Mafia Island, Juani Islet, epiphytic on *Thalassodendron* stems, -2 m ; HEC 10546, 22.8.1994 : Zanzibar, Matemwe, seaward reef slope, from -3 to -5 m ; FL 624, 19.7.1997 : Zanzibar, Pongwe, infralittoral fringe.

Indian Ocean distribution : Australia, Kenya (this paper), Madagascar, Mauritius, Mozambique, Réunion, Seychelles, Somalia, South Africa, Yemen, Tanzania (this paper).

Note : New for Kenya and Tanzania.

Phyllodictyon J.E. Gray

Phyllodictyon anastomosans (Harvey) Kraft *et* Wynne 1996 : 131, figs 16-25

References : Børgesen (1913 : 54-56, fig. 39) ; Egerod (1952 : 359-361, fig. 4, pl. 31) ; Egerod (1971 : 123-125, figs 10-16) ; Sartoni (1992 : 317-319, figs 12B,C) ; Wynne (1995 : 292, 332, fig. 86) ; Leliaert *et al.* (1998 : 186, figs 23, 24).

Type locality : Fremantle, Western Australia.

Vouchers : Tanzania, Zanzibar : FL 617, 19.7.1997 : Pongwe, intertidal reefflat, epiphytic on various algae, or epilithic on coral boulders or course sandy substrate ; HEC 12159, 30.7.1997 : Chwaka, epilithic in very shallow pools of high to mid-intertidal ; intertidal flat between tide channel and mangrove ; HEC 12594, 26.6.1999 : Pongwe, in shallow rock pools at neap low tide.

Indian Ocean distribution : Aldabra Islands, Australia, Diego Garcia

Atoll, India, Indonesia (Java), Kenya, Laccadive Islands, Malaysia, Maldives, Mauritius, Mozambique, Pakistan, Seychelles, Somalia, South Africa, Sri Lanka, Tanzania (this paper), Thailand, Yemen.
Note : New for Tanzania.

Struveopsis Rhyne *et* H. Robinson

Struveopsis siamensis (Egerod) P. Silva *in* Silva *et al.* 1996 : 800
References : Egerod (1975 : 47-50, figs 12-14 = *Pseudostruvea siamensis* Egerod) ; Sartoni (1992 : 314-315, figs 9D, 11).
Type locality : Ko Phuket, Nai Yang, Thailand.
Vouchers : Kenya : HEC 9404, 11.9.1992 : Mombasa, Iwetine Bay, mid intertidal pool. — Tanzania : HEC 11334, 18.1.1996 : Kunduchi, Mbudya Island, vertical walls of low intertidal pools ; FL 622, 19.7.1997 : Zanzibar, Pongwe, sand-covered rock intertidal reef flat ; FL 662, 21.7.1997 : Zanzibar, Matemwe, low intertidal reef pools ; FL 702, 26.7.1997 : Zanzibar, Nungwi, high intertidal reef pools.
Indian Ocean distribution : Somalia, Tanzania (this paper), Thailand.
Note : New for Tanzania.

Family Valoniaceae

Valonia C. Agardh

Valonia utricularis (Roth) C. Agardh 1823 : 431
References : Taylor (1928 : 75), Taylor (1950 : 41), Børgesen (1933 : 1), Børgesen (1940 : 11), Egerod (1974 : 139-140, fig. 28), Egerod (1975 : 45).
Type locality : Mediterranean Sea.
Vouchers : Kenya : HEC 8847, 24.9.1991 : Msambweni, epilithic, -0,5 m. — Tanzania : HEC 11151, 9.1.1996 : vertical wall of large coral head, -1,5 m.
Indian Ocean distribution : Bahrain, Chagos Archipelago (Egmont Atoll), Diego Garcia Atoll, India, Kenya, Madagascar, Malaysia, Maldives, Mauritius, Nicobar Islands, Pakistan, Réunion, Seychelles (including Mahé Island), Sri Lanka, Tanzania (this paper), Thailand.
Note : New for Tanzania.

Order BRYOPSIDALES
Family Bryopsidaceae

Bryopsis Lamouroux

Bryopsis indica A. Gepp *et* E. Gepp 1908 : 169-170, pl. 22: figs 10,11
Reference s: Womersley & Bailey (1970 : 271) ; Moorjani & Simpson (1988 : 12, pl. 12) ; Coppejans *et al.* (1994 : 74, fig. 1).
Syntype localities : Chagos Archipelago ; Coetivy Reef ; Mauritius, Sri Lanka.
Vouchers : Kenya : HEC 5998, 24.01.1986 : Mombasa, Mc. Kenzie Point ; HEC 6825, 13.07.1987 & HEC 7008, 27.07.1987 : Tiwi ; HEC 7301, 10.03.1988 : Shimoni, Wasini Island ; HEC 8818, 22.09.1991 : Msambweni. — Tanzania: HEC 9877, 04.08.1993 : Zanzibar, Matemwe ; HEC 9917, 05.08.1993 : Zanzibar, Paje ; HEC 11336, 18.01.1996 : Kunduchi, Mbudya Island ; HEC 11418, 23.01.1996 : Pemba Island, Vitongoji.
Indian Ocean distribution : Bangladesh, Chagos Archipelago, India, Kenya, Maldives, Mauritius, Seychelles (Coetivy Reef and Mahé Island), Singapore, Somalia, Sri Lanka, Tanzania (this paper).
Note : New for Tanzania.

Trichosolen Montagne

Trichosolen sp.
Voucher : Kenya : HEC 5642, 10.7.1985: Mombasa, Nyali Beach, vertical wall of low intertidal pool.
Note : Sterile.

Family Caulerpaceae

Caulerpa Lamouroux

Caulerpa brachypus Harvey forma ***parvifolia*** (Harvey) Cribb 1958b : 209
References : Jaasund (1976 : 19, fig. 39 lower), Sartoni (1978 : 403, fig. 2a), Coppejans & Beeckman (1990 : 113, pl. 1: figs 1, 2).
Type locality : Kiama, New South Wales, Australia.
Voucher : Kenya : HEC 5549, 1.7.1985: Mombasa, Mc Kenzie Point.
Indian Ocean distribution : Australia, Kenya.

Caulerpa filicoides Yamada var. ***andamanensis*** W.R. Taylor 1966 : 154-156, fig. 1 Fig. 27
Reference : Coppejans & Meinesz (1988 : 184, figs 12-14).

Type locality : Northeast of Ritchie's Archipelago, Andaman Islands.
Vouchers : Tanzania : HEC 12074, 26.7.1997 : Zanzibar, Matemwe, Kombe South, vertical as well as horizontal coral substrate, frequently hanging down from overhangs, outer reef slope, from -15 to -20 m ; HEC 12087, 27.7.1997 : Zanzibar, Matemwe, fringing reef of Mlango, ecology as previous nr ; HEC 12125, 29.7.1997 : Borabo Reef, ecology as previous nr.
Indian Ocean distribution : Andaman Islands, Tanzania (this paper).
Note : New for the East African coast.

Caulerpa sedoides C. Agardh 1817 : XXIII
Reference : Coppejans *et al.* (1998 : fig. 15).
Type locality : Kent Islands, Bass Strait, Australia.
Vouchers : Tanzania : HEC 12019, 23.7.1997 : Zanzibar, Paje, epilithic on slightly sloping seaward side of the fringing reef, infralittoral fringe.
Indian Ocean distribution : Australia, India, Indonesia (Java and Semau), Mauritius, Sri Lanka, Tanzania (this paper).
Note : New for the East African coast.

Caulerpa serrulata (Forsskål) J. Agardh var. ***serrulata*** forma ***torulosa*** (Weber-van Bosse) comb. nov. Fig. 26
Reference : Weber-van Bosse (1898 : 314-315, pl. 25, fig. 9 = *C. freycinetii* C. Agardh var. *typica* f. *torulosa* Weber-van Bosse).
Type locality : Friendly Islands.
Voucher : Tanzania : HIMS 0014, 26.12.1993 : Mafia Island, Southern Juani, 'upside-down jellyfish pool'.
Indian Ocean distribution : Tanzania (this paper).
Notes : New for the Indian Ocean. Our specimens agree with Weber-van Bosse's very short description and illustration (loc. cit.) : our specimens are 12 cm high, forming densely branched coverings ; stolons fleshy, erect branches stipitate, terete stipe 1-1,5 cm long, frond composed of dichotomously branched (up to 10 dichotomies), narrow straps up to 2 mm broad ; strap margins smooth or irregularly undulate, resulting in a torulose aspect, exceptionally with a small tooth (close to the strap apices). This *Caulerpa* population grows in a special ecosystem, being an inland seawater pool (collapsed cave), in communication with the open sea by underground channels.

Caulerpella ambigua (Okamura) Prud'homme van Reine *et* Lokhorst 1992 : 114

References : Egerod (1975 : 53, fig. 21 = *Caulerpa ambigua* Okamura), Wynne (1995 : 331, fig. 85).
Type locality : Ogasawara-gunto (Bonin Islands), Japan.
Vouchers : Tanzania : HEC 10504B, 20.8.1994 : Zanzibar, Uroa, epiphytic/mixed to *Caulerpa pickeringii* Harvey *et* Bailey, sand-covered rock substrate, -2 m.
Indian Ocean distribution : Maldives, Mauritius, Mozambique, Pakistan, Réunion, Seychelles (including Mahé Island), South Africa, Tanzania (this paper), Thailand.
Note : New for the East African coast.

Family Codiaceae

Codium Stackhouse

Codium cicatrix P. Silva 1959 : 143-145, fig. 16, pl. XIIa
References : Simons (1977 : 19, fig. 31) ; Seagrief (1980 : 21, fig. on pl. 2) ; Van den heede & Coppejans (1996 : 392-394, figs 2, 8).
Type locality : Ponta Rasa, Mozambique.
Vouchers : Kenya : HEC 6778, 12.7.1987 : Mombasa, Nyali Reef, reef pools ; HEC 9430, 13.9.1992 : Tiwi, seaward slope of the fringing reef, infralittoral fringe ; HEC 9460, 14.9.1992 : Chale Island, ecology as previous nr.
Indian Ocean distribution : Kenya, Mozambique, Seychelles, South Africa, Thailand.
Note : New for Kenya.

Codium extricatum P. Silva 1959 : 145-147, fig.17, pls XIII, XIV
References : Seagrief (1980 : 21, fig. on pl. 2) ; Seagrief (1988 : 40, fig. 5: 2) ; Van den heede & Coppejans (1996 : 398, figs 10, 15).
Type locality : Mouth of Qolora River, Cape Province, South Africa.
Vouchers : Kenya : HEC 6858, 15.7.1987 : Diani, reef pools in the infralittoral fringe ; HEC 6892, 16.7.1987 : Mombasa, Fort Jesus, low midlittoral pool ; HEC 9416, 12.9.1992 : Mombasa, Mc Kenzie Point, vertical wall of low intertidal pool. – Tanzania : HEC 9880, 4.8.1993 : Zanzibar, Matemwe, vertical walls of reef crest pools ; HEC 9923, 5.8.1993 : Zanzibar, Paje, on *Eucheuma*-farm pole, sublittoral ; ODC 349, 29.8.1994 : Zanzibar, Mangapwani, shallow infralittoral.
Indian Ocean distribution : Kenya, South Africa, Tanzania.
Note : New for Tanzania.

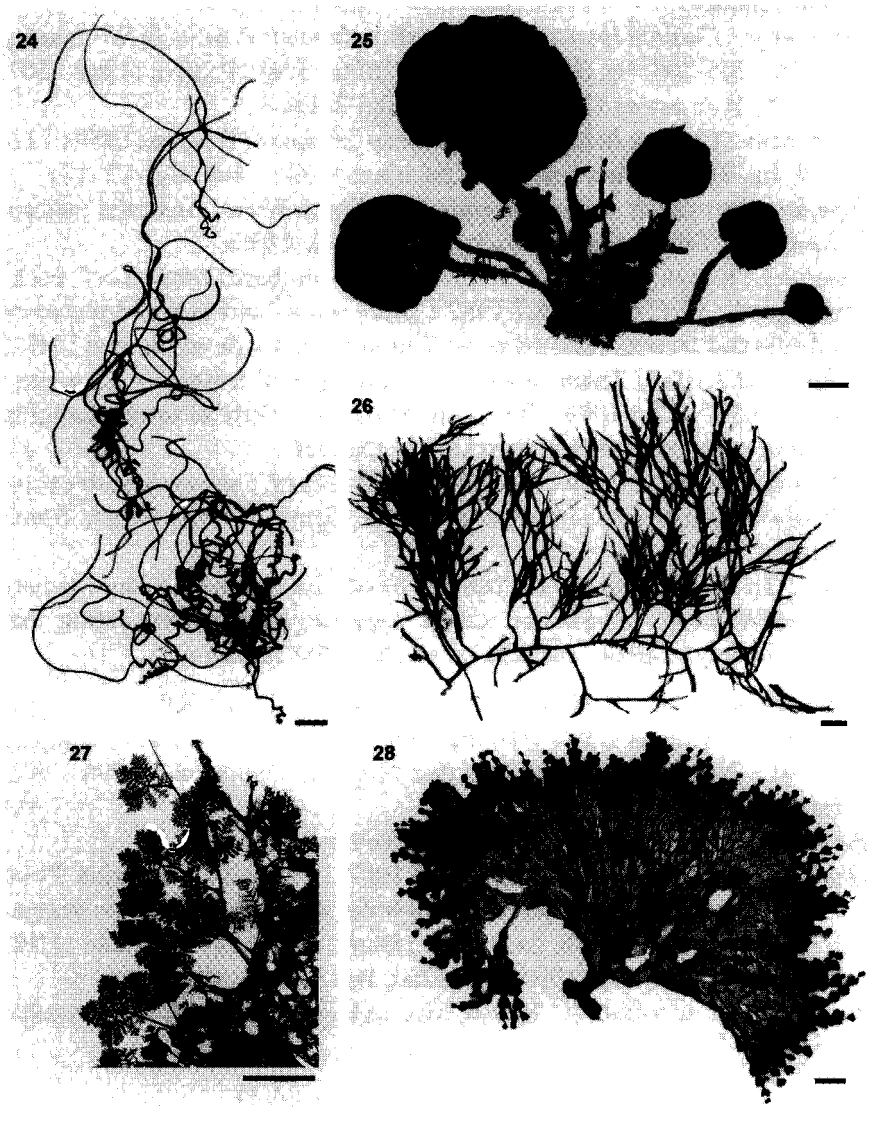


Fig. 24 — *Chaetomorpha spiralis* Okamura (HEC 9539) (1 cm).
Fig. 25 — *Chamaedoris auriculata* Børgesen (HEC 11046) (1 cm).
Fig. 26 — *Caulerpa serrulata* (Forsskål) J. Agardh var. *serrulata* forma *torulosa* (Weber-van Bosse) comb. nov. (HIMS 0014) (1 cm).
Fig. 27 — *Caulerpa filicoides* var. *andamanensis* W.R. Taylor (HEC 12074) (1 cm).
Fig. 28 — *Halimeda melanesica* Valet (HEC 7216) (1 cm).

Codium lucasii Setchell *in* Lucas 1935 : 200-202, fig. 3

References : *Codium lucasii* Setchell subsp. *lucasii*: P. Silva & Womersley (1956 : 265-266, fig. 3) ; Womersley (1956 : 374) ; P. Silva (1962 : 207, fig. 5) ; Womersley (1984 : 227-228, fig. 76D).

References : *Codium lucasii* Setchell subsp. *capense* : P. Silva (1959 : 111-115, fig. 3) ; Van den heede & Coppejans (1996 : 402, figs 12, 17).

Type locality : subsp. *lucasii* : Bondi, New South Wales, Australia ; subsp. *capense* P. Silva : Shakas Rock, Natal, South Africa.

Vouchers : Kenya : HEC 6762: 12.7.1987 : Mombasa, Nyali Reef, back-reef pool ; HEC 6857, 15.7.1987 : Diani, pools and exposed places of infralittoral fringe, seaward as well as landward side of the reef ; HEC 7062, 30.7.1987 : Diani, pools of the infralittoral fringe. — Tanzania : HEC 10547, 22.8.1994 : Zanzibar, Matemwe, vertical to overhanging wall of rock pool on landward side of the reef.

Indian Ocean distribution : according to Silva *et al.* : subsp. *lucasii* exclusively in Australia, subsp. *capense* in Kenya, Mozambique, South Africa.

Notes : The dimensions of the utricles of our specimens are intermediate between subsp. *lucasii* and subsp. *capense*, possibly indicating that there is only a single, variable taxon. New for Tanzania.

Codium pockockiae P. Silva 1959 : 138-140, fig. 14, pl. XII

References : Simons (1977 : 19, fig. 30) ; Lawson (1980 : 11) ; Seagrief (1980 : 21, fig. on pl. 2) ; Van den heede & Coppejans (1996 : 405, figs 13, 19).

Type locality : Port St. Johns, Transkei, South Africa.

Vouchers : Kenya : HEC 7423, 21.3.1989 : Malindi, Casuarina Point National Park, on coral debris in pot-holes in *Thalassodendron* vegetation, -1 m ; HEC 8497b, 24.8.1989 : Diani, -0,5 m. — Tanzania : HEC 10649 & 10650, 25.8.1994 : Zanzibar, Ras Fumba, -1m.

Indian Ocean distribution : Kenya, Mozambique, South Africa, Tanzania.

Note : New for Tanzania.

Codium prostratum Levring 1938 : 16-17, figs 8A-D

References : Silva (1959 : 113-135, fig. 11, pl. X) ; Simons (1977 : 21, fig. 38) ; Seagrief (1980 : 21, fig. on pl. 2) ; Van den heede & Coppejans (1996 : 405-406, figs 13, 19 ; 411, figs 30-31).

Type locality : Isipingo Beach, near Durban, South Africa.

Vouchers : Kenya : HEC 5608, 5.7.1985 : Mombasa, Mc Kenzie Point ; HEC 6821, 13.7.1987 : Tiwi ; HEC 6856, 15.7.1987 : Diani ; HEC 7298, 10.3.1988 : Shimoni, Wasini Island ; HEC 7341, 15.3.1988 :

Mombasa, Nyali ; HEC 8747, 13.9.1991 : Kanamai ; HEC 9431, 13.9.1992 : Tiwi ; HEC 9461, HEC 9462, HEC 9463, HEC 9464, 14.9.1992 : Kenya, Chale Island (Gazi) ; HEC 9502, 16.9.1992 : Msambweni, infralittoral fringe of the coastal coral platform. — Tanzania : HEC 12026, 23.7.1997 : Zanzibar, Paje. Ecology of all the specimens rather homogeneous: epilithic in the infralittoral fringe and shallow subtidal ; as well on the landward as on the seaward slope of the fringing reef.

Indian Ocean distribution : Kenya, Mauritius, Mozambique, Réunion, South Africa, Tanzania.

Notes : The specimen HEC 9502 was originally (Van den heede & Coppejans, 1996 : 405-406) identified as *C. vaughanii* Børgesen (type locality Mauritius) because the utricle dimensions agree very well with Børgesen's description (markedly smaller than those of *C. prostratum*). Moreover the thallus is characterised by a halo of hairs. According to Silva *et al.* (1996 : 861) "*Codium vaughanii* is very closely related to *C. prostratum*. At most, subspecific recognition may be justified". Our results would at least support the last statement. New for Tanzania.

Codium repens P. Crouan *et* H. Crouan *in* Vickers 1905 : 56-57

References : Tseng (1984 : 300, pl. 149, fig. 3) ; Littler *et al.* (1989 : 64, fig. 2, p. 65) ; Van den heede & Coppejans (1996 : 406-407, figs 15, 27-28).

Type locality : Vieux-Fort, Guadeloupe, West Indies.

Vouchers : Kenya : HEC 6859, 15.7.1987 : Diani, infralittoral fringe of the backreef ; HEC 7299, 10.3.1988 : Shimoni, Wasini Island, deep under overhang, -3 m ; HEC 7424, 21.3.1988 : Malindi, Casuarina Point National Park, on coral debris in pot-holes in *Thalassodendron* vegetation ; HEC 8427, 18.8.1989 : Watamu, Turtle Bay, lagoon behind the fringing reef, just under low water mark ; HEC 9458, 14.9.1992 : Chale Island, seaward slope of the fringing reef, infralittoral fringe.

Indian Ocean distribution : Kenya, Réunion, Seychelles, Sri Lanka.

Note : New for the East African coast.

Family Halimedaceae

Halimeda Lamouroux

Halimeda copiosa Goreau *et* Graham 1967 : 432-441, figs 1-10

References : Hillis-Colinvaux (1980 : 118 ; fig. 33) ; Littler *et al.* (1989 : 88, fig. 1, p. 89) ; Verheij & Prud'homme van Reine (1993 : 407, pl. 5,

fig. 1) ; Allen & Steene (1994 : 20) ; Coppejans *et al.* (1994 : fig. 21).

Type locality : Jamaica.

Vouchers : Tanzania : HEC 11094, 5.1.1996 : Kunduchi, Fungi Reef, hanging down from vertical walls as well as on horizontal substrate, -14 m ; HEC 11251, 14.1.1996 : Mafia Island, Shangani Reef, lower part of vertical drop-off, -20 m ; HEC 11488, 26.1.1996 : Kunduchi, Big T-Reef, drop-off, between from -15 to -35 m ; HEC 12047, 26.7.1997 : Zanzibar, Matemwe, Mnemba Reef, Kichwani, outer reef slope, vertical walls between from -15 to -25 m ; HEC 12083, 27.7.1997 : Zanzibar, Matemwe, Mlango Reef, ecology as previous nr.

Indian Ocean distribution : Aldabra Islands, Indonesia (Sumba), Madagascar, Maldives, Seychelles ; Tanzania (this paper).

Notes : Identified by O. Dargent. New for Tanzania.

Halimeda distorta (Yamada) L.H. Colinvaux 1968 : 33, figs 4, 6

Reference : Hillis-Colinvaux (1980 : 120, fig. 34).

Type locality : Ant Atoll, close to Ponape, Caroline Islands.

Vouchers : Kenya : HEC 5862, 15.1.1986 : Mombasa, between English Point and Mc Kenzie Point, from -0,5 to -1 m between seagrasses ; HEC 7234, 7.3.1988 : Shimoni, subtidal. — Tanzania : HEC 11373, 21.1.1996 : Pemba Island, Misali Island, deep low intertidal pool ; HEC 11459, 24.1.1996 : Pemba Island, Tondooni, Verani, under overhangs of the fringing reef, -2 m ; HEC 12104, 29.7.1997 : Borabo Reef, sand-covered channels between coral heads, reef slope, from -10 to -20 m.

Indian Ocean distribution : Kenya (this paper), Tanzania (this paper).

Notes : Identified by O. Dargent. New for the Indian Ocean.

Halimeda gracilis Harvey *ex* J. Agardh 1887 : 82

References : Hillis-Colinvaux (1980 : 144 ; figs 44a, b) ; Verheij & Prud'homme van Reine (1993 : 408, pl. 5, fig. 6) ; Coppejans *et al.* (1994 : fig. 24).

Type locality : Sri Lanka.

Vouchers : Kenya : HEC 7407, 19.3.1988 : Malindi, Casuarina Point National Park. — Tanzania : HEC 11497, 26.1.1996 : Kunduchi, Big T-Reef, horizontal substrate at the foot of the drop-off, -35 m ; HEC 12045, 26.7.1997 : Zanzibar, Matemwe, Mnemba Reef, Kichwani, sandy parts between coral heads, outer reef slope, from -15 to -25 m ; HEC 12100, 27.7.1997 : Zanzibar, Matemwe, Mlango Reef, ecology same as previous nr.

Indian Ocean distribution : Aldabra Islands, Amirante Islands, Andaman Islands, Chagos Archipelago, Comoro Islands, India, Indonesia

(Mentawai Islands), Kenya, Laccadive Islands, Nicobar Islands, Saya de Malha Bank, Seychelles, Singapore, Sri Lanka, Tanzania (this paper).

Notes : Identified by O. Dargent. New for Tanzania.

Halimeda macrophysa Askenasy 1888 : 14, pl. IV: figs 1-4

References : Hillis-Colinvaux (1980 : 134 ; fig. 40a, b) ; Verheij & Prud'homme van Reine (1993 : 408, pl. 6.1)) ; Coppejans *et al.* (1994 : fig. 26).

Type locality : Matuku Island, Fiji.

Vouchers : Kenya : HEC 7024, 28.7.1987 : Mombasa, Nyali, on bottom of large, low intertidal pool ; HEC 8722, 5.9.1991 : Mombasa, Mwamba Beach, infralittoral fringe, between *Cymodocea serrulata* (Braun) Ascherson *et* Magnus — Tanzania : HEC 11164, 10.1.1996 : Mafia Island, outer reef slope in front of Juani Island, coral head -18 m ; HEC 12046, 26.7.1997 : Zanzibar, Matemwe, Mnemba Reef, Kichwani, vertical walls, outer reef slope, from -15 to -25 m ; HEC 12198, 24.8.1997 : Zanzibar, Makunduchi, seaward reef slope, from -1 to -3 m.

Indian Ocean distribution : Aldabra Islands, Indonesia (Sumatra and Timor), Kenya, Tanzania (this paper).

Notes : Identified by O. Dargent. New for Tanzania.

Halimeda melanesica Valet 1966 : 680 Fig. 28

Reference : Hillis-Colinvaux (1980 : 153-154).

Type locality : Loyalty Islands, Lifou.

Vouchers : Kenya : HEC 5564, 2.7.1985 : Mombasa, Mc Kenzie Point ; HEC 5860, 15.1.1986 : Mombasa, between English Point and Mc Kenzie Point ; HEC 6814, HEC 6816, 13.7.1987 : Tiwi ; HEC 7216, 2.3.1988 : Mombasa, Fort Jesus ; HEC 8243, 5.8.1989 : Diani ; HEC 8879, 26.9.1991 : Mombasa, Nyali. — Tanzania : HEC 12065, 26.7.1997 : Zanzibar, Matemwe, Kombe South, outer reef slope, -15 m ; HEC 12238, 26.8.1997 : Zanzibar, Chwaka, mangrove tide channel, -1 m.

Indian Ocean distribution : Kenya (this paper), Tanzania (this paper).

Notes : Identified by O. Dargent. New for the Indian Ocean. We previously wrongly identified this species as *H. incrassata* (Ellis) Lamouroux (Coppejans & Verellen, 1991).

Halimeda micronesica Yamada 1941 : 121, fig. 15

References : Hillis-Colinvaux (1980 : 149 ; fig. 46) ; Tseng (1984 : 290,

pl. 144, fig. 1) ; Verheij & Prud'homme van Reine (1993 : 409, pl. 6, fig. 3) ; Allen & Steene (1994 : 21).

Type locality : Ant Atoll, near Ponape, Caroline Islands.

Vouchers : Kenya : HEC 7409, 19.3.1988 : Malindi, Casuarina Point ; HEC 8206, 29.12.1988 : Watamu, Mida Creek. — Tanzania : HEC 9896, 4.8.1993 : Zanzibar, Matemwe, vertical walls, seaward reef slope, -2 m ; HEC 10572, 23.8.1994 : Zanzibar, Nungwi, seaward reef slope, infralittoral fringe ; HEC 11439, 23.1.1996 : Pemba Island, Vitongoji (Watangwe Beach), just under low water mark ; HEC 12049, 26.7.1997 : Zanzibar, Matemwe, Mnemba Reef (Kichwani), outer reef slope, from -5 to -15 m.

Indian Ocean distribution : Aldabra Islands, Chagos Archipelago, Indonesia (South Pagai Island ; Sumatra ; Sumba), Kenya, Madagascar, Maldives, Seychelles, Tanzania (this paper).

Notes : Identified by O. Dargent. New for Tanzania.

Family Udoteaceae

Avrainvillea Decaisne

Avrainvillea nigricans Decaisne 1842 : 108

References : Olson-Stojkovich (1985 : 38-40, fig. 20) ; Littler *et al.* (1989 : 68, fig. 2, p. 69) ; Verheij & Prud'homme van Reine (1993 : 401, pl. 4, fig. 4).

Type locality : West Indies, near Guadeloupe.

Vouchers : Kenya : HEC 7254, 8.3.188 : Shimoni, Ras Wasin ; HEC 7378a, 17.3.1988 : Gazi, mangrove tide channel (Kidogoweni). — Tanzania : HEC 10705, 27.8.1994 : Zanzibar, Chwaka, margin of mangrove tide channel.

Indian Ocean distribution : India, Kenya (this paper), Mozambique, Seychelles, Tanzania (Zanzibar).

Note : New for Kenya.

Avrainvillea ridleyi A. Gepp *et* E. Gepp 1911 : 33-34, 138, pl. XI : figs 94-96

Reference : Olson-Stojkovich (1985: 47, fig. 25).

Type locality : Christmas Island.

Voucher : Kenya : HEC 6993, 27.7.1987: Tiwi, vertical, shaded place in the infralittoral fringe.

Indian Ocean distribution : Christmas Island, Kenya (this paper), Madagascar, Sri Lanka.

Note s: New for the East African coast.

Rhipidosiphon Montagne

Rhipidosiphon javensis Montagne 1842a : 15

References : Jaasund [1976 : 29, fig. 60 = *Udotea javensis* (Montagne) A. Gepp & E. Gepp] ; Tseng (1984 : 294, pl. 146, fig. 2 = *U. javensis*) ; Verheij & Prud'homme van Reine (1993 : 412, pl. 7, fig. 6).

Type locality : Leiden Island (Nyamuk-besar) near Jakarta, Java, Indonesia.

Vouchers : Kenya : HEC 6998, 27.7.1987: Tiwi, vertical walls of midlittoral pool. — Tanzania : HEC 10468, 19.8.1994 : Zanzibar town, Mbweni Cliffs, on coral fragment on sand, -2 m.

Indian Ocean distribution : Comoro Islands, India, Indonesia, Kenya (this paper), Malaysia, Maldives, Mauritius, Mozambique, Réunion, Seychelles, Singapore, Somalia, South Africa, Sri Lanka, Tanzania, Thailand.

Note : New for Kenya.

Rhipilia Kützing

Rhipilia cf ***orientalis*** A. Gepp *et* E. Gepp 1911 : 57, 140, pl. XVI : figs 134-136

References : Coppejans & Prud'homme van Reine (1989 : 131-133, pl. 6, figs 1-18) ; Littler *et al.* (1991 : 203, fig. 4B, table 3).

Syntype localities : Indonesia : Fau Islet, Gebe Island, Moluccas and Sebangkatan Island, Balbalangan Islands.

Vouchers : Tanzania : HEC 12088, 27.7.1997 : Zanzibar, Matemwe, Mlango Reef, outer slope, -17 m ; HEC 12072, 26.7.1997 : Zanzibar, Matemwe, Kombe South, outer reef slope, -25 m ; HEC 12116, 29.7.1997 : Borabo Reef, outer reef slope, -18 m.

Indian Ocean distribution : Amirante Islands (Desroches Island), Tanzania (this paper).

Note : New for the East African coast.

Tydemania Weber-van Bosse

Tydemania expeditionis Weber-van Bosse 1901 : 139-140

References : Gepp & Gepp (1908 : 174, pl. 23: figs 18, 19) ; Coppejans *et al.* (1994 : figs 33-36).

Syntype localities : various in Indonesia.

Voucher : Tanzania : HEC 12180, 6.8.1997 : Kunduchi, Pongogio Island, from -1 to -2 m.

Indian Ocean distribution : Amirante Islands, Andaman Islands, Chagos Archipelago (including Egmont Atoll), India, Maldives, Nicobar Islands, Seychelles, Tanzania (this paper).
Note : New for the East African coast.

Udotea Lamouroux

Udotea argentea Zanardini 1858 : 290
References : Gepp & Gepp [1911 : 125-127, 143-144, pl. II : fig. 21 ; pl. III : fig. 22d ; pl. VII : figs 57, 58c, 59 ("forma *typica*")] ; Børgesen [1949a : 18-19, figs 8, 9 ("var. *typica*")].
Type locality : Suez, Egypt.
Vouchers : Tanzania : HEC 11042, 3.1.1996 : Kunduchi, Bahari Beach, horizontal rock surface under *Thalassodendron* bed, from -1,5 to -2 m ; HEC 12067, 26.7.1997 : Zanzibar, Matemwe, Kombe South, outer reef slope, sand-covered coral between coral heads, -15 m.
Indian Ocean distribution : Amirante Islands (St. Joseph Atoll), Australia, Cargados Carajos, Madagascar, Mauritius, Seychelles, Singapore, Tanzania (this paper).
Note : New for the East African coast.

Udotea flabellum (Ellis *et* Solander) Howe 1904 : 94
References : Tseng (1984 : 292, pl. 145, fig. 3) ; Coppejans & Prud'homme van Reine (1989 : 137 ; pl. 137, fig. 7-10) ; Littler *et al.* (1989 : 74, fig. 2, p. 75) ; Verheij & Prud'homme van Reine (1993 : 413, pl. 8, fig. 4).
Type locality : West Indies.
Vouchers : Kenya : HEC 7230, 7.3.1988 : Shimoni, Marine Parc Offices, shallow subtidal, sheltered ; HEC 7260, 8.3.1988 : Shimoni, Ras Wasin, silty sand, -3 m. — Tanzania : HEC 11043, 3.1.1996 : Kunduchi, Bahari Beach, sandy patches in *Thalassodendron* beds, from -1,5 to -2 m.
Indian Ocean distribution : India, Kenya, Malaysia, Mauritius, Seychelles, Singapore, Somalia, Sri Lanka, Tanzania (this paper).
Note : New for Tanzania.

Udotea glaucescens Harvey *ex* J. Agardh 1887 : 70-71
References : Coppejans & Prud'homme van Reine (1989 : 139 ; pl. 10, fig. 1, 2) ; Verheij & Prud'homme van Reine (1993 : 414, pl. 7, fig. 5).
Type locality : Tonga.
Vouchers : Kenya: HEC 6712, 6.7.1987 : Mombasa, KMFRI, -4 m ; HEC

6921, 21.7.1987 : Mombasa, Mc Kenzie Point, on coral fragments on sand, -3 m ; HEC 7264, 8.3.1987 : Shimoni, Ras Wasin. — Tanzania : HEC 10634, 25.8.1994 : Ras Fumba, -1 m ; HEC 10676, 26.8.1994 : Kizinkazi, seaward slope of reef, -2 m ; HEC 11252, 14.1.1996 : Mafia Island, Shangani Reef, at foot of drop-off, -25 m ; HEC 11111, 3.1.1996 : Kunduchi, Bahari Beach, vertical to overhanging wall of coral head, -1,5 m, HEC 12103, 29.7.1997 : Borabo Reef, reef slope, -10-20 m, extremely abundant and growing in open stands.

Indian Ocean distribution : Cargados Carajos, Indonesia (Sumatra), Kenya (this paper), Madagascar, Singapore, Tanzania (this paper).

Note : New for the East African coast.

Order DASYCLADALES
Family Dasycladaceae

Bornetella Munier-Chalmas

Bornetella sphaerica (Zanardini) Solms-Laubach 1892 : 80-81

References : Børgesen (1948 : 26-27, 52, fig. 24) ; Valet (1969 : 587-588, pl. 41 : figs 4-6).

Type locality : Sorong, Irian Jaya, Indonesia.

Voucher : Tanzania : HEC 11381, 21.1.1996 : Pemba Island, Misali Island, low midlittoral tide pools.

Indian Ocean distribution : Madagascar, Mauritius, Réunion, Singapore, Tanzania (this paper).

Note : New for Tanzania.

Neomeris Lamouroux

Neomeris annulata Dickie 1874b : 198

References : Magruder & Hunt (1979 : 31, fig. 2, p. 30) ; Tseng (1984 : 266, pl. 132, fig. 4) ; Littler *et al.* (1989 : 52, fig. 2, p. 53).

Type locality : Mauritius.

Vouchers : Kenya : HEC 7265b, 8.3.1988 : Shimoni, Ras Wasin ; HEC 7440, 22.3.1988 : Malindi, Silversands.

Indian Ocean distribution : Aldabra Islands, Chagos Archipelago, Comoro Islands, India, Indonesia, Kenya (this paper), Laccadive Islands, Madagascar, Maldives, Mauritius, Réunion, Seychelles, Singapore, Sri Lanka, Tanzania.

Note : New for Kenya.

Discussion

Four new species were recently described after material from Tanzania and Kenya : *Hypoglossum androlamellare* (Wynne & De Clerck 2000), *Vanvoorstia incipiens* (De Clerck, Wynne & Coppejans 1999), *Dictyota grossedentata* and *D. rigida* (De Clerck & Coppejans 1999). Other taxa, which are not readily identifiable as previously described species are still under study : *Lophocladia* sp., *Gibsmithia* sp., *Predaea* sp. 2, *Osmundaria* sp. Some material of the Rhodophyta is still not identified to genus level and might also represent new taxa. So for example our specimens of *Corynocystis prostrata* remained unidentified until Kraft (Kraft *et al.* 1999) described similar material from the Philippines as a new genus and species, which is in this list. That same species is also present in our collections from the North and South coast of Papua New Guinea (HEC 4671, 15.8.1980 : N-coast, Hansa Bay, Manam, Borda Reef, -25 m ; HEC 8057, 4.8.1988 : N-coast, Madang Province, Sek Point, -15 m ; HEC 10235, 23.7.1994 : S-coast, seaward slope of barrier reef in front of Port Moresby, from -15 to -30 m ; HEC 10425, 4.8.1994 : S-coast, Loloata Island, seaward reef slope, -15 m ; always strongly shaded under overhangs). *Microcladia gloria-spei*, present in our collection from Kenya since 1989 was only described from the Cape in 1986 (Stegenga 1986). Material belonging to the genera *Gracilaria* and *Sargassum* still has to be identified accurately.

Amongst the 97 new records mentioned here as new for Kenya and/or Tanzania since Isaac's (1967, 1968, 1971) and Jaasund's (1969, 1970 a-c, 1976, 1977 a-d, 1979) publications, 50 could be "expected" as they already had been recorded along the coast of neighbouring continental countries (Somalia, Kenya, Tanzania and Mozambique).

Seventeen species represent more important range extensions from South Africa (RSA) or from islands along the East African coast : *A. secundum* (RSA), *Episporium centroceratis* (RSA), *Myriogramme marginifructa* (RSA), *Chondria dangeardii* (Mauritius), *Polysiphonia scopulorum* var. *villum* (Seychelles), *Gibsmithia hawaiiensis* (Seychelles), *Titanophora pikeana* (Madagascar, Mauritius, Réunion), *Gracilaria vieillardii* (RSA, Indonesia), *Caulerpa filicoides* f. *andamanensis* (Andaman Islands), *C. sedoides* (Mauritius), *Codium repens* (Réunion, Seychelles), *Avrainvillea ridleyi* (Madagascar), *Rhipilia* cf *orientalis* (Amirante Islands), *Tydemania expeditionis* (Seychelles, Amirante Islands), *Udotea argentea* (Mauritius, Madagascar, Amirante Islands), *U. glaucescens* (Madagascar), *Bornetella sphaerica* (Madagascar, Mauritius, Réunion).

The discovery of another 9 species results in major range extensions : *Polyopes ligulatus* (Sri Lanka, Indonesia), *Microcladia gloria-spei* (RSA, Atlantic W-coast), *Hypoglossum simulans* (Maldives), *Lophocladia kuetzingii* (Australia), *Osmundaria spiralis* (Australia), *Dudresnaya capricornica* (Australia), *Rhodopeltis borealis* (Australia), *Asteromenia peltata* (Maldives), *Stypopodium flabelliforme* (Australia, Indonesia). It is surprising that a species like *Polyopes ligulatus* has not been mentioned by Isaac or Jaasund, as it is a large seaweed which is rather frequent, especially along the Kenyan coast.

Fourteen species had never been reported from the Indian Ocean before : *Balliella crouanioides* (Pacific Ocean : Japan), *Tapeinodasya bornetii* (Pacific Ocean : Indonesia), *Callophycus serratus* [Pacific Ocean : Philippines, Tonga, New Britain, Solomon Islands, Fiji, Papua New Guinea, Australia (northern Queensland)], *Lomentaria baileyana* (Atlantic Ocean : N America ; Pacific Ocean : Philippines), *Chamaebotrys boergesenii* (Pacific Ocean : Makassar Strait, Indonesia), *Chrysymenia glebosa* (Pacific Ocean : Hawaiian Islands), *Corynocystis prostrata* (Pacific Ocean : Philippines, Papua New Guinea, this paper), *Dictyota hamifera* (Atlantic Ocean : Caribbean Sea ; Pacific Ocean : Tahiti, Solomon Islands, Papua New Guinea), *D. stolonifera* (Pacific Ocean : Colombia, Costa Rica, Nicaragua, Papua New Guinea), *Hydroclathrus tenuis* (Pacific Ocean : Indonesia, China, Japan), *Caulerpa anceps* (Friendly Islands), *C. brachypus* f. *parvifolia* (Pacific Ocean : Australia), *Halimeda distorta* (Western Pacific Ocean, both north and south), *H. melanesica* (South-western Pacific).

Numerous species with important to major range extensions were known from South Africa or Australia and have not been reported from areas in between. One of the reasons for these disjunct distributions could be the lack of collecting by SCUBA-diving : many of the "new" records for the East African coast were discovered in deeper waters (-10 m and downwards). The presence of "Australian" species along the East African coast confirms and extends the model of Hommersand (1986) on the biogeography of the South African marine red algae.

As opposed to wide distribution areas, some species apparently have a very limited distribution : the recently described *Vanvoorstia incipiens* is extremely abundant in Pongwe Bay (Zanzibar), but has, so far, never been collected anywhere else. Other species again have a wide distribution but are rare : *Bornetella sphaerica* also has only been collected at a single site along the E African coast.

The presence of *Tapeinodasya bornetii*, described from the Philippines and Indonesia, and now along the E African coast is astounding, knowing that another species, *T. etheliae* has been described from the Seychelles.

ACKNOWLEDGEMENTS

We are very grateful to the directors of the Kenya Marine and Fisheries Research Institute (Mombasa, Kenya : Dr. Allela and Dr. Okemwa) and of the Institute of Marine Sciences (Zanzibar, Tanzania : Dr. Ngoile and Dr. Julius) for their help with the accomodation. Our gratitude also goes to Dr. M. Richmond for the local organisation of the field work in Tanzania. Dr. Millar is acknowledged for the identification of some of the Rhodophyta and Mr. Dargent for his help during field work and the identifications of *Halimeda*. Many thanks also to Prof. Dr. M. Wynne for his top speed replies as well as for copies of rare reprints and to Dr. W.F. Prud'homme van Reine for his help about a *Caulerpa*. We would also like to thank em. Prof. Dr. Van der Veken for critically reviewing this paper. This research was sponsored by the Fund for Scientific Research – Flanders (Belgium), nr. 3G002496.

BIBLIOGRAPHY

ABBOTT, I.A. (1999). Marine Red Algae of the Hawaiian Islands. Bishop Museum Press. Honolulu, Hawai'i. 477 pp., 133 figs.

ABBOTT, I.A., & LITTLER, M.M. (1970). Some Rhodymeniales from Hawaii. *Phycologia* **8** : 165-169.

AGARDH, C. A. (1817). *Synopsis algarum Scandinaviae, adjecta dispositione universali algarum.* Berling, Lund. XL + 135 pp.

AGARDH, C.A. (1822-1823). Species algarum ... Vol. 1, part 2. Lund. pp. [I-VIII] 169-398 (1822), 399-531 (1823).

AGARDH, J.G. (1885). Till algernes systematik. Nya bidrag. (Fjerde afdelningen.) *Acta Univ. Lund.* **21**(8). 117 pp., 1 pl.

AGARDH, J.G. (1887). Till algernes systematik. Nya bidrag. (Femte afdelningen.) *Acta Univ. Lund.* **23**(2). 174 pp., 5 pls.

ALLEN, G.R. & STEENE, R. (1994). Indo-Pacific coral reef field guide. Tropical reef research, Singapore. 378 pp.

ASKENASY, E. (1888). *Algen.* In: Forschungsreise S.M.S. "Gazelle". IV. Theil: Botanik. [Fasc. 2.] Berlin. 58 pp., XII pls.

BALDOCK, R. N. (1976). The Griffithsieae group of the Ceramiaceae (Rhodophyta) and its southern Australian representatives. *Austr. J. Bot.* **24** : 509-93.

BALLESTEROS, E. (1994). New records of benthic marine algae from Mauritius (Indian ocean). *Bot. Mar.* **37** : 537-546.

BASSON, P.W. (1979). Marine algae of the Arabian Gulf coast of Saudi Arabia. *Bot. Mar.* **22** : 47-82.

BØRGESEN, F. (1933a). Some Indian green and brown algae especially from the shores of the Presidency of Bombay III. *J. Indian Bot. Soc.* **12** : 1-16.

BØRGESEN, F. (1936). Some marine algae from Ceylon. *Ceylon J. Sci., Sect. A., Bot.* **12** : 57-96.

BØRGESEN, F. (1937). Contributions to a South Indian marine algal flora-II. *J. Indian Bot. Soc.* **16** : 311-357.

BØRGESEN, F. (1940). Some marine algae from Mauritius. I. Chlorophyceae. *Kongel. Danske Vidensk. Selsk., Biologiske Meddelelser* **15**(4). 81 pp., 26 figs, III pls.

BØRGESEN, F. (1943). Some marine algae from Mauritius. III. Rhodophyceae. Part 2. Gelidiales, Cryptonemiales, Gigartinales. *Kongel. Danske Vidensk. Selsk., Biologiske Meddelelser* **19**(1). 85 pp., 42 figs, I pl.

BØRGESEN, F. (1948). Some marine algae from Mauritius. Additional lists to the Chlorophyceae and Phaeophyceae. *Kongel. Danske Vidensk. Selsk., Biologiske Meddelelser* **20**(12). 55 pp., 24 figs, II pls.

BØRGESEN, F. (1949a). Some marine algae from Mauritius. Additions to the parts previously published. *Kongel. Danske Vidensk. Selsk., Biologiske Meddelelser* **21**(5). 48 pp., 17 figs, II pls.

BØRGESEN, F. (1952). Some marine algae from Mauritius. Additions to the parts previously published, IV. *Kongel. Danske Vidensk. Selsk., Biologiske Meddelelser* **18**(19). 72 pp., 33 figs, V pls.

BØRGESEN, F. (1953). Some marine algae from Mauritius. Additions to the parts previously published, V. *Kongel. Danske Vidensk. Selsk., Biologiske Meddelelser* **21**(9). 62 pp., 20 figs, III pls.

COLINVAUX, L.H. (1968). New species of *Halimeda*: a taxonomic reappraisal. *J. Phycol.* **4** : 30-35, 6 figs.

COPPEJANS, E. (1990). *Dictyota adnata* Zanardini (Phaeophyta, Dictyotales) a remarkable mangrove inhabiting species in Kenya. *Belgian J. Bot.* **60** : 371-380.

COPPEJANS, E. & BEECKMAN, T. (1989). *Caulerpa* section Sedoideae (Chlorophyta, Caulerpales) from the Kenyan coast. *Nova Hedwigia* **49** (3-4) : 381-393.

COPPEJANS, E. & BEECKMAN, T. (1990). *Caulerpa* (Chlorophyta, Caulerpales) from the Kenyan coast. *Nova Hedwigia* **50**(1-2) : 111-125.

COPPEJANS, E., BEECKMAN, H. & DE WIT, M. (1992). The seagrass and associated macroalgal vegetation of Gazi Bay (Kenya). *Hydrobiologia* **247** : 59-75.

COPPEJANS, E., DE CLERCK, O. & LELIAERT, F. (1998). *Caulerpa sedoides* f. *geminata* (Codiales, Chlorophyta) from Papua New Guinea, and a reappraisal of the different forms of *C. sedoides*. *Phycol. Res.* **46** : 131-137.

COPPEJANS, E., DE CLERCK, O., LELIAERT, F. & DARGENT, O. (2000). Progress of the taxonomic research on the macroalgae (Chlorophyta, Phaeophyta and

Rhodophyta) along the East African coast. *In*: Proceedings of the Conference on Advances in Marine Sciences in Tanzania (eds. Francis, J. & Richmond, M.D.) in press.

COPPEJANS, E., DE CLERCK, O. & VAN DEN HEEDE, C. (1994). Annotated and illustrated survey of the marine macroalgae from Motupore Island and vicinity (Port Moresby area, Papua New Guinea). I. Chlorophyta. *Biol. Jaarb. Dodonaea* **62** (1995) : 70-108.

COPPEJANS, E., DE CLERCK, O. & VAN DEN HEEDE, C. (1995). Annotated and illustrated survey of the marine macroalgae from Motupore Island and vicinity (Port Moresby area, Papua New Guinea). II. Phaeophyta. *Belgian J. Bot.* **128** : 176-197.

COPPEJANS, E., & GALLIN, E. (1989). Macroalgae associated with the mangrove vegetation of Gazi Bay (Kenya). *Belgian J. Bot.* **122** : 47-60.

COPPEJANS, E. & MEINESZ, A. (1988). Marine algae of Papua New Guinea (Madang Prov.) 1. Caulerpaceae (Chlorophyta-Caulerpales). *Blumea* **33** : 181-196.

COPPEJANS, E. & MILLAR, AJ.K. (2000). Marine Red Algae from the North coast of Papua New Guinea. *Bot. Mar.* **43** : in press.

COPPEJANS, E., & PRUD'HOMME VAN REINE, W.F. (1989). Seaweeds of the Snellius-II Expedition. Chlorophyta: Caulerpales (except *Caulerpa* and *Halimeda*). *Blumea* **34** : 119-142.

COPPEJANS E., RICHMOND M., DE CLERCK O. & RABESANDRATANA R. (1997). Marine macroalgae, seaweeds. In *A Guide to the Seashores of Eastern Africa and the Western Indian Ocean Islands*. (M.D. Richmond ed.) Stockholm: SIDA, Dept Research Cooporation, SAREC. 70-95.

COPPEJANS, E. & VAN DEN HEEDE, C. (1996). The Codiales (excluding *Codium*) (Chlorophyta) from Kenya, Tanzania and the Seychelles. *Belg. J. Bot.* **129** (1) : 47-65.

COPPEJANS, E., & VERELLEN, A. (1991). The genus *Halimeda* (Chlorophyta, Caulerpales) from the Kenyan coast. *Journal of Phycology* **27**(suppl.) : 16. [Abstract.]

CORMACI, M., FURNARI, G. & PIZZUTO, F. (1994): Taxonomic and nomenclatural notes on *Anotrichium tenue* and related species (Ceramiaceae, Rhodophyta). *Taxon* **43** : 633-637.

COTTON, A.D. (1907). New or little-known marine algae from the East. *Bulletin of Miscellaneous Information, Royal Botanic Gardens, Kew* **1907** : 260-264.

CRIBB, A.B. (1954). Records of marine algae from south-eastern Queensland I. *University of Queensland Papers, Department of Botany* **3** : 15-37, including IV pls.

CRIBB, A.B. (1958b). Records of marine algae from south-eastern Queensland-IV. *Caulerpa. University of Queensland Papers, Department of Botany* **3** : 209-220, including 5 pls.

CRIBB, A.B. (1983). Marine algae of the Southern Great Barrier Reef. Rhodophyta. Australian Coral Reef Society, The Great Barrier Reef Comm., Handbook n°2. 173 pp., 71 pls.

DAWSON, E.Y. (1962). Additions to the marine flora of Costa Rica and Nicaragua. *Pacific Naturalist* **3** : 375-395.

DECAISNE, J. (1842). Essais sur une classification des algues et des polypiers calcifères de Lamouroux. *Ann. Sci. Nat., Bot.* **18** : 96-128.

DE CLERCK, O. (1999). A revision of the genus *Dictyota* Lamouroux (Phaeophyta) in the Indian Ocean. Ph.D. thesis: Ghent University. 356 pp.

DE CLERCK, O. & COPPEJANS, E. (1997). Notes on *Dictyota vieillardii* and *D. adnata* (Dictyotaceae, Phaeophyta). *Taxon* **43** : 33-36.

DE CLERCK, O. & COPPEJANS, E. (1999). Two new species of *Dictyota* (Dictyotales, Phaeophyta) from the Indo-Malayan region. *Phycologia* **38** (3) : 184-194.

DE CLERCK, O., DE JONG, Y.S.D.M. & COPPEJANS, E. (2000). *Tapeinodasya* Weber-van Bosse (Ceramiales, Rhodophyta): redescription of an enigmatic genus of the Dasyaceae. *Bot. Mar.* **43** : in press.

DE CLERCK, O., WYNNE, M. & COPPEJANS, E. (1999). *Vanvoorstia incipiens* sp. nov. (Delesseriaceae, Rhodophyta) from Tanzania, East Africa. *Phycologia* **38** (5) : 394-400.

DE SCHRYVER, T. (1990). Epifytische wieren (Bostrychietum) in de mangrove van Gazi Bay (Kenia). Agron. Eng. thesis: Ghent University. 99 pp.

DESIKACHARY, T.V., KRISHNAMURTHY, V. & BALAKRISHNAN, M.S. (1990). *Rhodophyta. II. Taxonomy part. Part II A*. Madras, India: Madras Science Foundation. 279 pp., 51 figs, XLII pls.

DE TONI, G.B. (1905). Sylloge algarum ... Vol. IV. Florideae. Sectio IV. Patavii [Padova]. pp. 1523-1973.

DICKIE, G. (1874b). On the algae of Mauritius. *J. Linn. Soc., Bot.* 14 : 190-202.

DOTY, M.S. (1963). *Gibsmithia hawaiiensis* gen. n. *et* sp. n. *Pacific Science* **17** : 458-465, 17 figs.

EGEROD, L.E. (1974). Report of the marine algae collected on the Fifth Thai-Danish Expedition of 1966. Chlorophyceae and Phaeophyceae. *Bot. Mar.* **17** : 130-157.

EGEROD, L.E. (1975). Marine algae of the Andaman Sea coast of Thailand : Chlorophyceae. *Bot. Mar.* **18** : 41-66.

FARGHALY, M.S. (1980). Algues benthiques de la Mer Rouge et du bassin occidental de l'Océan Indien (étude taxinomique et essai de répartition, notamment des Udotéacées). Thesis: Université des Sciences et Techniques du Langedoc, Montpellier 274 pp.

FELDMANN, J. (1942). Remarques sur les Némastomacées. *Bull. Soc. Bot. France* **89** : 104-113.

GEPP, A. & GEPP, E.S. (1908). Marine algae (Chlorophyceae and Phaeophyceae) and marine phanerogams of the "Sealark" Expedition, collected by J.

Stanley Gardiner, M.A., F.R.S., F.L.S. *Trans. Linn. Soc. London, Bot.*, **7** : 163-188.

GEPP, A. & GEPP, E.S. (1911). The Codiaceae of the Siboga Expedition including a monograph of Flabellarieae and Udoteae. Siboga-Expeditie Monographie **62**. Leiden. 150 pp., XXII pls.

GOREAU, T.F. & GRAHAM, E.A. (1967). A new species of *Halimeda* from Jamaica. *Bull. Mar. Sci.* **17** : 432-441.

HARVEY, W.H. (1838). The genera of South African plants ... Cape Town. lxvi + 429 pp.

HARVEY, W.H. (1853). Nereis boreali-americana ... Part II. Rhodospermeae. *Smithsonian Contr. Knowl.* 5(5). 258 pp., pls XIII-XXXVI.

HARVEY, W.H. (1857). Friendly Island algae. Nos. 1-124 (Exsiccata with printed names).

HILLIS-COLINVAUX, L. (1980). Ecology and taxonomy of *Halimeda*: primary producer of coral reefs. *Advances Mar. Biol.* **17** : 1-327.

HOLLENBERG, G.J. (1968). An account of the species of *Polysiphonia* of the central and western tropical Pacific Ocean. I. Oligosiphonia. *Pacific Science* **22** : 56-98.

HOMMERSAND, M. (1986). The biogeography of the South African marine red algae: a model. *Bot. Mar.* **29** : 257-270.

HÖRNIG, I., SCHNETTER, R., PRUD'HOMME VAN REINE, W.F., COPPEJANS, E., ACHENBACH-WEGE, K. & OVER, J.M. (1992). The genus *Dictyota* (Phaeophyceae) in the North Atlantic. I. A new generic concept and new species. *Nova Hedwigia* **54** : 45-62.

HOWE, M.A. (1904). Notes on Bahaman algae. *Bull. Torrey Bot. Club* **31** : 93-100, pl. 6.

HOWE, M.A. (1918). *Class 3. Algae*. In N.L. Britton, Flora of Bermuda. New York. pp. 489-540.

HOWE, M.A. (1920). *Algae*. In N.L. Britton & C.F. Millspaugh, The Bahama flora. New York. pp. 553-618.

HUISMAN, J.M. (1996). The red algal genus *Coelarthrum* Børgesen (Rhodymeniaceae, Rhodymeniales) in Australian seas, including the description of *Chamaebotrys* gen. nov. *Phycologia* **35** (2) : 95-112.

HUISMAN, J.M. & MILLAR, A.J.K. (1996). *Asteromenia* (Rhodymeniaceae, Rhodymeniales), a new red algal genus based on *Fauchea peltata*. *J. Phycol.* **32**(1) : 138-145.

HUISMAN, J.M. & WALKER D.I. (1990). A catalogue of the marine plants of Rottnest Island, Western Australia, with notes on their distribution and biogeography. *Kingia* 1 : 149-459.

ISAAC, W.E. (1967). Marine botany of the Kenya coast 1. A first list of Kenya marine algae. *J. E. Africa Nat. Hist. Soc. Natl. Mus.* **26**(2) : 75-83.

ISAAC, W.E. (1968). Marine botany of the Kenya coast 2. A second list of marine algae. *J. E. Africa Nat. Hist. Soc. Natl. Mus.* **27** : 1-6, 1 fig.

ISAAC, W.E. (1971). Marine botany of the Kenya coast 5. A third list of Kenya marine algae. *J. E. Africa Nat. Hist. Soc. Natl. Mus.* **28**(122) : 1-23, including 1 pl., 2 maps.

ITONO, H., & TANAKA, T. (1973). *Balliella*, a new genus of Ceramiaceae (Rhodophyta). *Bot. Mag., Tokyo* **86** : 241-252, 23 figs.

JAASUND, E. (1969). Marine algae in Tanzania I. *Bot. Mar.* **12** : 255-274, 10 figs.

JAASUND, E. (1970a). Marine algae in Tanzania II. *Bot. Mar.* **13** : 59-64, 2 figs.

JAASUND, E. (1970b). Marine algae in Tanzania III. *Bot. Mar.* **13** : 65-70, 3 figs.

JAASUND, E. (1970c). Marine algae in Tanzania IV. *Bot. Mar.* **13** : 71-79, 3 figs.

JAASUND, E. (1976). *Intertidal seaweeds in Tanzania*. University of Tromsø. 159 pp., 12 pls, 288 figs.

JAASUND, E. (1977a). Marine algae in Tanzania V. *Bot. Mar.* **20** : 333-338, 3 figs.

JAASUND, E. (1977b). Marine algae in Tanzania VI. *Bot. Mar.* **20** : 405-414.

JAASUND, E. (1977c). Marine algae in Tanzania VII. *Bot. Mar.* **20** : 415-425.

JAASUND, E. (1977d). Marine algae in Tanzania VIII. *Bot. Mar.* **20** : 509-520.

JAASUND, E. (1979). New records of marine algae in Tanzania. In: International Symposium on Marine Algae of the Indian Ocean Region ... 1979. Abstracts. Bhavnagar, India. p. 9.

KRAFT, G. T. (1984). Taxonomic and morphological studies of tropical and subtropical species of *Callophycus* (Solieriaceae, Rhodophyta). *Phycologia* **23** (1) : 53-71.

KRAFT, G.T., LIAO, L.M., MILLAR, A.J.K., COPPEJANS, E.G.G., HOMMERSAND, M.H. & FRESHWATER, D.W. (1999). Marine benthic red algae (Rhodophyta) from Bulusan, Sorsogon province, southern Luzon, Philippines. *Philipp. Scient.* **36** : 1-59.

KRAFT G. T. & WYNNE M. J. (1996). Delineation of the genera *Struvea* and *Phyllodictyon* J.E. Gray (Cladophorales, Chlorophyta). *Phycol. Res.* **44** : 129-142.

KÜTZING, F.T. (1845). *Phycologia germanica* ... Nordhausen. X + 340 pp.

KÜTZING, F.T. (1847). Diagnosen und Bemerkungen zu neuen oder kritischen Algen. *Botanische Zeitung* **5** : 1-5, 22-25, 33-38, 52-55, 164-167, 177-180, 193-198, 219-223.

KÜTZING, F.T. (1853). *Tabulae phycologicae* ... Vol. 3. Nordhausen. 28 pp., 100 pls.

KÜTZING, F.T. (1864). *Tabulae phycologicae* ... Vol. 14. Nordhausen. [III +] 35 pp., 100 pls.

KÜTZING, F.T. (1869). *Tabulae phycologicae* ... Vol. 19. Nordhausen. IV + 36 pp., 100 pls.

KYLIN, H. (1932). Die Florideenordnung Gigartinales. *Acta Univ. Lund.* **28**(8) : 88 pp., 22 figs, 28 pls.

LAWSON, G.W. (1980). *A check-list of East African seaweeds (Djibouti to Tanzania)*. Lagos, Nigeria: Department of Biological Sciences, University of Lagos. 65 pp.

LAWSON, G.W. & JOHN, D.M. (1987). The marine algae and coastal environment of tropical West Africa (second edition). Cramer, Stuttgart. 415 pp.

LELIAERT, F., COPPEJANS, E. & DE CLERCK, O. (1998). The Siphonocladales *sensu* Egerod (Chlorophyta) from Papua New Guinea and Indonesia. *Belg. Journ. Bot.* **130** : 177-197.

LEVRING, T. (1938). Verzeichnis einiger Chlorophyceen und Phaeophyceen von Südafrika. *Acta Univ. Lund.* **34**(9). 25 pp., 10 figs, IV pls.

LITTLER, D.S., LITTLER, M.M., BUCHER, K.E. & NORRIS, J.N. (1989). *Marine plants of the Caribbean, a field guide from Florida to Brazil.* Smithsonian Institution Press, Washington, D.C. 263 pp.

LITTLER, M.M., LITTLER, D.S. & TITLYANOV, E.A. (1991). Comparisons of N- and P-limited productivity between high granitic islands versus carbonate atolls in the Seychelles Archipelago: a test of the relative-dominance paradigm. *Coral Reefs* 10 : 199-209.

LUCAS, A.H.S. (1935). The marine algae of Lord Howe Island. *Proc. Linn. Soc. New South Wales* **60** : 194-232.

MAGRUDER, H. & HUNT, J.W. (1979). *Seaweeds of Hawaii.* The Oriental Publishing Company, Honolulu. 116 pp.

MILLAR, A. J. K. (1990). Marine red algae of the Coffs Harbour Region, northern New South Wales. *Austr. Syst. Bot.* **3** : 293-593.

MILLAR, A.J.K. (1999). Marine benthic algae of Norfolk Island, South Pacific. *Austr. Syst. Bot.* **12** : 479-547.

MILLAR, A.J.K., DE CLERCK O., COPPEJANS E. & LIAO L.M. (1999). Annotated and illustrated survey of the marine macroalgae from Motupore Island and vicinity (Port Moresby area, Papua New Guinea). III. Rhodophyta. *Austr. Syst. Bot.* **12** : 549-591.

MÖBIUS, M. (1885). Ueber eine neue epiphytische Floridee. *Ber. Deutsch. Bot. Ges.* **3** : 77-80.

MONTAGNE, C. (1842). Prodromus generum specierumque phycearum novarum, in itinere ad polum antarcticum ... collectarum ... Paris. 16 pp.

MOORJANI, S. & SIMPSON, B. (1988). Seaweeds of the Kenya coast. Nairobi: Oxford University Press. 134 pp., 67 pls.

MSHIGENI, K.E. & PAPENFUSS, G.F. (1980). New records of the occurrence of the red algal genus *Titanophora* (Gigartinales: Gymnophlaeaceae) in the western Indian Ocean, with observations on the anatomy of the species found. *Bot. Mar.* **23** : 779-789.

MSHIGENI, K.E. & PAPENFUSS, G.F. (1981). *Solieria jaasundii*, a new species of red algae (Gigartinales, Solieriaceae) from Tanzania. *Bot. Mar.* **24** : 1-7.

NIZAMUDDIN, M. & BEGUM, M. (1973). Revision of the marine Cladophorales from Karachi. *Bot. Mar.* **16** : 1-18.

NIZAMUDDIN, M. & GESSNER, F. (1970). The marine algae of the northern part of the Arabian Sea and of the Persian Gulf. *Meteor Forschungsergebn., D.* **6** : 1-42.

NORRIS, R.E. (1985). Studies on *Pleonosporium* and *Mesothamnion* (Ceramiaceae, Rhodophyta) with a description of a new species from Natal. *British Phycol. J.* **20** : 59-68.

NORRIS, R.E. (1991). The structure, reproduction and taxonomy of *Vidalia* and *Osmundaria* (Rhodophyta, Rhodomelaceae). *Bot. J. Linn. Soc.* **106** : 1-40.

NORRIS, R.E. (1992). Six marine macroalgal genera new to South Africa. *S. African J. Bot.* **58** : 2-12.

NORRIS, R.E. & WYNNE, M.J. (1987). *Myriogramme marginifructa* sp. nov. (Delesseriaceae, Rhodophyceae) from Natal. *S. African J. Bot.* **53** : 381-386.

NOZAWA, Y. (1970). Systematic anatomy of the red algal genus *Rhodopeltis. Pacific Science* 24 : 99-133.

OHBA, H. & ENOMOTO, S. (1992). Marine flora around Motupore Island on the south coast of Papua New Guinea. Kagoshima Univ. Res. Center S. Pac., Occasional Papers **23** : 25-32.

OKAMURA, K. (1903a). Algae japonicae exsiccatae. Tokyo. Fasc. II. Nos. 51-100.

OKAMURA, K. (1903b). Contents of the "Algae Japonicae Exsiccatae" Fasciculus II. *Bot. Mag., Tokyo* **17** : 129-132.

OLSEN-STOJKOVICH, J. (1985). A systematic study of the genus *Avrainvillea* Decaisne (Chlorophyta, Udoteaceae). *Nova Hedwigia* **41** : 1-68.

PARKINSON, P.G. (1980). *Halymenia*, being a critical account of the confused nomenclature of *Halymenia* C.A. Agardh 1817 (Halymeniaceae, Cryptonemiales, Rhodophyta) with reflections on the international code of botanical nomenclature and corrections to certain recent work in which it has been disregarded. . *Phycologiae Historiae Analecta Autodidactica. Fasciculus primus* 1-20. Auckland: Pettifogging Press. 20 pp.

POCOCK, M.A. (1956). South African parasitic Florideae and their hosts. 3. Four minute parasitic Florideae. *Proc. Linn. Soc. London* **167** : 11-41.

PRICE, I.R. & KRAFT, G.T. (1991). Reproductive development and classification of the red algal genus *Ceratodictyon* (Rhodymeniales, Rhodophyta). *Phycologia* **30** : 106-116.

PRICE, I.R. & SCOTT, F.J. (1992). *The turf algal flora of the Great Barrier Reef Part I. Rhodophyta.* Botany Department, James Cook University, Townsville, Australia. 266 pp., 81 figs.

PRUD'HOMME VAN REINE, W.F. & LOKHORST, G.M. (1992). *Caulerpella* gen. nov., a non-holocarpic member of the Caulerpales (Chlorophyta). *Nova Hedwigia* **54** : 113-126, 13 figs, 1 table.

ROBINS, P.A. & KRAFT, G.T. (1985). Morphology of the type and Australian species of *Dudresnaya* (Dumontiaceae, Rhodophyta). *Phycologia* **24** : 1-34.

ROELS, T. (1998). Taxonomisch-morfologische studie van enkele genera van de Ceramiaceae langs de Oost-Afrikaanse kust. M Sc-thesis Ghent University. 65 pp. + 48 pls.

SAITO, Y. & WOMERSLEY, H.B.S. (1974). The southern Australian species of

Laurencia (Ceramiales: Rhodophyta). *Austr. J. Bot.* **22** : 815-874, 27 figs.

SARTONI, G. (1975). Contributo alla conoscenza della flora algale bentonica di Sar Uanle (Somalia meridionale). *Giorn. Bot. Ital.* **108** : 281-303.

SARTONI, G. (1976). Researches on the coast of Somalia. The shore and dune of Sar Uanle. 6. A study of the benthonic algal flora. *Monitore Zoologico Italiano, ser.* **2**, *suppl. 7* : 115-143.

SARTONI, G. (1986). Algal flora and his vertical distribution on the Gesira cliff (central-southern Somalia). *Webbia* **39** : 355-377.

SARTONI, G. (1992). Research on the marine algae of south-central Somalia. 3. The Siphonocladales-Cladophorales complex. *Webbia* **46** : 291-326, 14 figs.

SAUNDERS G.W. & KRAFT G.T. (1996). Small-subunit rRNA gene sequences from representatives of selected families of the Gigartinales and Rhodymeniales (Rhodophyta). 2. Recognition of the Halymeniales ord. nov. *Can. J. Bot.* **74** : 694-707.

SCHMITZ, F. & FALKENBERG, P. (1897). *Rhodomelaceae*. In : A. Engler & K. Prantl (eds.), Die natürlichen Pflanzenfamilien ... I.Teil, Abt. 2. Leipzig. pp. 421-480, figs 240-266.

SCHNEIDER, C.W. (1975). North Carolina marine algae. V. Additions to the flora of Onslow Bay, including the reassignment of *Fauchea peltata* Taylor to *Weberella* Schmitz. *Brit. Phycol. J.* **10** : 129-138.

SCHNEIDER, C.W. & SEARLES, R.B. (1991). *Seaweeds of the Southeastern United States : Cape Hatteras to Cape Canaveral.* Duke University Press. Durham and London. 553 pp., 563 figs.

SCHNETTER, R. & BULA-MEYER, G. (1982). Marine algen der Pazifikküste von Kolombien. *Biblioth. Phycol.* **60**. 287 pp., 37 pls.

SEAGRIEF, S.C. (1980). Seaweeds of Maputaland. In M.N. Bruton & K.H. Cooper (eds.), Studies on the ecology of Maputaland. Durban : Rhodes University and the Natal Branch of the Wildlife Society of Southern Africa. pp. 18-41, 12 pls.

SEAGRIEF, S.C. (1988). Marine algae. In R.A. Lubke, F.W. Gess, & M.N. Bruton (eds.), A field guide to the Eastern Cape coast. Grahamstown: Wildlife Society of Southern Africa. pp. 35-72, pls 6-11, figs 5 : 1-5 : 17, table 5.1.

SEARLES, R.B. (1968). Morphological studies of red algae of the order Gigartinales. *Univ. Calif. Publ. Bot.* **43**. 100 pp., 12 pls, 33 figs.

SETCHELL, W.A. (1925). Notes on *Microdictyon*. *Univ. Calif. Publ. Bot.* **13** : 101-107.

SETCHELL, W.A. (1926). Tahitian algae collected by W.A. Setchell, C.B. Setchell, and H.E. Parks. *Univ. Calif. Publ. Bot.* **12** : 61-142.

SETCHELL, W.A. (1929). The genus *Microdictyon*. *Univ. Calif. Publ. Bot.* **14** : 453-588.

SETCHELL, W.A. (1926). Tahitian algae, collected by W.A. Setchell, C.B. Setchell and H.E. Parks. *Univ. Calif. Publ. Bot.* **12** : 61-142.

SILVA, P.C. (1952). A review of nomenclatural conservation in the algae from the point of view of the type method. *Univ. Calif. Publ. Bot.* **25** : 241-323.

SILVA, P.C. (1957). Remarks on algal nomenclature. *Taxon* **6** : 141-145.

SILVA, P.C. (1959). The genus *Codium* (Chlorophyta) in South Africa. *J. S. African Bot.* **25** : 101-165, 22 figs, pls II-XVI.

SILVA, P.C., MEÑEZ, E.G. & MOE, R.L. (1987). Catalog of the benthic marine algae of the Philippines. *Smithsonian Contr. Mar. Sci.* **27**. 179 pp.

SILVA, P.C., BASSON, P.W. & MOE, R.L. (1996). *Catalogue of the benthic marine algae of the Indian ocean.* University of California press, Berkeley. 1259 pp.

SIMONS, R.H. (1977). Seaweeds of southern Africa: guidelines for their study and identification. *Republic of South Africa, Department of Industries, Sea Fisheries Branch, Fisheries Bulletin* **7**. 113 pp., 188 figs.

SOLMS-LAUBACH, H. (1892). Ueber die Algengenera *Cymopolia*, *Neomeris* und *Bornetella*. *Ann. Jard. Bot. Buitenzorg* **11** : 61-97.

STEGENGA, H. (1986). The Ceramiaceae (excl. *Ceramium*) (Rhodophyta) of the South West Cape Province, South Africa. *Biblioth. Phycol.* **74**. 149 pp., 51 pls.

STEGENGA, H. (1988). Notes on Ceramiaceae (Rhodophyta) from the eastern Cape Province, South Africa. I. New records and remarks on morphology. *Blumea* **33** : 371-393.

STEGENGA, H. & BOLTON, J.J. (1992). Ceramiaceae (Rhodophyta) of the Cape Province, South Africa: distribution in relation to concepts of marine provinces. *Bot. Mar.* **35** : 99-107.

STEGENGA, H., BOLTON, J.J. & ANDERSON, R.J. (1997). Seaweeds of the South African West Coast. *Contr. Bolus Herb.* **18**. 655 pp., 251 pls.

TAYLOR, W.R. (1928). The marine algae of Florida with special reference to the Dry Tortugas. *Publ. Carnegie Inst. Wash.* **379**. 219 pp., 3 figs, 37 pls.

TAYLOR, W.R. (1942). Caribbean marine algae of the Allan Hancock Expedition, 1939. *Allan Hancock Atlantic Expedition Report* **2**. 193 pp., 20 pls.

TAYLOR, W.R. (1945). Pacific marine algae of the Allan Hancock Expeditions to the Galapagos Islands. *Allan Hancock Pacific Expeditions* **12**. 528 pp., 100 pls, 3 figs.

TAYLOR, W.R. (1950). *Plants of Bikini and other northern Marshall Islands.* University of Michigan Press, Ann Arbor. 227 pp., 79 pls.

TAYLOR, W.R. (1966). An interesting *Caulerpa* from the Andaman Sea. *J. Phycol.* **1** : 154-156, 1 fig.

TRONO, G.C.J. (1997). Field guide and atlas of the seaweed resources of the Philippines. Bookmark, Makati City. 306 pp.

TSENG, C.K. (1984). *Common seaweeds of China.* Science Press, Beijing. 316 pp., 149 pls.

TSENG C.K. & BAOREN L. (1983). Two new brown algae from the Xisha Islands, South China Sea. *Chin. J. Ocean. Limnol.* **1** : 185-188, 1 pl.

VALET, G. (1966). Sur une espèce rare et une nouvelle espèce d'*Halimeda* de Mélanesie. *Rev. Bot.* **73** : 680-685.

VALET, G. (1969). Contribution à l'étude des Dasycladales. 2. Cytologie et reproduction. 3. Révision systématique. *Nova Hedwigia* **17** : 551-644, pls 133-162.

VAN DEN HEEDE, C. & COPPEJANS, E. (1996) The genus *Codium* (Chlorophyta, Codiales) from Kenya, Tanzania (Zanzibar) and the Seychelles. *Nova Hedwigia* **62** (3-4) : 389-417.

VERHEIJ, E. & PRUD'HOMME VAN REINE, W.F. (1993). Seaweeds of the Spermonde archipelago, SW Sulawesi, Indonesia. *Blumea* **37** (2) : 385-510.

VICKERS, A. (1905). Liste des algues marines de la Barbade. Ann. Sci. Nat., Bot. **9** (1) : 45-66.

WEBER-VAN BOSSE, A. (1901). Études sur les algues de l'Archipel Malaisien. [III.]. *Ann. Jard. Bot. Buitenzorg* **17** : 126-141.

WEBER-VAN BOSSE, A. (1904). Note sur deux algues de l'Archipel Malaisien. *Recueil Trav. Bot. Néerl.* **1** : 96-105.

WEBER-VAN BOSSE, A. (1913a). Liste des algues du Siboga. I. Myxophyceae, Chlorophyceae, Phaeophyceae avec le concours de M. Th. Reinbold. *Siboga-Expeditie Monographie* **59a**. Leiden. 186 pp., 52 figs, 5 pls.

WEBER-VAN BOSSE, A. (1913b). Marine algae, Rhodophyceae, of the "Sealark" Expedition, collected by Mr. J. Stanley Gardiner, M.A. *Trans. Linn. Soc. London, Bot.* **8** : 105-142.

WEBER-VAN BOSSE, A. (1914). The Percy Sladen Trust Expedition to the Indian Ocean in 1905, under the leadership of Mr J. Stanley Gardiner, M.A. Reports. No. XIV. Marine algae, Rhodophyceae. *Trans. Linn. Soc. London, Zool.* **16** : 269-306, 1 fig., pls 16-18.

WEBER-VAN BOSSE, A. (1923). Liste des algues du Siboga. III. Rhodophyceae. Seconde partie. Ceramiales. *Siboga-Expeditie Monographie* **59c**. Leiden. pp. 311-392, figs 110-142, pls IX, X.

WEBER-VAN BOSSE, A. (1926). Algues de l'expédition danoise aux Îles Kei. *Vidensk. Meddel. Dansk Naturhist. Foren. Kjøbenhavn* **81** : 57-155.

WEBER-VAN BOSSE, A. (1928). Liste des algues du Siboga. IV. Rhodophyceae. Troisième partie. Gigartinales et Rhodymeniales et tableau de la distribution des Chlorophycées, Phaeophycées et Rhodophycées de l'Archipel Malaisien. *Siboga-Expeditie Monographie* **59d**. Leiden. pp. 393-533, figs 143-213, pls XI-XVI.

WITHELL, A.F., MILLAR, A.J.K. & KRAFT, G.T. (1994). Taxonomic studies of the genus *Gracilaria* (Gracilariales, Rhodophyta) from Australia. *Austr. Syst. Bot.* **7** : 281-352.

WOMERSLEY, H.B.S. (1994). *The marine benthic flora of Southern Australia part IIIa : Bangiophyceae and Florideophyceae (Acrochaetiales, Nemaliales, Gelidiales, Hildenbrandiales and Gigartinales sensu lato)*. Canberra. pp. 508.

WOMERSLEY, H.B.S., & BAILEY, A. (1970). Marine algae of the Solomon Islands. *Philos. Trans., Ser. B* **259** : 257-352, 26 figs in text and on pls 24-27.

WYNNE, M.J. (1982). *Duckerella*, a new genus of Delesseriaceae (Rhodophyta) from Madagascar. *Phycologia* **21** : 236-242.

WYNNE, M.J. (1988). A reassessment of the *Hypoglossum* group (Delesseriaceae, Rhodophyta) with a critique of its genera. *Helgoländer Meeresuntersuchungen* **42** : 511-534, 10 figs.

WYNNE, M.J. (1995). Benthic marine algae from the Seychelles collected during the R/V Te Vega Indian ocean expedition. *Contr. Univ. Michigan Herb.* **20** : 261-346.

WYNNE, M.J. & DE CLERCK, O. (2000). Taxonomic observations on *Hypoglossum* (Delesseriaceae, Rhodophyta) in the Indian Ocean and Malayan region, including the description of two new species. *Cryptogamie, Algologie* **21** : 111-131.

WYNNE, M.J., PRICE, I.R., & BALLANTINE, D.L. (1989). Distinctions between *Hypoglossum barbatum* Okamura, *H. minimum* Yamada and *H. simulans* sp. nov. (Delesseriaceae, Rhodophyta). *Phycologia* **28** : 28-38.

YAMADA, Y. (1931). Notes on some Japanese algae, II. *Journal of the Faculty of the Hokkaido Imperial University, ser. V, Botany* 1: 65-76, 3 figs, pls 16-20.

YAMADA, Y. (1941). On the species of *Halimeda* from Micronesia. *Kagaku Nanyo* **4** : 108-121.

ZANARDINI, G. (1858). Plantarum in mari Rubro hucusque collectarum enumeratio (juvante A. Figari). *Mem. Reale Ist. Veneto Sc.* **7** : 209-309.

ZANARDINI, G. (1878). Phyceae papuanae novae vel minus cognitae a cl. O. Beccari in itinere ad Novam Guineam annis 1872-75 collectae. *Nuovo Giorn. Bot. Ital.* **10** : 34-40.

TAXONOMIC INDEX

Names in italics are mentioned as synonyms in this list