

is the fact that in the cases of embryos and veligers, only fractions with RM of 50% and above were seen. According to Leaback (1976), the fast moving fractions have lower molecular size than those of slow moving fractions and probably simpler molecular constitution. Decrease in the number of protein fractions

and simplification of molecular structure might be due to functional requirements for that stage of development in the life cycle. Goldberg and Cathey (1965) also reported such variations in LDH pattern during the ontogeny of *Argobuccinum*.

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### MARINE ALGAL FLORA FROM SOME LOCALITIES OF SOUTH TAMIL NADU COAST

#### ABSTRACT

Marine algae were collected from six localities along south Tamil Nadu Coast namely Tuticorin, Manapad, Tiruchendur, Idinthakarai, Kovalam and Muttam. Maximum number of 56 algal species at Tuticorin and minimum number of 25 species at Muttam were recorded. Totally 98 algae belonging to the groups Chlorophyta, Phaeophyta, Rhodophyta and Cyanophyta were recorded from these six places. The red algae occurred more in number than other algae in all these places.

STUDIES on marine algae occurring at different parts of Indian Coast were made by many workers. In Tamil Nadu Coast, the algae growing at Mahabalipuram (Srinivasan, 1946), Porto Novo region (Kannan and Krishnamurthy, 1978), Mandapam area (Chacko *et al.*, 1955., Umamaheswara Rao, 1969, 1972 a, 1972 b, 1973; Subbaramaiah, 1974; Subbaramaiah *et al.*; 1977), Tuticorin (Varma, 1960; Mahadevan and Nagappan Nayar, 1967) and Tiruchendur (Krishnamurthy, 1980)

were already reported. Information is not available on algae growing in other localities of Tamil Nadu especially from the southern part of Tamil Nadu. Hence, during the course of this study on the distribution of edible seaweeds along South Tamil Nadu Coast, the algae growing in six localities namely Tuticorin area (Karapad, Hare Island, Van Tivu, Kasuwar Island and Karaichalli Island), Manapad, Tiruchendur, Idinthakarai, Kovalam and Muttam were collected. The list of species

collected is presented and discussed in this paper. This information would be useful to the seaweed industries to know the places of occurrence of commercially important agar and algin yielding seaweeds for commercial exploitation and also collection of seed material from the available localities for culture of seaweeds.

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#### Material and methods

The algae grow on stones, pebbles and dead coral pieces in Tuticorin area, while in other localities namely Manapad, Tiruchendur, Idinthakarai, Kovalam and Muttam they grow on rocks and boulders. Collections of algae were made from these six places (Fig. 1) in

the first fortnight of January 1985 during spring tide periods from the intertidal and subtidal region (upto 0.5 m depth). The available macro and micro algae in each place were collected separately, preserved in 5% formalin, brought to the laboratory at Mandapam and then identified.

#### Results

The total number of genera and species of marine algae belonging to four groups occurring at Tuticorin area, Manapad, Tiruchendur, Idinthakarai, Kovalam and Muttam are presented in Table 1. The list of species collected from these six localities is given in Table 2. Maximum number of 56 algal species from Tuticorin area and minimum number of 25 species from Muttam were recorded. A total number of 43 species from Manapad, 41 species from Idinthakarai, 38 species from Kovalam and 34 species from Tiruchendur were collected. The red algae occurred more in number than green and brown algae in all these places. The blue green alga *Lyngbya majuscula* was found only at Manapad (Table 1). Altogether 98 species were recorded in all the six localities of which 30 species belong to Chlorophyta, 23 species to Phaeophyta, 44 species to Rhodophyta and 1 species to Cyanophyta (Table 2.)

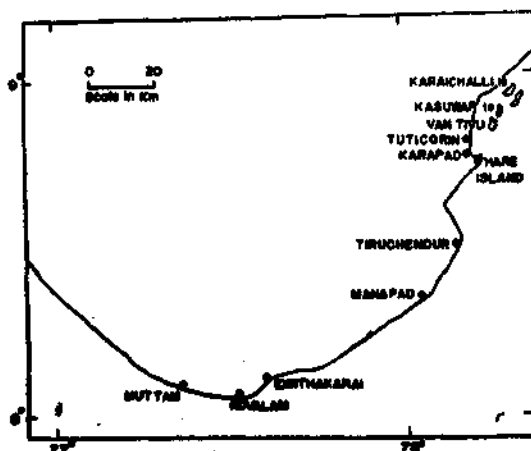


Fig. 1. Coastline of southern Tamil Nadu showing collection localities.

#### Discussion

It is evident from the investigations made earlier by several workers (Krishnamurthy and Joshi, 1970) that 81 algal species occur at Tuticorin. But in the present study only 56 species are collected from Tuticorin. The less number of species observed is due to only one collection made in a particular period. The algal flora observed in the present study at Tuticorin resembles with deep water algal flora of Tuticorin (Varma, 1960; Mahadevan and Nagappan Nair, 1967) as many of the species collected were found growing in deep waters. Krishnamurthy (1980) reported 46 species of marine algae from Tiruchendur

TABLE 1. Total number of genera and species of marine algae belonging to different groups occurring at six localities of south Tamil Nadu Coast

Place	Chlorophyta		Phaeophyta		Rhodophyta		Cyanophyta		Total	
	Genera	Species	Genera	Species	Genera	Species	Genera	Species	Genera	Species
Tuticorin area	12	19	14	17	16	20	-	-	42	56
Manapad	9	12	6	7	18	23	1	1	34	43
Tiruchendur	7	11	5	5	15	18	-	-	27	34
Idinthakarai	9	12	7	8	18	21	-	-	34	41
Kovalam	7	8	6	7	20	23	-	-	33	38
Muttam	4	6	3	4	11	15	-	-	18	25

TABLE 2. List of marine algae occurring at six localities along southern Tamil Nadu Coast

Name of the Algae	Tuticorin area	Manapad	Tiruchendur	Idinthakarai	Kovalam	Muttam
CHLOROPHYTA						
<i>Enteromorpha compressa</i> (Linn.) Grev.	+	+		+		
<i>E. prolifera</i> (Fig. et De Not.) J. Ag.			+			
<i>Ulva fasciata</i> Delile	+	+		+	+	+
<i>U. lactuca</i> Linnaeus	+	+				
<i>U. reticulata</i> Forsskal	+					
<i>Chaetomorpha aerea</i> (Dillw.) Kuetz.				+		
<i>C. antennina</i> (Bory) Kuetz.	+	+	+	+	+	+
<i>Chaetomorpha</i> sp.	+		+			+
<i>Cladophora</i> sp.	+	+	+	+	+	
<i>Bryopsis plumosa</i> (Huds.) C. Ag.	+	+	+	+		
<i>Pseudobryopsis mucronata</i> Boergesen						+
<i>Caulerpa fastigiata</i> Montagne			+			
<i>C. fergusonii</i> Murray	+	+	+			
<i>C. peltata</i> Lamouroux	+				+	
<i>C. racemosa</i> (Forsskal) Weber v. Bosse	+					+
<i>C. racemosa</i> var. <i>laetevirens</i>						
<i>C. cylindracea</i> (Sonder) Web. v. Bosse				+		
<i>C. scalpelliformis</i> (R. Br.) Web. v. Bosse		+		+	+	+

Table 2 (Contd.)

Name of the Algae	Tuticorin area	Manapad	Tiruchendur	Idinthakalai	Kovalam	Muttam
<i>C. scalpelliformis</i> f. <i>intermedia</i> Weber v. Bosse			+			
<i>C. sertularioides</i> f. <i>brevipes</i> (J. Ag.) Svedelius	+		+	+		
<i>Chlorodesmis hildebrandtii</i> A. & E. S. Gepp		+				
<i>Codium adhaerens</i> Anderson	+					
<i>C. decorticatum</i> (Woodward) Harvey				+	+	
<i>C. tomentosum</i> (Hudson) Stackhouse	+					
<i>Halimeda gracilis</i> Harv. ex J. Ag.		+				
<i>H. macroloba</i> Decaisne	+	+		+	+	
<i>H. tuna</i> var. <i>platydisca</i> (Dacne) Barton			+			
<i>Boergesenia forbesii</i> (Harv.) Feldm.	+					
<i>Dictyosphaeria cavernosa</i> (Forsskal) Boergs.	+					
<i>Survea tuticorinensis</i> Boergs.	+					
<i>Valoniopsis pachynema</i> (Martens) Boergs.	+	+	+	+	+	
PHAEOPHYTA						
<i>Giffordia confiera</i> (Boergs.) Taylor	+					
<i>Dictyopteris delicatula</i> Lamouroux	+				+	
<i>Dictyota bartayresiana</i> Lamouroux	+				+	
<i>D. dichotoma</i> (Huds.) Lamouroux			+	+		
<i>Padina gymnospora</i> (Kuetz.) Vickers	+	+				
<i>P. pavonica</i> (L.) Thivy et Taylor			+	+		
<i>P. tetrastromatica</i> Hauck	+				+	+
<i>Pocockiella variegata</i> (Lamour.) Papenfuss	+			+		
<i>Spatoglossum asperum</i> J. Ag.	+		+	+	+	
<i>Stoechospermum marginatum</i> (C. Ag.) Kuetz.	+	+	+	+		
<i>Colpomenia sinuosa</i> (Roth) Derb. et Sol.	+	+		+		
<i>Hydroclathrus clathratus</i> C. Ag.	+					
<i>Rosenvingea intricata</i> (J. Ag.) Boergs.	+					
<i>Chnoospora implexa</i> (Her.) J. Ag.	+				+	+
<i>Cystoseira trinodis</i> (Forsskal) C. Ag.	+					
<i>Hormophysa triquetra</i> (L.) Kuetz.		+				
<i>Sargassum duplicatum</i> J. G. Agardh						+
<i>S. ilicifolium</i> (Turner) J. Ag.	+					
<i>S. myriocystum</i> J. Agardh		+		+	+	
<i>S. wightii</i> (Greville) J. Ag.			+	+	+	+
<i>Sargassum</i> sp.	+	+				
<i>Turbinaria conoides</i> (J. Ag.) Kuetz.	+	+				
<i>T. decurrens</i> Bory	+					

Table 2 (Contd.)

Name of the Algae	Tuticorin area	Manapad	Tiruchendur	Idinthakarai	Kovalam	Muttam
<b>RHODOPHYTA</b>						
<i>Liagora pulverulenta</i> Ag.		+				
<i>Galaxaura oblongata</i> Lamouroux					+	
<i>Asparagopsis taxiformis</i> (Delile) Collins et Harvey				+	+	+
<i>Gelidium pusillum</i> (Stackhouse) Le Jolis			+	+	+	+
<i>Gelidiella acerosa</i> (Forsskal) Feldman et Hamel	+	+				
<i>G. indica</i> P. S. Rao		+	+	+	+	+
<i>Chondrococcus hornemanii</i> (Mert.) Schmitz.	+	+	+	+	+	+
<i>Amphiroa anceps</i> (Lamk.) Decsne.				+	+	
<i>A. fragilissima</i> (L.) Lamour.		+				
<i>Cheilosporum spectabile</i> Harvey			+		+	
<i>Jania rubens</i> (L.) Lamouroux	+	+	+	+	+	
<i>Grateloupia filicina</i> (Wulf.) C. Ag.				+		
<i>G. lithophila</i> Boergesen	+	+	+		+	+
<i>Halymenia floresia</i> (Clem.) C. Ag.	+					
<i>Gelidiopsis variabilis</i> (Grev.) Schmitz.		+	+	+	+	+
<i>Gracilaria corticata</i> var. <i>corticata</i> J. Ag.		+	+			+
<i>G. corticata</i> var. <i>cylindrica</i> (J. Ag.) Umamaheswara Rao	+	+		+		
<i>G. crassa</i> (Harvey) J. Ag.	+					
<i>G. edulis</i> (Gmel.) Silva	+					
<i>G. fergusonii</i> J. Ag.		+	+		+	+
<i>G. foliifera</i> (Forsskal) Boerges.	+			+	+	+
<i>Gracilariopsis sjoestedtii</i> (Kylin) Dawson	+					
<i>Sarconema furcellatum</i> Zan.		+	+	+		
<i>Solertia robusta</i> (Grev.) Kylin	+	+	+	+	+	
<i>Hypnea musciformis</i> (Wulf.) Lamour.	+					
<i>H. nigrescens</i> (Grev.) J. Ag.			+			
<i>H. valentiae</i> (Turn.) Mont.		+		+	+	+
<i>Botryocladia leptopoda</i> (J. Ag.) Kylin.				+	+	
<i>Colearthrum opuntia</i> (J. Ag.) Boergesen	+	+			+	
<i>Champia parvula</i> (C. Ag.) Harvey	+	+				
<i>Centroceras clavulatum</i> (C. Ag.) Mont.	+	+	+		+	+
<i>Cerantium gracilimum</i> Griff. et Harvey		+		+		
<i>Spyridia filamentosa</i> (Wulf.) Harvey	+		+			
<i>Acrosorium uncinatum</i> (J. Ag.) Kylin					+	
<i>Dictyurus purpurescens</i> Bory		+				
<i>Acanthophora spicifera</i> (Vahl.) Boergesen	+	+	+	+	+	
<i>Herposiphonia insidiosa</i> (Grev.) Falkenb.					+	
<i>Laurencia ceylanica</i> J. Ag.		+		+	+	+
<i>L. flagelliformis</i> J. Ag.			+	+	+	+
<i>L. obtusa</i> (Huds.) Lamour.	+					
<i>L. papillosa</i> (Forsskal) Grevillo	+	+	+			
<i>L. poitei</i> (Lamour.) Howe		+	+	+	+	+
<i>Nuerymenia fraxinifolia</i> (Mert.) J. Ag.				+		+
<i>Roschera glomerulata</i> (C. Ag.) Web. v. Bosse	+					
<b>CYANOPHYTA</b>						
<i>Lyngbya majuscula</i> Harvey et Gomont		+				

while only 34 species were recorded from this place during the present study. It may be due to the variation in the period of collection. The total number of algae observed in the present study is less when compared with algae growing at Mandapam area (Umamaheswara Rao, 1969) where 180 species were recorded.

The present investigation was made by collecting algae from intertidal and subtidal region upto 0.5 m depth. It is obvious from

the studies made at Tuticorin (Varma, 1960; Mahadevan and Nagappan Nayar, 1967) and Mandapam area (Umamaheswara Rao, 1972 b, 1973; Subbaramaiah *et al.*, 1977) that algae also grown in deep waters. Hence detailed studies on algal composition and their seasonal distribution in intertidal and subtidal regions from various localities along southern Tamil Nadu Coast has to be undertaken to know the complete flora and their seasonal variation in occurrence.

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