

# List of the Algae collected by the Fishery-Inspection Curaçao.

BY

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With Plate VIII.

The Algae named in the following list were collected by Dr. J. Boeke, during his inspection of the fishery in West-India. This collection was the first made in our Dutch colonies and therefore it did not seem quite useless to publish the results, although these do not bring any new points of view.

The region, we treat with, has often been algologically examined.

In the first place I mention the beautiful collection of Mazé and Schramm of Guadeloupe, worked out by Mr. Crouan. Several other persons collected, before Murray published in 1889 a complete list of the Algae, found in West-India. At the end he attempts to draw some more general conclusions concerning the distribution of algae, based on carefully worked out tables. From these lists we may conclude that West-India is a well defined region. Of the 788 known species 347 are found only in these parts. Without doubt this proportion will be changed, when our knowledge is extended. At present most similarity is found with the flora of the Warm-Atlantic, with which the West has 161 species in common. Peculiar is the fact, which has already been stated, that in general the genera are the same in the West-Atlantic and West-Indian region as in the Indian Ocean, while the species differ broadly. Dr. Versluys <sup>1)</sup> has recently established

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1) Hand. 10e Nat. Gen. Congres te Arnhem 1905. pg. 490.

this in the case of Primnoideae and Echinidae. The great resemblance of the East-Atlantic with both the Indian Ocean and West-India and the great difference of forms of West-India with the East-Pacific brought Dr. Versluys to the hypothesis that the communication of Atlantic and Pacific over the New World is older than that over the Old World. Of course our algological knowledge is not yet so advanced, that we might make any conclusions in that way. However the known facts seem to show indications in that direction. For instance: West-India has 160 species common to the Mediterranean, whilst this number is only 73 for the South-Atlantic with the Cape of Good Hope, and for the Warm-Pacific 75. We should not forget however that the Mediterranean is a carefully worked out region, whilst from the Warm-Pacific as well as from the West Coast of Africa and the Cape of Good Hope very little is known. So we may by no means yet condemn Murray's hypothesis of a communication round the Cape of Good Hope in quaternary periods, where, with the great differences of climate just as well in the North as in the South hemisphere, also the great currents had another direction.

But the algological research of the West is not only interesting for the general geographical distribution of algae. But the distribution of algae in this region itself gives rise to special problems. So it seems that on Guadeloupe the marine flora consists principally of Florideae, whilst Murray declares to have collected mostly Chlorophyceae on Grenada, and even *Spirogyra tropica*, a freshwater form found in the Amazon waters. Also in this collection of Dr. J. Boeke most specimens from St. Martin and St. Eustatius were Chlorophyceae. What may be the cause in this region with so complicated stream directions and so changeable salt conditions, cannot be said so easily, but certainly it is worth while to be studied.

The algae of the North Coast of South-America, easily

to be reached from our colonies, are very little known and specially here, where the great currents join the sea, interesting things will probably be found. This small collection, which, owing to the carelessness of the crew is merely a portion of the whole, consists of full 60 different species, of which 5 are not included in Murray's list. I would doubtless have been able to extend the list, if all specimens had been complete and in perfect condition. With the aid of material, which may come into my hands later on, I hope to be able to do so.<sup>1)</sup>

As the local names are very characteristic, when one knows the plants, I thought it would not be without interest to give a short list of them. A difference is often made between two species of one genus, whilst two forms so different in dimension as *Haliseris delicatula* and *Haliseris Justii* go under one name. Also *Acetabularia caraibica* and *Gracilaria lichenoides*, two genera not like each other at all have the same local name.

Before closing here I wish to thank Mrs. Weber—van Bosse, under whose direction I made this list, for her good advice and her ready help, as well as for the indispensable use of her extensive collections and library.

## CHLOROPHYCEAE.

### CONFEROIDEAE.

#### 1. Ulvaceae.

*Ulva fasciata* f. *taeniata*. Setchell. Rif (Reef) Curaçao  
(Boeke and Schoonhoven).

f. *lobata* Setchell. Caracas bay. Cur.<sup>2)</sup>

1) The collection made by Kapt. Luit. ter Zee Schoonhoven consisted of a good many wellpreserved specimens. The names and localities are included in the following list.

2) When I do not add the name, the algae were collected by Dr. Boeke.

## CLADOPHORACEAE.

*Chaetomorpha Lineum*. Müll. Rifwater. Cur.

*Cladophora glaucescens* Griff. Locality?

*Cladophora gracilis* Griff. Curaçao harbour (Schoonhoven).

## SIPHONAEAE.

**Caulerpaceae.**

*Caulerpa verticillata* J. Ag. Zakito. Bay of Wacao. Curaçao.  
(Boeke and Schoonhoven).

*C. racemosa* Weber v. Bosse.

var *laete-virens*. W. v. B. with occasional transition-stages towards var. *clavifera*. — Canal. Cur.

var. *uvifera* W. v. B. Also the *laete-virens*-form was often represented in the branchlets, so that it is difficult to bring this sample under one name.

Wacao. Cur.

var. *uvifera* f. *intermedia* W. v. B. The form of the branchlets was that of f. *intermedia*, but they were arranged in two rows, what never occurs in var. *uvifera*.

St. Eustatius T(?) bay. — Wacao gr. bay. Cur.

*C. sertularioides*. Gmelin.

f. *typica* Canal. (Spanish harbour).

f. *brevipes* W. v. B. Canal. Spaansche haven. Binnenwater. Cur.

f. *longiseta* Ag. Rifwater. Rif (Reef) Canal. Cur.

*C. cupressoides*. f. *typica* W. v. B. St. Eustatius.

T. D. Dick Bay.

*C. sedoides*. Agardh. St. Eustatius, at right angles to Jenkins Bay.

*C. spec?* St. Eustatius. Harbour.

**Codiaceae.**

*Penicillus elongata*. Gepp. This is a species very much like

- P. capitatus*. I do not think this specimen is the real *P. capitatus* because: 1e. the stem is continued far into the capillitium 2e. the filaments are in general thicker than those of *P. capitatus*—Rifwater. Cur.
- P. capitatus*. Lamarck. in several not very typical samples among which some young ones.
- Simsons bay. Lagoon. St. Martin.
- St. Eustatius. harbour.
- St. Martin. Oyster-pond.
- P. pyriformis*. Gepp. St. Eustatius. Dick Bay.
- P. Lamourouxii*. Decaisne. This sample lost the greater part of the capillitium. Therefore I can only make the supposition that we have here a *P. Lam. f. gracilis*.
- St. Eustatius.
- Codium tomentosum*. (Huds) Stackh. Locality?
- Udothea conglutinata*. Soland. St. Martin Simsons Bay.
- St. Eustatius T. D. Dick Bay-Harbour.
- Halimeda Opuntia* Lamx.
- f. *typica* Barton. Schottegat. — Curaçao Rif. (Reef)
- Spaansche haven, (Spanish harbour). — Canal. —
- f. *cordata*. Barton. Rifwater. Cur.
- H. Tuna* f. *typica*, Barton. Simsons Bay lagoon.
- St. Martin little mullet pond.
- H. incrassata*.
- f. *typica*-Barton. Simsons Bay. St. Martin.
- f. *Lamourouxii*. Bart. Schottegat. Cur.

### Valoniaceae.

- Dyctyosphaeria favulosa*. Ag. Thallus irregular—Rif (Reef)
- Curaçao.
- Cladophoropsis membranaceus* Börgesen. Reefponds Curaçao.
- Valonia verticillata* Kütz.? I must add a note of interrogation as the branching is not typical. A more regular comb is formed, which reminds us of forms as *Anadyomena*—St. Eustatius.

**Dasycladiaceae.**

*Acetabularia crenulata*, Lamour. Schottegat. Cur. St. Martin.  
Simsons Bay.

*A. caraibica*. Kütz. Rifwater. Cur.

*Botryophora occidentalis*. J. Ag. St. Martin Mullet pond.

**PHAEOPHYCEAE.****Dictyotaccae.**

*Padina gymnospora*. till now unknown in West-India-  
Schottegat.

*P. commersonii*, Bory. Cur. Reef Fortress Zakito.

*Dictyota dentata*, Lamx. Reef Curaçao.

*D. pardalis*, Kütz. Curaçao: Spaansche haven (Spanish  
Harbour). Spaansche (Spanish) Water.  
Wacao, gr. bay.

*D. linearis*, (Ag.) Greville. Zakito. Cur.

*D. Mertensii*, Mart. Wacao gr. bay. Cur.

*Sphacelaria furcigera*, Kütz. On several Sargassum plants.

*Gymnosorus variegatus*, Lamour. St. Eustatius: T. (?) bay.  
T. D. Dick Bay, harbour ruins.

*Haliseris delicatula*, Lamour. Wacao bay. Cur.

*H. Justii*, Lamour. Wacao bay. Cur.

**Encoeliaceae.**

*Hydroclathrus cancellatus*, Bory. St. Martin. Simsons bay.

**Fucaceae.**

*Turbinaria trialata*, Kütz. Locality?

*Sargassum platycarpum*, Mont. Curaçao. Caracas bay.

Spaansche (Spanish) water.

Spaansche haven (Spanish  
harbour).

*S. vulgare*, Ag. Since this is a species in which superficially very different forms are classed together, I must here add that my specimens probably belong to *S. leptocarpum* Kütz. Phyc. gen. p. 362. Tab. Phyc. XI t. 6.  
Reef Curaçao.

*S. spec.*? Caracas bay. Cur.

## RHODOPHYCEAE.

### Bangiaceae.

*Bangia ceramicola*, (Lyngb.). Chauv. On Dictyota pardalis.  
Spaansche (Spanish) water. Cur.  
*Goniotrichum* spec.? On Dictyota pardalis. Spaansche  
(Spanish) water. Cur.

### Helminthocladiaceae.

*Chantransia* spec.? On Dictyota pardalis. Spaansche Haven  
Cur. (Spanish Harbour).  
*Liagora viscida*, Forsk. Rifwater. Cur.  
f. *coarctata*, Kützing. Rifwater. Cur.

### Chaetangiaceae.

*Galaxaura comans*, Kjellm. Schottegat. Mangroves. Cur.  
*G. Liebmanni*, Aresch) Kjellm. Curaçao Rifwater.  
*G. Stupocaulon*, Kjellm. Locality?  
*G. moniliformis*, Kjellm. St. Eustatius.

### Gelidiaceae.

*Wrangelia plebeia*. Ag. Curaçao Reef.

### Rhodophyllidaceae.

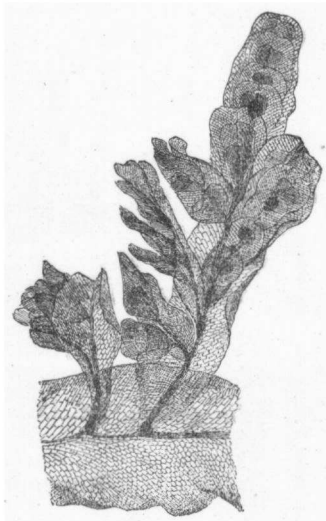
*Eucheuma isiforme*, J. Ag. Locality?

**Delesseriaceae.***Hypoglossum tenuifolium* (Harv.) J. Agardh.f. *Schoonhoveni* n. f. Curaçao.

This alga is characterized by the big median sorus instead of two sori (fig. 6), one on each side of the midrib as we usually find in *Hypoglossum*. One median sorus is typical for *Delesseria*, and I should take this alga as a *Delesseria* if it had not so many characteristics in common with *Hypoglossum* and specially with *H. tenuifolium*. The new branches are developed on the midrib and that consists of one central and two cortical rows of cells (fig. 7. 8.) However the alga differs from the typical specimens of *Hypoglossum tenuifolium* from Key-West by its big median sorus, stouter frond and leaves not blunt at the top but often lengthened in a narrow band (fig. 9) from which new branches issue. I wish to distinguish it as a new form for which I propose the name of *Schoonhoveni* in honour of captain Schoonhoven, who gathered it for me at Curaçao.

*Zellera Boekei* n. sp.

Root and stem unknown. Upper part of plant consisting of a dichotomically branched, broadly winged axis, that carries unilateral and dorsally inserted winged branches or leaves; these carry branches of second order and these again branches of third order. All ramification strictly unilateral and dorsal. Cystocarps on the midrib, pitcher-shaped. Tetraspores unknown. St. Eustatius 25 fathoms. leg. Boeke.



Out of a depth of 25 *Zellera Boekei* n. sp. (enlarged).

fathoms Dr. Boeke brought home from St. Eustatius the upper part of a Delesseria-like alga, that I could recognize on comparison with material collected by the Siboga-Expedition for a member of the genus *Zellera*. This genus has been described by von Martens in „Die Tange der Preussischen Expedition nach Ost-Asien pl. VIII, but his figure is an unhappy one as Mrs. Weber could ascertain, who compared her specimens from the Siboga-Expedition with the authentic piece of von Martens at the museum in Berlin. Neither is the description of Schmitz in Engler u. Prantl fig. 416 entirely accurate. *Zellera tawallina* is characterized by a curved, winged main stem, that carries unilateral and dorsal branches of second order and these again carry leaflets, but none of these leaflets fasten themselves to other branches, they remain free, as I could ascertain on various Siboga-specimens. The leaflets often overlap the preceding branches and in that case the plant looks as if it consisted of a net-like tissue, but in reality the leaflets remain free.

The *Zellera* of St. Eustatius has essentially the same ramification as *Zellera tawallina*; all the branches issue unilaterally and always from the dorsal side of the preceding branch. It differs from *Z. tawallina* by the broader wing with entire margin (fig. 2. 3.) and the pitcher-like cystocarps. *Z. tawallina* has a narrower dentate wing and globular cystocarps. I have only a fragment of the *Zellera* of St. Eustatius, the dredge having only brought up the top of a single plant, but the ramification is so typical that I was able to recognize the genus and to describe this new species for which I propose the name of *Boekei* in honour of Dr. Boeke, who discovered the plant. —

#### **Sphaerococcaceae.**

*Gracilaria lichenoides*, L. till now only known from East-India.—Rif water. Cur.

**Rhodomelaceae.**

*Laurencia papillosa* (Forsk) Grev. Caracas bay. Cur.  
Curaçao Reef.  
Rifwater. Cur.

*L. obtusa* Lam. not a typical example, probably one of  
the forms *laxa* or *gracilis*. Owing to lack of material I  
cannot give one of both forms as certain. Locality?

*Herposiphonia secunda*, Ag. Curaçao Reef. (Boeke and Schoon-  
hoven).

*Acanthophora Thierii*, Lam. Zakito (Schoonhoven) — Spaan-  
sche (Spanish) water —  
Curaçao. Bay of Wacao.

*Polysiphonia variegata*, Ag. Curaçao rifwater. (Schoonhoven,  
*Bryothamnion triangulare*, Kütz. St. Eustatius. Jenkins bay.  
(Schoonhoven)

**Ceramiaceae.**

*Griffithsia corallina*, Lightf. St. Eustatius. (Boeke and Schoon-  
hoven).

*Centroceras clavulatum*, Mont. Cur. Caracas bay. Eustatius,  
*Ceramium tenuissimum*, Lyngb. [37 m.

f. *arachnoïdea*, Ag. Curaçao. Bay of Wacao.

*Spyridia filamentosa*, (Wulf.) Harv. Curaçao.  
Schottegat (Schoonhoven).  
St. Eustatius (Boeke).

**Corallinaceae.**

*Amphiroa fragilissima* (Linn.) Lamx. St. Martin Poste bay.  
Curaçao Reef.

*Melobesia farinosa* Lam. On *Zostera*. Rifwater.

**LIST OF LOCAL NAMES.**

*Kolo di Lama* sea-cabbage. *Padina gymnospora*.

*Jerba di Toetoecan*. *Dictyota linearis*.

- Jerba caranga.* Haliseris delicatula and H. Justii.  
*bima.* Chaetomorpha Linum.  
*Jerba di Tortuca.* Ulva fasciata f. taeniata.  
*Jerba di vrega* vulgar kratsja-kratsja. Halimeda incrassata,  
 f. Lamourouxii.  
*Jerba crap.* Halimeda Opuntia (kratsja-kratsja).  
 vrega-schrobden. Halimeda Opuntia f. cordata.  
*Pieterselie di lama.* Acetabularia crenulata.  
*Jerba di garnaaltje.* Acetabularia caraibica and Gracilaria  
 lichenoides.  
*Jerba di siringa.* Caulerpa racemosa var. laete-virens.  
*Jerba di ploenia.* Caulerpa sertularioides f. brevipes.  
*Pompon di awa.* Penicillus elongata.  
*Jerba di cania.* Zostera.
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## EXPLANATION OF THE PLATE.

- Fig. 1. *Zellera Boekei* n. sp. upper part of the plant.  
 Fig. 2. *Hypoglossum tenuifolium* (Harv.) J. Agardh.  
 f. *Schoonhoveni* n. f. Median axis dorsal side.  
 Fig. 3. *H. tenuifolium* f. *Schoonhoveni*. Median axis from  
 the ventral side.  
 Fig. 4. *Zellera Boekei* young winged branch of third  
 order, enlarged.  
 Fig. 5. *Z. Boekei*. winged branch of second order enlarged.  
 Fig. 6. *Z. Boekei* growing point of the winged branch of  
 third order.  
 Fig. 7. *Z. Boekei*. Top of the winged branch of second order.  
 Fig. 8. *Hypoglossum tenuifolium* f. *Schoonhoveni*, n. f. Piece  
 of the thallus with tetraspore-sorus.  
 Fig. 9. *H. tenuifolium* f. *Schoonhoveni* n. f. Top of a leave  
 lengthened in a narrow band.
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# ERRATUM.

p. 238 l. 5 from the top: for fig. 6 read fig. 8.

l. 11 " " " for fig. 7, 8 read fig. 2, 3.

p. 239 l. 11 " " bottom: for fig. 2, 3 read fig. 4, 5.

