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Some Littoral Plants of Flinders Island

By PETER SAENGER*

The coastline of Flinders Island consists mainly of steep sandy beaches alternating with rocky headlands, mostly of granite. However, there are limestone reefs and cliffs at Settlement Point, and a small limestone headland on the northern shore of Tanners Bay (see Fig. 1). Both these localities proved to be rich collecting areas.

At Settlement Point, Neptune's necklace *Hormosira banksii*, the brown bubbleweed *Colpomenia sinuosa* and *Padina fraseri* constitute the main plant cover in the shallow water; while *Caulerpa brownii*, *Codium galeatum*, *Ecklonia radiata* and *Cystophora* spp. form the deep water elements. It was here in the sheltered rock-pools that the green crustose alga *Dicetyosphaeria sericea* occurred.

In the deeper water around Settlement Point, large areas of the sea nymph *Cymodocea antarctica* are to be found. Another angiosperm known as the Marine Fibre plant *Posidonia australis*, forms extensive areas which may become exposed at low tide. These can be seen at numerous localities but are particularly striking offshore from Lady Barron, and between Cape Barren and Long Islands. In January, vast numbers of the opened capsules of this plant are washed up on the beaches around Flinders Island. When the leaves of this plant decay, the leaf fibres are rolled into close

balls by the wave action and these may be found washed up on the beaches in a variety of sizes. A third angiosperm occurs at Cameron Inlet, on the east coast of Flinders Island. Here the grass wracks *Zostera muelleri* and *Z. tasmanica*, so common on Victorian shores, occur in small patches.

The area displaying the clearest zonation both of animals and plants was the granite headland on the east coast overlooking Babel Island. Rochford (1957) shows the "east Tasmanian" surface water mass extending from the Tasmanian east coast to the southern tip of Flinders Island, but indicates a strong, seasonal fluctuation in its position. In March, this cool surface water mass appears to be at its most northern position and is shown to influence coastal temperature and salinity of the southern half of the coast of Flinders Island. This "east Tasmanian" water mass has a temperature in March of 14.2°C (Winter, 12°C; Summer, 16-18°C); while at the same time the waters of North-eastern and Eastern Bass Strait are at 16.8° and 19.5°C respectively. However as Guiler et al. (1958) point out, the water temperatures become higher offshore, owing to the influence of the warm, southward-flowing East Australian current, so that 30 miles east of Babel Island the summer temperatures are 18-19°C, while in winter they are just over 13°C. This somewhat

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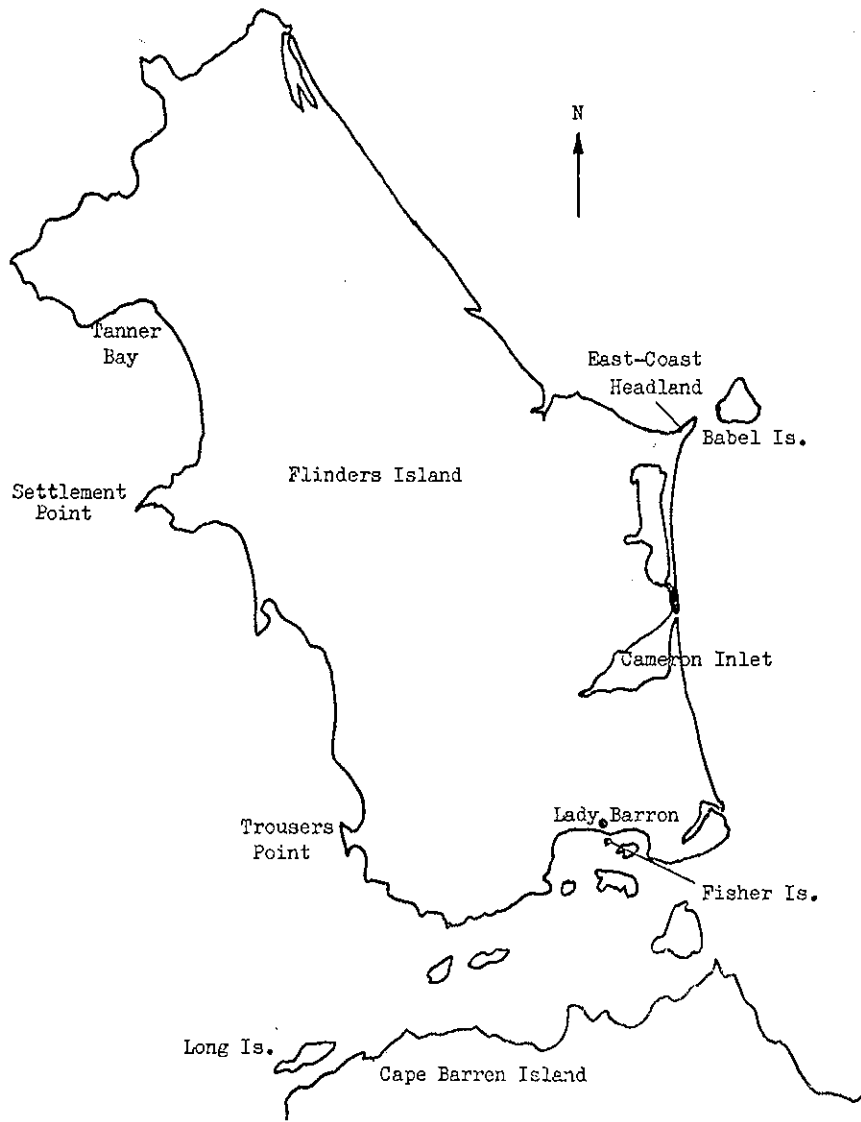


Figure 1 showing position of localities mentioned in the text.

colder belt of water lying close to the east coast of Flinders Island allows a rich algal flora to develop.

The constant battering of waves on this headland is reflected by a large spray zone characterized by the small, light-blue periwinkle *Melaraphe unifasciata*. Below this zone a dark band consisting of two lichens *Lichina confinis* and *Verrucaria* sp. is conspicuous. At high water mark a diffuse barnacle zone occurs, consisting of at least two barnacle species. This is followed by a zone consisting almost purely of the sea lettuce *Ulva lactuca* and the brown alga *Scytosiphon lomentaria*. A narrow but conspicuous band of the green alga *Codium galeatum* occurs below the *Ulva* zone, especially in more exposed areas. In more sheltered habitats, this *Codium* zone appears to be replaced by a *Dictyopteris-Wrangelia* zone with a few small patches of the tube worm *Galeolaria caespitosa*. It is in this zone that large numbers of the black elephant snail *Scutus antipodes* and the mutton fish or abalone *Haliotis ruber* were observed.

In the lower littoral region the sea-squirt *Pyura stolonifera* occurred, followed by a band of the southern bull-kelp *Durvillea potatorum*, a species of cold water affinities (Fig. 2). The kelp *Macrocystis angustifolia* and several *Cystophora* species occurred in the deeper rock pools. Two species of cold water affinities, *Durvillea antarctica* and *Macrocystis pyrifera*, are absent on Fisher Island (Gillham, 1965), but are found on Tasmanian coasts (Guiler, 1952). These two species were also absent on Flinders Island.

However Gillham (1965), states that on the northern coast of Fisher Island, members of the Siphonales become conspicuous, among them *Caulerpa cactoides*, *C. simpliciuscula*, *C. sedoides* and *Codium muelleri*. Without exception, the *Caulerpa*

species mentioned were not observed on Flinders Island, and as these *Caulerpa* species are usually temperate water indicators, their absence suggests that the waters around Flinders Island may be significantly cooler than Victorian waters where these *Caulerpa* species are common, but not cold enough for *Durvillea antarctica* and *Macrocystis pyrifera* to grow.

Guiler et al. (1958, p. 181) concludes from evidence at Fisher Island that the "apparent reduction in the size of cold water loving species such as the southern bull-kelp . . . points to a slight warming of the cool water". Although no such reduction in size was observed at this east coast locality, the fact that *Macrocystis angustifolia* and *Durvillea potatorum* are apparently absent at other localities on Flinders Island, seems to support his conclusion that "all dominant species are cold temperate in affinities, but the warm temperate element is very much stronger at Flinders Island than in Southern Tasmania" (p. 181).

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BIBLIOGRAPHY

- Gillham, M. E. (1965). IV. Vegetation: Additions and Changes—The Fisher Island Field Station. *Pap. Proc. Roy. Soc. Tas.* **99**: 71-80.
- Guiler, E. R. (1952). The marine algae of Tasmania check list with localities. *Pap. Proc. Roy. Soc. Tas.* **86**: 71-106.
- Guiler, E. R., Serventy, D. L., and Willis, J. H. (1958). The Fisher Island Field Station—With an account of its principal Fauna and Flora. *Pap. Proc. Roy. Soc. Tas.* **92**: 165-183.
- Rochford, D. J. (1957). The Identification and Nomenclature of the Surface Water Masses in the Tasman Sea (data to the end of 1954). *Aust. J. Mar. Freshw. Res.* **8** (4): 369-413.

APPENDIX

List of Littoral Marine plants collected during January-February 1967. (This list is nowhere near complete but may serve as a basis for further work. Unfortunately no seasonal changes in species occurrences has been incorporated.)

Angiosperms:

Cymodocea antarctica
Posidonia australis
Zostera muelleri
Z. tasmanica

Lichens:

Lichina confinis
Verrucaria sp.

Chlorophyceae:

Caulerpa brownii
C. flexilis
Codium australicum
C. galcatum
C. lucasii
C. pomoides
C. spongiosum
Dictyosphaeria sericea
Enteromorpha sp.
Ulva lactuca

Rhodophyceae:

Corallina officinalis
Dicranema grevillei
Gelidium pusillum

Jania fastigiata
J. micrarthrodia
Laurencia botryoides
Lithothamnion sp.
Nemalion helminthoides
Phacelocarpus labillardieri
Plocamium preissianum
Wrangelia plumosa

Phaeophyceae:

Colpomenia sinuosa
Cystophora torulosa
Cystophora spp.
Cystoseira sp.
Dictyopteris muelleri
Durvillea potatorum
Ecklonia radiata
Ectocarpus sp.
Halopteris spicigera
Hormosira banksii
Macrocystis angustifolia
Nothcia anomala
Padina fraseri
Phyllospora comosa
Sargassum undulatum
Sargassum sp.
Scaberia agardhii
Scytosiphon lomentaria
Seirococeus axillaris
Sphlachnidium rugosum
Zonaria crenata

Cyanophyceae:

Rivularia australis