

# Harvesting the Sea

**Dr Peter J. Gosling** looks at a nutritious, natural and free food source.

Many of you will have spent your Summer days by the seaside, and will probably have considered any seaweed on the beach as a bit of a nuisance. However, I wonder how many of you are aware that seaweed is a fantastically valuable source of food, containing protein, fats, carbohydrates, vitamins and minerals.

In fact, it is almost a complete food, readily assimilated because its potassium and sodium ratio is almost the same as that of the human body. The protein found in seaweed contains all the eight essential amino acids as in meat, but unlike meat has virtually no calories. Proteins are not everything. It is the other constituents of seaweed that have justly earned them such a good reputation among nutritionists and gourmets alike, and caught the imagination of the more alert members of the medical profession.

Seaweed is packed with vitamins and minerals, building up the body's defences, improving health and well-being. What is more seaweed is free!

Why it is that people, in all but a few coastal areas of the UK, have been so slow to recognise this free food source? Maybe the connotation of the term sea 'weeds', with those land plants that are profuse nuisances in the garden, have put people off trying them. It is not surprising that those who have 'discovered' the gastronomic delights of these plants, often refer to them as sea 'vegetables'.

The growing popularity in the UK of Japanese food has certainly increased the number of people who have tried and liked various sea vegetables. The Japanese have used the plants whole, or



Left: Bladder Wrack. Above: Knotted Wrack



products from them, for centuries. However, the truth is that, even in the UK, modern methods of food processing and other technological changes have brought sea vegetable products into our everyday diets, without people realising what it is they are eating or using.

Extracts of sea vegetables are frequent ingredients in everything from canned meat to ice creams, used for their emulsifying, thickening, stabilising, suspending and gelling properties. Sea vegetables, such as kelp and *Spirulina* are even consumed in tablet form by athletes as aids to their training and diet regimes.

So why not be brave and try eating the plants whole? There are plenty to choose from, with literally thousands of different types, or species, of sea vegetables. Even around the British coast we see more than eight hundred species.

## Making your selection

Try any sea vegetable you come across, as probably the only type to avoid is one called *Desmarestia* which you are unlikely to encounter anyway unless you are a diver! Fortunately, unlike mushroom and toadstool groups, that are also freely available to those who seek them, there are no poisonous large sea vegetables. Although you may find some that do not taste so good, others such as kelp, dulse, laver, etc., are truly delicious and offer considerable nutritional benefits.

## Nutritional benefits

Sea vegetables contain protein, fats, carbohydrates, vitamins and minerals but, as you might expect, there is some variation in nutrient values between the different species. Kelp, a broad

description of most of the largest brown sea vegetables around our coasts, for instance, are a valuable source of minerals and trace elements as well as a good source of vitamins of the B group, C, E and K.

Dulse, or red sea vegetable, a very popular food, contains the highest concentration of iron of any food source. It is also a valuable provider of vitamin C, potassium and magnesium. There is a slight nutritional variation with season, the general rule being that sea vegetables are at their most nutritious in the Spring and lowest in the Autumn.

For those who like to identify the species they are enjoying and the precise nutritional benefits they are deriving from a particular type I would recommend the excellent books *Seaweed – A User's Guide*, by Sonia Surey-Gent and Gordon Morris, and *The Sea Vegetable Book*, by Judith Madlener.

## Harvesting

Collecting sea vegetables could not be easier. They may be found from the middle shore down into shallow water, on rocks, and under overhanging rocks in pools etc. All that is required is to give it a quick wash in clean seawater to remove unwanted grit and wildlife, keep it cool and take it home. Clearly common sense dictates that some stretches of our coastline, where sewage or industrial outlets occur are avoided. Local knowledge or simple enquiry should enable these areas to be easily pinpointed.

Once home, rinse carefully in fresh water, sorting into types as you go, picking out rough or damaged pieces. Do not let the plants soak in the water for

too long or you will lose valuable nutrients. Tap water can cause the plant cells to burst open. A quick wash is all that should be needed.

## Will it keep?

For most of us it is not always possible to go out and collect fresh sea vegetables just when we want to, so, as with other foods, some means of storing for future use after a good harvesting session is required.

The obvious way to keep sea vegetables cool is to put them in the refrigerator. Delicate sea vegetables will keep for two or three days, the stronger ones up to a week. Let your eyes and nose be your guide on this as obviously no two plants will ever be quite the same.

For speed and convenience, sea vegetables can be frozen, though some like kelps do not survive freezing well. The softer vegetables freeze best, with a storage life of about six months before the flavour is lost. Use from the freezer as you would frozen herbs, chopped straight into soups or stews, or defrost with hot water.

Remember a certain amount of nutrient loss occurs every time you rinse or blanch the sea vegetable, unless you use the rinsing water as well. To maintain optimum nutritional values do not blanch sea vegetables before freezing.

## Drying

Perhaps the most traditional and natural way to preserve sea vegetables is by drying. If you should find yourself on the beach on a hot Summer's day, to sun-dry sea vegetables, just rinse, bunch the stronger types into small bundles and hang from the branches of a shady tree,



Spiral Wrack



in the breeze. More delicate types can be spread out on flat surfaces, or just heaped into small mounds, frequently turned so no damp patches remain.

Sea vegetables need to be dried as fast as possible. This may take about twelve hours to crisp dry in order to maintain the value of the vitamin A in the plants. If you just want to keep a small amount of sea vegetables, or are just starting to experiment, you can even dry them in an oven providing you ensure that the temperature is not too high.

As with all dried foods, a little damp can destroy them, but regular checking will deal with problems before they get too serious.

Throw away mouldy bits, but do not mistake dried salt patches for mildew. Dried sea vegetables can be stored in small airtight containers in the cool dark conditions, but avoid aluminium containers.

A well-dried sea vegetable will last many years, and all species are long lasting if dried. Keep air contact to a minimum until it is actually used. It is amazing how quickly sea vegetables take on water from the air, after all, that is why the weather forecasters amongst us have their precious bits of seaweed to tell them when it is going to rain!

## In the kitchen

Sea vegetables may be used alone, as a substitute for meat in many recipes or as an additional flavour to enhance existing meat and fish dishes. Many people find the flavours of sea vegetables an exciting and welcome addition to their palate. However, for most of us the flavours of whole sea vegetables are still unfamiliar and for the less adventurous this may be instantly repellent.

I would therefore urge you not to dismiss a sea vegetable out of hand after the first mouthful, as with many things in life you may find the distinct flavours grow on you. Give it a chance - experiment. Try various types cooked in different ways before you finally give the thumbs down. Sea vegetables may taste unusual but rarely unpleasant. So take heart and give sea vegetables a try - they are free so you have nothing to lose! 🌊

A tangle of *Laminaria Digitata*. (Photos Niall Benvie)

## COOKING IDEAS

Substitute a cup of dried sea vegetable such as dulse for the bacon in an egg and bacon pie; Chop fresh sea vegetable such as laver into wild herb salads; Add sea vegetables such as kelps to soups, stews and casseroles; Make sea vegetable broth or infused tea for a nutritious winter warmer.

### Examples of sea vegetable derivatives commonly used in processed foods:

**Carrageenan E407** a natural extract of several sea vegetables, notably Carrageen, typically used as an emulsifying, thickening, suspending and gelling agent in products such as ice creams, salad dressings, instant desserts, infant formula, alcoholic beverages etc.

**Agar E406** a naturally occurring derivative of the stems of sea vegetables belonging to the red algae family, especially *Gelidium amansii*, typically used as a, thickening, stabilising and gelling agent in products such as ice creams, canned meats etc.

**Alginate acid E400** an extract from brown sea vegetables, mainly *Laminaria*, growing off the west coast of Scotland and Ireland, typically used as an emulsifier, thickener, stabiliser and gelling agent in products such as instant desserts, ice creams, and soft drinks.

**Alginates E401-5** a group of substances (sodium alginate, potassium alginate, ammonium alginate, calcium alginate and propylene glycol alginate) each prepared from alginic acid E400 derived from brown sea vegetables. Alginates are used for their emulsifying, thickening, stabilising, suspending, gelling properties as well as diluents for colouring and flavouring agents.

