

Beach Trip

Trip to the Beach



Give the microscope a day at the seaside and study marine life.



The computer microscope can be used at the beach with a laptop.



Life in a rock pool can offer endless specimens for study.

'Bucket, spade, microscope' . . . going to the coast will never be the same again. If you have a digital microscope coupled to a laptop you can give it a day at the seaside and take pictures of living organisms from rock-pools. Life began in the sea, and there are many excellent sights awaiting the young microscopist. One familiar sight will be the thin sheets

of sea-lettuce. The flat green one is *Ulva*, and the long thin version is *Enteromorpha*. These green algae need high levels of nitrogen, a suitable source of which is sewage. For this reason, sea lettuce is often an indicator of sewage pollution. The red-coloured sea lettuce is *Porphyra*, which is used in Wales to make a glutinous breakfast food known as laver-bread, a

regional alternative to sausage. Under the 200x lens, the cells of *Porphyra* are a remarkable sight. You will probably find small feathery specimens which look rather like moss. These are colonial animals, and among the most common are *Dynamena* and *Obelia*. There are often hundreds of the animals on each branch. They feed by wafting a



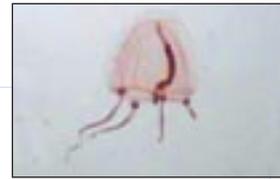
Looking like a tiny tree, *Obelia* is actually a sea animal - 10x.



Each colony consists of hundreds of individual organisms 60x.



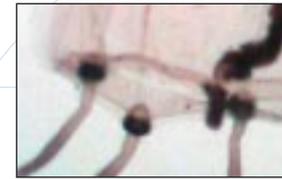
The organisms, less than 0.25 mm across, are miniature sea-anemones 200x.



At 10x you might find *Syncoryne*, a small free-swimming jellyfish.



You can learn about sand using the digital microscope - 10x.



60x unveils the bell-shaped body and tentacles.



Top lighting reveals the mixture of minerals at 60x.



The *Syncoryne* tentacles are covered with stinging cells - 200x.



Select the lower lamp to study sand magnified 200x.

current of water through a mouth opening and extracting particles of food. If you are lucky you may find some of the small free-swimming miniature jellyfish like *Syncoryne*. The higher magnifications will reveal the tentacles, and the rows of stinging cells with which they paralyze their prey. If you use a fine net, made from an old pair of tights or pantyhose, you might find some tiny shrimps or other forms of plankton, all of which are exciting subjects for study. With care (microscopes and

computers really don't get on well with water) you might be able to set up the 10x lens over a small rock pool and study sea-anemones and other rock-pool species close to the surface. I have not tried this, mainly because of a fear of dropping the microscope into the pool, but this is another new area of microscopy waiting to be explored. Then you should try studies of sand. In some samples you will find tiny shells. Other samples are mostly rock, some are quartz, while

most sand is made of silica. These are glass particles (they look like boulders at 200x) made of the same compound as the sharp stinging hairs of a nettle. Oh yes, and don't forget your Factor 30. Once you start studying seashore life you are likely to be carried away and stay too long in the sun. The hand-held microscope can document the damage caused to your skin by the sunburn, true, but it's best avoided if possible. Better add sun-hat to the list.



This specimen is of the sea-lettuce *Enteromorpha* - 10x.



Even under 200x it is hard to observe *Enteromorpha* cells.



Porphyra is a red sea-lettuce used to make laver-bread.



Under 200x the cells of *Porphyra* stand out vividly.