

# BAYLANDS

## Diatoms

Diatoms, a type of algae, are microscopic one-celled, golden brown organisms of the phylum *Bacillariophyta*. They are a main component of plankton and can be found in all waters, including those of the San Francisco Bay. Diatoms are among the most important and prolific organisms in all the waters of the world, as they provide many animals directly or indirectly with food and oxygen. Almost all diatoms are autotrophic, which means that they convert inorganic materials into organic nutrients through photosynthesis.

Diatoms are crystal-like in appearance because their cell walls are made of a glass-like silica. This and the fact that they have beautiful symmetry and design, gives diatoms the nickname "jewels of the sea." Most diatoms are sedentary, incapable of moving except as they are moved by the flow of water. The sedentary diatoms, *Centrals*, are usually rounded in shape with radial markings. The mobile diatoms, *Pennales*, are elongated and have feather-like markings.

Diatoms reproduce asexually, by ordinary cell division. The cell walls consist of two overlapping halves which split apart during reproduction. Each half splits to become the upper half of a daughter cell. A new lower half is then formed inside each of the daughter cells. The size of the daughter cell is slightly smaller than the parent and, with each subsequent generation, size diminishes. Diatom colonies have been found to be reduced in size up to 60%. When their size eventually becomes too small to reproduce, the cells form auxospores which restore the diatom to its original size.

The fossilized remains of diatoms often form beds of diatomaceous earth. The largest bed of diatomaceous earth in the United States is found in Santa Barbara County, California, where it is mined.

## Nature Notes

The beds of this earth in Santa Barbara are more than 1,000 feet deep.

Diatomaceous earth is widely used in filters, insulation, abrasives, paints, varnishes, and other products.

*Edited and Illustrated by Virginia Kolence*

