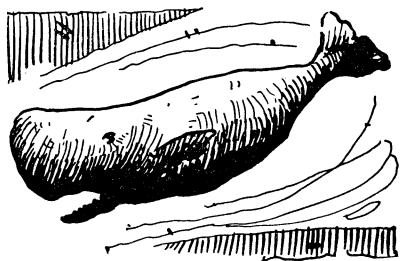


BIOLOGY  
**NATURE  
 RAMBLINGS**  
 by Frank Thone



### Invisible But Important

**I**SN'T IT ODD, how all animal life in the sea is dependent on tiny plants invisible to the naked eye!

Vast mountains of these algal cells are accounted for in the more usual cycles of eat-and-be-eaten represented by practically all fish, crustaceans, dolphins, seals, whales, as well as less familiar creatures such as jellyfish, starfish and sea urchins, octopuses and cuttlefish—all the larger carnivora and scavengers that swim the sea and crawl on its bottom.

Each of these creatures eats other animals a little smaller than itself. These in turn prey on still others that are a step smaller, until at last we get down to the ultimate feeders on the one-celled algae—animals that are microscopic themselves. There may be a dozen or a score of digestive steps between diatom and whale.

That pyramiding of hungers holds true specifically for the sperm whales, the only whales that eat really large bites. With their enormous jaws and stumpy teeth as big as pint jars, sperm whales rend and devour the pink flesh of the giant cuttlefish that live in the great, dark depths. These cuttlefish are in turn devourers of anything they can touch with their anaconda-like arms, including many really large fish. The big fish in turn are eaters of smaller fish, and the smaller fish feed on still smaller ones. The smallest fish eat tiny shrimp-like creatures, marine worms, swimming mollusks, and so on. These, finally, make the ultimate food-demand upon the one-celled algae, the humble grasses of the sea.

Whales, partly because of their huge size, partly because of the mystery that still surrounds much of their lives, give dramatic emphasis to the struggle for food, the compounded tragedy of eat-and-be-eaten that goes on incessantly in the sea. But it must be remembered that on

smaller scale it is repeated in the life of every fish down to the smallest minnow, every squid and cuttlefish, every oyster and clam, every sea animal that eats other sea animals.

Hence the anxious preoccupation of sea scientists with the microscopic algae. With all the care and ingenuity that agronomists bestow on questions of soil fertility, rainfall, growing temperatures, and all other factors that make for success or failure in the production of land crops and pastures, the oceanographers study the conditions that influence the lives of these humble plants that are the foundation of whatever men take out of the sea with hooks, or nets, or harpoons.

*Science News Letter, September 14, 1940*

### PLANT PHYSIOLOGY

## Green Plants Give Off Faint Red Radiation

**F**LASHING a red light usually means "Stop!" But when a green plant does it, the flash means "Food-making being speeded." This discovery has been announced in a new publication by Dr. E. D. McAlister and Dr. Jack Myers of the Smithsonian Institution.

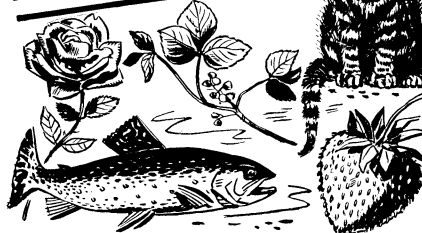
The red flash in question is not visible to human eyes, because it is masked by the intense green reflected by the plants when light shines on them—and they can not form food except with the aid of visible light. To see the red flash, which is only a tenth of a per cent of the total light absorbed by the plant, special filters and light-sensitive instruments have to be used. The only way that human eyes could be imagined as seeing the red flash would be by having them totally color-blind to green and hypersensitive to red. So far as is known, this never happens.

The red light is of the kind known to physicists as fluorescent. Fluorescence occurs when certain substances, irradiated with light of a certain color, give off light of a different color. Until the two Smithsonian researchers devised their apparatus and perfected their technique, the relation of this red fluorescence to the food-making process was not known.

One result of the investigation was the demonstration that there is an "anti-photosynthetic" action in at least some plants, that works to hinder or limit the food-making process, even in the presence of the light necessary for it to proceed. They demonstrated this process in young wheat plants, and have indications that it goes on in other species also.

*Science News Letter, September 14, 1940*

## WHAT IS YOUR ALLERGY?



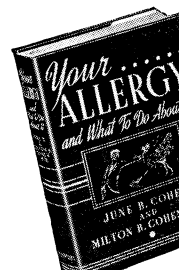
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