

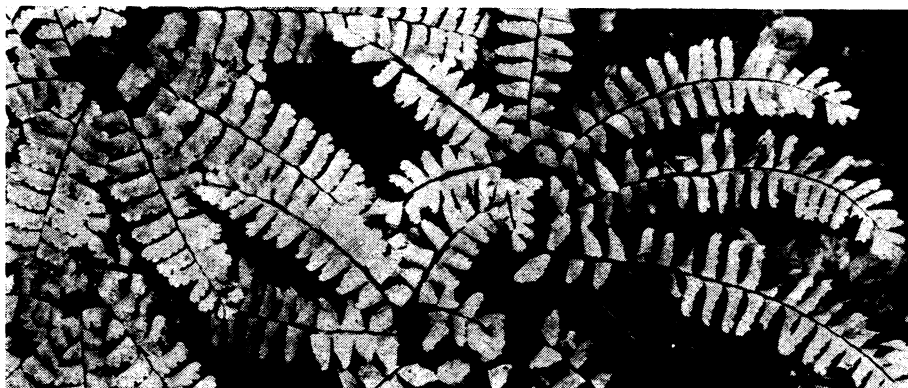
# Nature Note

## Ferns

In moist woods or sunny fields; in swampy ravines or on wind-swept cliffs; in almost any part of the world except the deserts, grow an amazing group of plants—the ferns.

These graceful plants produce neither seeds nor flowers, and lead a double life. They are members of the Pteridophyta division, smallest group in the plant kingdom.

Composed of a root, a stem and several delicate leaves in one of their lives, ferns seem simple—but they have such a complex life cycle that it was not fully analyzed until the middle of the nineteenth century. Beneath the fern leaves appear tiny clusters of brown cases containing “fern dust.” This is made up of spores only one five-hundredth of an inch wide. A single fern may produce more than 50 million spores in a summer. When ripe, these

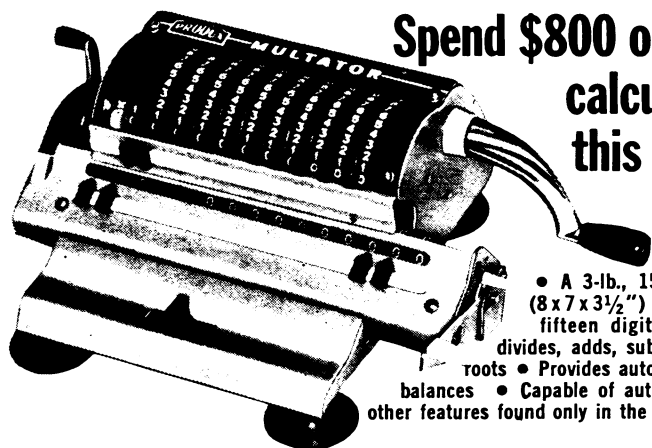


dustlike spores drop or are blown onto the ground where they begin their second life. Each microscopic single-celled body immediately puts down a slender root hair to anchor it to the soil. It develops, cell by cell, into what is called a prothallus or gametophyte.

surface to fertilize the eggs. After a few weeks a new plant emerges from this union, sending a tiny root into the earth and a leaf and stem toward the sun, drawing nourishment from the prothallus as an unborn baby draws nourishment from its mother. A tiny leaf opens and begins manufacturing its own food from the sun, air and soil nutrients. The prothallus shrivels and dies. A second series of leaves begins to unfurl and take over the task of manufacturing food. A new fern has appeared.

One of the most easily identified ferns of the 5,000 species of the world is the maidenhair, *Adiantum pedatum*. This fern is easily recognized by the distinctive circular pattern made by its feathery twice-pinnate leaves, borne on two curving parts of its jet black midrib.

This is a tiny flat disk in the shape of a heart, no bigger than half your fingernail, and as thin as a piece of paper. On the underside of this obscure plant, egg cells are produced in small cups, and farther away sperm cells are formed which swim over the moist



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