flow through like sand in an hourglass." Yet the egg assumes a normal egg-shape after it is laid, none the worse for its experience. Laboratory experiments, pulling and squeezing these tiny eggs, showed a remarkable degree of toughness and resiliency.

The adult female of this species also feeds on the grain moth larvae herself, though she never sees them. She does this by puncturing a larva with her ovipositor. While the tip is still imbedded in the stung larva, the ovipositor exudes a viscous fluid which hardens on the outside, forming a tube.

The insect then withdraws her ovipositor, leaving the tube intact. Through this the insect drinks the blood of the larva "as daintily as a college girl sipping soda water through a straw."

Science News Letter, August 24, 1935

ENTOMOLOGY

Did Spiders Teach Man The Weaving of Nets?

See Front Cover

GREEK legend has it that Arachne, the first mortal spinster, learned so perfectly Athene's art of weaving that she became presumptuous enough to compete against the goddess, and as a punishment was transformed into a spider.

Whatever may be the justification for the old story, it would seem at least as likely that men learned from spiders the weaving of nets to trap birds and other small quarry, more directly than women did the art of weaving cloth. While nobody knows when or how nets were actually invented, it is easy to speculate that some Neolithic hunter, idling among the riverside reeds on a day when birds were shy, may have watched a spider spread her net for her own winged prey, and so received the inspiration to try something of the same kind to catch his food with more certainty and less labor.

Arachne may have taught men the use of birdlime, too, for the cross threads in her web are sticky with a glue of her own making, which is the ultimate prey-catching device that makes the whole mechanism effective.

So fine are the treads, even thus coated, that under ordinary circumstances they are quite invisible. But after a cool night they may be so beaded with tiny dewdrops that they can be photographed. It was in this state that Cornelia Clarke caught the web shown on the cover of this number of the SCIENCE NEWS LETTER.

Science News Letter, August 24, 1935

ECOLOGY

Prairie's Own Soil Management Superior to That of Man

MAN, the land-hungry, the land-exploiting, ultimately the land-ruining, can learn much from the prairie grasses and herbs that formed the original sod in the Corn Belt states, some fragments of which still remain unplowed, especially in Nebraska and the Dakotas. Studies reported by Drs. J. E. Weaver and Evan L. Flory of the University of Nebraska indicate that the soil management practised by the prairie sod excels that carried on by man in practically every important respect.

Man's soil management is a business of extremes. His tillage, for field crops such as corn and cotton, keeps the soil stirred and loose all the time, a ready prey for erosion by wind and water. Prairie sod thrives without this constant disturbance—earthworms are plows enough. Man strives to give a field to a single plant species as a monopoly, and to kill all other growths as weeds. Prairie sod turns the acres into a mixed community of many species; there is competition in it, to be sure, but there is a sort of tolerance even in the competition. Man's crops cover the soil only during a part of the growing season; before planting and after harvest the soil is naked to the attack of the elements. Prairie sod is a constant protecting mantle; the seeds of its various constituent plants ripen at different times the whole summer through.

Cooler Air Over Sod

Quantitative measurements of climatic and other factors bring out dramatically the superiority of sod-economy over plow-economy. On a given summer day, the air in a cornfield at four feet above the ground was hotter by four degrees than air at the same level over the prairie. At four inches the difference was 11 degrees, at the soil surface itself the cornland was 21 degrees hotter than the prairie sod, and just below the soil surface the cornland was 38 degrees hotter.

This difference is reflected not only in the greater strain put on the endurance of the plants themselves, but in the conditions which the important nitrogen-fixing microorganisms of the soil have to face. The cornland was too hot for them to live, while the temperature of the prairie sod soil was still within survival limits.

The evaporating power of the air showed like differences. At the height of the plants, it was 27 per cent. greater over the cornfield; at half the height, 106 per cent. greater, and near the soil surface the difference was 68 per cent. to the disadvantage of the corn. These heightened evaporation rates are of critical significance in time of drought, when soil water conservation is of supreme importance.

Drs. Weaver and Flory do not contend that all the West should be returned to grass. There must obviously be corn and wheat, alfalfa and soybeans. Nevertheless, they contend, "we may profitably consider the natural environment. Not until the native environment in its relations to water, humidity, temperature fluctuations and other critical factors of both air and soil have been compared with that of overgrazed and cropped areas will it be known how widely we are departing from Nature's plan of a stable environment."

Science News Letter, August 24, 1935

From Page 119

So supplementary means must be devised. Important are flood-water reservoirs, which will hold back part of the water until the rest has been drained off, and then release their impoundings as rapidly as possible. There have been proposals to build such flood checks right in the Ohio itself, as well as in some of the other larger tributaries of the Mississippi from the west. These the committee doubts, but it gives its approval to a considerable number of flood-water dams on other tributaries, and even suggests that these may be the key to flood defense.

But in spite of all this, floods will still develop. Here a third strategy comes into play. If you cannot hold your adversary back, yield and let him rush through a path of your own choosing. This is the principle of the so-called floodways of the lower Mississippi. These are auxiliary flowage paths for the river, with guide levees along their sides. In normal years they remain empty, and may even be farmed. But when a Great Flood comes, once in a generation or oftener, the weaker "fuse plug" levees that close their upper ends are permitted to give way, and the surplus waters pour through on their way to the sea.