



Spiders

► ONE SIGN of authentic Navajo weaving, it is said, is a hole left in the middle of the blanket or basket. This is in compliance with an ancient compact with the Spider Woman, who imposed this condition in return for teaching the Pueblo Indians of the Southwest the arts of spinning.

The ancient Greeks paid tribute to spiders with a legend of their own. A maiden named Arachne was so skillful at the domestic art that she challenged the goddess of weaving, Athena, to a competition. Her handiwork was so excellent that the goddess, in a rage, destroyed the tapestry of her mortal rival, changed Arachne into a spider, and condemned her to an eternity of spinning.

Arachne became the Greek word for spider, and scientists still preserve the word in their name, the Arachnida, for the class of creatures to which spiders belong along with scorpions, mites, ticks and Daddy Longlegs.

People frequently make the mistake—usually accompanied with an “ugh” of re-

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By Joseph Degrazia, Ph.D.

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vulsion—of grouping spiders with insects. Spiders are not insects. Insects form a separate class of their own. The spider clan differs in many ways, possibly the most striking being the fact that they have eight legs.

Another interesting difference between spiders and insects is that spiders lack wings. But this lack of “conventional” flying equipment is no serious handicap, because spiders have evolved a method of airborne travel that is as giddy as a roller coaster and as improbable as a magic carpet. It is called ballooning.

Ballooning is an activity which seems to be characteristic of new-born spiders, but it is by no means restricted to them. Provided the spider species is small in size, all age and maturity groups seem to indulge in the sport. The way the game is played is this: A spider will make for the highest available point, for example the pinnacle of a stalk of grass. Then it will face into the wind, pointing its abdomen at a high angle up into the air.

This position, with the rear end tilted up like a cannon, puts the spinnerets into an advantageous position. Silk thread starts from the spinnerets, the passing breeze tugs on the silk, pulling it out. As the thread grows longer, the tug grows stronger, and at a certain point the spider lets go its toehold and goes sailing off down-wind on its silken filament.

This unlikely aeronautical technique probably accounts for the dispersion of spiders all over the globe. Charles Darwin observed ballooning spiders when his ship, the Beagle, was 60 miles off the South American coast, and they have been reported as far as 200 miles offshore.

One of the requirements for ballooning is lightness of weight. The larger spiders, like the tarantula, are too bulky for ballooning even when young.

Science News Letter, March 6, 1954

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MEDICINE—How has the effect of anti-polio gamma globulin shots been rated by experts? p. 148.

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ZOOLOGY

Mice Live, Breed in Below Freezing Cold

► THE HOUSE mouse can live and breed in cold storage rooms at below freezing temperatures.

Two families of white mice reached the third generation in a room kept at two to four degrees below zero Centigrade, about 26 degrees Fahrenheit, Drs. S. A. Barnett and Brenda M. Manly of the University of Glasgow report in *Nature* (Feb. 20).

The mice in cold storage were compared with control families kept at 50 degrees and 68 degrees Fahrenheit. The control families reached the fourth generation in the time the cold mice reached the third generation.

Nests were made from cotton wool, and the nest temperatures in the cold rooms were about the same temperature as the nests of the control mice. Scientists reported that the mice in the cold rooms had nests of better construction than the controls.

Functional changes involved in the adaptation to below freezing temperatures are being studied.

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