

# THOSE FABULOUS SPINNERS

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By Vance Hoyt

PERHAPS you do not like spiders; most of us don't. But much can be learned from the wonders they perform and the good they do in destroying vast numbers of harmful insects.

Although more abundant and diversified in the Tropics, spiders range far into the Arctic regions and are found almost everywhere that earthly conditions will sustain life. Two tiny eight-legged mites, primitive relatives, were recently discovered thriving on lichen moss in the Boreas area of Queen Maud Land in the Antarctic. Even far up on Mount Everest, at an elevation above 22,000 feet, small black species of spiders have been found living among the wind- and snow-swept rocks, making them the world's highest thriving land animals.

Spiders constitute a large family of some 25,000 described species. They are not insects but arachnids, possessing lungs and eight legs in place of six. Originally all spiders had eight eyes but many lost one or more pair. Some cave-dwelling species are even blind.

The big South American taran-

tula, *Theraphosa leblondi*, is the giant species of spiderdom. It is almost three and one-half inches long, and large enough to capture a fair-sized bird. Its bulk is more than 100,000 times that of the smallest of the spider clan, *Olgunius obectus*, which is barely one-twenty-fifth of an inch in length. This spider is also a South American inhabitant.

Our only native poisonous spider is the black widow, *Lactrodectus mactans*, whose nonsticky and elastic thread, when split to measure about .00005 inch in diameter, is used as "crosshairs" in such precision instruments as bombsights and telescopic gunsights. The average life span of the Black Widow is about one year; and not until adulthood does the female become either black or a widow. It is then that the ominous hourglass-shaped red or yellow spot appears on the underbelly and the female becomes highly poisonous. Her bite, however, is not necessarily deadly. To some persons the venom is almost entirely harmless. Others may die if proper treatment is not given immediately.

UNTIL the middle twenties, the black widow spider was rarely heard of except in the southern part of the United States. Today, however, it is found in every state in the union and far north in Canada. Also, it is plentiful in the Hawaiian Islands. But, like all other forms of life, the widow has several check enemies to prevent overbreeding. One of her most insatiable nemeses is the little dipterous fly.

On several occasions I have watched this tiny parasitic fly, *Gaurax araneae* (Coquillett), lay its eggs on the white or yellow egg sac of the widow, even as she hovered protectively over her precious treasure. The spider seemed to sense that something was wrong, but her eyes are not good in the sun, and the fly is a tiny and agile sprite. Thus deposited, the fly's eggs hatched and the almost microscopic larvae wormed their way through the silken fabric into the widow's pearly eggs and fed upon them with impunity. Then, about three days later, some 200 fat, full-grown fly larvae pupated and changed into cocoons. In a couple of weeks the cocoons burst and the adult flies emerged and took wing in search of other black widow broods to destroy.

Few sights in nature are more fascinating than spiders' building of their unique nests of gossamer. Did you ever watch the common garden spider weave her web? The next time the opportunity comes your way do not destroy the clever one but note

carefully the skill and perfect ease with which the spider goes about her task. All the products of her loom, from the suspension bridge to the elaborate egg sac, are architectural rarities to contemplate. Truly, the symmetry of her wheel web, and the artistic manner in which it is created, make it a work of art.

What a marvelous engineer and workman! But the most wonderful thing about the spider is the thread she spins. It exudes from her spinnerets like a trick of magic. You will soon learn that the thread she manufactures for the construction of the spirals, or network proper, is of a different material from the other threads that support the web. It is sticky and very resistant, so tenacious and strong as to hold securely prey many times larger than the mistress of the net herself.

SPIDERS construct many different kinds of web and nest. There are funnel webs, orb webs, sheet webs, hammock webs, double bowl and dome webs, and webs of indescribable beauty and shapes. There seems to be no limit to production and to the uses to which the spinners can apply the magical silken strand of their microscopic spinnerets. They make sacs for their eggs, shelters for protection from enemies, drag-lines for security and for moving various objects, balloons for aerial navigation, and many other things for service in their varied and romantic lives. A certain spider in New Guinea

weaves a giant web strong enough to be used by the natives as fish nets.

The lasso spider constructs a unique web for capturing the most cautious prey. It spins a triangular web with a single line of elastic thread running from the apex of the triangle to the twig. At the twig end of the line sits the spider itself. Holding fast to the twig, it reels in the silken thread like a harpooner until there is a pile of loose folds coiled among its legs. The trap is now set and the spider patiently waits for some adventuresome insect to touch the web. When this happens, it lets go of the line and the rebounding web throws its sticky strand against the victim and ensnares it.

In some areas, during the fall months, spider webs can be seen almost everywhere, a billowy gossamer sea glistening in the morning light. The migrating flier *Araneida*, with her streamer kites floating high in the air, occasionally travels as far as 200 miles without coming to rest. The glimmering gossamer of these airborne sprites drifting mysteriously at considerable height in the moonlit welkin has been mistaken for flying saucers.

Although spiders are air-breathing animals, the little water spider has acquired the remarkable ability to descend beneath the water, where it builds its winter home. Crawling down the stem of some aquatic plant in a pond, the female chooses a likely place for her nest. A number of strong lines are spun for anchorage,

in the middle of which she constructs a thimble-shaped web with open end down. Then, returning to the surface, she dives back into the water, carrying with her tiny bubbles of air sticking to the hairs of her legs. Entering the bell of her home she carefully rubs these off. Thus, traveling swiftly up and down the stem, she finally has air instead of water in her home. Then she crawls in and, head downward, goes to sleep for the winter.

THE trap-door spider performs feats no less marvelous. It has been my privilege through the years to observe the resourceful nest of this solitaire earth-dweller. The tube-burrow of this Amazon of spiderdom is about ten inches long and one and one-half inches wide. Fitting neatly in its upper end is the hinged door composed of sun-dried mud reinforced with webbing. Its undersurface and the walls of the tube are lined with smooth, silky webbing of a lustrous and velvety appearance, polished as hard and slick as tile. The trap door is so perfectly seated that not a drop of water can enter the burrow during a heavy rainstorm.

When the trap is set, the female holds the door closed with her strong fangs inserted in two small holes in the under side of the lid. When she braces herself in the burrow with her legs, it is only with great difficulty that the lid can be raised. A knife blade bends when attempts are made

to pry it open. Experiments have shown that the spider is capable of resisting a lift estimated at ten pounds on her door.

I have forced open the door of many trap-door spiders' burrows and found the female clinging desperately to it. Some of them allowed themselves to be lifted partly out of the tube before they let go and dropped back into the dark interior. But, as soon as I closed the lid, the dauntless inmate invariably returned and got another tenacious grip.

AS WITH the ground-inhabiting tarantula, the great spider wasp, *Pepsis*, is the trap-door spider's most deadly enemy. When lighting near the door the spider may leap out and capture the wasp before she recognizes it and is stung in turn and rendered entirely helpless. The door to the nest being open, the wasp enters the burrow, dragging its victim to the bottom of it, where she deposits her egg in or on the paralyzed body of the living spider. There the grub, when hatched, burrows into the body of its host and feeds on its warm living tissues, but does not attack such vital organs as the heart. The spider lives with the grub within it, usually until nearly time for the latter's pupation. The grub then spins a silken cocoon around itself. Later it breaks its way out and appears in the form of a perfect spider wasp, which, after mating, finds another spider host to repeat the cycle.

OF ALL the forms of life on earth, the female spider probably has the least respect and greatest contempt for her lesser half. The inscrutable Mrs. Bluebeard's romantic deceit is beyond compare. When the urge to woo overcomes the insignificant male, he must needs make wary advances to a voracious, ruthless and cannibalistic glutton. For hours on end the tiny mincing Lothario displays his sexual charms before the churlish shrew. In some species the male has little odd, bright-colored tufts of hair which he flirts as he dances his rigadon of death before the lurid enchantress, his pitiful antics being always fearful, now ludicrous, now pathetic. While he is dancing, he is fairly safe; for the female may appear surely amused by his solemn cavortings. But, if he should stop, she will attempt to capture and devour her would-be lover.

Some males will timidly approach their ladylove bearing insects as tender tokens of their affection. Other males, of the web-spinning species, venture to attract the female by a series of enticing jerks on the web. But, since any web disturbance is also a signal that prey has run afoul of the snare, the male never can foretell the nature of his reception. He may be taken either to the lady's full-blown bosom or into her not less ample stomach. But, no matter which way the play ends, the fabulous spinner of web and death will surely eat "the fool there was!"

# LIVING ON CAPRI

*By Phyllis W. Heald*

CAPRI and the Blue Grotto are synonymous. To see one and not the other is as idiotic as listening to Amos without Andy or claiming you want eggs and no bacon. Nevertheless, right here, I must confess we lived on Capri nine months and I never visited the Grotto. I always intended to, but when the weather was good, so was the swimming, and I hated to leave the beach. When the weather was bad it was too rough to take the little rowboat and make the trip. However, I must exonerate my husband. Weldon had visited Capri before, and covered all its scenic points, so his only reaction was a slight uneasiness at my wilful neglect, and a troubled sense that he ought to do something about it. But he was a bridegroom at the time and hadn't learned just how far he dared push his authority.

We had come from Braunwald, Switzerland, where an unusually rainy, cold spring had dampened our ardor for mountain climbing. In contrast to the snow, ice and bleakness of the Alps, Italy's sunshine and warmth was like heaven on earth.

"Let's stay awhile," Weldon suggested one morning as we floated lazily on the blue water and gazed across the Bay at Vesuvius shooting out columns of smoke.

"Let's," I agreed, and ducked my head to study the ruined outlines of Emperor Tiberius' palace, built as a summer home during his reign, 42 B.C. to 37 A.D. And, for the past several centuries submerged in the Bay of Naples.

So at luncheon we asked the concierge at the Hotel Quisiana if he knew of a place we might rent.

"Si, si, Signori" he had answered, full of animation and gesticulations. "I think of just the right spot for you. She is perfect!"

"She" was perfect. The concierge was as correct as he was voluble.

Thus we moved into the little white Villa Unghia Marina. It was on the south edge of the island, situated high on the side of a hill overlooking the Faraglioni rocks, against which, we soon learned, the Mediterranean lapped gently when at peace with the elements, or flamed furiously when angry. Even