

ENTOMOLOGY

**Spider Snubs Tradition,
Prefers Mice to Flies**

► WANT A better mousetrap? How about a spider that enjoys dining on mice?

Just such a playful creature inhabits the jungle wildlife refuge and biological experiment station on Barro Colorado Island in the Canal Zone, the Smithsonian Institution in Washington has reported.

According to the Institution, the spider is an exceptionally large and equally poisonous tarantula that has been observed to devour a mouse much bigger than itself in about 18 hours. Although its eating habits are not in the best traditions of dining etiquette, this natural mouse catcher is reported to leave a small ball of some skin, hair and bones at meal's end.

To demonstrate the "Won't you walk into my parlor, said the spider to the mouse" routine, the scientists at the Island station put a mouse into a cage with the tarantula.

With lightning speed, the spider struck the mouse on the chin with its fangs. The little mammal died very quickly, but the spider kept its fangs imbedded for half an hour. Assured that its victim had had it, the spider picked it up and carried it into a corner where it covered it completely with a silk web.

Then in the tarantula's customary way of feeding, states the Institution, the spider sucked its victim dry of body juices. When the juices were all gone, the tarantula ate the skin and flesh.

"Occasionally," adds the Institution account of the feast, "it would move about the cage, carrying with it the silk-shrouded body of its prey."

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Hummingbird

► LIKE a big bee in feathers, the hummingbird darts about the garden, suspended in mid-air on its invisible vibrating wings while it probes deep-throated flowers.

It is always a mental effort to regard this dynamic molecule of life as a bird, it is so small and flies so much more in the manner of an insect.

Other small birds can hover for short moments, but the fluttering of their wings is relatively slow and one can see them as they beat. No other bird has so perfected the art of hovering flight as the hummingbird.

In the eastern United States there is only one species of hummingbird, the ruby-

throat. This one, however, ranges everywhere east of the Rockies, well up into Canada, where you would hardly expect to find tropical visitors. For the hummingbirds in general are of the tropics, and ours is a commuter who comes north to rear a family and then returns to a warm climate for the winter.

Ruby-throated hummingbirds winter all the way from Florida and Texas south to the Isthmus, and appear sporadically in Cuba; in spite of their diminutive size they are quite evidently efficient travelers.

The hummingbird does not spend all day at that dizzying occupation of flying at the rate of a mile a minute without moving from the spot. That kind of flying requires the burning up of too much energy to be kept up indefinitely. He does it in short spurts, resting between whiles on a slender twig or perhaps a trellis wire, preening his feathers.

Nor does the hummingbird feed, insect-wise, on honey, as is often imagined. He likes meat as well as anybody, only he is willing to take it in little bits—as tiny insects in the bottoms of the flowers. That is really what his long, probing beak is after most of the time.

The best way to secure regular visits from hummingbirds is to plant a trumpet-creeper vine somewhere about the premises. The deep-throated, flame-colored flowers of the tropical plant are the favorite food-counters of these hovering, humming, darting small bits of feathery energy. But they can be lured by other deep or long-spurred flowers that common bees have trouble getting into, for example, the larkspur.

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AERONAUTICS

Learning to Beat Heat

See Front Cover

► TO HURL atomic bombs between continents, it will be necessary to beat heat up to 8,000 degrees Fahrenheit and establish control of missiles speeding as high as 15,000 miles per hour and rising up to 600 miles into space beyond the earth.

This is the research task of the Ames Aeronautical Laboratory of the National Advisory Committee for Aeronautics, Moffett Field, Calif.

No enemy defense could stop a long range missile speeding at 20 times the speed of sound. It would be enormously difficult to hit it in the few seconds between the object's detection and its impact.

Heat is the great barrier to hypersonic missiles. Temperatures high enough to melt or vaporize most metals quickly develop at such high speeds in the air next to the skin of the missile.

The latest idea to lick this heat is to apply to the metal missile the way the human body cools its skin. This is transpiration cooling or evaporating a liquid through a porous skin.

While the missile is outside the earth's thin atmosphere, there is little chance of controlling it. When it drops back into the earth's air toward the end of its flight, however, scientists want to work out new ways of controlling it, possibly by tail fins that are useless in space.

The problems of such high flight and high temperature are being studied in new wind tunnels, among them a heat-transfer tunnel 10 by 12 inches in size.

Shown on the cover of this week's SCIENCE NEWS LETTER is an infrared photograph of a laboratory experiment simulating aerodynamic heating on a model placed in a jet of hot gas. It shows how the sharp nose and thin wing leading edges heat up more rapidly than thicker parts of the model.

Another tunnel at Ames Laboratory is an eight-inch tunnel that lowers air pressures and densities to altitudes corresponding to over 100,000 feet.

Electronic computers are also being used to predict and study what will happen to such missiles in the future.

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