

four pairs of legs, and the lack of antennae or wings, is the scorpion, which is thought to be the only arachnid that gives birth to live young.

This clan is the most venomous of the arachnids, although victims of scorpion sting are far more likely to die of fright than poisoning.

The earliest of all land animals, fossil scorpions have been found in Silurian rocks, 400,000,000 years old. Today's scorpion looks very much like its ancestor.

One species of scorpion has been found in fossil beds at Waterville, N. Y. The scorpion is considered by some students to be the first animal to adjust itself to land life in North America.

Right after young scorpions are born, they climb onto their mother's back and stay there until the first molting takes place, about a week or ten days after birth. The story that the infants then proceed to devour the body of their parent is the work of a rich imagination, Dr. Gertsch states. At this early age, he explains, their digestive system is not developed enough for them to devour anything.

Do Not Suicide

Another story Dr. Gertsch calls a fable is the belief that scorpions commit suicide by stinging themselves when they are helplessly cornered or surrounded by a ring of fire.

Scorpions differ from spiders in that their abdomen is elongated to form a tail terminating in a poisonous sting.

Whip scorpions are different from true scorpions because they have no tail sting and no poison glands. Some have a slender, whiplike tail and an enlarged set of head appendages, fitted with sharp spines for grasping and crushing their prey.

When the "vinegaroon," a giant whip scorpion, is disturbed, a small gland at the base of the tail produces a liquid with a strong vinegar-like odor that volatilizes and causes a smarting of the eyes when sprayed

at the small animals preying on the vinegar.

"The great majority of spiders," Dr. Gertsch reports, "and almost all those from the United States and other temperate areas, have a venom so feeble that its transitory effects are insignificant.

"In most instances, the bite is followed by local symptoms at the site of the punctures—burning, throbbing, and similar painful sensations, numbness, stiffness, and sometimes a very slight swelling. These symptoms usually persist for only a matter of minutes, or a few hours at the most, then disappear entirely — which indicates that the action is largely a local, mechanical one, and that the venom itself lacks harmful toxins.

"The severity of this type of injury usually does not exceed the sting of a wasp; only those individuals inordinately susceptible to the venoms of arthropods are affected in any important way."

Some spider poisons, however, do contain a toxin that causes a much more severe local and sometimes general reaction.

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NATURAL RESOURCES

Man-Made Lakes Provide Extra Game Fish Supply

➤ **ROD AND REEL ENTHUSIASTS** have access to an additional 1,000,000 pounds of game fish a year from man-made lakes, the U. S. Department of Interior announced.

Each of the 81 lakes created under the Federal Aid program is expected to yield at least 150 pounds of game fish per acre annually.

The 7,908 acres of lakes were created jointly by Federal and state governments at an average cost of \$1,000 to \$3,000 per acre of water. Twenty-seven states have participated in the lake-making program.

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GEOPHYSICS

Sun Controls Range of Cosmic Rays Detected

➤ **THE NUMBER** and kind of cosmic rays detected smashing into the earth's atmosphere are controlled by the sun.

Only when sunspots are at their lowest point in the 11-year solar cycle do scientists find the range that would be discovered in space, Dr. John A. Simpson of the University of Chicago said.

Variations in the sun's radiation, he told the National Academy of Sciences meeting, affect interplanetary space, which in turn controls the cosmic rays reaching earth.

Since sunspots are now increasing, the true range of cosmic rays will soon be unavailable for study for several years, Dr. Simpson said. The sun itself is responsible for some of the cosmic rays.

Sunspots moving across the solar surface reflect the migration of the sun's internal magnetic field, Dr. Eugene Parker, also of the University of Chicago, reported.

Churning gases in the sun's outside layer of about 60,000 miles create internal magnetic fields that float outward, producing the dark areas known as sunspots when they hit the sun's surface.

The earth's core is also churning over, and this motion creates its magnetic field, Dr. Walter M. Elsasser of the University of Utah said. He likened the movements to the swirling eddies found in the atmosphere, seen on weather maps as high and low pressure areas, on a very slow time scale.

That good conductors of electricity create their own magnetic fields was pointed out by Dr. S. Chandrasekhar of Yerkes Observatory, Williams Bay, Wis. The material in interstellar space, he said, has such a high conductivity that electric currents may be generated.

Science News Letter, May 5, 1956

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