

Phrynichus jayakari

Whip Spider

Class: Arachnida. **Order:** Amblypygi. **Family:** Phrynichidae.

Other names: Tailless Whip-Scorpion, Cave Spider



Physical Description:

Also known as tailless whip-scorpions or **amblypygids**, are similar to scorpions but lack a tail (thus, their name: *ambly* = blunt, and *pygi* = rumps). Whip spiders have a 3-5 cm flat body with 8 legs, although they only use 6 to walk and the other 2 as long, thin, whip-like sensory organ, several times the length of the body. These whip-like feelers are used to detect prey in darkness and can extend three to six times the length of the arachnid. Their **antenniform** front legs can rotate 360 degrees around their bodies and are covered with fine hairs capable of delicate tickle movements. these spider-like arachnids have well-developed, pincer-like **pedipalps**, similar to scorpions Whip spiders have a single pair of eyes at the front of the body and three eyes along both sides, but possess medium to poor eyesight. Color varies from dark brown to yellowish-brown with numerous dark spots and markings over their bodies and legs giving them a mottled appearance to blend in with their surroundings. In spite of its rather threatening appearance, *Phrynichus jayakari* is in fact totally harmless and does not possess venom glands or a sting.

Diet in the Wild: Small vertebrates and invertebrates; especially insects: crickets, katydids, harvestmen, spiders, millipedes, roaches, and moths.

Diet in the Zoo: Crickets

Habitat & Range: Tropical and sub-tropical areas worldwide; typically found under stones, leaves, bark or in rock crevices and caves.

Life Span: 2 to 3 years.

Perils in the wild: There are few sources on predation of the whip spider since they are great at hiding, highly adapted, and fairly quick. One source suggested spiders, lizards, and scorpions as predators.

Physical Adaptations:

- They capture their prey by seizing and holding it with their spined pedipalps, then crush and eat it with their shearing mouthparts (called **chelicerae**).
- Modified front appendages: stretch to as much as 10 inches to aid in hunting and orientation. The antennae are also used for communication, and are equipped with olfactory sensors.
- They are very agile and their flattened bodies enable them to scurry into narrow slits under rocks or bark when disturbed.
- They drink water and use their pincers to bring the water to their mouths when drinking.

Behavioral Adaptations:

- Nocturnal and arboreal.
- Has a sideways 'crab-like' walking gait, with one of its long modified legs always pointing in the direction it is walking.
- They rarely bite if threatened, but can grab with pedipalps, resulting in a thorn-like puncture injury.

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- They are hardy animals and can survive long periods without food or water.

Reproduction and Development:

- Courtship is a complicated and intricate affair, much like a ritual dance, involving much touching and stroking of the female by the male using his antenniform forelegs. Sperm transfer is indirect as in scorpions. The male deposits a **spermatophore** on the substrate and then lures the female towards it; she eventually positions her body so that the sperm can enter her genital tract where she will store them until she is **ovipositing**. This courtship and mating always occurs in darkness.
- An indefinite period of time after mating, weeks or even months later, the female will lay her eggs. The 6-60 eggs are enclosed in an egg sac that is carried on the underside of the female. Though liquid when extruded it quickly solidifies and becomes a leathery case she carries around with her. Oviposition occurs at night. Females will abort egg-laying if they are disturbed.
- The eggs take about 3 to 3.5 months to hatch. Females do not eat until their young have left her. These first hatchlings are white, still embryonic, and can hardly move so they cling to their mother. Young are carried on their mother's back until their second molt, after which they scatter. They molt once or twice a year until they reach maturity. Tailless whip scorpions continue molting and growing throughout their adult lives.

Additional Information of Interest:

- In an experiment using two different whip spider species, social "tenderness" was observed. In one experiment, the siblings were removed from a familiar cage and placed randomly into a large unfamiliar cage. Within minutes, they gathered back together. Mothers of both species nurtured their young. Often, the mother whip spider would sit in the middle of her offspring and slowly stroke their bodies and whips with her own feelers. "This was the best example I had ever seen of friendly behavior in an arachnid," said lead study author Linda Rayor, a Cornell University entomologist.
- The Mexican tailless whip-scorpion was featured in Harry Potter and the Goblet of Fire. When Professor Moody used one of these to practice his "Unforgivable Curses." It was suggested even one bite could kill, but this "scorpion" has no venom and is harmless to humans.
- They have also made an appearance on Fear Factor; contestants were forced to eat these creatures, proving that humans are much more dangerous to amblypygids than amblypygids are to us.
- There are over 155 species of whip spiders.
- Fossilized amblypygids have been found dating back to the Carboniferous period
- In whip spider's patella is reduced in a considerable amount and adopts the function of a breaking point for **autotomy** (act by which an animal severs an own appendage) in case a leg should be incarcerated or grabbed by a predator.
- The Amblypygi are the only arachnids where females and males continue molting after reaching sexual maturity and keep increasing size by this process.

Conservation Connection: Arachnids

Arachnids are a numerous and diverse group, with over 50,000 species described so far. They include spiders, scorpions, vinegaroons, whip spiders and their relatives. The arachnids are largely predators, truly as deadly as they appear, but usually only creatures on their own scale, mainly insects. By filling the ecological niche of a diminutive predator, arachnids of all types are important in maintaining the balance of nature by keeping insect populations in check.

Arachnids, like their insect relatives, are Arthropods, the evolutionary decedents of creatures called trilobites. In fact the first land animals were scorpions which appeared some 400 million years ago. In the eons since, the diversity of arachnids has allowed them to flourish in every place on Earth that can support life, from tropical forests to scorching deserts to our own backyards.

Conservation Status: IUCN—yet to be classified

Conservation Efforts: N/A

Glossary: List of definitions of the most important recurrent technical terms used in the text.

amblypygi – The order of tail-less whip scorpions.

antenniform – Having the shape of antennae.

autotomy – The breaking off of a part of the body by the organism itself.

cheliceræ – A pair of feeding appendages head used for on the members of the of the subphylum Chelicerata.

pedipalps- Second pair of appendages of arachnids.

spermatophore – Capsule or packet containing sperm.

oviparity - Reproduction in which the eggs are released by the female; development of the offspring occurs outside the maternal body. Adj., oviparous

Sources:

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