

= Trogloraptor =

Trogloraptor is a genus of large spiders found in the caves of southwestern Oregon . It is the sole genus in the family Trogloraptoridae , and includes only one species , Trogloraptor marchingtoni . These spiders are predominantly yellow @-@ brown in color with a maximum leg span of 3 in (7 @. @ 6 cm) . They are remarkable for having hook @-@ like claws on the raptorial last segments of their legs .

Trogloraptor belongs to one of only three new spider families described since 1990 . The specific name is in honor of the amateur cave biologist and deputy sheriff Neil Marchington .

= = Discovery = =

The spiders were first collected in 2010 by Geo Graening , Neil Marchington , Ron Davis and Daniel Snyder , cave conservationists from the Western Cave Conservancy . They were described in 2012 by a research team consisting of arachnologists Charles Griswold , Tracy Audisio and Joel Ledford of the California Academy of Sciences . The male holotype was recovered from the M2 cave near Grants Pass , Oregon on July 29 , 2010 . The female holotype was recovered from a cave in Josephine County , Oregon on September 16 , 2010 .

Lead researcher Griswold claimed that Trogloraptor might explain the legends of giant cave spiders in the area . The discovery is also notable because only two other new spider families have been described since 1990 . The American arachnologist Norman Platnick commented that it was " ... as fascinating to arachnologists as the discovery of a new dinosaur is to paleontologists . "

= = Taxonomy = =

Trogloraptor includes only one species , Trogloraptor marchingtoni , and is the only genus in the monotypic family Trogloraptoridae . It was initially suggested that Trogloraptor was a primitive member of the six @-@ eyed spider superfamily Dysderoidea . However , Trogloraptor exhibits several unique features , including primitive respiratory systems , that justify its assignment to a separate family . The family probably diverged from other spiders about 130 million years ago , which would make it another notable relict taxon from North America . A 2014 study based on ribosomal DNA found that Trogloraptor fell outside the Dysderoidea and concluded that it should not be included in this clade .

The specific name is in honor of Neil Marchington . The generic name Trogloraptor means " cave robber " , in reference to the spider 's habitat and hooked raptorial tarsi .

= = Distribution = =

Additional live specimens recovered in 2010 and 2011 from Oregon were all found deep inside caves . Except for a single juvenile specimen recovered from the understory debris of old growth redwood forests of northwest California , none have been found outside the caves . This specimen has different markings than T. marchingtoni and may represent a new undescribed species .

The family Trogloraptoridae may have had a wider distribution given that redwood forests encompassed a far greater area in North America during the Pliocene (about 5 mya) . Other species may still be present in other caves .

= = Description = =

Adult Trogloraptor have six eyes and a body length of about 7 to 10 mm (0 @. @ 28 to 0 @. @ 39 in) in males and 8 to 10 mm (0 @. @ 31 to 0 @. @ 39 in) in females . With its legs outstretched , the spider can reach up to 3 in (7 @. @ 6 cm) in length .

The entire body is yellow @-@ brown , except for a dark brown V @-@ shaped mark on the cephalothorax , the orange @-@ brown chelicerae , and the purple @-@ brown abdomen (

opisthosoma) with a series of faint light @-@ colored chevron markings . The cephalothorax carapace is pear @-@ shaped with a heart @-@ shaped sternum . The abdomen is oval and sparsely covered with small bristles (setae) . The males possess enlarged piriform pedipalps .

The spiders are unique in the flexible and toothed hook @-@ like claws on the last segments (tarsus) of their legs . These elongated claws resemble those of spiders in the family Gradungulidae of Australia and New Zealand , but the two families are only distantly related . Hooked tarsal claws are also present to a lesser extent in the unrelated genera Doryonychus of Tetragnathidae , Hetrogriffus of Thomisidae and Celaenia of Araneidae .

= = Ecology = =

Trogloraptor spin simple webs with only a few strands , hung from the roofs of caves . Griswold et al. stated that the claws may have a significant function in capturing prey . Similar to the Nelson cave spider of New Zealand (Spelungula cavernicola , a gradungulid) , Trogloraptor probably dangle upside down from their webs , snatching at passing flying insects with their claws . However their exact prey remains unknown . Captured live specimens were raised in climate @-@ controlled laboratory conditions in an effort to find out . These specimens were offered moths , crickets and other spiders as food ; but these were declined and the specimens starved after two weeks . This may indicate a preference for very specific prey .

Like most spiders , Trogloraptor possess venom glands . However , the venom is not known to be harmful to humans . The spiders themselves are very shy and unaggressive . They immediately flee illumination .