= Phaeacius =

Phaeacius is a spider genus of the family Salticidae (jumping spiders) , found in sub @-@ tropical China and between India and the Malay Peninsula , including Sri Lanka , Sumatra and the Philippines . Although other spiders can jump , salticids including Phaeacius have significantly better vision than other spiders , and their main eyes are more acute in daylight than a cat 's and 10 times more acute than a dragonfly 's . The main eyes focus accurately on an object at distances from approximately 2 centimetres (0 @.@ 79 in) to infinity , and in practice can see up to about 75 centimetres (30 in) .

While most jumping spiders are active hunters , Phaeacius is unusually sedentary , generally resting in its unusual flattened pose for hours or days on logs , tree barks , pieces of wood or any other solid surface , where it is very well camouflaged . Its preferred prey is moths and other insects , and jumping spiders . Insects can usually move around an inactive Phaeacius , or even over its body , but if the insect moves between the spider 's first pair of legs , Phaeacius lunges extremely quickly to bite the prey . Sometimes Phaeacius takes a more active approach , especially if without prey for a week or more . Phaeacius does not enter webs voluntary , and moves away if it touches one accidentally . It can bite through the threads and pull strongly with its legs , but cannot escape from very sticky webs .

The closest relatives of Phaeacius are in the genus Holcolaetis , and the next closest genera are Portia and Spartaeus .

= = Body structure = =

Spiders are chelicerates , which differ from other arthropods in that the usual body segments are fused into only two tagmata , the cephalothorax and abdomen . Jumping spiders have a distinctive rectangular carapace . : 51 All spiders ' abdomens bear appendages that have been modified into spinnerets that extrude silk from up to six types of silk glands within their abdomen . The cephalothorax and abdomen are joined by a small , cylindrical pedicel , which allows the abdomen to move while spinning silk . : 571 ? 574 While most jumping spiders do not build webs to catch prey , they use silk for other purposes , including moulting and laying eggs . : 495

The whole body of Phaeacius is 7 @.@ 5 to 11 @.@ 5 millimetres (0 @.@ 30 to 0 @.@ 45 in) long , and notably flattened , including the carapace , while the carapaces of some other groups are raised . : 495 The cepholothorax of Phaeacius ? is relatively long , and the highest point is a little behind the last pair of eyes . : 204 , 206 @-@ 208 Phaeacius is very well camouflaged ; for example , P. malayensis has a body with dull grey and brown markings that resemble the surface of tree trunks in the rainforest .

Jumping spiders generally have large forelegs and short , powerful back legs , and can leap up to 50 times their own length by powerfully extending the third or fourth pairs of legs . : 578 : 495 In spiders and other chelicerates , there is only one pair of appendages before the mouth , and in spiders these are modified into fangs that inject poison into the prey . Behind the mouth is a pair of pedipalps (" palps " for short) , and those of male spiders are quite large and are used for displaying and mating .

= = Senses = =

Jumping spiders have eight eyes , the two large ones in the centre @-@ and @-@ front position (the anterior @-@ median eyes , also called " principal eyes " : 51) providing acute vision and housed in tubes in the head . The other six are secondary eyes , positioned along the sides of the carapace and acting mainly as movement detectors . : 16 While the middle pair of secondary eyes in most jumping spiders are small , those of Phaeacius and other members of the sub @-@ family Spartaeinae are almost as large as the other secondary eyes . Although other spiders can jump , salticids including Phaeacius have significantly better vision than other spiders , : 521 and their main eyes are more acute in daylight than a cat 's and 10 times more acute than a dragonfly 's . The main

eyes focus accurately on an object at distances from approximately 2 centimetres (0 @.@ 79 in) to infinity , : 51 and in practice can see up to about 75 centimetres (30 in) . : 53

Spiders , like other arthropods , have sensors , often modified setae (bristles) , protruding through their cuticle (" skin ") for smell , taste , touch and vibration . : 532 ? 533 Unlike insects , spiders and other chelicerates do not have antennae .

= = Movement and being undetected = =

While most jumping spiders walk quickly , in a stop @-@ go gait and jumping over obstacles , the movements of Phaeacius are very unusual . Phaeacius usually uses a " flattened posture " head @-@ down on a vertical surface , with the body , legs and palps pressed against the surface , the hindmost legs upwards and the other legs downwards , : 496 ? 497 and its markings and flattened body make it easily hidden against the bark of a tree trunk . Its habit of walking with its body and legs flattened against a surface helps Phaeacius to be unobtrusive .

= = Feeding and defence = =

While almost all jumping spiders are predators , mostly preying on insects , on other spiders , and on other arthropods , Phaeacius does not use the usual hunting tactics . : 502 Most jumping spiders walk throughout the day , so that they maximise their chances of a catch , and jump on their prey and then bite it . Unlike most jumping spiders , Phaeacius and other spartaeines do not leap on prey , but lunge from about half the predator 's body length away .

Phaeacius is unusually sedentary for a jumping spider , generally resting in the flattened pose for hours or days on logs , pieces of wood or any other solid surface , : 502 and captures particular types of prey more often when the predator matches this background . Insects can usually move around an inactive Phaeacius , or even over its body or legs . However , if the insect moves between the spider 's first pair of legs , Phaeacius lunges extremely quickly , driving its body upward 2 to 3 millimetres (0 @.@ 079 to 0 @.@ 118 in) and forward about half the length of its body . The lunge ends with the spider 's fangs in the prey and often with the foremost two pairs of legs forming a basket over the prey . When the prey stops struggling , Phaeacius resumes the flattened pose and then feeds . : 502

However , Phaeacius can adopt other , more active approaches , with different gaits for each . If an insect remains almost stationary while Phaeacius is in the flattened pose and facing the insect , the spider may step slowly forward to its prey , rocking and keeping its flattened pose . To rock , Phaeacius moves about half a body length forward then , without pausing , smoothly back almost to the previous position . It performs about 10 cycles of those movements , progressing by 1 to 2 millimetres (0 @.@ 039 to 0 @.@ 079 in) per cycle , and then rests . : 502 ? 504 This rocking motion may disguise Phaeacius as shadows on the tree trunk . : 514 ? 515 The insect occasionally keeps stationary until Phaeacius reaches within about half a body length and then lunges . : 502 ? 504

When hunting other jumping spiders and when the background matches its coloration , Phaeacius uses " insinuation " , in which it waits , sometimes up to an hour , while a jumping spider moves around nearby , and then Phaeacius suddenly turns up to 180 ° toward the prey and then resumes the flattened pose . Phaeacius then moves a few millimetres toward the prey and resumes the flattened pose . If the prey moves away , Phaeacius continues the insinuation manoeuvre , but if the prey moves toward it , Phaeacius lunges . Other jumping spiders show no awareness of a flattened Phaeacius on a matching background , and apparently survive by luck . : 502 ? 504 When the background does not matches Phaeacius ? coloration , other jumping spiders recognise Phaeacius as a threat .

Sometimes , especially if without prey for a week or more , Phaeacius may approach insects faster , from 50 to 100 millimetres (2 @.@ 0 to 3 @.@ 9 in) away , and if necessary turning round to face the prey . Often Phaeacius then adopts the flattened pose after the turn , but sometimes it walks faster than usual and , without pausing , lunges from about half its body length . : 502 ? 504

In a test on a background matching its own coloration , Phaeacius was most successful against other salticids and then against moths , and was also successful against flies and hunting spiders . On a non @-@ matching background , Phaeacius was most successful against moths .

Phaeacius does not try to eat other spiders ' eggs , does not enter webs voluntarily , and moves away if it touches one accidentally . It can bite through the threads and pull strongly with its legs , but cannot escape from very sticky webs . : 502 This behaviour is quite different from that of its close relative , Portia , which hunts actively and can enter any type of web to catch spiders and their eggs . : 491

When disturbed , some jumping spiders usually run away quickly and leap if chased . Phaeacius stays in its flattened posture unless harassed , when it runs quickly for about 100 to 300 millimetres (3 @.@ 9 to 11 @.@ 8 in) and then adopts the flattened posture , and finally walks away about 10 minutes later . : 499 ? 500

= = Reproduction = =

Before courtship , male spiders spin a small web and ejaculate on to it , and then store the semen in reservoirs on his pedipalps , : 581 ? 583 which are larger than those of females . : 572 ? 573 Phaeacius spins a flimsy silken , horizontal or vertical platform , about twice the spider 's length in diameter , to moult and lay eggs , but not at other times . After the moult , Phaeacius leaves the discarded exuvia hanging from the platform . A female 's egg sac is placed in a shallow cavity on the surface of a log . : 495

= = Taxonomy and distribution = =

Phaeacius is a spider genus of the Salticidae family (jumping spiders) . Phaeacius is in the subfamily Spartaeinae , which is thought to be primitive . : 491 Molecular phylogeny , a technique that compares the DNA of organisms to reconstruct the tree of life , indicates that Phaeacius is a member of the clade Spartaeinae , that Spartaeinae is basal (quite similar to the ancestors of all jumping spiders) , and that Phaeacius ? s closest relative is the genus Holcolaetis , and that the next closest are Portia and Spartaeus . : 53

The genus is found in sub @-@ tropical China and between India and Malaya , including Sri Lanka , Sumatra and the Philippines .

= = Species = =

Phaeacius alabangensis Wijesinghe , 1991 ? Philippines
Phaeacius azarkinae Prószy?ski & Deeleman @-@ Reinhold , 2010 ? Sumbawa
Phaeacius biramosus Wijesinghe , 1991 ? Sumatra
Phaeacius canalis Wanless , 1981 ? Philippines
Phaeacius fimbriatus Simon , 1900 ? Nepal , Java
Phaeacius hampi Freudenschuss & Seiter , 2016 ? Philippines
Phaeacius lancearius (Thorell , 1895) ? India , Myanmar
Phaeacius leytensis Wijesinghe , 1991 ? Philippines
Phaeacius mainitensis Barrion & Litsinger , 1995 ? Philippines
Phaeacius malayensis Wanless , 1981 ? China , Malaysia , Singapore , Sumatra
Phaeacius saxicola Wanless , 1981 ? Nepal
Phaeacius wanlessi Wijesinghe , 1991 ? Nepal , Sri Lanka
Phaeacius yixin Zhang & Li , 2005 ? China
Phaeacius yunnanensis Peng & Kim , 1998 ? China