

ART. XXIX.—*Descriptions of New Species of New Zealand Araneæ, with Notes on their Habits.*

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Fam. CTENIDÆ.

Gen. CYCLOCTENUS, Koch.

Cycloctenus fugax, sp. nov.

Femina.—Length, 13mm.; length of cephalothorax, 5mm. Legs, 4, 1, 2, 3; 1, 2, and 3 not differing greatly in length.

Cephalothorax and abdomen of a brownish-yellow ground-colour, mottled with black or dark-brown, and moderately thickly covered with short appressed reddish hair, the whole superior surface of the body presenting a brilliant brindled appearance. The predominating colour at the sides and in front of the pars cephalica is dark-brown, and between the posterior row of eyes and the anterior extremity of the thoracic fovea brownish-yellow, with flecks of a darker hue. On the lateral slopes of the pars cephalica the dark flecks are somewhat wedge-shaped, and lie parallel with the lateral indentations. Sternum and maxillæ brown; falces and labium dark-brown. Legs and palpi of the same ground-colour as the body, flecked and annulated with brown. On the dorsal surface of the abdomen there is a fairly distinct pattern formed by a brown fleck in the median line near the base, and four others, two on each side—the first pair situated about half-way between the base and the posterior extremity, and connected with the basal fleck by two rather indistinct lines; the second pair about a millimetre behind the first, and also connected by faint lines. The lines connecting the first pair make a somewhat acute and those connecting the second pair an obtuse angle. Most of the ventral surface between the vulva and the spinners is of a reddish hue, due to the colour of the hair. Vulva reddish- and dark-brown. The dorsal pattern of the abdomen varies a good deal, according to the age of the spider.

Cephalothorax somewhat longer than the tibia of a leg of the fourth pair, much constricted at the caput, the sides of which are nearly vertical, here about half as wide as at the broadest part of the thorax, which is strongly rounded at the sides, somewhat dome-shaped, as high as or a trifle higher than the caput, and moderately steep; central and lateral indentations all very distinct; so is the junction between the

caput and the thorax. Ocular area very hairy and nearly black, that part of it occupied by the centrals of the middle and the front row of eyes almost in the same plane with the clypeus, which is low.

Eyes, with the exception of the somewhat elliptical laterals of the middle row, round; those of the posterior row the largest, and the centrals of the middle row larger than the eyes of the front row; all placed on tubercles; those of the front row about the same distance from each other as from the base of the clypeus and the centrals of the middle row; the laterals of the middle row very small, below the plane of the centrals, and posited nearly half-way between them and the eyes of the posterior row; the centrals of the middle row nearer to each other than to the eyes of the posterior row; the laterals of the middle row opalesque, and the rest of a dark colour. The curve of the middle row is slightly directed forwards.

Falces hairy, convex in front near the base, slightly diverging towards the extremities, anterior side of groove furnished with a long fringe of hair and armed with four teeth (the basal tooth very minute), the posterior side armed with two large distant teeth, which are nearer the claw than those of the anterior side; claw of moderate length and strength.

Maxillæ convex, narrowest at the base, very gradually increasing in breadth towards the extremities, slightly rounded on the outside and in front, where there is a dense fringe, somewhat inclined to the labium.

Labium convex, quadrate in outline, constricted at the base, slightly emarginate in front, and rather more than half as long as the maxillæ.

Sternum round-cordate, very slightly convex, and moderately hairy.

Abdomen oval, convex, wider than the cephalothorax. Spinners inconspicuous, somewhat laxly grouped; superior and inferior pair not differing greatly in length and strength; the central pair very small.

The *tarsi* of all the legs without spines; the four anterior tibiæ with 2, 2, 2, 2 spines below, and 2 at the sides; the metatarsi of the same legs with 2, 2, 2, 2 below, and 2, 2 at the sides; tarsal claws 3, superior with fine teeth, anterior one the largest; inferior claw with one tooth.

Palpi of moderate strength, humeral joint bent and thickened towards the extremity, more hairy below than above, spines 1, 1, 1, rather shorter than cubital + radial joint; the latter longer than the former; digital joint about equal in length to cubital + radial, well armed with spines and furnished with a 4-toothed claw, the anterior tooth large, and the posterior very minute.

Vulva somewhat semi-elliptical in outline, the fovea limited posteriorly by a transverse corneous costa and laterally by two strong bent converging tooth-like processes, one on each side, that spring from the posterior costa.

Hab. Dunedin and the Clutha Valley; *P. G.*

One of our most handsome spiders, very timid, and so nimble and prodigal of limb that to capture it intact is no easy matter. It is surprising with what swiftness it can run, even after losing half its legs. With one leg on each side it is a fair match for many spiders with the full complement of legs. It is found under stones of considerable size, and often with *Cambridgea fasciata*, with which it seems to live on terms of amity. It affects bush country, but is sometimes found in the open. Its cocoon, which contains about sixty roundish, yellow, jelly-like eggs, is of a plano-convex shape, and firmly attached by its plane surface to the under-side of stones. To render it as inconspicuous as possible its fabricator generally sprinkles its exposed surface with earth of the colour of the surface to which it is attached. The texture of this cocoon resembles that of parchment. In general appearance the male exactly resembles the female.

Fam. ENYOIDÆ.

Gen. HABRONESTES, Koch.

Habronestes marinus, sp. nov.

Femina.—Length, 8mm. ; length of cephalothorax, 3½mm. Legs, 4, 1, 2, 3.

Cephalothorax of a chocolate-brown ground-colour, glossy and tinged with olive-green, the lower portion of the thoracic slope being yellow, and the lateral indentations of a darker hue than the ridges between them; falces, maxillæ, and labium reddish-brown, the two latter of a somewhat lighter hue than the former, and the labium darker at the base than elsewhere; sternum pale-yellow in the middle almost from end to end, and, between this central yellow area and the red-brown margin, dark-brown; legs yellow or reddish-yellow towards the base, from there passing gradually into brown towards the extremities, marked with brown stripes or annulations and slightly tinged with olive-green. Dorsal and lateral surface of the abdomen of a darker hue than the cephalothorax, with a median broken line of dull-yellow, having on each side of it two rows of dull-yellow markings, the outer row on each side somewhat irregular, the inner row on each side and the median broken line coalescing thus Λ about two-thirds of the length of the abdomen from the base, and thence so continuing to the anus; the ventral surface yellow on the basal side of the transverse groove, between this groove and the spinners very

dark brown at the sides, dusky-yellow in the middle, and here covered with a very dense pubescence. The dorsal surface is much less hairy, but more copiously furnished with bristles. The dark portions of the abdominal surface are very finely mottled with dull-yellow.

Cephalothorax about 1mm. longer than broad at the broadest part, and here less than 1mm. broader than at the fore-part of the caput; pars cephalica sloping forward, the back of the cephalothorax thus forming a continuous curve; normal indentations moderately distinct; sides slightly rounded; back and fore-part of caput very sparsely furnished with coarse hairs.

Eyes on small black eminences, the centrals of the middle row very minute, the rest not differing greatly in size, and round, or almost so; those of the front row nearer to the laterals of the middle row than these latter are to the eyes of the posterior row, but more distant from each other than those of the posterior row are from each other; the centrals of the middle row slightly nearer each other than to the front eyes, and nearer to these than to the laterals of their own row; the curve of the middle row directed forward. Height of clypeus less than the space between a central and a lateral of the middle row.

Falces almost vertical, inclined forwards rather than backwards, at the base projecting beyond the plane of the clypeus; glossy and finely rugulose, furnished with hairs at the sides and extremities, and with a dense fringe at the anterior side of the groove, the latter with 4 teeth on the posterior side, the one nearest the fang the largest, and the basal one very minute, and three on the anterior side, the middle one of which is large and the other small, the basal tooth being much more distant from it than the other.

Maxillæ convex, in front of the palpal junction oblong in outline, inclined to the labium, in front slightly rounded on the outside and obliquely truncated on the inside, and here furnished with a dense dark-coloured fringe.

Labium convex, widest above the basal constriction, narrowest in front and here truncated, more than half as long as the maxillæ.

Sternum slightly convex, oblong-cordate, truncated in front and strongly pointed posteriorly, somewhat impressed opposite the legs, very glossy and very sparsely furnished with coarsish black hairs.

Abdomen oblong-ovate, convex, at its widest part wider than the cephalothorax; inferior spinners by far the largest, in front of them a tuft of hair that, seen with the naked eye or with a glass of very low power, looks like a small mammilla.

The *tarsi* without spines (1 or 2 on one of the 4th legs in some examples); the *tibiæ* and *metatarsi* of the 3rd and 4th pairs so heavily armed with spines as to resemble veritable *chevaux-de-frise*; on the inferior surface of the corresponding joints of the 1st and 2nd pairs 6 to 8 spines, the distribution of which is somewhat irregular—on the *tibiæ* 2, 2, 2; 3, 1, 1, 2, or 3, 1, 1, 1, 2, and on the *metatarsi* 2, 2, 2, or 2, 1, 2, 2; tarsal claws 3, superior with several teeth, inferior bent vertically down and simple.

Palpi slender, joints all armed with 1 or more spines—humeral joint with 1, 1, 2, or 1, 1, 1 above, this joint slightly bent and increasing a little in thickness towards the fore extremity, and in length not differing much from the digital joint; the cubital joint by much the shortest, and thickened in front; digital joint furnished with a finely-toothed claw.

Of the *corpus vulvæ* the sides are brown, and the posterior, anterior, and central parts pale-yellow; the brown parts corneous, pitted with circular cavities, posteriorly near to and anteriorly distant from each other, having thus the shape of a horse-shoe with the heels directed forward, and the toe broken through by the yellowish neck of the somewhat spathulate vulvular concavity. Slightly outside the front of each heel there is an oblique elongated bald depression having the same hue as the branchial opercula, and in front of each of these depressions another smaller depression of the same hue.

Though much smaller, the male closely resembles the female in form. Length, 5mm.; relative length of cephalothorax and abdomen nearly the same as in the female. Cephalothorax and its appendages reddish-yellow; coloration and markings of abdomen similar to those of the female's. On the outside, at the fore extremity of the radial joint of the palpi, two short stout apophyses close together, the one flesh-coloured, the other brown; digital joint turbinate, having on the under-surface at the base a hollow in which are situated the palpal organs, in the centre of the hollow a loop-shaped yellow corneous process partly concealed by a membranous scale, and springing from the base a dark-coloured filiform spine, which, after passing along the inside and round the front, terminates on the outside at no great distance from the base.

I have several females, but only one male.

Hab. Dunedin Harbour. *P. G.*

This interesting spider is found on the under-surface of stones between high- and low-water mark, being at full-tide immersed in from a few inches to a foot or more of water. When detached from the stones it rises to the surface like a cork, and at once simulates death. In this condition it will bear a good deal of pushing about without showing the

least sign of life; but a slight pinch with the forceps makes it either run smartly along the surface of the water or strenuously struggle to dive. It, however, never succeeds in getting more than its head and some of its legs under water. Like *Amaurobioides maritima*, Cambridge, and *Dolomedes aquaticus* and *Lycosa uliginosa*, Goyen, it is wholly unable to dive. To get under water it must, like them, have some support for its legs. It is able to run at a fair pace on the upper, but much faster on the under surface of stones. This is no doubt owing to the circumstance that its body, with the air entangled in its pubescence, is of lower specific gravity than sea-water. On the upper surface part of its energy is spent in holding its body down, but on the under-surface most of it may be employed in running. Owing to the fact that the stone must be turned a little to expose the spider to view, I have been unable to determine whether during immersion it seeks its prey or remains inactive. It is difficult to believe that any land animal would adopt this mode of existence merely for the sake of being under water during a considerable portion of its life. On the stones under which it lives there is abundance of animal life upon the juices of which it might feed; I incline, therefore, to the view that it lives partly, if not entirely, upon the juices of marine animals, and that its preference for this kind of food has induced it to take to sea-water. I have also found examples of this spider in the crevices of the banks laved by the water at full-tide, but, though I have searched diligently for it, have never met with it at any greater distance from the sea.

Its cocoon, which is of a plano-convex shape, and attached firmly by its plane surface to the under-side of stones, is also under water during a large portion of every day; and the young, as soon as they leave the cocoon, seem as much at home in that element as the mother spider. The material of the cocoon is of a thin leathery consistence, and apparently impervious both to air and water. It contains about twenty rather large pale-yellow, roundish eggs, which are placed in tiers, and built into a rude sort of cone. They are loosely agglutinated together, and attached to the central part of the roof of the cocoon, which is invariably well inflated with air. The young remain in the cocoon for some time after they are hatched, and this imprisoned air is no doubt intended for their use. Owing to its whitish colour, the cocoon is a rather conspicuous object; but its fabricator is in colour so much like the bits of wood and other material adhering to the stones that it is difficult to distinguish it from them. It constructs neither snare nor protective tube that I could discover. The air by which its existence is supported during immersion is held entangled in the dense pubescence of the abdominal ventral surface.

I have another spider, a member of the family *Attoidea*, found in the bay in the same locality, and having the same habit, except that it constructs for itself a protective tube; but, owing to the difficulty of assigning an example to its genus in a family containing so many ill-defined genera, I have been unable to determine in which to place it. This is the fourth marine spider discovered in New Zealand, which is, I believe, the only country in which such spiders have been found.

ART. XXX.—*On a New Genus of Fishes of the Family Percidæ, from New Zealand.*

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PROFESSOR HUTTON described in 1875 a new species of *Percidæ*, which he founded on a stuffed specimen in the Otago Museum, Dunedin, under the name of *Therapon rubiginosus*. In his account of this fish in "Trans. N.Z. Inst.," viii., pp. 209–10, he says, "It differs from *Therapon* in the oblique cleft of the mouth, the forked caudal, and the greater development of the scales on the vertical fins; but I hesitate to draw up generic characters for it until I can get a fresh specimen." The opportunity of examining a second and particularly fine example of this rare fish has fallen to me, by the acquisition by this Museum of a specimen thrown on the beach, in July 1889, near the mouth of the river Avon, in the Province of Canterbury.

The specific description given by Professor Hutton in the volume I have cited leaves little to be desired in the matter of accuracy; a few points only, and those not easily to be made out in a dried skin, require addition or emendation. I am able also to confirm his opinion that a new genus would probably have to be established for its reception, of which I therefore append the diagnostic characters under the name of *Plagiogeneion*, and a completed description of the species.

PLAGIOGENEION,* gen. nov.

Body oblong, compressed, covered with ctenoid scales; eye equal in diameter to length of maxillary bone; mouth small, vertical; teeth small, villiform in both jaws; palate

* *πλάγιος* = perpendicular; *γένειον* = jawed.