

STUDIES IN TASMANIAN SPIDERS.

PART II.

By

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Plates XXI. to XXVI. and Eight Text Figures.

(Read 17th November, 1927.)

Family AVICULARIIDÆ.

Sub-Family CTENIZINÆ.

Genus *Aganippe*, O. P. Cambr.*Aganippe tasmanica*, sp. nov.

Plates XXI. and XXII.

The description of the female is as follows:—

Measurements in millimetres (excluding the falces)

Total Length	27.0
Length of Cephalothorax	12.0
Breadth of Cephalothorax	10.0
Length of Abdomen	16.0
Breadth of Abdomen	13.0

Leg.	Coxa	Trochanter and Femur	Patella and Tibia	Metatarsus and Tarsus	Total
1	4.0	7.0	7.0	4.5	22.5
2	4.0	7.0	7.0	5.0	23.0
3	4.0	7.0	7.0	5.5	23.5
4	5.0	9.0	9.0	7.5	30.5
Palpi	5.0	6.0	6.0	3.5	20.5

Cephalothorax: Brown, arched, clothed with long, fine, erect hairs and thin black bristles on the cephalic part; and with long, fine erect hairs and down-lying matted grey hair on the thoracic part.

Pars Cephalica: Arched, ascending; a median row of black bristles extends from the fovea to the ocular area and each bristle is mounted on a small tubercle. The segmental

groove is well marked by a deep pit on each side. The front margin on each side of the ocular area is lighter in colour than the rest of the surface.

Ocular Area: Dark brown, raised, arched, one and three-fifth times as broad as it is long. There is a group of bristles in front and in rear of the anterior median eyes.

Clypeus: Wide, transversely wrinkled, hyaline.

Pars Thoracica: Gently arched from side to side and sloping gradually to the rear margin, which is slightly indented.

Thoracic Fovea: Very deep, wide and strongly procurved.

Marginal Band: Reflexed and thickly fringed with long fine grey hairs towards the rear.

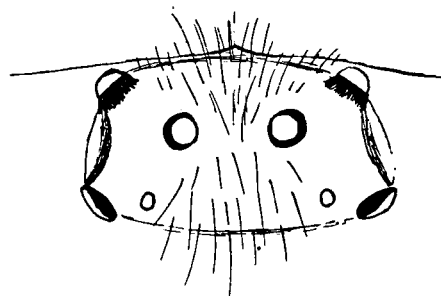


Fig. 1. *Aganippe tasmanica* (sp. nov.). Eyes in female.

Eyes: In two rows arranged in a group on a tubercular eminence. The front row is strongly procurved and shorter than the rear row. The rear row is procurved in front and recurved behind. A line drawn tangential to the rear edge of the anterior laterals passes in front of the anterior medians without touching them. The distance between the anterior medians is equal to two and a half times their individual diameter. The front laterals are nearly round, and one and a half times the diameter of a front median eye. The rear laterals are elliptical in shape, their long diameter being nearly twice the diameter of a front median eye. The rear medians are the smallest of the group, and separated from each other by about two and a half times the distance between the two front median eyes. The rear laterals are separated from the rear medians by a distance equal to about one and three-quarter times the diameter of a front median eye. (See Fig. 1.)

Legs: Sturdy, brown in colour, and not very long. Relative lengths 4, 3, 2, 1. It will be noticed from the measurements given above that legs 3, 2, and 1 are almost equal in length and not much longer than the palpi. The tarsi and metatarsi of legs 1 and 2 are thickly scopulated. There are spines on all the tarsi and metatarsi, those on the outer side of tarsi 4 being especially numerous. All the legs are densely clothed, particularly on the under side, with long thin black bristles and long fine hairs. On the upper side bare spaces are visible. On the under side of coxæ and femora 2, 3, and 4 there is a little down-lying grey hair similar to that on the sternum. Each of the tibial segments is provided with two or three spines on the under side near the apex. The coxæ of legs 4 meet behind the sternum. The superior tarsal claws are provided with a small tooth near the base and a large tooth. The inferior claw is small and bare.

Palpi: Moderately long, similar in colour and clothing to the legs. Tarsi thickly scopulated. Tibiæ more heavily armed with spines than in the case of the legs. The single claw is provided with a small tooth near the base and a large tooth.

Falces: Strong, well curved, moderately long, clothed with black bristles, but having bare patches on the upper surface. The rastellum consists of a large number of strong teeth placed close together on the front of the falces. The fang is fairly long and well curved. The inner margin of the falx sheath is provided with a row of 7 or 8 large teeth. The outer margin is provided with a thick fringe of hair and a row of 8 smaller teeth, while there is also an intermediate row of about seven minute teeth.

Maxillæ: Brown, divergent, moderately broad, clothed with very long hair and bristles, and thickly fringed along the inner margin with yellowish brown hair. A small group of nine or ten spines is placed at the lower inner angle.

Labium: Brown, submerged, arched, almost square, front edge slightly indented, clothed with a few long bristles but devoid of spines.

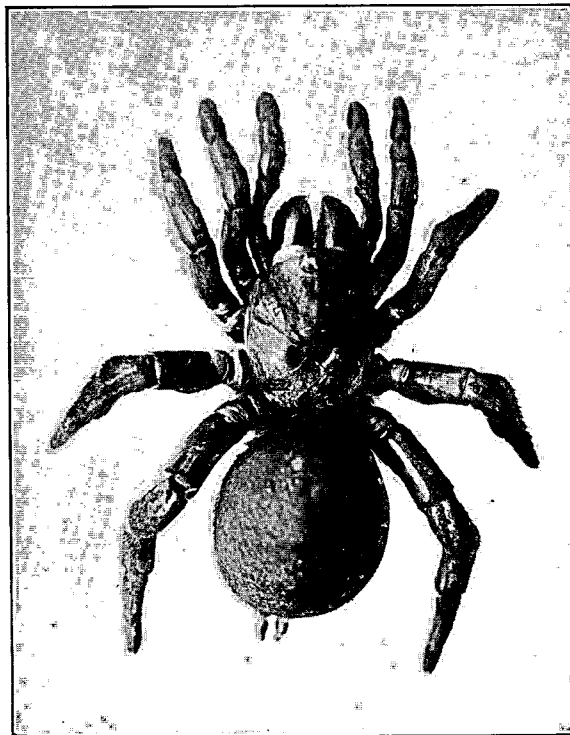


Fig. 1. *Aganippe tasmanica* (sp. nov.) ♀.

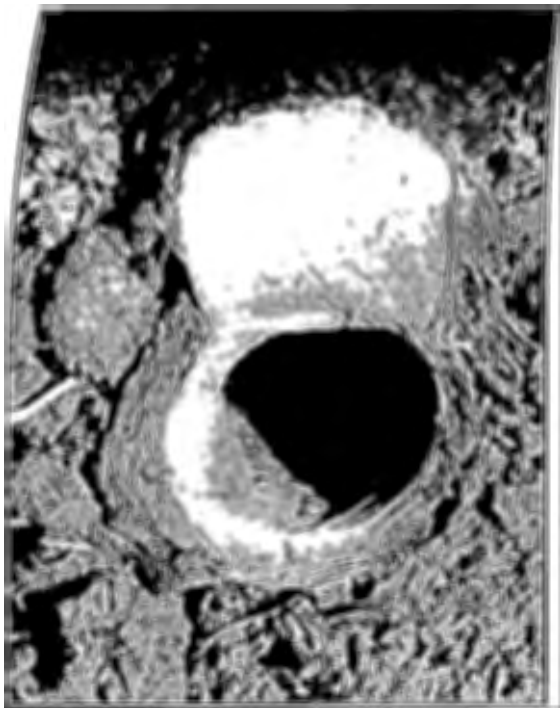


Fig. 2. *Aganippe tasmanica* (sp. nov.).
Nest open.

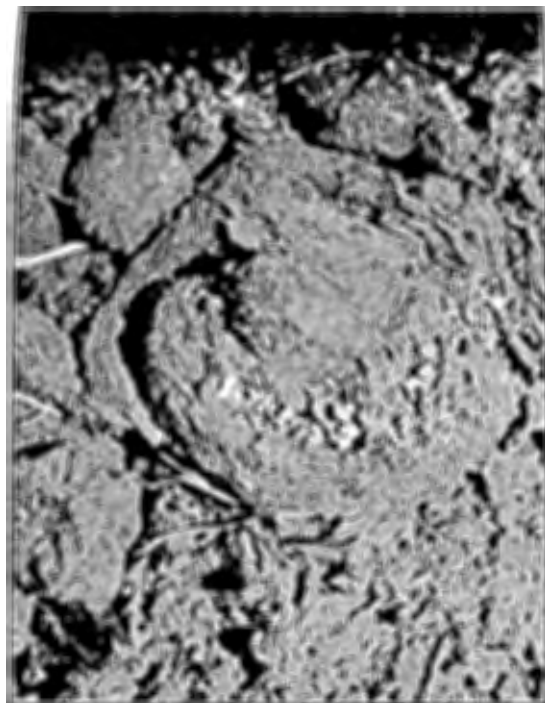


Fig. 3. *Aganippe tasmanica* (sp. nov.).
Nest closed.

Sternum: Brown, broadly pyriform, clothed with erect black bristles and with down-lying greyish hair towards the rear.

Sigilla: Rear pair large, removed from the margin and placed between the coxæ of the third pair of legs. The second pair of sigilla are small, placed near the margin and between the coxæ of the second pair of legs. The first pair small, marginal, and hidden by the coxæ of the first pair of legs.

Abdomen: Ovate, slightly overhanging the base of the cephalothorax, hairy, dark brown. A pair of muscle impressions are present on the dorsal surface near the front. No distinct pattern can be seen. The under surface hairy and somewhat lighter in colour than the dorsal surface.

Spinnerets: Very hairy, short, the first joint of the superior pair longest, the third joint shortest and dome shaped. The inferior pair are very small and close together.

Locality: Prince of Wales Bay, Derwent Park, 29th April, 1927.

Field Notes: Four specimens were collected. In each case the nest was made in a bank just above high tide mark. The burrow went into the bank almost horizontally for a distance of 21.0 cm. It had a diameter of 18.0 mm. near the opening, but was somewhat enlarged at the inner end. The mouth of the burrow was closed with a firm, neatly-fitting lid of the wafer type, and just inside the opening the nest was thickly lined with silk. Farther in the lining became gradually thinner, so that the inner end of the burrow had little or no silk covering the wall.

One of the nests was closed with a double lid. (See Plate XXII., Figs. 2 and 3.) This, however, seems an unusual occurrence. The spider generally increases the size of the lid by adding to its margin, but in this case an entirely new lid seems to have been made, the smaller and older lid being left on top of it and still attached by its own hinge. Perhaps some obstruction made it impossible for the spider to close the old lid properly, and hence a new lid became necessary. The outside of the lid was decorated with lichens, and closely resembled the surrounding soil.

Genus *Arbanitis*, L. Koch.*Arbanitis mestoni*, sp. nov.

Plate XXIII, Figs. 4 and 5.

The description of the male is as follows:—

Measurements in millimetres (excluding the falcis).

Total Length	13.0
Length of Cephalothorax	7.0
Breadth of Cephalothorax	5.0
Length of Abdomen	6.0
Breadth of Abdomen	4.0

Leg.	Coxa	Trochanter and Femur	Patella and Tibia	Metatarsus and Tarsus	Total
1	3.0	7.0	7.0	7.0	24.0
2	2.5	6.0	6.5	6.5	21.5
3	2.5	5.0	5.0	6.5	19.0
4	2.5	7.0	8.0	8.0	25.5
				Tarsus	
Palpi	2.5	4.0	5.0	1.5	13.0

Cephalothorax: Obovate, brown, thinly clothed with short down-lying bristles.

Pars Cephalica: Arched, gently ascending, dark brown, thinly clothed with short down-lying bristles, which, however, are more numerous than on the thoracic part. Segmental groove well defined.

Ocular Area: Arched and well raised above the rest of the cephalic area.

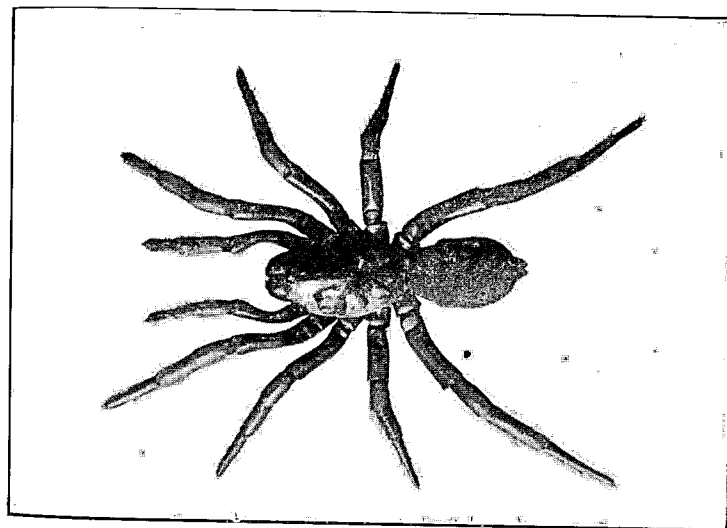
Clypeus: Narrow, hyaline, transversely wrinkled, furnished with 9 or 10 small bristles in front of the median eyes.

Pars Thoracica: Brown, sloping gently to the rear, slightly arched, radial grooves distinct but not deep. A pair of conspicuous spines are placed one on each side, just in front of the abdomen, with a third smaller spine midway between them.

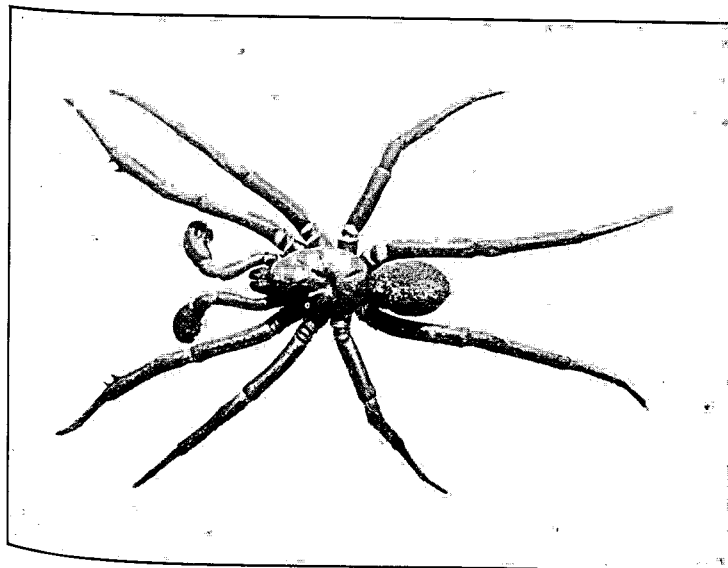
Thoracic Fovea: Small, deep, straight.

Marginal Band: Dark brown, very slightly reflexed, fringed with coarse spine-like bristles from the rear to the front.

Plate XXIII.

Fig. 5. *Arbanitis mestoni* (sp. nov.) ♀.

P. and P. Roy. Soc. Tas., 1927.

Fig. 4. *Arbanitis mestoni* (sp. nov.) ♂.

Eyes: Mounted on a well-raised tubercle. The two front median eyes are much higher than the others. The front row of eyes is strongly procurved; the rear row is recurved on its posterior margin, but almost straight on its anterior margin. The front median eyes are separated from each other by a space slightly less than two-thirds of their individual diameter and from their lateral neighbours by slightly more than this distance. The front lateral eyes are the largest of the group, and have a long diameter about one and two-third times the diameter of a front median eye. The rear laterals are next in size, being about three-quarters the size of the front laterals, from which they are separated by a distance equal to one-half the diameter of a front median eye. The rear medians are close to the rear laterals, their long diameter equals the diameter of a front median eye, and they are separated from each other by a distance equal to twice the diameter of a front median eye. (See Fig. 2.)

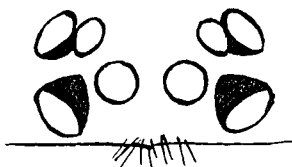


Fig. 2. *Arbanitis mestoni* (sp. nov.). Eyes in male.

Legs: Concolorous with the cephalothorax, long and tapering. Relative lengths 4, 1, 2, 3. The tarsi of the first two pairs of legs are provided with a very light scopula, which does not extend on to the metatarsi. The tarsal, metatarsal, tibial, and femoral segments of all the legs are furnished with spines. The clothing of the legs consists of bristles, which are so coarse that it is difficult to distinguish the larger ones from spines. There is very little hair on the legs. Tibia 1 is provided with two apophyses near the apex on the inner side. Each apophysis ends in a pair of flattened prongs. (See Fig. 3.) The superior tarsal claws are long and provided with three large teeth near the base and four smaller teeth on the side. The inferior claw is small and bare.

Palpi: Slightly more than half the length of leg 1, lightly clothed with coarse bristles and short hairs, concolorous with the legs; tibial segment much enlarged and furnished with an apophysis beset with spines, which, however, do not extend up to the apex of the segment. Bulb pyriform,

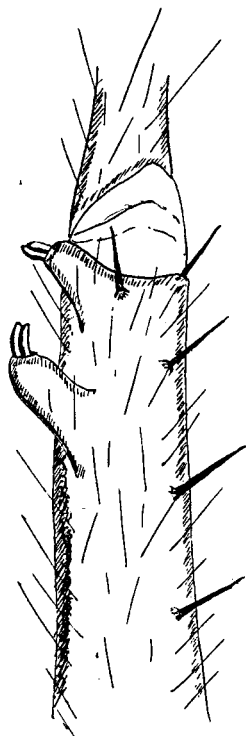


Fig. 3. *Arbanitis mestoni* (sp. nov.). Apex of tibia I. of male from below.

bilobed, shining, produced into a moderately long, twisted style. (See Fig. 4.) There is some resemblance between the palpus of this spider and that of *Arbanitis scaurus* (1). In the latter, however, the style is much shorter, the spines are distributed from the apophysis to the apex of the tibia and the segment is more inflated.

Falces: Small, dark brown, clothed with black bristles. Rastellum is composed of four or five rather long spine-like teeth on the front of each falx. The fang long, dark brown, and well curved.

Maxillæ: Brown, small, divergent, lightly clothed with short black hairs, inner margin provided with a thick fringe of yellow hair. No spines present.

Labium: Brown, almost square, truncated in front and slightly indented, its front margin is clothed with a few black bristles. No spines present.

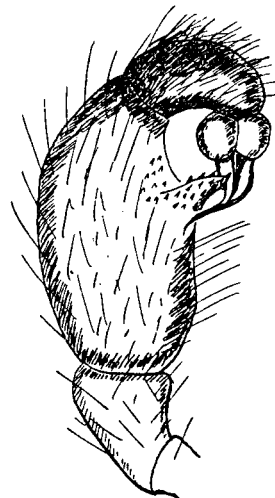


Fig. 4. *Arbanitis mestoni* (sp. nov.). Palpus of male from outer side.

Sternum: Long oval in shape, brown, lightly clothed with black bristle-like hairs.

Sigilla: Small, very indistinct, and placed near the margin.

Abdomen: Obovate, upper surface dark brown with indistinct markings of a lighter brown; clothed with short, black, coarse, down-lying hairs and very coarse erect spines mounted on tubercles. Under surface yellowish brown clothed with coarse black hairs. Lung covers yellowish.

Spinnerets: Yellowish and hairy. Superior pair thick and short, the first joint being equal in length to the other two joints combined. Tip of third joint rounded. Inferior pair small and about their own diameter apart.

The description of the female is as follows:—

Measurements in millimetres (excluding the falcēs).

Total Length	21.5
Length of Cephalothorax	10.0
Breadth of Cephalothorax	7.0
Length of Abdomen	11.5
Breadth of Abdomen	7.0

Leg.	Coxa	Trochanter and Femur	Patella and Tibia	Metatarsus and Tarsus	Total
1	3.5	7.0	7.5	5.0	23.0
2	3.0	6.0	6.0	4.5	19.5
3	2.5	4.5	5.0	5.0	17.0
4	3.0	6.0	8.5	6.5	24.0
Palpi	3.5	5.0	5.0	Tarsus 3.0	16.5

Cephalothorax: Ovate, brown, very thinly clothed with short bristle-like hairs.

Pars Cephalica: Arched, gently ascending, its highest point being about midway between the fovea and the eyes. A median row of bristles extends from the eye space to the fovea.

Ocular Area: Broader than long, well raised, arched, dark brown; there are a few bristles in front of the eyes and three or four between the rear median eyes.

Clypeus: Moderately deep, sloping forward, transversely wrinkled and hyaline.

Pars Thoracica: Slightly arched and gently sloping to the rear; radial grooves distinct.

Thoracic Fovea: Straight, deep, and moderately wide.

Marginal Band: Slightly reflexed, fringed with short brown hairs.

Eyes: Mounted in two rows; front row strongly procurved, rear row recurved on its rear margin, but almost straight on its front margin. The round front median eyes are well raised above the others, and are separated from each other by a space equal to one and one-eighth times their individual diameter. The elliptical front laterals are the largest of the group, their long diameter being equal to about one and two-third times the diameter of a front median eye. The rear laterals are slightly smaller than the front laterals, from which they are separated by a space equal to half the long diameter of the latter. The rear medians have a long diameter equal to the diameter of a front median eye. They are separated from each other by a space equal to nearly three times that which separates the front medians. The front laterals are separated from the front medians by a space almost equal to the diameter of the latter. (See Fig. 5.)

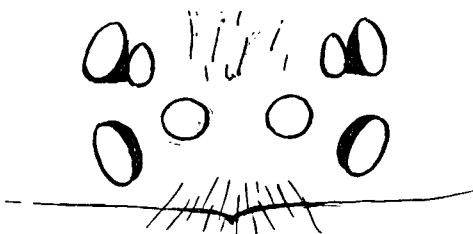


Fig. 5. *Arbanitis mestoni* (sp. nov.). Eyes in female.

Legs: Light brown, thinly clothed with black bristles; longitudinal bare stripes are visible on the upper side of the femora, patellæ, and tibiæ. Relative lengths 4, 1, 2, 3. The tarsi and metatarsi of the first and second pairs of legs are scopulated, but in the case of the second pair the scopula extends only a short way along the inner margin of the under side of the metatarsus, the greater portion of the segment being devoid of a scopula. Spines are present on the under side of all the tarsi and metatarsi. The tibial segments of the first two pairs of legs are also armed with 8 or 9 long prominent spines on the outer margin of the under side. The superior tarsal claws each have a large tooth and a very small tooth close together near the base of the claw. The inferior claw is small and bare.

Palpi: Similar in colour and clothing to the legs. There are strong spines on the under side of the tarsus, tibia, and

patella, those on the tarsus standing out from a moderately thick scopula. The single tarsal claw has two teeth near the base.

Falces: Moderately large, black, clothed with coarse black bristles and provided with a rastellum in front. Fang well curved and dark reddish brown in colour. The outer margin of furrow furnished with a fringe of long yellow hairs, and the inner margin with a row of seven large teeth, while there is also an intermediate row of seven or eight small teeth.

Maxillæ: Light brown, hairy, moderately long; the inner margin provided with a yellow fringe; the base ends in an obtuse point; a group of 19 or 20 spines is found near the inner angle.

Labium: Short, broad, submerged, arched, truncated, provided with a few long black bristles, but no spines.

Sternum: Brown, pyriform, lightly clothed with erect black bristles.

Sigilla: Small and indistinct; the first pair marginal, the second and third pairs removed a short distance from the margin.

Abdomen: Obovate, upper surface dark brown, clothed with black hairs and long, thin tapering spines mounted on tubercles; no distinct pattern visible. The under surface also dark brown and clothed with black hairs, but devoid of spines. Lung covers dark brown.

Spinnerets: Dark brown, short, hairy, the first joint of the superior pair longest, the third shortest. The inferior pair small, cylindrical, and separated by a space equal to one and a half times their individual diameter.

Locality: Woodsdale, 24th April, 1927.

Field Notes: The nests were numerous at the locality mentioned, and generally made in the side of a grassy bank. In some instances the burrow was almost horizontal. It was not provided with a lid, but the opening was surrounded by a collar of grass stalks matted together with silk. One of these collars measured 2.5 cm. high. The length of the burrow was about 13 cm. A thick silk lining covered the walls just inside the opening, but the inner end of the nest, which was slightly enlarged, had no lining.

This spider is named in honour of A. L. Meston, Esq., M.A., by whom it was discovered, and to whom I am indebted for the above field notes.



Fig. 6. Web of *Ectatosticta troglodytes* (Higg. and Pett.), among the rocks at the Forth Falls.

Family HYPOCHILIDÆ.

Genus *Ectatosticta*, Simon.

The Distribution of the Cave Spider, *Ectatosticta troglodytes* (Higg. and Pett.), in Tasmania, with notes on its web and a description of the male.

Plate XXIV., Fig. 6.

This remarkable spider, which Dr. Pulleine (2) calls "Tasmania's most aristocratic spider," was first recorded from a Chudleigh cave in 1883, and described by Higgins and Petterd (3) under the name of *Theridion troglodytes*. In 1904 W. J. Rainbow (4) gave a more detailed description of the spider under the name of *Ectatosticta troglodytes*, and recorded its occurrence in shallow sandstone caves on the banks of the Pieman River. The habit of often living in caves has given rise to the belief that the spider is confined to caves. This, however, is not the case, for in May, 1926, I found an immature specimen under a log on Mt. Arthur, near Lilydale. During the latter part of December, 1926, through the kindness of Mr. G. Craw, I had the opportunity of collecting several specimens in the vicinity of the Forth Falls, near Sheffield. At this locality the spider had built its web among the rocks in the gully leading up to the falls. The large horizontal sheets of web, hung between the moss-covered stones, were quite conspicuous. During the day-time attempts were made to entice the spider from its hiding place beneath the rocks by dropping live insects on to the web, but all to no purpose; the spider resolutely refused to come out. There was nothing to do but to wait till night time and then repeat the experiments. The positions of several webs were accordingly noted, and as soon as it was dark lanterns were lighted and another attempt made. No sooner had the struggling insect fallen on to the upper side of the web than the spider rushed out on the lower side and seized it through the web. The spider was then easily caught in a tin before it had time to regain its retreat under the rocks. A moderately large tin was required, since *E. troglodytes*, when fully grown, has a spread of legs amounting to as much as seven inches. In the above way an adult male and several females were secured.

Some weeks later, on the 25th January, 1927, I collected several specimens of this spider at Lenah Valley, near the

foot of Mount Wellington. A male was taken from under a heap of forest débris, while a female and an old deserted egg sac were discovered in a hollow log.

The spider is also sometimes found in abandoned mine shafts on the Zeehan mining field. It would seem therefore that it is widely distributed throughout the State, and not merely confined to caves.

The web of this spider always takes the form of a horizontal sheet, which under favourable conditions may attain relatively large proportions. In a small narrow cave at Mole Creek a web was found suspended between the two walls of the cave, and it measured four feet long by nearly two feet wide. One end of the sheet led into a dark recess occupied by the spider. The threads, which form the framework of the web, are smooth, but the meshes are composed of a hackled band. This hackled band is intermediate in structure between that of *Amaurobius* and that of *Uloborus*. It consists of two smooth parallel threads supporting a band of viscid silk. The much curled threads of *Amaurobius* are not represented, but the edges of the viscid band show an undulating pattern approaching the lobed structure in the hackled band of *Uloborus*.

The description of the male is as follows:—

Measurements in millimetres.

Total Length	16.0
Length of Cephalothorax	8.0
Breadth of Cephalothorax	6.0
Length of Abdomen	9.0
Breadth of Abdomen	6.0

Leg	Coxa	Trochanter	Femur	Patella	Tibia	Meta-tarsus	Tarsus	Total
1	3.0	1.0	26.0	4.0	27.0	25.5	11.5	98.0
2	3.0	0.7	20.0	4.0	20.5	15.5	7.5	71.2
3	2.5	0.6	16.5	3.0	15.0	14.0	5.5	57.1
4	2.5	0.6	19.0	3.0	17.0	18.0	7.0	67.1

The male resembles the female in colour, clothing, size, and general appearance. Therefore it will be necessary to describe only the following features.

Legs: Long and tapering, concolorous with the cephalothorax; tibial, metatarsal, and femoral segments clothed with long fine hairs which curve outwards from the leg, and armed with long straight spines. The tarsal segments are clothed with short hairs and armed with a few short spines underneath. The patellæ are smooth. The most characteristic feature is the peculiar curve in the metatarsi of the second pair of legs. (See Fig. 6.) Superior tarsal claws have 13 teeth; the inferior claw is small and bare.

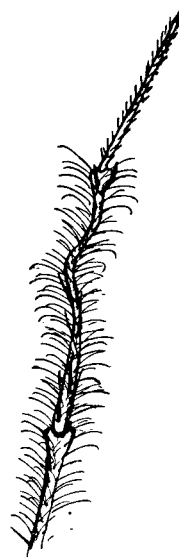


Fig. 6. *Ectatosticta troglodytes* (Higg. and Pett.). Metatarsus II. in male.

Palpi: Concolorous with the legs; trochanter and femur 7.0 mm.; patella and tibia 5.5 mm.; tarsus 3.0 mm.; clothed with short hairs and a few long slender bristles. The femoral segment is armed with a few spines. There is a slight protuberance on the under side of the tibia near its apex, and at this point the clothing of hair is more dense. The tarsus is long and relatively thick near the base, but gradually tapers to a blunt-pointed extremity. On the under side near the base of the tarsus is a bunch of very long coarse hairs which projects under the bulb. The genital bulb is simple, and produced into a long conductor, which reaches nearly to the end of the tarsus. There is a marked difference between

the palpus of this spider and that of its nearest relative, *E. davidi* (Simon) (5), which occurs in China. In the case of the latter the genital bulb is attached almost at the extremity of the tarsus, while in the Tasmanian spider it is attached near the base. (See Fig. 7.)

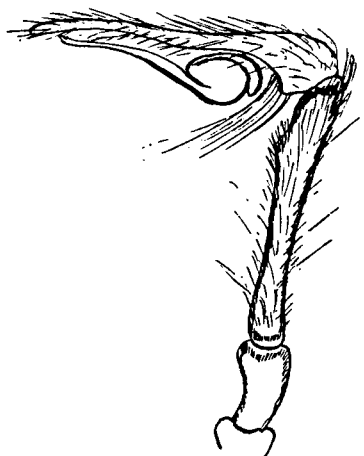


Fig. 7. *Ectatostieta troglodytes* (Higg. and Pett.). Left palpus of male viewed from outer side.

Falces: Superior margin of sheath armed with a row of five large teeth; the inferior margin smooth for the greater part of its length, but possesses a group of twenty-two minute teeth near its base and opposite the last two teeth on the superior margin.

Family ARGIOPIDÆ.

Sub-Family ARGIOPINÆ.

Genus *Cyrtophora* (Simon).

The Web and Habits of *Cyrtophora parnasia* (L. Koch) (6).

Plates XXV. and XXVI.

The webs of spiders belonging to the genus *Cyrtophora*, E. Simon, *Hentzia*, McCook, are of a very interesting nature. Probably the most complete account of one of these webs is that given by Dr. McCook (7) in reference to the American spider, *Hentzia basilica*. Other descriptions have been given by Walckenaer (8), Ausserer (9), Workman (10), Simon (11), and Rainbow (12). Most of these descriptions are brief, and do not deal with the finer architectural details of the webs.

Consequently, as Professor Comstock (13) points out, there are still several important questions concerning the structure of these webs to be answered.

The most common Tasmanian species of the genus *Cyrtophora* is *C. parnasia* (L. Koch). It occurs in fair numbers on the Trevallyn Hills, particularly on the slopes which face the morning sun. The web is generally placed about sixty centimetres from the ground in a tussock of cutting grass (*Gahnia psittacorum*, Lab.). The whole snare consists of an irregular network of threads, in the centre of which is suspended an open silken cone. (See Fig. 8.) This

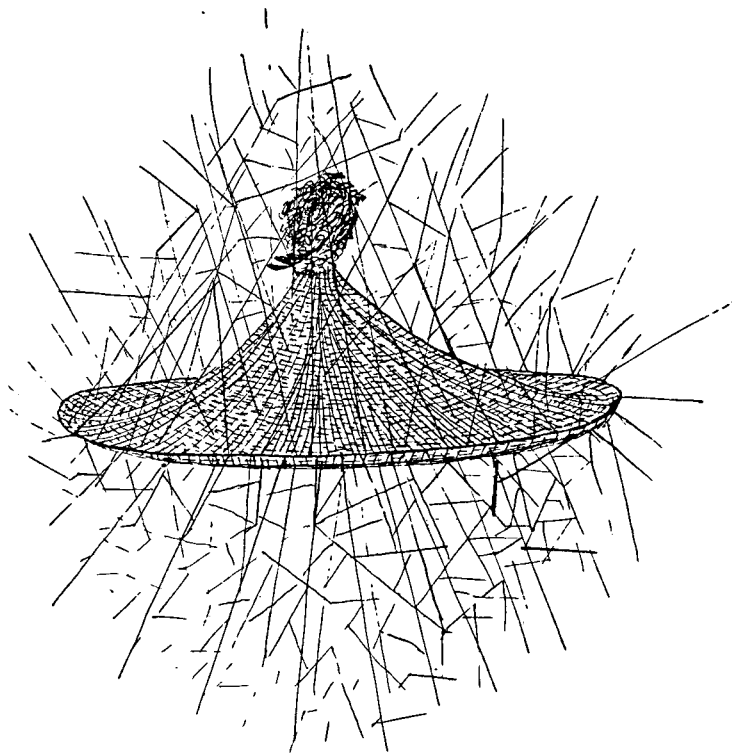


Fig. 8. Web of *Cyrtophora parnasia* (L. Koch).

inner conical portion will be referred to as the dome of the web. The margin of the dome is slightly reflexed, and the apex leads into a snug retreat occupied by the spider. This retreat is made of dry leaves and twigs interwoven with quantities of the softest silk. (See Plate XXV., Fig. 7.) It

opens downwards. The whole web is about 30 centimetres in height and 25 centimetres in width. The diameter of the dome is almost equal to the width of the web. The apex of the dome is about 8 centimetres higher than the margin. Extending downwards and outwards from the apex to the margin are numerous rays. These are intersected by the turns of a closely woven spiral passing round the dome from apex to margin. At first glance the dome bears some resemblance to a closely-woven orbicular snare of the usual argiopid type, which has been hung in a horizontal plane, and whose centre has been drawn up. Closer inspection, however, reveals the fact that there is no hub, its place being taken by the spider's retreat. The usual notched zone and free space are also absent. In the field it is almost impossible to count the number of rays and the number of turns in the spiral, since the threads are so very fine and close together. However, if the outer irregular network be cut away, it is not difficult to mount a representative portion of the dome between two plates of glass as described by Professor Comstock (14). This enables the counting to be done under the microscope. By this means it was found that the dome of *C. parnasia* is made up of about 200 rays (counted near the apex) and 250 turns in the spiral. Many of the rays are branched so that the space between two adjacent rays near the margin of the dome is not greater than that between two near the apex. This branching of the rays is also seen in the webs of certain species of *Nephila* (15). It renders the meshes of the web more uniform in size. In the case of *C. parnasia* the meshes are nearly square, the interval between adjacent rays being about 0.75 mm., and that between adjacent turns in the spiral about 0.70 mm. Both the rays and the spiral are dry and inelastic, thus resembling the threads of the notched zone in the ordinary orbicular snare. When highly magnified the thread forming the rays and the spiral is seen to consist of two separate strands twisted together. At the points where the spiral crosses a ray it appears to be twisted round the ray several times, and not merely fastened with an attachment disc. (See Plate XXV., Fig. 8.)

The outer irregular network serves mainly as a support for the dome and the nest. It may also be intended to impede the flight of insects, but the spider appears to take very little notice of an insect entangled in it. When, however, the struggles of the victim cause it to fall through the outer network on to the upper side of the dome, the spider immediately rushes out on the under side. When a little way from

the nest the spider stops and shakes the web vigorously. It then advances a little farther towards its prey, hesitates, and again shakes the web. Finally, when satisfied that the shaking has entangled the legs of its victim in the fine meshes, the spider seizes it and enswathes it in silk, turning it over and over as is the usual custom with the *Argiopidæ*.

The egg sacs, generally two in number, are woven into the soft fluffy silk of the nest, and thus effectually concealed. There are about ninety eggs in each sac. They are yellow in colour, and massed together in a more or less spherical heap. (See Plate XXVI., Fig. 9.) The silk in close contact with the eggs is of a silvery grey colour, and densely woven above and below the eggs, forming, as it were, two valves united by more delicate tissue. This covering is surrounded by a layer of grey fluffy silk, the surface of which is decorated with peculiar dark coloured tufts of twisted silk resembling those made by *Tetragnatha*. (See Plate XXVI., Fig. 10.) These little tufts are generally hidden in the fluffy silk of the nest, and it is only by careful dissection that the various parts of the egg sac can be separated.

Types: The type specimens of spiders described in the above paper will be placed in the Queen Victoria Museum, Launceston.

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