

# AUSTRALIAN MUSEUM SCIENTIFIC PUBLICATIONS

Rainbow, W.J., 1902. Notes on the architecture, nesting-habits, and life-histories of Australian Araneidae, based on specimens in the Australian Museum. *Records of the Australian Museum* 4(7): 312–316. [25 August 1902].

doi:10.3853/j.0067-1975.4.1902.1110

ISSN 0067-1975

Published by the Australian Museum, Sydney

nature culture **discover**

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NOTES ON THE ARCHITECTURE, NESTING-HABITS, AND  
LIFE-HISTORIES OF AUSTRALIAN ARANEIDÆ, BASED  
ON SPECIMENS IN THE AUSTRALIAN MUSEUM.

By W. J. RAINBOW, F.L.S., Entomologist.

(Figs. 24 - 27).

PART III.—THE ECRIBELLATÆ: Haplogynæ.

THE Ecribellatæ have been divided into two sub-sections or groups, viz., the Haplogynæ and Entelegynæ, and of these the former contains six families: Sicariidæ, Leptonetidæ, Oonopidæ, Hadrotarsidæ, Dysderidæ, and Caponiidæ. In Australia, the Haplogynæ are represented by the first, third, fourth, and fifth families here enumerated. None of these spiders is provided with a *cribellum* or *calamistrum*, and the majority have only six eyes. In external appearance, and simplicity, their sexual organs closely approach the Theraphosæ. The genital orifice is situated in both sexes in the epigastric fold, between the pulmonary sacs, and is a simple transverse slit. In the male the last joint of the maxillary palpi is more or less cylindrical, and slightly modified in form, and differs but little in general appearance from that of the female; the copulatory organ consists of a cylindrical or globose lobe, with a more or less prolonged extension, and this may be either straight, curved, or twisted, and acts as the conductor of the styli, the orifice of which is situated at the tip.

FAMILY SICARIIDÆ.

This family is divided by Simon into six sub-families, only one of which—*Scytodinæ*—is represented in Australia. One genus only, *Scytodes*, Latr., is associated by E. Simon with this sub-family, and its geographical range is given as:—"Europa et Regio mediterranea; ins. Atlanticæ; Africa tropica et austr.; ins. Madagascar; Acia occid., centr., orient et merid.; Malaisia et Polynesia; America septr., centr., merid. et antillana."<sup>1</sup>

Three species of this genus are known to me as occurring in Australia, viz., *Scytodes marmorata*, L. Koch, originally recorded from Upolu and Rarotonga; and *S. striatipes*, L. Koch, originally recorded from Upolu, Tonga, and Viti Islands; the third species is apparently *S. thoracica*, Walck., a well-known European form.

<sup>1</sup> Simon—Hist. Nat. Araignées, 2nd edit., i., 1892, p. 276.

The interior of buildings, caves, fissures of rocks, under stones, herbage, and trunks of trees (near the ground), are the favourite haunts of *Scytodes*. They are very slow in their movements. The webs are small, very irregular, and composed of a few loose lines apparently thrown out at random. *S. thoracica* carries its cocoon, which is globular and of a brown colour, under its sternum, where it is held in place by the falces and palpi.

According to Simon, some Malaysian species, notably *S. pallida*, Dal., which is very common in the Philippines, are somewhat different in their spinning habits, and are frequently found on the leaves of trees, which they roll much after the manner of the Clubionidæ and Theridiidæ.<sup>2</sup>

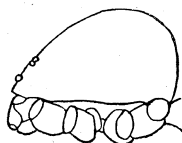


Fig. 24.

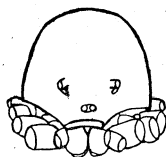


Fig. 25.

I have collected *S. marmorata* and *S. thoracica* (?) both in rock shelters and buildings. In these spiders the cephalothorax is very high behind, convex, and sloping sharply forward; the eyes (six) are arranged in three series of two each, and of these each lateral pair is placed obliquely, and the third or median pair are situated well forward; the falces are very weak (Figs. 24 and 25).

#### FAMILY OONOPIDÆ.

Simon has divided this family into two sections, viz., Oonopidæ molles and Oonopidæ loricatæ,<sup>3</sup> and of these the latter only occurs, so far as is at present known, in Australia. It would not be at all surprising, however, if species referable to the first section should hereafter be discovered upon this continent. *Orchestina*, E. Sim., for instance, is a genus that may reasonably be expected, seeing that it is so widely distributed, species having been recorded from the Mediterranean region and Central Arabia, South Africa, Island of Taprobane, the Philippines, New Zealand, and Venezuela. *Oonops*, Templ., is another widely distributed genus, the range of which is Europe and the Atlantic Islands, the Antiles and Venezuela, Egypt and South Africa, the Islands of Maderia and Taprobane.

Oonopidæ molles embrace all those spiders the abdomen of which is wholly soft and devoid of plates or scales; sometimes,

<sup>2</sup> Simon—*Loc. cit.*, p. 276.

<sup>3</sup> Simon—*Loc. cit.*, pp. 292 and 296.

however, the abdomen is rather tough or leathery beneath in the epigastric region. The first two genera in this section, of which *Orchestina* is one, differ somewhat from the normal type of the family, but their characters are not considered by Simon sufficient to warrant the creation of a sub-family. *Oonops pulcher*, Templ., a European species, is included in our collection. These spiders are, as a rule, of a uniform tint, and generally yellowish or orange-red, but the abdomen is always of a lighter colour than the other parts of the body.

Oonopidæ loricatæ contain all those species in which the abdomen is armed with hard plates or scales. In typical forms, such as those of *Gamasomorpha*, *Dysderina*, etc., the entire superior surface of the abdomen is completely covered with a dorsal plate, oval, and more or less convex; the inferior surface is also provided with a *scutum* or plate, which is narrowest in front, where it surrounds the pedicle, and is dilated a little above at the point of its insertion; the plate is prolonged to the rear, and is truncated immediately in front of the base of the spinnerets.

The teguments, which are very hard, are often smooth and brilliant, sometimes granulated, finely striated, or punctated; they are furnished with isolated hairs or bristles, which are at times fine and cylindrical, sometimes depressed and lanceolate, but very rarely plumose.

The Oonopidæ loricatæ embrace eleven genera, only one of which—*Gamasomorpha*, Karsch,—is at present known to occur in Australia. There are others, however, so widely distributed, that it is only reasonable to assume they may hereafter be recorded from this continent.



Fig. 26

*Gamasomorpha* has a wide geographical range. It is as follows<sup>4</sup>:—"Arabia petræa; ins. Taprobane; Singapore; Birmania; Sumatra; ins. Philippinæ; Japonia; Nova-Hollandia; Antillæ et Venezuela." It also occurs in the South Sea Islands. *G. loricata*, L. Koch, is found in Australia, but it was originally recorded from the Island of Upolu. It has six eyes, in three series of two each; they are arranged as delineated in the figure herewith (Fig. 26).

The Oonopidæ are all small, never exceeding 4 mm. in length. *G. loricata* is only 3 mm., and some species are even less. They are usually found amongst vegetable *débris*; one European species has been recorded as dwelling in the interior of houses, its presence having been noted in herbaria and entomological collections, where it doubtless preys upon minute Acarids.<sup>5</sup> This species, although it has not been recorded from Australia, has probably been

<sup>4</sup> Simon—*Loc. cit.*, p. 301.

<sup>5</sup> Simon—*Loc. cit.*, p. 291.

introduced into this country, for old and dirty collections, although free from *Anthrenus*, have frequently specimens covered with fine cob-web. These tiny spiders run quickly, but with a succession of jerks; sometimes they progress by leaps. They do not construct a web for the capture of prey. The cocoons are very simple, white, sub-globose, and composed of flocculent silk, the threads of which are irregular, yet nevertheless sufficient to cover the rather large eggs. Several cocoons are fabricated by the female, and these are always within the vicinity of her retreat.

#### FAMILY HADROTARSIDÆ.

This family contains only two genera: *Hadrotarsus*, Thor., and *Gmogala*, Keys. Their systematic position is uncertain.<sup>6</sup> In some respects they approach the Oonopidæ; whilst, on the other hand, they display strong affinities to some of the Theridiidæ, notably species of the genera *Pholcomma*, Thor., *Paculla*, E. Sim., and *Tetrablemma*, Camb. Each genus is represented by a single species, viz., *Hadrotarsus barbirusa*, Thor., from Yule Island, New Guinea; and *Gmogala scarabeus*, Keys., from Sydney. These spiders are very minute, and nothing is known of their spinning-work or life-history. I have not seen *Hadrotarsus*, but the Museum collection contains a single female specimen of *Gmogala scarabeus*,

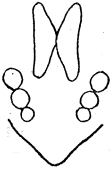


Fig. 27.

Keys. The Hadrotarsidæ are furnished with eight eyes, and those of *G. scarabeus* are figured herewith (Fig. 27).

#### FAMILY DYSDERIDÆ.

The Dysderidæ is split up into two sub-families: the Dysderinæ and Segestriinæ, and each is represented in Australia—the first by a single species, and the latter by three.

The genus *Dysdera*, Latr., is recorded by Simon,<sup>7</sup> as occurring in "Europa et regio mediterranea; Africa sept. et max. austr.; ins. Atlanticæ; Asia centr.; America sept. et austr.," and I have since recorded it from Sydney,<sup>8</sup> and described a species under the name *Dysdera australiensis*. The Dysderids are nocturnal spiders, lurking under stones, in cracks of walls, or dark, damp, mossy situations. In such places as these they construct tubes of white silk, the texture of which is very close and strong; scraps of dead leaves are sometimes incorporated in the structure. Those I have examined from under stones and from fissures, have been free from all extraneous materials, whilst those constructed in

<sup>6</sup> Simon—*Loc. cit.*, p. 305; and Thorell—*Ragni Malesi e Papuani*, iii., 1881, p. 194.

<sup>7</sup> Simon—*Loc. cit.*, p. 318.

<sup>8</sup> Rainbow—*Proc. Linn. Soc. N.S.W.*, xxv., pt. 3, 1900, pp. 483 and 485, pl. xxiii., figs. 1, 1a.

situations abounding in vegetable *débris* have always had foreign matter, in the shape of dead leaves, woven into the texture. Unfortunately I have never succeeded in collecting a cocoon. These spiders obtain their prey by hunting, or by laying in wait; they can run fast, and will rush rapidly out of their hiding places in pursuit of passing insects. The *Dysdera* have six eyes, arranged in two rows, and in the form of a transverse oval; the pair comprising the front row are somewhat the largest, and are widely separated from each other; the four constituting the second row are pro-curved, and of these the median pair are not only sensibly the largest, but are also the closest together.

The genus *Ariadna*, Aud. in Sav., (sub-family Segestriinæ) occurs in "Regio mediterranea; Africa austr.; ins. Taprobane; ins. Samatra; Japonia (*lateralis*, Karsch); Nova-hollandia et Tasmania (*segmentata*, E. Sim.); America sept.; Antillæ; America merid.: Venezuela, Colombia, Brasilia, Resp. Argent. et Chili."<sup>9</sup>

These spiders are not so active as those of the preceding sub-family. Their white silken tubes are constructed in nooks and crannies, such as the fissures of rocks, holes in walls, depressions in the trunks of trees, or under bark. The texture of the tubes is very close and strong; the orifice is round, and strengthened by a girdle of white silk irregularly woven. The cocoons are white, and lenticular; the eggs numerous, but not agglutinated. *Ariadna* has six eyes, of which the laterals are much the smallest and the widest apart.

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<sup>9</sup> E. Simon—*Loc. cit.*, p. 322.