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ON A RE-EXAMINATION OF THE TYPES OF KREFFT'S  
SPECIES OF CESTODA IN THE AUSTRALIAN  
MUSEUM, SYDNEY.

PART I.

BY T. HARVEY JOHNSTON, M.A., D.Sc., Hon. Zoologist.

(From the Bureau of Microbiology, Sydney.)

(Plates i-vi.)

I.—INTRODUCTION.

CORRECTION.

Page 3 and following pages, in the heading, for "Kreffft"  
read "Johnston."

there have been a few identifications and more complete accounts given of parasites found in local hosts but previously described from extra-Australian hosts, *e.g.* *Gyrocotyle rugosa*, Dies., whose anatomy was given by Spencer. In some cases there is merely a reference to the identification of an Entozoon in a host in Australian territory, which has been described elsewhere, *e.g.* certain tapeworms from the Sunfish. Besides these a number of larval Cestoda have been described or identified from mammals, reptiles, amphibia and frogs by Haswell, Hill, myself and others. It should be mentioned that no notice has been taken of the introduced fauna, whether wild or domesticated, in the above estimate of our known Australian Cestoda.

From the foregoing it will be seen that Krefft has described about half of the tapeworms known from the Australian mainland. His accounts and figures are very unsatisfactory and do not allow of the recognition of any of them, as his remarks are



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I.—INTRODUCTION.

If we consider what a vast vertebrate fauna—fish, amphibians, reptiles, birds, mammals,—Australia possesses, we must be struck with the extreme paucity of our knowledge of its parasitology and especially of its Platyhelminthic Entozoa. It is only the Cestoda which concern us here; a comparatively small number have been described. If we include only adult forms from the mainland, *i.e.* if we exclude those described from New Guinea and other East Indian Islands belonging to the Australasian zoogeographical section we will notice that there are only about ten tapeworms described (December 1910) more or less completely from our mammals, four of them being named by Kreffft and three by Zschokke; about seventeen from Australian birds, eleven being named by Kreffft, two by Linstow and two by myself; two from local fish, both described by Haswell; and two from reptiles, one being studied by me. In addition to these there have been a few identifications and more complete accounts given of parasites found in local hosts but previously described from extra-Australian hosts, *e.g.* *Gyrocotyle rugosa*, Dies., whose anatomy was given by Spencer. In some cases there is merely a reference to the identification of an Entozoon in a host in Australian territory, which has been described elsewhere, *e.g.* certain tapeworms from the Sunfish. Besides these a number of larval Cestoda have been described or identified from mammals, reptiles, amphibia and frogs by Haswell, Hill, myself and others. It should be mentioned that no notice has been taken of the introduced fauna, whether wild or domesticated, in the above estimate of our known Australian Cestoda.

From the foregoing it will be seen that Kreffft has described about half of the tapeworms known from the Australian mainland. His accounts and figures are very unsatisfactory and do not allow of the recognition of any of them, as his remarks are

generally confined to a few details regarding the dimensions, the general appearance of the strobila and the form of the scolex, and even these are not accurate. But for the fact that most of his types have been preserved in the Australian Museum, all of his species might be justifiably rejected. Many of the type specimens have become dried and are therefore of little or no use, but I have been fortunate enough in a few cases to find rather better preserved material which I have been able to identify as belonging to the same species as the types in question.

They have been commented upon by various authors but no definite pronouncement has so far been possible.

The re-examination of Krefft's species, therefore, seemed to me desirable, and the Curator kindly placed the original material at my disposal. In the following pages the majority of them receive more or less attention according to their state of preservation.

Krefft described sixteen species as follows<sup>1</sup> : —

- (1) *Tænia tuberculata*.
- (2) *Tænia novæ hollandiæ*.
- (3) *Tænia paradoxa*.
- (4) *Tænia forsteri*.
- (5) *Tænia fimbriata*.
- (6) *Tænia flavescens*.
- (7) *Tænia cylindrica*.
- (8) *Tænia coronata*.
- (9) *Tænia mastersii*.
- (10) *Tænia phalangistæ*.
- (11) *Tænia pediformis*.
- (12) *Tænia moschata*.
- (13) *Tænia rugosa*.
- (14) *Tænia chlamydereæ*.
- (15) *Tænia bairdii*.
- (16) *Bothriocephalus marginatus*.

All of the above, excepting Nos. 4, 5, 9, 10 and 16, are from birds, the exceptions being from mammals, the last three of them being from marsupials. Of the above sixteen specific names, five were already preoccupied in the genus *Tænia*, having been used by previous workers, and therefore Krefft's species require re-naming if proved to be distinct. Under this list come (1) *T. fimbriata*, the name having been used previously by Batsch in 1786, and by Diesing in 1850 ; (2) *T. rugosa*, previously

<sup>1</sup> Krefft — Trans. Entom. Soc. N. S. Wales, ii., 1873, pp. 206-227.

employed by Pallas in 1760, and by Diesing in 1850; (3) *T. coronata*, used by Creplin in 1829; (4) *T. paradoxa* preoccupied through having been erected by Rudolphi in 1801; and (5) *T. tuberculata* also preoccupied by Rudolphi (1819). I have already ventured to rename the first as *T. krefftii*<sup>2</sup>, the second as *T. hedleyi*<sup>3</sup>, and the third as *T. australiensis*<sup>4</sup>. The fourth appears very like his *T. nove-hollandiæ* from the same host and consequently I have not thought it advisable to rename it until the specimens shall have been more carefully studied. In regard to *T. tuberculata*, the similarity to *Diploposthe levis*, Bloch, was sufficiently close to justify a further and more detailed examination of Krefft's species before altering its name. As will be seen later, *T. tuberculata* is synonymous with *D. levis*. *T. australiensis* is a typical member of the genus *Gyrocoelia*, *T. hedleyi* belonging to the allied genus *Acoleus*. *Tenia pediformis*, Krefft, is a *Fimbriaria* and moreover is synonymous with *F. fasciolaris*, Pall., more commonly known as *Tenia malleus*, Goeze. *T. forsteri* is a *Tetraphobus*, while *T. chlamydera* (*T. chlamydodera*) belongs to the genus *Choanotenia*, and *T. flavescens* to *Diorchis*. Both *T. bairdii* and *T. cylindrica* are species of *Hymenolepis*, the former being synonymous with *H. sinuosa*, Zeder, i.e. *H. collaris*, Batsch, while the latter is synonymous with *H. megalops*, Nitzsch. The types and only specimens of two of his forms have been lost and consequently these two species, *T. moschata* from the Musk Duck (*Biziura lobata*), and *T. phalangistæ* from the common Opossum (*Trichosurus vulpecula*), need not be any longer taken into account in Parasitology, as they are not recognisable from his descriptions. Both *T. mastersii* and *T. krefftii* belong to the Anoplocephalidæ. Fuhrmann has suggested that Krefft's *T. nove-hollandiæ* may be a *Dioicocestus*, but this suggestion is based mainly on the fact that the host is a *Podiceps*.

From the foregoing remarks it will be seen that most of the species have been more or less examined. The most interesting forms are *T. coronata* (= *Gyrocoelia australiensis*), *T. rugosa* (= *Acoleus hedleyi*) and *T. tuberculata* (= *Diploposthe levis*). The first two belong to the Acoleidæ, a family characterised by the absence of a vagina and by the possession of a highly specialised musculature in the parenchyma, while the last possesses single genitalia, but doubled genital ducts and a characteristic arrangement of the body-musculature.

<sup>2</sup> Johnston—Proc. Linn. Soc. N. S. Wales, xxxiv., 1909, pp. 518-9.

<sup>3</sup> Johnston—Journ. Roy. Soc. N. S. Wales, xlv., 1910, p. 94.

<sup>4</sup> Johnston—Journ. Roy. Soc. N. S. Wales, xlv., 1910, p. 95.

## II.—DESCRIPTION OF THE SPECIES.

TÆNIA TUBERCULATA, *Kreffl.*

[From the White-eyed Duck or Widgeon (*Aythya australis*, Gould).]

(Plate i.)

I propose first to describe as well as the macerated material will allow, the anatomy of *Tænia tuberculata*, Krefft, and then to discuss its systematic relationships. The imperfect condition of the specimens must be taken into consideration, especially as this account is based entirely on Krefft's type material. The main facts relating to the worm as given by Krefft<sup>5</sup> are as follows:—Length seldom exceeding forty-two inches; average breadth one quarter inch, but may reach a half inch; head small; neck long; anterior end of the strobila very variable; no trace of the presence of suckers and rostellum; segments very narrow in anterior part of the chain; tubercles on the posterior segments; double genital papillæ in each segment; cirrus spiny and bell shaped; eggs circular and without hooks.

A glance at his figures will show that the material was in a poor state of preservation at that time, and its condition has not improved since. His account may accordingly be disregarded.

None of the scolices examined allow of the recognition of much detail. They are small and somewhat rounded and do not project at all laterally, but on the contrary, the scolex is the narrowest part of the strobila, being about 0·145 mm. in breadth in the region of the suckers. The latter are very weak structures when compared with the size of the parasite, being about 0·055 mm. in diameter. Their openings are directed antero-laterally.

A rather long, delicate eversible rostellum is present and is surrounded by a single circle of ten hooks. These are very small, being about 0·018 in length. The dorsal root is relatively long and rodlike, the ventral root short and rounded, and the claw small. The whole series is so closely clustered in the scolices examined that it is difficult to make out the exact form of each hook.

<sup>5</sup> Krefft—*Loc. cit.*, pp. 215-16.



Behind the scolex the strobila gradually widens until at 0.33 mm. from the anterior end, that is at the point where segmentation becomes recognisable, the breadth is about 0.055 mm. The segments are here very narrow. Then there is a sudden increase in breadth though the proglottids still remain very narrow. Throughout the greater part of the strobila the width is short, seven or eight mm., though occasionally it reaches ten mm., the mature segments being from 0.7 to 1.3 mm. in length (average about one mm.) Segments 3.8 mm. broad by 0.7 mm. long were seen containing ripe eggs.

The genital papilla is more or less prominent according as the cirrus is everted or not. It is located just anteriorly to the middle of the edge of each segment. The genital cloaca is somewhat elongate. The female opening is either immediately anterior to or beside the male opening, though at times it was seen to be below it.

The excretory system consists of the usual two pairs of trunks, an outer and an inner lying close beside it, the outer being very much the larger, having a lumen of from 0.01 to 0.02 mm. in transverse section. In cases where the diameter is less than this the margin is usually very much crinkled. Lying just internally to each outer tube is a very much smaller inner vessel with a lumen of only 0.004 mm. The parenchyma surrounding both and especially the inner vessel was deeply staining and contained abundance of nuclei. Both vessels lie at a considerable distance inwards from each lateral margin. They are situated in the medulla at about equal distances from the dorsal and ventral surfaces, but where the genital ducts cross over them, they become displaced ventrally. Transverse excretory vessels are absent.

The nervous system is composed of a number of longitudinal cords along each side as well as ring commissural nerves connecting the lateral cords of one side with those of the other. There are three nerves laterally, a median or main trunk and two accessory nerves, one slightly dorsally and one slightly ventrally. All three are connected by fibres. At certain levels and especially near the posterior end of each segment large paired nerves are given off dorsally and ventrally. These pass through the cortex to meet with similar structures from the other side to form ring commissures. The anterior commissural ring is much less evident. From the same point of origin as these ring nerves there are given off short but thick fibres laterally. The main longitudinal fibres lie ventrally to the genital ducts and the uterus. On the nerve ring in the neighbourhood of the

excretory vessels there may be seen in section other accessory longitudinal fibres. There is a ventral and dorsal pair on each side. There are thus ten longitudinal nerves, three pair of large laterals and two pair of smaller cords.

*Musculature, etc.*—In transverse sections the cuticle is seen to be rather thin. Below it lie the subcuticular structures consisting of very well developed circular muscles and within these the longitudinal fibres. The subcuticular cells are imperfectly preserved.

The separation between the cortex and medulla is not well marked owing to the poorly developed system of transverse muscle fibres. Lying in the peripheral part of the cortex there was abundance of calcareous corpuscles of an elliptical or rounded form and possessing a diameter of from 0.005 - 0.012 mm.

The longitudinal muscular system of the parenchyma is very strongly developed. There are three distinct systems arranged concentrically. The innermost (Pl. i, fig. 1, l. m. 3) is just outside the transverse muscles and is practically restricted to that part of the cortex which lies above and below the female complex. There are here about eight well-marked bundles on each surface, and in addition there are a few isolated bundles lying laterally from the excretory vessels. As these latter occur within the other two systems they probably belong to the same series as those just mentioned. Just externally to this series is the ordinary longitudinal system consisting, as is frequently the case, of an inner (Pl. i, fig. 1, l. m. 2) and an outer (Pl. i, fig. 1, l. m. 1) series of bundles. The inner bundles are much larger, as also are the individual fibres, than those belonging to the outer series. The fibres, especially those of the larger bundles, were separated from each other, this being perhaps due to imperfect preservation. These two rings are generally easily distinguishable from each other except laterally where they become more or less merged. Even in the lateral portion of the cortex these bundles are still highly developed. In ripe segments it was noticed that the uterus frequently forced its way dorsally between the longitudinal bundles so as to lie against the subcuticula and in such cases the uterine lobes might be seen almost surrounding individual bundles (Pl. i, fig. 2). At the posterior end of each segment there is seen in sections, a mass of well developed transverse muscle. Connecting the dorsal and ventral surfaces there are a great number of strong dorso-ventral fibres.

*Male Genitalia.*—The male glands appear very early and do not persist, but disappear soon after the segment has reached

female maturity. There are three testes, all of about the same size, situated near the posterior border of each segment, fairly close to each other. Two may be on the right side, and the other on the left or *vice versa*. One of the former pair is sometimes nearly median in position, in which case it lies just behind and above the vitelline gland. The laterally placed vesicles are seen to lie postero-laterally from the main mass of the ovary and postero-medially from the vesiculæ seminales. The testes approach a little nearer to the dorsal surface than do the ovarian lobes. In transverse section they are seen to extend into the middle portion of the medulla. They are rounded or even pyriform in shape and measure about 0.156 by 0.117 mm. Two vasa efferentia pass away from each testis, one connecting with each vesicula seminalis. These seem to come off from the same point and to diverge from one another very soon.

There are in each segment two very large and conspicuous vesiculæ seminales which vary in size and shape according to the amount of spermatozoa contained in them. The usual form is rounded though it may be elongate or pyriform. In a few instances was seen to be bent in such a way as to form an obtuse angle. The size is about 0.144 mm. in diameter. Each lies quite ventrally in the anterior portion of the proglottid, just laterally to the ovary and antero-laterally to the outer testes. The corresponding vas deferens passes off laterally from its outer extremity. It is a more or less twisted tube which usually becomes thrown into a few coils just before entering the powerful cirrus sac. That part of each vas deferens which lies between the vesicula and the longitudinal excretory canals is surrounded by a dense mass of deeply staining cells, doubtless glandular in nature, which were too imperfectly preserved to allow of any detailed study of them. These are much more abundant on the inner region but gradually become smaller and fewer laterally, none being detected on the coiled portion of the vas deferens near the cirrus sac. Sometimes the glands cover the outer (*i.e.* lateral) wall of the vesicula too. In transverse section of the segment it is seen that the vas deferens in the neighbourhood of the vesicula lies either medianly or ventrally, but that it gradually curves dorsally to pass over the nerve and the excretory vessels, the latter being displaced towards the ventral surface in this region.

On entering the cirrus sac the vas deferens soon widens to form an inner vesicula with rather thin walls when compared with the remainder of the tube which lies within the sac and which possesses strong circular muscles in its walls. This part of the

male duct is very considerably coiled whilst the cirrus is lying at rest. A characteristic feature of the large tubular cirrus is the powerful armature of relatively large and very closely set and spirally arranged hooks which are seen in section of the organ to form a dense covering, the points projecting backwards. The cirrus sac is a large powerful organ, fusiform in shape and from 0.3 to 0.38 mm. long by from 0.18 to 0.23 mm. broad, in segments of 3 mm. in breadth, lying towards each antero-lateral corner of the segment. From it there pass inwards very distinct retractor fibres which travel towards the midregion of the segment. One notices that the parenchyma surrounding the sac is areolate and is very definitely marked off from the rest of the body-parenchyma. Within this is the true cirrus sac consisting of a very powerful thick longitudinal muscle surrounding a loose tissue which in turn encloses in its centre, the male duct. The walls of the latter possess a definite layer of circular muscle fibres. In the loose tissue there may be seen relatively large-muscle fibres whose course is longitudinal to the cirrus into which they are inserted. They appear to act as retractors of the cirrus.

*Female Glands.*—The female complex consists of a compact mass of glands occupying the greater part of the middle of each segment, the breadth being about 0.7 mm. and the length 0.31 mm. in segments at 30 mm. distance from the anterior end. In transverse section the complex, especially the ovary, is seen to occupy most of the mid-region of the medulla extending longitudinally almost from the anterior to the posterior border of each segment and lying between the lateral testes and the vesiculae seminales in the transverse plane.

The ovary as a whole has an approximately vermiform shape, the vitelline and shell glands being located in the posteriorly directed hilum. Though there is an ovarian bridge present, yet it is very short and consequently one cannot readily recognise the existence of two wings. Each wing is made up of a great number of ovarian tubes arranged roughly in a radiating manner. The short thick ovarian bridge lies just in front of the vitellarium and shell gland. From it there passes off postero-ventrally a very short oviduct which joins the fertilizing duct very close to the shell gland complex.

The vitelline gland, as already mentioned, lies in a midline just behind and below the ovarian bridge. It is nearly 0.2 mm. in breadth and possesses an irregular shape, being deeply lobed. Its duct is short and passes downwards and forwards to enter the fertilising canal. The shell-gland complex is median and lies

just above and in front of the vitellarium being situated between the latter and the ovarian bridge. The complex as a whole is an elongate solid gland made up of a great number of granular deeply staining cells, whose inner end is narrowed and duct-like.

Each vagina is a wide tube leading from the corresponding female genital pore inwards and backwards to the middle of the segment where it meets its fellow from the other side. It then passes forward to enter into relationship with the various female glands. A more detailed account of its course may now be given. Each passes inwards close beside the wall of the cirrus sac along its dorsal surface. It then crosses over the lateral part of the vas deferens at about the point where the latter becomes thrown into a few loops or coils to lie postero-ventrally or ventrally to the male duct which it accompanies inwards as far as the inner end of the vesicula seminalis. In the region of the excretory canals the vagina lies between these and the more dorsally placed vas deferens, whilst in the neighbourhood of the vesicula, it lies on the ventral limit of the medulla. In this last locality it frequently becomes widened to form an elongate receptaculum seminis which extends still further inwards and backwards as will be mentioned below. Occasionally this portion of the vagina becomes swollen into a rounded reservoir of about the same shape and size as the vesicula seminalis which lies immediately anteriorly to it. In a longitudinal vertical section of a segment (Pl. i, fig. 2), the vagina and the vas deferens are seen in transverse sections as two adjacent tubes, the former possessing a wide lumen and thin walls, the latter a narrow lumen with thick walls containing longitudinal muscular fibres. The vagina now travels inwards, backwards and ventrally, skirting round the posterior border of the corresponding ovarian lobe, this part of the duct being fairly wide. The two vaginae unite medianly near the posterior margin of the segment to form a short wide common transverse tube from which the fertilising canal passes forwards. The oviduct and vitelline duct enter it from the neighbourhood of the shell-gland complex which is now penetrated. The duct then passes forwards to the transversely placed uterus. The vaginae persist in segments in which the uterus is well developed and in which the ovary has disappeared.

The uterus consists at first of a more or less transversely placed sac whose middle lies just posteriorly to the ovarian bridge. The long "wings" of the sac extend outwards and backwards between the ovarian tubes, and as they develop very rapidly they soon come to extend into the posterior corner of each

segment. The connecting (*i.e.* the median) portion is very narrow and remains so even in mature segments, so that in these latter the uterus consists of two large irregularly lobed structures which almost touch each other along the midline but which are actually connected only in the antero-dorsal part of the proglottid. As the uterus becomes filled with eggs the stalk-like portion of the wings comes to expand and lobes develop both in the dorso-ventral and horizontal planes, but more especially dorsally. The lateral growth takes place in such a way that the uterus lies dorsally to the excretory ducts and nerve, but partly folds round these to form a bay which is open towards the ventral surface. It also lies dorsally to the vesiculæ seminales and the inner portion of each vagina. The latter is seen in transverse and horizontal sections to skirt around the ventral edge of the uterus, and between it and the ventral layer of transverse muscle fibres. It penetrates between the dorsal longitudinal muscle bundles to the subcuticular cells, the muscles thus coming to be partly surrounded by the uterus (Pl. i, fig. 2). The tubercular appearance of many of the segments, a fact which led to Kreffit giving it the specific name of *tuberculata*, is partly due to this fact and partly to imperfect preservation. The uterine lobes or pouches in the transverse plane come near the surface and probably as a result of pressure brought about by the contraction of the powerful longitudinal and dorso-ventral fibres, a "tubercle" has been produced at the weakest point. In some of the sections it was noticed that the uterus had reached the surface. In entire stained preparations the pouches which lie just below the surface may be seen as a series of rounded structures projecting dorsally from the main mass of the sac.

The eggs possess two shells, the thin outermost covering being about 0.09 by 0.07 mm. Within this is a firm embryonic covering also of elliptical form, measuring 0.047 by 0.035 mm. A very delicate membrane surrounds it. The embryonal hooklets are curved and very small; Kreffit was not able to recognise them.

*Systematic.*—This parasite has been referred to by several authors and has been placed in no less than four different genera. Kreffit called it a *Tenia* as at his time this huge genus had not been divided up systematically to any extent. In 1891 Monticelli<sup>6</sup> regarded it as a synonym of *Tenia bifaria*, von Sieb. In the same year Blanchard<sup>7</sup> suggested that it might

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<sup>6</sup> Monticelli—Boll. Soc. Nat. Napoli, v., 1891, p. 153.

<sup>7</sup> Blanchard—Mém. Soc. Zool. France, iv. 1891, p. 443.

be an *Ophryocotyle*. In 1893 Diamare<sup>8</sup> erected a genus *Cotugnia* for tapeworms possessing double genitalia along with certain other characters and thought<sup>8</sup> that *T. bifaria* might also belong to this genus. Stiles<sup>9</sup> in 1896 followed Diamare and listed *T. tuberculata* as a synonym of *Cotugnia bifaria* but gave Monticelli's account and figures of the parasite. In 1900 Diamare<sup>10</sup> referred to the imperfect account given by Krefft. In 1906 Fuhrmann<sup>11</sup> dealt with the synonymy of *Diploposthe laevis*, Bloch, and included *Tenia bifaria*, von Sieb. under it. He stated that *T. tuberculata* was in all probability a *Diploposthe* and was perhaps synonymous with *D. laevis* but on account of the difference between the geographical range of the Australian host species, and the Anseriform birds which may act as the host of *D. laevis* in the Northern Hemisphere, he thought that the two Cestodes might be distinct. Accordingly he listed Krefft's species as *Diploposthe? tuberculata* in 1908.<sup>12</sup> I have recently<sup>13</sup> given a summary of the above facts, mentioning that the species was a true *Diploposthe*.

My detailed examination of Krefft's type material places beyond all doubt that his *T. tuberculata* is a synonym of *Diploposthe laevis*, Bloch. One has only to compare the above description and figures with those given by Jacobi<sup>14</sup> in 1897, by Cohn<sup>15</sup> in 1901, and by Kowalewski<sup>16</sup> in 1903, in order to recognise the synonymy. Fuhrmann<sup>17</sup>, in a very important paper on the genus *Diploposthe* stated that he had examined the original material of *Tenia bifaria*, von Sieb., *Diploposthe lata*, Fuhrm.<sup>18</sup>, and *D. suigeneris*, Kowalewski<sup>19</sup> and found them all to be synonymous with *D. laevis* Bloch. He also discussed several points concerning the anatomy of this species, in which Cohn,

<sup>8</sup> Diamare—Boll. Soc. Nat. Napoli, vii., 1893, p. 12.

<sup>9</sup> Stiles—Bull. Dept. Agr. U.S.A., Bur. Animal Industry, 12, 1896, pp. 30-1

<sup>10</sup> Diamare—Centr. Bakt., xxviii., 1900, p. 849.

<sup>11</sup> Fuhrmann—Centr. Bakt. Orig., xl., 1906, pp. 217-224.

<sup>12</sup> Fuhrmann—Zool. Jahrb., Suppl. Bd. x., Heft, 1, 1908, p. 85.

<sup>13</sup> Johnston—Journ. Roy. Soc. N. S. Wales, xlv., 1910, pp. 99-100.

<sup>14</sup> Jacobi—Zool. Jahrb. Abth. Anat., x. 1897, pp. 287-306.

<sup>15</sup> Cohn—Nova. Acta. Leop. Carol. Akad., lxxix., 1901, pp. 421-429.

<sup>16</sup> Kowalewski—Bull. Acad. Sci. Cracovie, Classe Sci. math. nat., 1903 pp. 518-9.

<sup>17</sup> Fuhrmann—Centr. Bakt. I., xl., 1906, pp. 217-224.

<sup>18</sup> Fuhrmann—Zool. Anz., xxiii., 1900, pp. 50-1.

<sup>19</sup> Kowalewski—Loc. cit., pp. 518-9.

Jacobi and Kowalewski differed from each other. *T. trichosoma*, Linstow<sup>20</sup>, was mentioned as being very probably also a synonym. It seems to me that Fuhrmann is correct. Linstow's specimen was very small and immature. The rostellar hooks figured by him are very like those figured by Krabbe<sup>21</sup>, and those seen by me in Kreff's specimens. Other accounts dealing with this Cestode are those given in 1850 by Diesing<sup>22</sup>, in 1877 by Linstow<sup>23</sup> (dealing with the armature of the parasite), in 1882 by Krabbe<sup>24</sup>, and in 1889<sup>25</sup> and 1891<sup>26</sup> by Monticelli. The last mentioned author has misinterpreted the various male and female glands, describing a double set of reproductive organs in each segment whereas the genitalia are single though the ducts are double. The main points of difference between our specimens and the account given by European workers, are unimportant. In the main I have found the relationships of the genitalia the same as those mentioned by Fuhrmann and Kowalewski especially by the former. Of the work of the latter only a relatively brief English résumé is available and one has to rely on the figures (which by the way are very good) for a great deal of detail.

The vaginae are much closer to the vasa deferentia in our specimens than is shown in Kowalewski's figures. The inner nerve ring mentioned by him was not recognised and the strongly developed anterior ring commissure mentioned by this author and by Cohn was scarcely recognisable though the posterior ring commissure was readily seen. The anastomoses between the vasa efferentia mentioned by him were not detected. The establishment of the identity of *T. tuberculata* with *D. laris*, very considerably widens the known range of this parasite which occurs in at least thirteen different genera belonging to the Anatidae (Duck family)<sup>27</sup> in the Northern Hemisphere. Kreff's specimens were taken from *Aythya australis*, Gould, but I have recognised the same species amongst Kreff's Entozoa collected

<sup>20</sup> Linstow—Arch. Naturg., xlviii., 1882, p. 22.

<sup>21</sup> Krabbe—Bidrag til Kundskab om Fuglenes Baendelorme in Dansk Vidensk Selsk. Skr. Naturvid, (5) viii., pp. 302-3. figs. 165, 166.

<sup>22</sup> Diesing—Systema helminthum, 1850, p. 541.

<sup>23</sup> Linstow—Arch. Naturg., xliii., 1877, pp. 1-18.

<sup>24</sup> Krabbe—Dansk Vidensk. Selsk. Skr. Naturvid. Math. (6), i., 1882, pp. 349-366 (this work was not available to me).

<sup>25</sup> Monticelli—Proc. Zool. Soc., 1889, p. 325.

<sup>26</sup> Monticelli—Boll. Soc. Nat. Napoli, v., 1891, pp. 151-3.

<sup>27</sup> For list see Fuhrmann, 1906, *Loc. cit.*, p. 217, also Fuhrmann, 1908, *Loc. cit.* under the various hosts mentioned.



from the Black Duck (*Anas superciliosa*, Gmel.), and the Teal (*Nettion castaneum*, Eyton), which are therefore newly recorded hosts for *Diplosthe larvis*, Bloch.

TENIA FORSTERI, Krefft.

The description of *Tœnia forsteri*, a parasite taken from the stomach of a Dolphin (*Delphinus forsteri*, Gray ?), in Port Jackson, as given by Krefft<sup>28</sup> is very scanty. Consequently Cobbold<sup>29</sup> suggested that this Cestode might belong to the species named by Diesing<sup>30</sup> in 1850 as *Tetrabothevirus triangulare* from *Delphinorhynchus rostratus*, Cuv. In 1892 Monticelli<sup>31</sup> described a tapeworm from *Delphinus delphis*, Linn., from the Bay of Naples, which he referred to Krefft's species as it agreed with the latter in the few points mentioned by Krefft. He gave a short account and figures of the anatomy making the species the type of a new genus, *Prostheocotyle*. In 1899 Fuhrmann<sup>32</sup> discussed this genus giving a résumé of the known species, including *P. forsteri* and *P. triangulare*, the descriptions of these being based on the original material of Monticelli and Diesing respectively. In 1904 he gave a much fuller account<sup>33</sup> of these two parasites. Lühe in 1899 showed that the Genus *Prostheocotyle* is synonymous with *Tetrabothevirus*, Rud.

From the above, it will be seen that some pronouncement in regard to *Tetrabothevirus forsteri* may be of use. Unfortunately the type material has become dried up and is now useless for the purpose of systematic study. Consequently I am able to give only a few details, which will be supplemented by further information derived from the descriptions of Monticelli and Fuhrmann.

The scolices have not been much affected by the drying, but the attempt to follow out the anatomy of the segments was quite unsuccessful. The scolex is about 0.43 mm. in breadth, (0.28 mm. in Fuhrmann), and bears four very prominent muscular suckers, with a deep cup-like cavity and a rounded or oval opening 0.157 mm. in breadth by 0.19 mm. in length. Each sucker is nearly

<sup>28</sup> Krefft—*Loc. cit.* p. 218.

<sup>29</sup> Cobbold—*Parasites*—A Treatise on the Entozoa, 1879, p. 422.

<sup>30</sup> Diesing—*Systema helminthum*, i., 1850, p. 601.

<sup>31</sup> Monticelli—*Boll. Mus. Zool. Anat. Comp. R. Univ. Torino*, vii., 1892, No. 27, pp. 6-8.

<sup>32</sup> Fuhrmann—*Centr. Bakt. Orig.* i., xxv., 1899, pp. 869-870.

<sup>33</sup> Fuhrmann—*Centr. Bakt. Orig.* i., xxxv., 1904, pp. 744-752.

spherical and between each pair there is a deep narrow groove. Situated on the outer and anterior edge of each there is a small auricle, a muscular appendage characteristic of the genus *Tetrabothrius*.

Immediately behind the scolex there is a narrower unsegmented neck region, which is soon followed by the segmented portion of the strobila. The specimens do not allow of any further detail being given except that the segments gradually increase in size until the last few proglottids are reached, these being rather longer and narrower than those further forward. Kreffl gave the length of the worm as being two and a half inches (= about 52 mm.). He also stated that the segments were not provided with "lemnisci," this implying that he did not see the cirrus. The characters of the scolex resemble the figures given by Monticelli<sup>34</sup> so closely that there is no doubt as to the identity of the two parasites. The breadth is very much greater than that given by Fuhrmann (0.28 mm.). The length according to the latter may be from 25 to 65 mm.

The following summary account of the anatomy is based mainly on that given by this author. The longitudinal musculature consists of an inner series of bundles of fibres, each bundle with from twelve to twenty fibres and an outer series in which there are fewer (three to six) fibres in the individual bundles. The transverse and dorso-ventral muscles are well developed. There are no commissural vessels in the scolex connecting the excretory canals of the one side with those of the other.

The genital atrium is narrow and deep, the cirrus sac opening into it dorsally and the vagina ventrally. The male duct does not open directly into the cloaca but first into a male canal which connects with the latter. According to Monticelli's figure the pores (which are situated on the right side) seem to be placed at about the middle of the margin of the segments.

The male organs consist of about twenty-two testes (instead of from five to seven as mentioned and figured by Monticelli) arranged around the female organs. The vas deferens after being thrown into coils, passes out laterally to terminate in a long cirrus lying in the muscular rounded cirrus sac which has a diameter of 0.072 mm. This in turn leads into a short male canal terminating in the genital cloaca dorsally to the vagina.

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<sup>34</sup> Monticelli—*Loc. cit.*, figs. 4, 5, 6.

The female organs lie ventrally. The large slightly lobed ovary is situated in the middle of the posterior half of the segment behind the testes and the vitellarium. The vagina passes out dorsally and, as already mentioned, opens ventrally to the male aperture. A receptaculum seminis is absent. The vitelline gland is a compact organ lying just in front of the middle of the ovary, this position of the yolk gland being a characteristic of the genus. The uterus is at first a dorsally placed transverse tube which eventually becomes sac-like and occupies almost the whole of the medulla.

In regard to Cobbold's suggestion of identity between *T. forsteri* and *T. triangularis*, a comparison of the description of each as given by Fuhrmann<sup>35</sup> is sufficient to show that the two are distinct. Dr. G. Sweet<sup>36</sup> has misquoted the latter author as having examined specimens of *T. triangularis* from dolphins captured in Sydney Harbour.

#### TÆNIA FLAVESCENS, Krefft.

(Plate ii.)

This parasite was described very meagrely by Krefft<sup>37</sup>, the hosts mentioned being the Black-duck (*Anas superciliosa*, Gmel.) and the Blue-wing Shoveller (*Spatula rhynchotis*, Lath.). I am now able to add the following additional hosts, the Teal (*Nettion castaneum*, Eyton), and the White-eyed duck (*Aythya australis*, Gould), from New South Wales.

The original account of this Cestode is insufficient, and, in many details, incorrect. It may, therefore, be disregarded. The following description is based upon an examination of the type material from *Anas superciliosa*, from which it will be seen that *T. flavescens* is a typical member of the genus *Diorchis*.

*Diorchis flavescens* is a rather narrow worm of about one millimetre in maximum breadth. Most of the specimens were from three to five centimetres long, though some were much longer, one exceeding 8.4 cms. The scolex is small, being 0.195 mm. in width. The suckers are fairly well developed, the diameter reaching nearly 0.1 mm. (Pl. ii., fig. 1). The cuticle lining them is provided with abundance of minute spines

<sup>35</sup> Fuhrmann—Centr. Bakt. Orig., i., xxxv., 1904, p. 748.

<sup>36</sup> Sweet—Proc. Roy. Soc. Vict., xxi. (n.s.), 1909, p. 479.

<sup>37</sup> Krefft—Loc. cit., p. 219.

resembling those present in certain species of *Ichthyotenia* (*Proteocephalus*)<sup>38</sup> and in some species of *Diorchis*<sup>39</sup> (*D. acuminata*, Clerc, and *D. americana*, Ransom). The rostellum when fully everted is a prominent organ of 0.103 mm. in length, the width of the somewhat swollen extremity being 0.08 mm. Situated on this latter portion are the ten hooks (about 0.068 mm. long) arranged in a single circle. As in other members of the genus the dorsal root of the hook is relatively long (0.042 mm.), the ventral root being short and rounded. The claw is 0.025 mm. in length. The form of the hook is seen in Pl. ii., fig. 3. The rostellum may be so deeply retracted that the hooks lie on a level with the lower part of the suckers (Pl. ii., fig. 2). Connected with this rostellum is a strongly muscular rostellar sac whose inner limit lies behind the level of the suckers.

The scolex is succeeded by a short unsegmented neck of variable length but whose breadth (0.14 mm.) is only slightly less than that of the scolex. The first segments are very short but they gradually increase both in length and width. In proglottids in which male sexual maturity has been reached, the sizes are 0.11 by 0.5 mm. With advancing female maturity the segments become broader (0.90 mm.) and relatively shorter (0.096 mm.), whilst those which contain ripe eggs may measure 0.174 mm. in length by one mm. in breadth.

*Body-wall, etc.*—The specimens are too poorly preserved to allow of an examination of the subcuticular structures. Calcareous corpuscles are very abundant. They are elliptical in form, varying somewhat in size, their average being about 0.0078 by 0.0045 mm. They are restricted to the outer layers of the cortex. The lateral nerve is situated at about midway between the excretory vessels and the margin of the segment, the genital ducts passing over it. The parenchyma musculature is well-developed, the longitudinal bundles being arranged in two series, an outer ring consisting of numerous small bundles and an inner series of eight large bundles (Pl. ii., fig. 8), each consisting of a number of very powerful fibres. The arrangement of the longitudinal musculature seems to be typical in this genus. Transverse fibres appear to be very poorly developed.

The excretory system consists of a larger ventral and a smaller dorsal pair, the latter lying above and sometimes slightly laterally from the former. Both lie ventrally to the genital ducts on the

<sup>38</sup> Johnston—Journ. Roy. Soc. N. S. Wales, xliii., 1909, p. 103, etc.

<sup>39</sup> Ransom—Bull. U. S. Nat. Museum, 69, 1903, p. 42, etc.

pore-bearing side. They are situated at a rather lower dorso-ventral level on this side than on the opposite side, a feature similar to that found in other species of *Diorchis*. Transverse vessels were not seen. There appears to be a valve-like projection into the lumen of each ventral vessel near the posterior edge of each segment (Pl. ii., fig. 4).

*Genitalia*.—The genital apertures are unilateral, being located on the right side. They lie marginally in front of the middle of the edge, being usually at the junction of the anterior third with the posterior two-thirds. A distinct papilla is absent. There may be a very short narrow common genital cloaca into which the male and female apertures open, the female pore being immediately below that of the male system. As already remarked the genital canals pass above the longitudinal nerve and both excretory vessels.

The male organs consist of two large testes placed more or less symmetrically in the posterior portion of the segment. They appear early but develop slowly for a considerable distance back from the anterior end, when they begin to increase very suddenly in size at the time of male maturity. They then occupy a large part of the medulla lying between the excretory vessels, the diameter of each being almost 0.1 mm. Sometimes they are quite close together, especially in all the younger segments (Pl. ii., fig. 5), but with increasing size of the glands and the seminal vesicle their symmetrical arrangement becomes disturbed (Pl. ii., fig. 6). A large mass of spermatozoa comes to be stored in the vesicula seminalis after which the male glands commence to dwindle rapidly, the female organs meanwhile coming to maturity. The vesicula in ripe segments is a large rounded structure lying near the dorsal surface in the anterior portion of the segment. Its position is seen to vary, being usually above and in front of the testes which is remote from the genital pore in young segments but in proglottids which have reached male maturity it usually lies rather nearer the midline separating the two glands. A much narrower tube connects the vesicula with the cirrus sac. The cirrus sac is a long, more or less tubular, slightly twisted structure of from 0.270 to 0.35 mm. in length, with a maximum breadth of about 0.050 mm., lying dorsally in the anterior portion of the segment. The broadest part is towards its inner end, the other end being much narrower (0.03 mm.). The organ stretches inwards almost to the midline, and occasionally much further. Its musculature is somewhat thicker around the middle. There is a small seminal vesicle within the sac.

The cirrus is very long and slender and when at rest lies irregularly and loosely coiled. It can be thrust out to a very considerable degree, the everted portions actually reaching 0.50 mm. in one case observed, the width of the segment to which it belonged being 0.92 mm. In the case of other cirri the length was much less, but eversion was not complete. Each cirrus is thus a very long delicate tube, its maximum breadth being 0.0054 mm. It does not possess a basal enlargement like that found in *D. inflata* and *D. acuminata*. Unlike these species and *D. americana*, *D. flavescens* shows the presence of a minute armature on the cirrus.

The female glands consist of a compact trilobed ovary lying ventrally in the midregion of the segment and of a vitelline gland, situated dorso-posteriorly to it. The mature ovary extends from the excretory vessels of the one side to those of the other, being about 0.39 mm. in width. Of the three lobes, one lies medianly in front of and between the other two which are lateral. The median is smaller than either of the others. The yolk-gland is either rounded or kidney-shaped and lies at the posterior edge of the segment, its position being more dorsal than that of the ovary. The vagina travels inwards immediately behind and somewhat ventrally to the cirrus sac in a number of wide rather closely arranged coils. Its general course is inwards and slightly backwards until it opens into a spacious thin-walled receptaculum seminis which extends inwards in mature segments to about the middle of the ovary, as an elongate wide tube. It lies above the excretory vessels and the ovary, and ventrally to the cirrus sac, vesicula seminalis, and testes. Its position is at a slightly higher dorsal level than that of the vagina. The uterus in mature proglottids is a sac-like organ lying ventrally but occupying most of the medulla between the excretory vessels of each side, except in the anterior region of each segment where the male and female ducts and reservoirs are situated. It also extends laterally above the excretory vessels on the pore-bearing side but below them on the opposite side of the segment. Thus the excretory vessels come to lie in a bay or groove formed by the uterus which partly surrounds them. The mature eggs are from 0.090 to 0.107 mm. in length and from 0.027 to 0.031 mm. in breadth. Each end is somewhat bluntly pointed, while each extremity of the inner shell is produced into a very prominent process. The inner shell measures from 0.054 to 0.068 mm. in length by about 0.016 mm. in breadth.

*Systematic.*—There appear to be only four other species of *Diorchis* known<sup>39\*</sup> viz. *D. inflata*, Rud., *D. parviceps*, Linst., *D. acuminata*, Clerc, and *D. americana*, Ransom. The first, third and fourth occur in Galliform birds, the second, and perhaps also the third, in Anseriform birds. *D. flavescens* is also a parasite of the latter group of birds. It appears to come very near *D. americana*<sup>40</sup>. *D. parviceps*, Linst.<sup>41</sup> from *Mergus* (= *Merganser*) *serrator*, differs considerably in regard to the rostellar armature and the male ducts. *D. inflata*<sup>42</sup> and *D. acuminata*<sup>43</sup> are very closely allied and perhaps identical, species differing from Krefft's form mainly in regard to the characters of the cirrus and its sac. It should be mentioned that Clerc found *D. acuminata* in a Rail, *Fulica atra* (in which *D. inflata* is also found) as well as in three Anseriform birds, *Anas* (= *Nettion*) *crecca*, *A.* (= *Chauliastmus*) *strepera* and *Mareca penelope*. Fuhrmann<sup>44</sup> thought that the identification of the *Diorchis* from the Rail with that from the various ducks was probably a mistake, consequently he queried the occurrence of *D. acuminata* in *Fulica atra*. Ransom<sup>45</sup> however showed that this Cestode occurs in another Rail (*Fulica americana*) in company with *D. americana*. It seems to me still possible that Clerc had before him two species of *Diorchis*, namely, *D. acuminata* (or *D. inflata*) from *Fulica atra* and another species, very similar in anatomy and which might well have been *D. flavescens*, from the Anseriform birds.

<sup>39\*</sup> *Diorchis oclusa*, Linst. (Linstow—Spolia Zeylanica, iii., 1905, p. 179) from a Flamingo is not a *Diorchis* but is a *Hymenolepis*, synonymous with *H. lipuloides*, Gervais, according to Fuhrmann (Zool. Jahrb., Suppl. Bd. x., Heft 1., 1908, p. 76, footnote).

<sup>40</sup> Ransom—Bull. U.S. Nat. Museum, 69, 1909, pp. 48-51.

<sup>41</sup> Linstow—Arch. Naturg., 1872, xxxviii., p. 57; *Id.*, Arch. Naturg., 1904, I., pp. 306-7.

<sup>42</sup> Krabbe—Bidrag, etc., 1869, pp. 285-6., and figs. 109-111; Jacobi—Zool. Jahrb. Syst., xii., 1898, pp. 95-104; Cohn—Centr. Bakt., I., xxv., 1899, pp. 224-5; Riegenbach—Centr. Bakt., I., xxv., 1899, pp. 885-6 (Referate); Cohn—Nova Acta, lxxix., 1901, p. 330; Clerc—Rev. Suisse Zool., xi., 1903, p. 284 (not available to me); Linstow—Zool. Jahrb. Syst., xxiv., 1906, pp. 15-17; Fuhrmann—Zool. Jahrb., Suppl. Bd., x., Heft 1, 1908, p. 81; *Id.*, Centr. Bakt., etc., I., Orig., xlii., 1906, p. 739 (footnote); Ransom—*Loc. cit.*, p. 46.

<sup>43</sup> Clerc—Zool. Anz., xxv., 1902, p. 659; *Id.*, Rev. Suisse Zool., xi., 1903, pp. 281-284. (not available): Ransom—*Loc. cit.*, pp. 42-48 (an abstract of Clerc's latter paper is given here).

<sup>44</sup> Fuhrmann—*Loc. cit.*, p. 7, p. 81.

<sup>45</sup> Ransom—*Loc. cit.*, p. 48.

TENIA BAIRDII, *Kreffl.*

(Plate iii.)

In giving a description of this Cestode from the Black Duck (*Anas superciliosa*), Krefft<sup>46</sup> mentioned that he had also found it in some other ducks but did not specify their names. I have found a few fragments of this species amongst some of his material collected from the intestine of the Teal (*Nettion castaneum*) which is therefore a newly recorded host for the Entozoon under review. The type specimen consists of a dried fragment which is of very little value. However, I have been able to recognise a few fragments from collections of material taken by Krefft from both of the abovenamed hosts and can therefore give some information regarding the parasite. No scolices were found and as the specimens are badly preserved, the descriptions cannot be otherwise than incomplete.

Krefft's account is very poor, and moreover includes at least three species, all of them belonging to the genus *Hymenolepis*. He himself admits (p. 224) that he found two varieties of ova. The small forms mentioned by him on page 226 and figured on his Pl. iii., figs. 25, 26, 27, belong to a different species. In a footnote on page 227 he mentioned that he regarded a tapeworm (Krefft's Pl. iii., figs. 24, 24a) found by him in a "Stilted Plover" (probably referring to *Himantopus leucoccephalus*) as belonging to this species on account of the similarity of the ova. This latter form is no doubt also a *Hymenolepis* and may be identical with *Hymenolepis*, sp. already recorded by me<sup>47</sup> from this host. It is certainly not identical with *H. bairdii*. If Krefft's figures of the scolex (Pl. iii., figs. 1, 5, 8) refer to the same form as that examined by me, then the scolex appears to be well marked, possessing large suckers and a well-developed retractile rostellum bearing a few relatively large hooks. He mentioned that the strobila rarely exceeded seven inches in length and that the segments varied in shape. The variation in form is represented in Pl. iii., figs. 1, 2, 3, the first being taken from the anterior portion of one of Krefft's fragments, the second from part of the strobila a little further back and the third from segments which have reached male sexual maturity. In some better preserved

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<sup>46</sup> Krefft—*Loc. cit.*, pp. 224-7.

<sup>47</sup> Johnston—*Journ. Roy. Soc. N. S. Wales*, xlv., 1910, p. 95.



material the proglottids are much less variable, and resemble those shown in Pl. iii., fig. 3, except that the margins are more definitely serrate.

No subcuticular structures are recognisable on account of the maceration which the specimens have undergone. Calcareous corpuscles are very abundant in the cortex. They are rounded or elliptical, varying in size from 0.004 by 0.0035 to 0.0118 mm. by 0.0095. The outer longitudinal muscle bundles are well developed and are distributed throughout the outer portion of the cortex. The inner series consists of a well marked ring of relatively large and numerous bundles arranged in a double row, those in the inner row being larger and less numerous than those in the outer row. Transverse fibres were recognised only in a few sections.

The excretory system consists of a wide ventral and a narrow dorsal vessel, the latter being situated just above the former. The genital ducts pass above both of them. Transverse vessels were not detected. The longitudinal nerve is located dorso-laterally from the ventral vessel.

*Genitalia*.—The genital pore is placed marginally and unilaterally at the junction of the anterior third with the posterior two-thirds, there being no distinct papilla. The cloaca is moderately long, its outer part being narrow while its inner end is relatively wide. Into the latter there open the male and female ducts, the latter being behind and below the former.

Lying on the antero-dorsal part of the inner end of the cloaca and opening into it there is a peculiar sac similar to that described as being present in *Hymenolepis sinuosa*, Zeder. Its walls are lined by cuticle and within this layer there are very strongly developed muscles, most of which radiate from the sac, while a few ring fibres are also present. The cuticle appears to be minutely spiny but this appearance is due to ends of the radial muscles which give a "stippled" effect like that produced by minute bristles. No spines were seen in sections of the sac. The wide opening of this organ lies beside and above the male opening, the sac itself which lies antero-dorsally to the outer end of the cirrus sac, apparently acting in some way as an accessory male organ. Two of the testes are situated on that side of the ovary which is remote from the genital pore, the other vesicle being on the opposite side. As will be seen from the figure (Pl. iii., fig. 3) two of the glands lie behind the female complex. They are approximately equal in size, measuring about 0.113 by 0.08 mm. They disappear soon after reaching maturity, the

vesicula seminalis having become by this time greatly swollen on account of the contained male products. The latter is an elongate bent organ lying in front of the ovary and passing laterally round and above the inner portion of the cirrus sac and coming to lie dorsally to and sometimes in front of it. It eventually opens into the sac, its inner portion being slightly coiled. An inner vesicula was not seen. The cirrus is relatively very long (0.43 to 0.52 mm.) and thin (0.008 mm. broad), its muscular walls being covered with a dense armature of very fine bristles like those of the accessory sac. The cirrus sac is an elongate organ about 0.56 mm. in length and 0.087 mm. in maximum breadth tapering somewhat laterally, lying in the anterior portion of the segment. Its walls contain a well-developed musculature. The sac passes inwards dorsally above the excretory vessels and then bends ventrally so that its inner end lies below the vesicula seminalis.

The female glands lie between the testes but the specimens are so poorly preserved that very little detail can be made out. The ovary appears to be a small bilobed organ lying just behind the middle of the proglottis and just anteriorly to the two posterior testes. The vitellarium, a rounded compact gland, lies postero-ventrally to the short ovarian bridge, the shell gland being situated antero-dorsally to the yolk gland and postero-dorsally to the ovary. The uterus is seen to be a transverse tube which later becomes more or less sac-like. Ripe eggs were not present.

The vagina passes inwards from the female pore for a short distance as a wide thin-walled duct. It then becomes narrowed to travel as a thin and very definite tube in a more or less sinuous course dorsally forwards and inwards above the cirrus sac. Its walls are covered with very minute bristles. Just in front of the sac, it enters the relatively large thin-walled spindle-shaped receptaculum seminis. The latter passes backwards below the cirrus sac and becomes narrowed to form the short fertilising duct in front of the ovary.

In spite of the incompleteness of the above description, it will be seen that there can be no doubt as to the identity of Kreffl's species with *Hymenolepis sinuosa*, Zeder, or more correctly *H. collaris*, Batsch<sup>48</sup>, as described by various authors, such as

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<sup>48</sup> Fuhrmann—Zool. Jahrb., Suppl. Bd. x., Heft 1, 1908, p. 77.

Dujardin<sup>49</sup>, Diesing<sup>50</sup>, Krabbe<sup>51</sup>, Stiles<sup>52</sup>, Kowalewski<sup>53</sup>, and Cohn<sup>54</sup>, who have dealt with the parasite. It is therefore of considerable interest that the distribution of this Cestode which is known to infest at least eight species of Anseriform birds<sup>55</sup> ranging mainly over the Northern Hemisphere should now be widely increased by the addition of two other hosts, viz. *Anas superciliosa*, Gmel., and *Nettion castaneum*, Eyton, from the Australian region. We may therefore expect to find the larval or cercocystis stage in some of our local freshwater Crustacea. Certain species of *Gammarus* and *Cyclops* are known as its intermediate hosts<sup>56</sup> in Europe.

TENIA RUGOSA, *Kreffl.*

[From the White-headed Stilt, (*Himantopus leucocephalus*, Gould).]

(Plate iv.)

Kreffl's account of this parasite may be disregarded, and his type specimens, or rather fragments, are now dried and therefore of no use for anatomical purposes. However, I have been able to compare some fresh material collected from this host in South Australia by Dr. J. B. Cleland, with Kreffl's original specimens and with his description, with the result that I believe the two forms belong to the same species. It was the armature of the cirrus sac which assisted me in establishing the identity. A cursory examination of the South Australian worm was sufficient to allow me to place the parasite in the family Acoleidae, and to remark that it probably belonged to the genus

<sup>49</sup> Dujardin—Hist. Nat. Helm., 1845, p. 573.

<sup>50</sup> Diesing—Syst. Helm., i., 1870, p. 542.

<sup>51</sup> Krabbe—Bidrag., etc., 1869, pp. 298-9.

<sup>52</sup> Stiles—Bull. Bur. Animal Industry, Dept. Agr. U.S.A., 12, 1896, pp. 40-41.

<sup>53</sup> Kowalewski—Bull. Acad. Sci. Cracovie, Cl. Sci. Math. Nat., xxix., 1895, pp. 349-367.

<sup>54</sup> Cohn—Nova Acta, lxxix., 1901, pp. 323-5.

<sup>55</sup> For list see Fuhrmann—*Loc. cit.*, pp. 149-155; Ransom—Bull. Bur. Animal Industry, Dept. Agr. U.S.A., 66, 1903, p. 92; Stiles—*Loc. cit.*, p. 40.

<sup>56</sup> Stiles—*Loc. cit.*, pp. 40-1; Hamann—Jen. Zeitschr. Naturwiss., xxiv., 1889, pp. 1-7; Mrazek, quoted Stiles, *Loc. cit.*, p. 41.

*Acoleus*<sup>57</sup>. A further study shows it to be a member of this genus. As already noted, the specific name *ragosa* is preoccupied in the genus *Tænia*, having been used by Pallas in 1760, for a tapeworm from certain fish, and by Diesing in 1850 for a Cestode from a monkey. A new specific name *hedleyi* was therefore suggested for this Entozoon which will now be described under the name of *Acoleus hedleyi*.

This parasite is a large multi-segmented worm of about 230 mm. in length, with a maximum breadth of nearly 4 mm. At the anterior end is the scolex which is scarcely any wider than the succeeding segments, being 0.7 mm. in breadth. The length excluding the rostellum is about 0.34 mm. Owing to the fact that the rostellum is completely withdrawn in the single scolex in my possession, very little can be said of it or of its armature. The suckers have a diameter of 0.26 mm., the apertures being directed almost anteriorly. There is no unsegmented neck region, segmentation being recognisable immediately behind the head. The first proglottis is about 0.6 mm. wide by 0.065 mm. long, the ratio of breadth to length being approximately 9 : 1. At 1.7 mm. from the anterior end the strobila becomes much broader, the posterior margins of the segments now projecting prominently whereas in the case of the first few segments the projection is slight. At 10 mm. the breadth is nearly 3 mm. the length being 0.43, the ratio being 7 : 1. At 70 mm. behind the scolex the breadth is 3.6 mm. the length having increased to 1.7 mm., the ratio thus being about 2 : 1. At 100 mm., the dimensions are 3.8 mm. and 2.4 respectively, *i.e.* nearly 3 : 2, while at 150 mm. they are 4.2 and 2.5 respectively. The final segments are very thick (2.2 mm.) more or less quadrate structures 3.5 mm. broad by 3.0 mm. long. The increase in thickness takes place as maturity progresses.

*Body-wall, Musculature, etc.*—Below the thin cuticle is a well defined subcuticular layer with circular and longitudinal muscle fibres. The musculature of the parenchyma is very similar to that of *Acoleus vaginatus*, and *Gyrocotyle perversa*, as described by Fuhrmann<sup>58</sup>. The most external of the system is a mass of transverse muscle fibres within which are the powerful bundles of the outer series of longitudinal muscle. Within the latter is a very strongly developed layer of transverse fibres which in their turn surround the inner longitudinal series consisting of very prominent bundles. Within this there is a third ring of

<sup>57</sup> Johnston—Journ. Roy. Soc. N. S. Wales, xlv., 1910, p. 94.

<sup>58</sup> Fuhrmann—Centr. Bakt., Abt. I., xxvi., 1899, pp. 618, 621.

transverse fibres, these forming the boundary between the cortex and the medulla (Pl. iv., fig. 5). The inmost transverse musculature is the weakest of the three. The longitudinal bundles are considerably elongated in the dorso-ventral direction. The inner bundles each possess from thirty to forty fibres, whilst the outer have about twenty. The differentiation into inner and outer series is still recognisable laterally though the bundles become much weaker. Dorso-ventral fibres are relatively powerful though not numerous. Scattered throughout the cortex are rounded calcareous corpuscles having a diameter of from 0.007 to 0.015 mm.

*Nervous System.*—The nervous system is seen to consist in each segment of three pairs of relatively large, longitudinal strands situated in the lateral region. The main nerve lies dorso-laterally to the ventral excretory vessel, the dorsal and ventral accessory nerves lying dorso-laterally, and ventro-laterally respectively from the main nerve. The strands all lie well within the inmost transverse muscular layer. The dorsal accessory and the main nerve pass dorsally over the cirrus sac, the other nerve lying ventrally to it.

*Excretory System.*—This system consists of the usual two pair of vessels, the ventral pair being much larger than the dorsal. The dorsal trunks possess a lumen of 0.026 mm., and lie medianwards from and just dorsally to the ventral vessel. The surrounding parenchyma is very rich in nuclei. The ventral pair have a diameter of about 0.085 mm. Both vessels are displaced dorsally in the region of the genital duct, the latter passing ventrally to them. A noteworthy point is the presence in the posterior region of each segment of two transverse excretory vessels, a narrow tube connecting the dorsal vessels and a wide tube lying immediately below it and connecting the two ventral vessels. This feature has already been mentioned by Fuhrmann as occurring in *Acolens vaginatus*. The ventral trunks were readily traceable into the scolex (see Pl. iv., fig. 1). Each became somewhat sinuous and eventually reached the level of the anterior margin of the suckers as a wide vessel which bent round to pass backwards for a short distance, and then transversely behind the retracted rostellum to meet its fellow from the opposite side. Probably the course is different when the rostellum is everted. A narrow commissure connecting the limbs of the loop was detected near the level of the mid-region of the suckers. The dorsal vessels were not traceable into the scolex.

*Genitalia.*—The genital pores alternate regularly<sup>59</sup>. Each is situated in a shallow cloaca on a prominent papilla just in front of the middle of the margin of each segment. When the cirrus is everted the papilla projects very considerably as is shown in Pl. iv., fig. 4. A female pore is absent.

The male organs are situated in the anterior portion of the proglottis in front of the female genitalia. The testes are numerous, there being about one hundred and fifty arranged in a transversely-lying group of 1.85 mm. in breadth, in the anterior third of the segment. They form a well defined mass which is rather wider at the extremities than in its mid-region. There is no grouping of the glands into two distinct series such as is figured by Fuhrmann<sup>60</sup> as occurring in *Acoelus vaginatus*. There are two or three rows in the dorso-ventral direction. The vesicles are restricted to the dorsal portion of the medulla. Their diameter is about 0.070 mm. Passing through the middle of the mass, is a collecting tube into which the vas deferens from each gland opens. From near the middle of the collecting vessel there passes away the vas deferens which travels below and usually in front of the testes. After a short course laterally it enters the powerful cirrus sac without having been thrown into any coils. Just within the cirrus sac the vas becomes much enlarged to form a vesicula seminalis. From this the cirrus passes out laterally as a tube with strongly muscular walls and a rather narrow lumen. It lies more or less coiled when at rest, the coils being restricted to the inner half of the cirrus sac. As previously mentioned, the genital duct, or rather the cirrus sac, lies ventrally to both excretory vessels and the main nerve, all of these structures being displaced dorsally in this region.

The cirrus sac is a very long and powerful cylindrical organ occupying one of the upper corners of the segment. In its position of rest it is 0.8 to 1.20 mm. long by about 0.26 mm. broad. Its outer wall consists of a thick layer of muscular tissue while the space between this and the male canal is traversed by the fibres of the retractor muscle of the cirrus, which passes back from the cirrus to be inserted into the sides of the inner portion of the sac (Pl. iv., fig. 4). Passing inwards from the external wall of the latter, there is a very prominent retractor of the sac, the fibres of this muscle coursing inwards from the sac to be inserted into the ventral region of the medullary parenchyma.

<sup>59</sup> In a few instances the cirrus sac was seen to open on the same side in two successive segments.

<sup>60</sup> Fuhrmann—*Loc. cit.*, p. 621.

The cirrus when fully everted is seen to be a relatively large organ of about 0.5 mm. long, with a breadth of 0.16 mm. at its base and tapering slightly towards the extremity. It is beset with a great number of very powerful hooks set spirally and as closely as their enlarged bases allow. Each hook has the form shown in Pl. iv., fig. 4, the base being about 0.0145 mm. long. The total length of hook is 0.022 mm. The length of the structure is somewhat less than that of the cirrus hooks in *Acoleus armatus*. Besides, the shape is seen on comparison with Fuhrmann's figure to be different, being intermediate between the latter and that of *Acoleus crassus*, Fuhrm.<sup>61</sup> The base is sunk into the cirrus wall, only the claw remaining projecting.

The female genitalia are characteristic in that there is neither a female aperture nor a vagina. The ovary is a rather broad organ (0.8-0.92 mm.) lying in the middle of the segment and possessing the general form of an arch, the cavity of which faces postero-dorsally. The gland consists of a large number of small tubes which are not readily separable into two groups or wings. In section it is seen that the organ is really bilobed, the middle piece or bridge being rather wide when compared with the size of the ovarian tubes. The bridge is situated quite ventrally, lying immediately above the inmost layer of transverse muscle fibres, the tubes being given off in an antero-dorsal direction. The short oviduct travels posteriorly and slightly dorsally from the middle of the organ. The vitelline gland is a large solid organ of an elongate kidney shape, being about 0.40 mm. broad. Its cavity faces forwards and slightly dorsally, the whole organ lying at the same dorso-ventral level as the ovary, the shell gland lying at a more dorsal level than either. The posterior border of the vitellarium is slightly lobed. The vitello-duct is very short, passing forwards and upwards to the shell gland, which is a small rounded organ lying just antero-dorsally to the yolk gland. Situated in the transverse plane between the ovary and the vitelline gland, is a long thin receptaculum seminis, the outer ends of which may be more swollen than the remaining parts. This structure is connected at its middle with the oviduct just in front of the shell gland. In regard to the closely allied *Acoleus armatus*, Fuhrm. (= *A. vaginatus* (Rud.), Fuhrmann)<sup>62</sup> states that the powerful cirrus seems to be able to penetrate some part of the parenchyma to liberate spermatozoa which

<sup>61</sup> Fuhrmann—Centr. Bakt., I., xxviii., 1900, p. 370-1.

<sup>62</sup> Fuhrmann—Centr. Bakt., I., xxvi., 1899, p. 621.

succeed in reaching the thin walled receptaculum and pass thence into the oviduct.

Lying between the testes and the ovary is the uterus, a long, transversely placed, simple tube which becomes modified later by the development of pouches or lobes anteriorly, posteriorly and ventrally. At first this organ is confined to the dorsal portion of the medulla at about the same level as the main mass of the testes, but with advancing ripeness the lobes develop and come to reach the ventral limits of the medulla. The fertilising duct appears to pass forwards above the ovary to enter the uterus somewhat ventrally in its mid-region. The eggs are rounded or elliptical, possessing two shells, the diameter of the outermost being 0.022 mm., that of the embryo being 0.009 mm. The poles of the inner shell are somewhat thickened as in *Acoleus vaginatus*<sup>63</sup>.

A few remarks regarding the genital rudiments may not be out of place. They become distinctly recognisable in the third segment as a transverse deeply staining area in the middle of the proglottis. Within a distance of one mm. from the anterior end, the rudiments of the cirrus sac, ovary and vitellarium are easily distinguishable and at a very short distance further back one may recognise the testes, uterus and receptaculum seminis. All the structures, especially the cirrus sac, develop rapidly in size.

In regard to the affinities of *Acoleus hedleyi*, it seems to approach very nearly to *A. vaginatus* (Rud.), Fuhrm., the main points of difference being the much greater length of the former—an unimportant detail—the number and disposition of the testes, and the armature of the cirrus.

Typical specimens have been deposited in the Australian Museum.

#### TENIA CORONATA, *Kreffl.*

(Plate v.)

A Cestode taken from the White-headed Stilt (*Himantopus leucocephalus*, Gould), in the Hunter River District, New South Wales, was originally described by Krefft<sup>64</sup> as *Tenia coronata*. The name, however, was already pre-occupied in the genus, having been used by Creplin in 1829 for a tapeworm (*Choanotenia coronata*) from certain other Charadriid birds in the Old

<sup>63</sup> Fuhrmann—Centr. Bakt., I., xxviii., 1900, p. 370; Krabbe—Bidrag til Kundskab om Engenes Baendelorme, 1869, fig. 189.

<sup>64</sup> Krefft—Trans. Entom. Soc. N. S. Wales, ii., 1873, pp. 220-1.



World. Consequently, a new specific name, *australiensis*, was suggested by me<sup>65</sup> as the two parasites are distinct. It was also mentioned that the worm appeared to be a *Dilepis*. It is really a *Gyrocoelia*, my error arising from the fact that in the jar containing the type specimen, there were present a number of fragments of a species of *Diorchis*, whose possession of unilateral genitalia and sac-like uterus led me to regard it as a *Dilepis*. Further examination of the latter showed it to be a typical *Diorchis*, viz. *D. flavescens* (syn. *T. flavescens*, Krefft) found in various ducks, the specimens evidently having been placed by mistake into the same receptacle as those from the Stilt. Dried fragments of *Gyrocoelia australiensis* were also found amongst the type material of *Tenia rugosa*, Krefft, i.e. *Acoelus hedleyi*, mihi.

Krefft's account is very unsatisfactory. He mentioned that the total length of the strobila was three and a half inches, the anterior fourth being thin and tapering, and that the scolex possessed four large suckers and a short rostellum. The rest of his information is of no value. There is only a scolex-less fragment in the Museum collection. Sexually mature segments are about 0.37 mm. in length by 0.89 mm. in breadth, the ratio being 2:5. In those proglottids in which the uterus has assumed its final form the length (0.060 mm.) is much shorter and the breadth (0.296 mm.) rather greater, the ratio being 1:5. The amount of overlapping is not very great.

*Body-wall, Musculature, etc.*—The state of preservation did not allow of any details being given regarding the subcuticular structures. The cuticle is quite thin. The parenchyma musculature is very peculiar and resembles in general type that found in other members of the Acoleidæ, one of which *A. hedleyi* has already been referred to. The longitudinal bundles are very powerful, consisting of two well-marked concentric series, the bundles of the outer possessing from twenty to thirty fibres, while those of the inner series have from twenty to fifty. The bundles become much smaller laterally but the rings do not become broken. The transverse musculature is quite typical for the genus. The outermost series is very well developed. The middle series, which lies between the two longitudinal rings is also well-marked though not so powerful as the outer. The innermost series is quite weak and was seen only in a few of the sections. Dorso-ventral fibres are easily recognised.

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<sup>65</sup>Johnston—Journ. Roy. Soc. N. S. Wales, xlv., 1910, p. 95.

Calcareous corpuscles are fairly abundant, rounded or elliptical structures varying from  $5.4\mu$  by  $7\mu$  to  $7.5\mu$  by  $11\mu$ .

The excretory system is similar to that described in *Acoleus hedleyi*. The vessels are situated in the medulla well within the musculature. The ventral stem is rather larger than the dorsal, both possessing a fairly wide lumen. The latter lies some little distance above the former, the male duct passing between them. At the posterior end of each segment there are two transverse excretory vessels, a dorsal and a ventral, connecting each dorsal and ventral longitudinal trunk respectively.

The only portion of the nervous system recognised was the large longitudinal nerve situated laterally from the excretory vessels. It passes just below the genital duct, being displaced somewhat ventrally.

The genital system is also characteristic and resembles that of *Gyrocaelia perversa* as described by Fuhrmann<sup>66</sup>. The male openings alternate irregularly and are located in front of the middle of the lateral margin of each proglottis. There is no prominent genital papilla excepting when the cirrus is more or less protruded. When the latter is at rest there is a narrow canal leading from the genital pore to the male duct. Female apertures are absent. The genitalia appear very early, the uterus and other parts being recognised in the youngest segments examined.

The male organs consist of a small group of about five small testes lying transversely in the middle of the anterior part of the segment in front of the female glands and uterus, and approximating to the dorsal surface; they disappear early. A transversely placed collecting duct receives their secretion. From the middle of this duct the vas deferens passes forwards and then laterally. It travels outwards, passing just below the dorsal excretory vessel, to enter the cirrus sac. A small swelling or vesicula seminalis may be present on the inner portion of the duct. After entering the sac, the vas becomes thrown into a few coils lying in the inner end of it. This narrow duct widens to form the eversible cirrus, a wide tube of from 0.033 to 0.067 mm. in diameter whose inner wall is thickly studded with slender hooks possessing a small basal portion, and a delicate backwardly projecting portion 0.006 mm. long. The sac as already mentioned lies between the excretory trunks and above the longitudinal nerve. It is a rather large organ of about 0.30 mm. in length,

<sup>66</sup>Fuhrmann—Centr. Bakt., I., xxvi., 1899, pp. 618-620.

with a maximum breadth of 0.145 mm. In general shape it is cylindrical or pyriform, being usually of the latter form in sexually mature segments. Its outer wall contains powerful muscles within which there is abundance of a loose parenchymatous tissue pervaded by muscle fibres acting as retractors of the cirrus. There are also well-defined fibres passing inwards from the inner end of the sac itself, their function being that of retractors of the sac. The walls of the vas deferens within the sac contain well-developed longitudinal and circular muscle fibres. When everted the cirrus is seen as a relatively short (0.275 mm.) tube with a broad base (0.10 mm.) tapering considerably towards the free end which measures 0.027 mm. in diameter. The muscular fibres mentioned by Fuhrmann<sup>67</sup> as passing from the cirrus sac to the cloacal wall in *G. perversa* were distinctly seen in *G. australiensis*, more especially in early sexual maturity.

The female system lacks a vagina. The ovary is a very extensive organ occupying the middle of each proglottid. At maturity it forms a compact mass of about 0.34 mm. in breadth, reniform in shape, the vitellarium and shell gland lying in the posteriorly directed hilus. In younger segments one may readily recognise a transverse bridge connecting the two ovarian lobes; each lobe is very greatly branched. Some of these branches or tubes lie in the dorsal portion of the medulla, the uterus commonly passing between them in the lateral regions of the gland. Portions of the ovary may extend forwards to lie below the anterior section of the uterus and even the testes. The bridge lies ventrally. The oviduct passes backwards and slightly dorsally to enter the shell gland. A receptaculum seminis was not recognised though it seems reasonable to expect the presence of some reservoir in which sperm may be stored. The vitelline gland is a conspicuous reniform organ lying behind the ovarian bridge, and dorso-posteriorly to the shell gland which may at times partly overlie it. The vitellarium and the ovarian bridge lie at the same dorso-ventral level, the rather large rounded shell-gland being situated more dorsally than either of them. The vitello-duct passes away dorsally from the hilus of the gland to join the oviduct within the shell complex.

The uterine duct leaves the shell-gland dorso-anteriorly as a narrow tube which passes forwards above the ovary until it reaches the uterus, opening into it in the median line just behind the testes. The uterus is a very characteristic organ resembling that of other species of *Gyrocampa* in being ring-like. In young

<sup>67</sup> Fuhrmann—*Loc. cit.*, p. 619.

proglottids it is a simple ring lying in front between the testes and the ovary, laterally just outside of the main mass of the latter gland and frequently between the outer portions of laterally-directed ovarian tubes, and posteriorly, just above the vitellarium on the same dorso-ventral plane as but behind the shell-gland. As development progresses, the uterine wall becomes more or less deeply pouched, especially on its outer side. The cavity becomes filled with a structureless substance which is probably of a mucous nature. A similar occurrence has been noted by Fuhrmann<sup>68</sup> in the uterus of *Gyrocotilia leuce*. As in the latter species and in *G. perversa* there is present in the mid-line at the posterior end of each segment a dorso-ventral canal into which the uterus comes to open. Neither this canal nor its rudiment was recognised until sexual maturity had been reached. In *G. perversa*, Fuhrmann<sup>69</sup> found the rudiment appearing early and was able to trace its development. Ripe eggs were not present in the fragment.

The known species of the genus *G. perversa*, *G. brevis*, *G. leuce* and *G. paradoxa*, Linst.<sup>70</sup>, as well as the species under review, are all from birds belonging to the Charadriiformes and seem to be very similar anatomically, the main difference being in regard to their musculature, the structure of the cirrus and the geographical distribution.

#### TENIA PEDIFORMIS, Krefft.

There is only a single specimen of this parasite in the Museum collection. It was taken from *Anas superciliosa*, Gmel. Krefft mentioned *Anas punctata*, i.e. *Nettion castaneum*, Eyton, as another host. Linstow, Wolffhügel and Fuhrmann<sup>71</sup> have already suggested that this species may be synonymous with *Tenia malleus*, Goeze, i.e. *Fimbriaria fasciolaris*, Pall., a statement with which I have agreed<sup>72</sup>. A further examination of Krefft's specimen confirms the opinion and consequently his name must

<sup>68</sup> Fuhrmann—Centr. Bakt., I., xxviii., 1900, p. 372.

<sup>69</sup> Fuhrmann—Centr. Bakt., I., xxvi., 1899, p. 620.

<sup>70</sup> Linstow—Spolia Zeylanica, iii., 1906, p. 183; Fuhrmann—Zool. Jahrb. Syst., Suppl. Bd., x., Heft 1., 1908, p. 87.

<sup>71</sup> Fuhrmann—Zool. Jahrb., Suppl. Bd. x., Heft 1., 1908, p. 91. Wolffhügel—Beitr. Kenntniss Vogelheim., Inaug., Biss., 1900, p. 80.; Linstow—Centr. Bakt. Orig., I., xii., 1892, p. 501.

<sup>72</sup> Johnston—Journ. Roy. Soc. N. S. Wales, xliv., 1910, p. 98.

sink into synonymy. The parasite is very poorly preserved and does not allow of a satisfactory account of its structure being given.

The known geographical range of *F. fasciolaris*, Pall., is now greatly widened by the inclusion of two Australian hosts, *Anas superciliosa*, Gmel., and *Nettion castaneum*, Eyton.

### TÆNIA CYLINDRICA, Krefft.

(Plate vi.)

Kreffit's specimens were taken from the intestine of a Black Duck (*Anas superciliosa*, Gmel.) and are very indifferently preserved. However, enough of the anatomy was made out, to allow of my recognising that they were specifically identical with a few parasites which I collected along with *H. collaris*, Batsch, (*Tænia bairdii*, Krefft), from *A. superciliosa*, shot near Sydney in the latter part of 1910. An examination of Krefft's species shows it to be a *Hymenolepis* and to be synonymous with *H. megalops*, Nitzsch. In view of the fact that Ransom<sup>73</sup> has carefully described and figured the anatomy of *H. megalops*, only a short account, more or less confirmatory in nature, need be given here. This author appears to have been the only recent writer who has had an opportunity of studying the species under review. Stiles<sup>74</sup>, in 1896, gave a summary of former accounts and added a few figures of the scolex.

Since Krefft's specimens are strongly contracted, the following account has been based mainly on my own forms. Most of the tapeworms measure about 16 mm., one of them being a fragment which contains six-hooked embryos. The breadth is fairly uniform, measuring about 0.6 mm. The almost spherical scolex (Pl. vi., fig. 1) is relatively very large and prominent, its breadth and thickness being 1.1 mm. The deep, powerful suckers have a diameter of 0.38 mm. and are directed antero-laterally. Situated on the apex of the head is the opening leading into the rostellar cavity. Segmentation begins immediately behind the scolex, the width in this region being 0.55 mm., gradually increasing to 0.6 mm., this latter breadth being maintained almost to the end of the worm. The final segments in some of the specimens, are slightly narrower and longer than those further forward, and,

<sup>73</sup> Ransom—Trans. Amer. Micro. Soc., xxiii., 1901 (1902), pp. 158-167.

<sup>74</sup> Stiles—Bull. Bur. Anim. Ind., Dept. Agr. U.S.A., 12, 1896, p. 59.

besides, no eggs were present in them. Owing to the presence of very deep inter-segmental constrictions, there is considerable overlapping, the proglottids being somewhat bell-like. The corrugated appearance noted by Dujardin and by Ransom is evident. Lying unilaterally in the posterior half of each segment, is the genital pore situated on a slight projection.

Sections were not cut, hence the relations of the muscular and subcuticular structures were not followed out. Ransom gives a detailed account of the nervous and excretory systems. The main vessels of the latter system are to be recognised in the segments, their arrangement being indicated in Pl. vi., figs. 2 and 3. The sex ducts pass above both excretory canals and the longitudinal nerve. Calcareous corpuscles are very abundant in the cortical tissue.

*Male Genitalia.*—The three testes lie in the posterior half of the segment, one being situated on the pore bearing side and the other two on the other side of the median line. Their arrangement varies somewhat as may be seen on comparing their position in Pl. vi., figs. 2 and 3, their disposition in fig. 2 resembling that drawn by Ransom. The vas deferens is a short thick, somewhat swollen tube passing forwards to enter the cirrus sac within which it becomes considerably swollen to form an elongate, rather wide, thin-walled inner vesicula seminalis, occupying the major portion of the inner half of the sac. From the outer end of this vesicle a narrow duct passes inwards towards the inner end of the cirrus sac, to bend round and again travel outwards as the cirrus which may or may not lie somewhat coiled within the sac. The inner wall of the cirrus carries a great number of closely set bristles which in the everted organ, project backwards. The cirrus can be protruded to a distance of at least 0.16 mm. The sac is relatively very long, being from 0.3 to nearly 0.5 mm. in length, the breadth being 0.04 mm. in its outer part and 0.06 mm. in its inner portion. Its inner extremity lies postero-dorsally to the ovary, the sac extending from this region postero-laterally in front of the vitelline and shell glands and above the vagina to terminate at the male pore. The latter opens into the narrow genital cloaca just above and behind the female pore.

*Female Genitalia.*—The ovary is a comparatively large, solid gland lying ventrally in the extreme anterior portion of the segment. It frequently possesses an irregularly bilobed shape. Behind it is the small compact vitelline gland which overlies the shell gland dorsally.

The vagina extends inwards from the female pore, its main mass lying in front of and somewhat ventrally to the cirrus sac. Though its opening is narrow, the duct soon becomes widened to act as a receptaculum seminis. As it passes below the sac just in front of the testes which lie on the right hand (*i.e.* the pore-bearing) side, it again becomes narrowed and eventually reaches the middle of the segment where it comes into relation with the other female ducts.

The uterus develops dorsally to the ovary, but ventrally to the male organs. It finally becomes a well-defined rounded or rectangular sac (Pl. vi., fig. 4), the only other portion of the genitalia persisting at this time being the vagina and the cirrus sac. As mentioned by Ransom, the anterior margin of the uterus lies practically at the junction between the segment to which it belongs, and the preceding one. The eggs are from 34 to 42 $\mu$  in diameter, the oncosphere measuring from 23 to 26 $\mu$  by from 19 to 23 $\mu$ , and its hooks 11 $\mu$ .

If the foregoing sketch be compared with Ransom's account, it will be admitted that the parasites are specifically identical. The finding of *H. megalops* in Australian Anatidæ thus greatly widens the range of this Cestode, as the host in question ranges over Australia and New Guinea. This helminth has so far been recorded (according to Fuhrmann's list)<sup>75</sup> from ten species of Anseriform birds ranging over Europe, North Africa, North and South America and now from Australia.

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<sup>75</sup> Fuhrmann—Zool. Jahrb., Suppl. Bd., x., Heft 1, 1908, pp. 149-158.

### III.—REFERENCE TO LETTERING OF THE FIGURES.

a. s.	accessory sac.	p. n. c.	posterior nerve commis- sure.	
c.	cirrus.	pr.	prostate cells.	
c. e. v.	commissural excretory vessel.	r.	rostellum.	
c. h.	cirrus hooks.	v. s.	receptaculum seminis.	
c. m.	cirrus musculature.	s.	sucker.	
c. n. f.	concomitant nerve fas- cicle.	s. e. c.	subcuticular cells.	
c. r.	cirrus retractor.	s. e. c. m.	subcuticular circular muscle.	
c. s.	cirrus sac.	s. e. l. m.	subcuticular longitud- inal muscle.	
c. s. m.	cirrus sac musculature.	s. g.	shell gland.	
c. s. r.	cirrus sac retractor.	t.	testes.	
cu.	cuticle.	tr. v.	transverse excretory vessel.	
d. e. v.	dorsal excretory vessel.	tr. m. .	} transverse muscles.	
d. tr. v.	dorsal transverse vessel.	tr. m. 1,		
d. v. m.	dorsoventral muscle- fibres.	tr. m. 2,		
g. c.	genital cloaca.	tr. m. 3,		
g. e.	genital eminence.	u.	uterus.	
g. p.	genital pore.	u. d.	uterine duct.	
g. r.	genital rudiments.	u. o.	uterine opening.	
l. n.	longitudinal nerve.	v.	vagina.	
l. m.	} longitudinal muscles.	v. d.	vas deferens.	
l. m. 1			v. g.	vitelline gland.
l. m. 2			v. e. v.	ventral excretory vessel.
l. a. n.	longitudinal accessory nerve.	v. s.	vesicula seminalis.	
n.	nerve.	v. tr. v.	ventral transverse vessel.	
o. d.	oviduct.	v. d.	vitelline duct.	
ov.	ovary.			

The figures were drawn by Mr. W. A. Birmingham from the author's original camera-lucida drawings.



# THE MYRIAPODA IN THE AUSTRALIAN MUSEUM.

## PART I.—CHILOPODA.

By H. W. BRÖLEMANN, Pau.

(Figs. 1-34).

Thanks to the kindness of the Trustees of the Australian Museum, I have been permitted to examine the Myriapods existing in the cabinets of the Museum, and for such favour I wish to express my sincerest thanks to whom it is due.

The material submitted for examination is small, but would certainly assume an importance adequate to the rank of the branch amongst the Arthropoda, should attention be drawn to these highly interesting animals, and should some means of identifying the species be offered to lovers of Nature.

A plain list of names and localities would not have answered the purpose; the diagnoses are distributed through many different periodicals and are difficult to obtain without considerable loss of time. It has, therefore, been considered a better plan to add to the observations furnished by the material of the Museum, full descriptions borrowed from the more recent authors and as complete synonymical indications as possible. Thus, students will have close at hand material for comparison as well as the necessary particulars for identification.

May this attempt to win sympathies to the cause of the much disregarded Myriapods meet with some success.

## CHILOPODA ANAMORPHA.

### SCUTIGEROMORPHA.

Genus ALLOTHEREUA, *Verhoeff*, 1905.

ALLOTHEREUA MACULATA (*Newport*), 1844.

(Figs. 1-4).

*Cermatia maculata*, Newport, Ann. Mag. Nat. Hist., 1844, xiii; Trans. Linn. Soc., 1845, xix.

*Cermatia maculata*, Newport and Gray, Cat. Myr. Brit. Mus., 1856.

- Cermatia australiana*, Newport, *Loc. cit.*, 1844.  
 „ „ Newport and Gray, *Loc. cit.*, 1856.  
*Scutigera australiana*, Gervais in Walckenaer, *Hist. Nat. Ins. Apt.*, 1847.  
*Scutigera maculata*, Gervais, *Loc. cit.*, 1847.  
 „ „ Meinert, *Vid. Meddel. Naturhist. For.* 1884, 1884-1886.  
*Scutigera maculata*, Haase, *Ber. K. Zool. Mus. Dresden*, 1887, 1886-1887.  
*Scutigera maculata*, Pocock, *Ann. Mag. Nat. Hist.*, 1901, (7), viii.  
*Scutigera Smithii*, Haacke, *Zool. Garten*, 1886, xxvii (*nec* Newport).  
*Cermatia Latreillei*, Newport, *Loc. cit.*, 1844.  
*Therexonema maculata*, Verhoeff, *Ges. Nat. Freunde Berlin*, 1904.  
*Allothereua maculata*, Verhoeff, *Zool. Anz.*, 1905, xxix.

Haase, 1887, has given the following description:—

“Robust, von vorne nach der Mitte wenig verbreitet, nach hinten zu mit Ausnahme der zwei letzten Segmente nicht verschmälert. Farbe hell, schön grünlich weiss, der Kopf mit einem blaugrünen Mittel fleck und solchen Seiten; Rückenplatten fast ganz blaugrün, mit Ausnahme der stets weissen Stomasättel; die obere Hälfte des Aussenrandes, sowie jederseits ein unregelmässiger, von grünblauen Flecken unterbrochener, sich von den Sätteln zum Vorderrand der Schilde hinziehender Raum bleiben hell grünlich weiss. Die dunkle Mittelbinde hat einen Stich in's Rostrothe. Auf den hinteren Rückenplatten werden der Seitenrand und die Mittelbinde dunkler, stets jedoch liegt das Stomach in hellem Felde. Bauchschilde schmutzig lehmbräun, hellgrün durchscheinend, besonders an den Rändern dicht rostroth behaart; Weichenfalten blaugrün eingefasst. Hüften bläulich pigmentirt, rostroth behorset; Oberschenkel hellgrün, nur vor der Spitze dunkelblau geringelt. Tibia nur am distalen Ende hellgrün, in der Mitte blaugrün, sonst dunkelblau (mit 2 blauen Ringen), ebenso das erste Tarsenglied. Von den Metatarsalien ist das erste Glied grünlich, die andern hell rostroth mit dunklen Einschnitten. Kopf überall rostroth behaart. Vom Innen-

winkel der Augen aus gehen nach innen sehr deutlich die an Rande dicht und lang bedornen, schwärzlich gefärbten, weit vorspringenden Hörner der Stirnalt, die durch einen queren, ziemlich stumpfen Winkel vereinigt werden. Der verlängerte Mitteleindruck wird vorn zwischen den Fühlern durch zwei sich schief kreuzende quere begrenzt und Verläuft vor dem Hinterrand der Augen in einer hinten verschmälerten, flachen und breiten, den stark aufgebogenen, bedornen Hinterrand des Kopfschildes nicht erreichenden Vertiefung. Fühler rostroth,  $1\frac{1}{2}$  mal so lang als der Leib, oft nur eine 15 mm. vom Kopf entfernte Knickung, bis zu der 130-140 Ringel vorkommen. Am Endgliede stehen kurze, schnell zugespitzte Sinneszapfen. Maxillarorgan unentwickelt. Giftklaue unten dicht bebürstet. Basalplatte in der Tiefe liegend. Vorderrand der ersten Stomaplatte stark und schmal nach oben abgesetzt, mit starren, nach hinten gerichteten Dornen bewehrt. Stomaplatten von der Seite gesehen mit gelbem sammetartigen Glanz, der von einer sehr grossen Menge feiner, nach hinten zurückgelegter und ganz flachanliegender, auf länglichen Warzen stehender Stachelchen herkommt. Am Rande kurze schwarzbraune Dornen und darunter doppelt so lange rostgelbe Haare. Die feine gelbe Behaarung lässt auf den Schilden besonders ausserhalb des hellen Raumes jederseits der Mittelbinde einzelne, meist apfelgrüne, seidengänzende Stellen frei. Bedornung unregelmässig, Dornen oft gekrümmt, meist zu 2 oder 3. Hinterrand der letzten Stomaplatte flach, mit zahlreichen Dörnchen besetzt; letzte Rückenplatte hinten stark verschmälert und gerundet, löffelartig vertieft, mit nach oben aufgebogenem Rande; dieser mit zwei Reihen starker Dörnchen und Borsten besetzt. Hüften wie die Bauchschilde rostgelb behaart. Tibia oben und unten dicht und stark rothbraun bedornet, dazwischen rostgelb behaart; Metatarsalien unten mit nach hinten gerichteten Haaren besetzt."

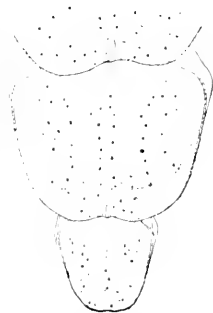


Fig. 1. *A. maculata*, Newport. 6th, 7th, and 8th terga.

Verhoeff, 1904-05, has drawn attention to the ornaments of the tergal sclerites of the Scutigeriidae as well as to the distribution of spurs and spines on the different joints of the legs, and on their systematic value. The same author adds some particulars which are not reproduced here as these agree with the observations recorded above (Fig. 1).

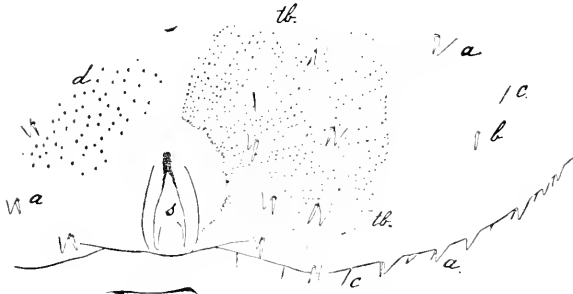


Fig. 2. *A. maculata*, Newport. Posterior margin of the 7th leg, enlarged.

Fig. 2 shows the setæ, setules and spines to be found on the terga of *A. maculata*, as well as the remarkable association of spines coupled with spinules which according to Verhoeff (Figs. 2 and 3) is one of the main characters of the genus.

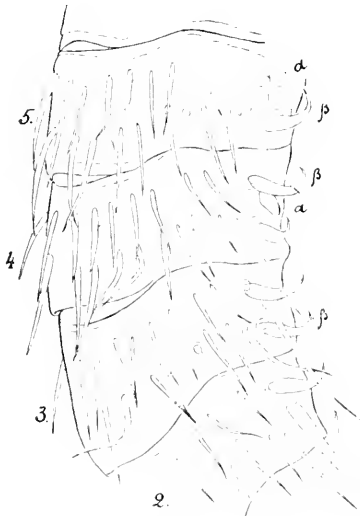


Fig. 4. *A. maculata*, Newport. Four penultimate rings of tarsus of 10th pair; A, the so-called "tarsal-zapfen"; B, hooked bristles.



Fig. 3. *A. maculata*, Newport, ♀ appendages.

Femora, patella and tibia are the only joints provided with spurs, thus:—

Femora:—Leg 1: 1 dorsal median; 1 ventral median.

Leg 2-14: 1 dorsal median and 1 dorsal posterior; 1 ventral median.

Leg 15: 1 dorsal median; 1 ventral median.

Patella :—On all legs : 1 anterior ; 1 dorsal median ; 1 posterior.  
The ventral surface is destitute of spurs, but bears two spines which are the tip-spines of the ventral-anterior and ventral-posterior row of spines of this joint (Fig. 4).

Tibia :—Leg 1 : 0 dorsal ; 1 ventral median and 1 ventral posterior (the latter may be missing occasionally).

Legs 2-14 : 1 dorsal median ; 1 ventral median and 1 ventral posterior.

Leg 15: 1 dorsal median ; 0 ventral.

The following table shows the number of rings of the protarsus and of the tarsus of each leg :—

	Protarsus.	Tarsus.	Remarks.
Leg 1	14—13	34—33	
2	12—13	33—33	
3	11—11	31—31	
4	10—11	29—32	
5	9—9	29—30	
6	9—9	29—28	
7	9—8	28—.	
8	8—.	29—.	left leg missing.
9	—.	—.	both legs missing.
10	—8	—29	right leg missing.
11	8—.	29 (at least)	left leg missing.
12	—8	—31	right leg missing.
13	9—8	34—33	
14	—8	—36	right leg missing.
15	—over 300—		right leg missing, left truncate.

On another specimen with anal legs broken at the tip, over three hundred rings could be numbered. It may be that this figure is far from the true number of rings as, towards the end, these grow smaller, less distinct and very irregular, so as to render it a difficult task to distinguish them from one another.

Spines are to be found on the femora, the patella, the tibia and the protarsus. They begin to appear on :—

the femora from the 4th pair of legs.

the patella from the 4th or 5th pair of legs.

the tibia from the 6th pair of legs.

the protarsus from the 5th or 7th pair of legs, as per adjoined table :—

Loc.	Femora.				Patella.				Tibia.				Protarsus.										
	Dorsal.	Anterior.	Ventral.	Posterior.	Distal.	Dorsal.	Anterior.	Ventral.	Posterior.	Distal.	Dorsal.	Anterior.	Ventral.	Posterior.	Distal.	Ring i	ii.	iii.	iv.	v.	vi.	vii.	
4	...	...	...	5	2/1	...	...	3 2	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	...	...	...	6	1	...	...	2	9/10	...	...	...	...	...	...	1	2	...	...	...	...	...	...
6	...	...	...	7 8	3/2	...	...	4 2	10/14	...	...	...	...	4/5	1	1	1	...	...	...	...	...	...
7	...	4	...	8 6	3/7	...	...	3/2	10/16	1	2	3	...	8/10	2	1	2/1	...	...	...	...	...	...
8	...	5	...	8	5	1	...	5	14	...	7	6	...	14	1	1	2	2	2	2	...	...	...
9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10	...	15	8	4	6	6	...	4	25	...	20	19	...	18	...	10	3	2	2	1	...	...	...
11	...	20	11	1	7	13	5	5	21	6	21	22	...	24	1	12	2	2	2	2	2	2	2
12	...	25	11	4	6	12	...	...	25	5	24	19	3	22	...	15	2	2	2	2	2	2	1
13	...	21 40	13 12	3 5	7/8	15/13	22/28	12	16/28	7/5	21/26	22/24	4	23	2	15/17	5/3	3	3/2	2	2	2	1
14	...	54	18	16	7	16	35	11	6	5	23	23	...	27	...	20	4	3	2	2	2	1	...

None of the antennæ were entirely preserved; the following are the numbers of rings observed in the best specimen:—

Right antenna:—Joint i, seventy-six rings; joint ii, two hundred and thirty-five rings; joint iii, broken after the one hundred and forty-second ring.

Left antenna:—Joint i, seventy-two rings; joint ii, one hundred and ninety-eight rings; joint iii, broken after the nineteenth ring.

An immature ♂ specimen furnished with two pairs of well-developed, single jointed styli, measured 12 mm. in length. The last terga showed the typical coupled spines but less numerous.

Most of the legs were broken off. On the remaining legs the spurs appeared to be disposed as in adults, except that the posterior spur of the patella was missing on the first left leg and that the ventral posterior spur of the tibia was not found to exist before the tenth right leg.

The number of rings of the protarsus and tarsus were the following:—

	Protarsus.	Tarsus.	Remarks.
Leg 1	12	25	right leg missing.
—	—	—	both legs 2—6 missing.
7	7	20	right leg missing.
8	7	22	left leg missing.
10	7	23	left leg missing.
11	6—6	24—26	
12	7	25	left leg missing. both legs 13—15 missing.

No spines could be detected on the joints before the eighth leg. Legs eight to twelve were provided with spines as shown below:—

Leg.	Femora.				Patella.					Tibia.				Protarsus.
	Dorsal.	Anterior.	Ventral.	Posterior.	Dorsal.	Anterior.	Ventral.	Posterior.	Distal.	Dorsal.	Anterior.	Ventral.	Posterior.	
8	...	...	...	...	...	...	...	4	...	2	...	...	5	} No spines.
9	...	...	...	...	...	...	...	...	...	...	...	...	...	
10	...	...	...	...	5	...	...	8	...	12	...	...	10	
11	...	5	1	...	6/7	...	...	9/6	...	17/15	9/7	...	14/10	
12	...	3	...	...	11	3	...	9	...	16	14	...	15	

The antennæ were composed of a comparatively smaller number of rings:—

Right antenna:—Joint i, fifty-one rings; joint ii, ninety-six rings; joint iii, broken after the one hundred and fifty-fifth ring.

Left antenna:—Joint i, sixty-six rings; joints i. and iii., broken after the one hundred and sixtieth ring and showing no partition between joint ii and joint iii.

Amongst other characters of the group, Verhoeff, 1904, (*Loc. cit.*, p. 258) mentions the existence of so called "Tarsalzapfen." Fig. 4 drawn from the tenth pair of legs of the ♂ specimen, gives an idea of these minute organs (*a*). The next lying bristles (*β*) assume a peculiar shape, being thickened at the base and hooked at the apex.

*Loc.*—Bourke, N. S. Wales; five specimens, three adult ♀ and one immature ♂.

## CHILOPODA EPIMORPHA.

### SCOLOPENDROMORPHA.

Genus RHYSIDA, Wood, 1863.

RHYSIDA? (*longipes*, Newport, 1844).

It is not easy to decide whether this specimen belongs to Newport's species or to *R. subinermis*, Meinert, as both anal legs are missing.

*Loc.*—Condamine River, South-east Queensland; one specimen, July, 1898.

Genus ETHMOSTIGMUS, Pocock, 1898.

ETHMOSTIGMUS RUBRIPES, Brandt, 1840.

*Scolopendra rubripes*, Brandt, Bull. sc. Acad. Petersb., vii., 1840.

*Scolopendra rubripes*, Gervais in Walckenaer, Hist. Nat. Ins. Apt., 1847.

*Scolopendra spinulosa*, Brandt, *Loc. cit.*, 1840.

„ *subcidens*, Newport, Ann. Mag. Nat. Hist., xiii., 1844.



- Scolopendra squalidens*, Newport, *Loc. cit.*, 1844.  
 „ „ Gray, List Myr. Brit. Mus., 1844
- Scolopendra squalidens*, Gervais, *Loc. cit.*, 1847.  
 „ *scabriventris*, Newport, *Loc. cit.*, 1844; Gray,  
*Loc. cit.*, 1844.
- Scolopendra sulcicornis*, Newport, *Loc. cit.*, 1844.  
 „ *megacephala*, Newport, *Loc. cit.*, 1844.  
 „ *rapax*, Gervais, *Loc. cit. (nec. Haase)*, 1847.
- Heterostoma sulcidens*, Newport, Trans. Linn. Soc., xix.,  
 1845.
- Heterostoma sulcidens*, Gray, *Loc. cit.*, 1844; Gervais, *Loc. cit.*,  
 1847.
- Heterostoma sulcidens*, Newport and Gray, Cat. Myr. Brit.  
 Mus., 1856.
- Heterostoma sulcidens*, Kohlrausch, Arch. Naturg. Troschel,  
 1881.
- Heterostoma sulcicornis*, Newport, *Loc. cit.*, 1845; Gray,  
*Loc. cit.*, 1844.
- Heterostoma sulcicornis*, Gervais, *Loc. cit.*, 1847; Newport  
 and Gray, *Loc. cit.*, 1856.
- Heterostoma flava*, Newport, *Loc. cit.*, 1845; Gervais, *Loc.*  
*cit.*, 1847.
- Heterostoma flava*, Newport and Gray, *Loc. cit.*, 1856.  
 „ *megacephala*, Newport, *Loc. cit.*, 1845; Gray,  
*Loc. cit.*, 1844.
- Heterostoma megacephala*, Gervais, *Loc. cit.*, 1847; Newport  
 and Gray, *Loc. cit.*, 1856.
- Heterostoma megacephala*, Kohlrausch, *Loc. cit.*, 1881.  
 „ *fasciata*, Newport, *Loc. cit.*, 1845; Gray, *Loc. cit.*,  
 1844.
- Heterostoma fasciata*, Newport and Gray, *Loc. cit.*, 1856.  
 „ *fasciatum*, Gervais, *Loc. cit.*, 1847; Meinert, Vid.  
 Med. Nat. For., 1884.
- Heterostoma crassipes*, Silvestri, Ann. Mus. Civ. Genova,  
 xxxiv., 1894.
- Heterostoma rubripes*, Haase, Ber. K. Zool. Mus. Dresden,  
 1887, 1886-87.
- Heterostoma rubripes*, Daday, Term. Fuz., xii., 1889; *Ibid.*,  
 xiv., 1891.

*Heterostoma rubripes*, Pocock, Ann. Mag. Nat. Hist. (6), xi., 1893.

*Heterostoma rubripes*, Silvestri, *Loc. cit.*, 1894.

” ” Attems, Jena Denk., viii., 1898.

*Ethmostigmus rubripes*, Pocock, Ann. Mag. Nat. Hist. (7), viii., 1901.

*Ethmostigmus rubripes*, Kraepelin, Mit. Nat. Mus. Hamburg, xx., 1903.

Kraepelin, 1903, has given the following description of Brandt's species:—

“Fühler 20 gliederig, Glieder länger als breit. Rückenplatten vom 2 oder 3 Segment gefurcht, vom 6 oder 7 berandet, glatt. Sternocoxalplatte mit 3, 3 Zähnen, Bauchplatten meist nur mit schwachen Andeutungen der Medialfurchen in Gestalt flacher Beulen in den mittleren Segmenten; letzte mit Medianfurchen, am Hinterrande tief bogig anserandet oder fast rechtwinklig ausgeschnitten. Pseudopleurenfortsatz kurz, die letzte Bauchplatte nicht oder kaum um deren Länge überragend, am Ende 2 spitzig, seitlich mit 2 starken Dornen, dorsal mit 3-5 auf dem bogig gewölbten Rücken in einer Linie stehenden Dörnchen. Beinpaare meist im 1-3 Segment mit 2 Tarsalsporen, 20 meist mit Tarsalsporen. Femur der Analbeine ventral aussen fast stets mit 3 Dornen (sehr selten 2), ventral innen ebenfalls 3 Dornen, Innenfläche und dorsal meist 4 in 2 Reihen gestellte Dornen, dazu Eckdorn. Färbung sehr variabel, dunkel braungrün bis orangegegelb oder ockergelb mit grünen Hinterrändern der Segmente, &c, Beine gelb. Länge dis 115 mm.”

Some minor variations could be observed, such as:—margins of the terga starting on the fifth segment; three lateral spines on the coxal process of anal legs; two tarsal spurs on the legs of the fourth segment; but these variations are hardly worth mentioning. Not so is the fact that the four proximal joints of antennae are naked.

*Locs.*—Penrith?; one specimen. Bourke and Wilcannia, Darling River floods. May-June 1890; one specimen, coxopleura and legs of fifteenth pair somewhat abnormal in shape and armature (individual abnormality): same locality; one specimen typical. Condamine River, July 1898; one specimen, full grown: same locality, one specimen not fully developed. Smithfield, N. S. Wales; one specimen. Solomon Islands; five specimens.

## Genus CORMOCEPHALUS, Newport, 1844.

## CORMOCEPHALUS AURANTIIPES, Newport, 1844.

- Scolopendra aurantiipes*, Newport, Ann. Mag. Nat. Hist., xiii., 1844.
- Scolopendra aurantiipes*, Gervais in Walckenaer, Hist. Nat. Ins. Apt., 1847.
- Scolopendra subminiata*, Newport, *Loc. cit.*, 1844; Gervais, *Loc. cit.*, 1847.
- Scolopendra obscura*, Gervais, *Loc. cit.* ( *nec. L. Koch*), 1847.
- „ *puncticeps*, Gervais, *Loc. cit.*, 1847.
- Scolopendra brevis*, Gervais, *Loc. cit.*, 1847.
- „ *miniata*, Gervais, *Loc. cit.*, 1847.
- Cormocephalus miniatus*, Newport, Trans. Linn. Soc., xix., 1845.
- Cormocephalus miniatus*, Newport and Gray, Cat. Myr. Brit. Mus., 1856.
- Cormocephalus subminiatus*, Newport, *Loc. cit.*, 1845.
- „ „ Gray, List. Myr. Brit. Mus., 1844.
- Cormocephalus subminiatus*, Newport and Gray, *Loc. cit.*, 1856.
- Cormocephalus subminiatus*, Haase, Ber. K. Zool. Mus. Dresden, 1887, 1886-87.
- Cormocephalus obscurus*, Newport, *Loc. cit.*, 1845; Newport and Gray, *Loc. cit.*, 1856.
- Cormocephalus gracilis*, Kohlrausch, Inaug. Dissert. Marburg, 1878.
- Cormocephalus gracilis*, Kohlrausch, Arch. Naturg. Troschel, 1881.
- Cormocephalus pygomegas*, Kohlrausch, *Loc. cit.*, 1881.
- Rhombcephalus brevis*, Newport, *Loc. cit.*, 1845.
- Cormocephalus aurantiipes*, Newport, *Loc. cit.*, 1845; Gray, *Loc. cit.*, 1844; Newport and Gray, *Loc. cit.*, 1856; Kohlrausch, *Loc. cit.*, 1881.
- Cormocephalus aurantiipes*, Meinert, Vid. Meddel. Naturhist. For., 1884.
- Cormocephalus aurantiipes*, Meinert, Proc. Amer. Phil. Soc., xxiii., 1885.

*Cormocephalus aurantiipes*, Haase, *Loc. cit.*, 1887; Pocock, *Biol. Cent. Amer.*, 1895; *Ann. Mag. Nat. Hist.* (7), viii., 1901.

*Cormocephalus aurantiipes*, Kraepelin, *Mit. Nat. Mus. Hamburg*, xx., 1903.

Kraepelin, 1903, has redescribed Newport's species as follows:—

“Kopfplatte dicht punktiert, mit deutlichen Basalplatten in den Hinterecken und 2 nach vorn bis zur Mitte des Kopfes reichenden medialen Längsfurchen. Fühler 17 gliedrig, 6 Grundglieder glatt und glänzend. 1 Rückenplatte dicht punktiert; mediale Längsfurchen vom 2-20 Segment durchgehend entwickelt; Berandung vom 7 oder 8 (selten vom 9) Segment bis 20 segment; letzte Rückenplatte mit durchgehender Medianfurche, fein punktiert, am Hinterrande bogig vorgezogen wie bei den übrigen Arten. Sternocoxalplatte mehr oder weniger dicht punktiert, vorn meist mit Medianfurche, die nach hinten eine zarte, gewellte, meist wenigstens an den Seiten erkennbare Querfurche erreicht oder schneidet; Zahnplatten etwas breiter als lang, jede mit 4 Zähnen, von denen der äussere etwas mehr isolirt ist. Bauchplatten vom 2-20 Segment mit durchgehenden 2 Medialfurchen, fein punktiert; letzte nach hinten verjüngt, meist etwas länger als am Grunde breit, mit seichtem Medianeindruck, am Hinterrande flachbogig gerundet. 1 bis 20 Beinpaar mit Klauenspornen Pseudopleuren in einen ziemlich schlanken Kegel ausgezogen, am Ende 2 spitzig, am Hinterrande der Pseudopleuren kein Seitendorn. Femur der Analbeine etwa  $2\frac{1}{4}$ - $2\frac{1}{2}$  mal so lang wie dick, ventral meist flach, oft mit gewulsteten Rändern, auf dem Aussenrande eine Längsreihe von 3 starken Dornen; auf dem inneren Rande in der Grundhälfte 2 Dornen, auf der Innenfläche distal 1 Dorn, dorsal innen 2 Dornen, dazu ein starker, 2 spitziger Eckdorn; Endklauen gross, oft so lang wie der letzte Tarsus, mit starken Klauenspornen. Stigmen lang dreieckig bis schlitzförmig. Färbung gelbbraun bis schmutzig oliv, bei juv. auch dunkel oliv, Kopf und 1 Rückenplatte oft mehr gelbroth, auch das Endsegment nebst den Analbeinen oft heller; Hinterränder der Segmente zuweilen dunkler grün; Beine gelb, bei juv. zuweilen grünlich. Länge bis 100 mm.”

It is noteworthy that one of the Port Stephens specimens has no spines at the claw of the anal legs. The Parramatta specimen is quite young.

*Locs.*—Port Stephens, N. S. Wales; two specimens. Parramatta, N. S. Wales; one specimen.

*CORMOCEPHALUS AURANTIIPES MARGINATUS*,<sup>1</sup> *Porat*, 1876.

*Cormocephalus marginatus*, *Porat*, Bih. K. Svensk. Vet. Akad. Handl., iv., 1876.

*Cormocephalus aurantiipes marginatus*, *Kraepelin*, Mit. Nat. Mus. Hamburg, xx., 1903.

According to *Kraepelin*, 1903:—

“Der Hauptform durchaus gleichend, aber die letzte Rückenplatte ohne Medianfurche. Die Berandung der Rückenplatten beginnt bei den vorliegenden Stücken stets im 7 Segment. Die Rückenplatten sind fast immer grün berandet.”

Here also the margins on the terga begin with the seventh segment.

*Loc.*—*Narrabri*, N. S. Wales; one young specimen.

*CORMOCEPHALUS BREVISPINATUS SULCATUS*, *subsp. nov.*

(Fig. 5.)

Dark olive green; legs and antennæ paler; toxicognats rusty.

Length 76 mm.; breadth of first tergum 6.50 mm. of second, 6 mm. of sixteenth, 6.50 mm. of the twenty-first, 5.50 mm. (measurements taken on the largest specimen).

Head plate, first tergum and maxillipedes obsoletely punctured. Head plate of even length and breadth (4.50 mm.); anterior margin rounded; posterior margin angular with the apex engaged under the anterior margin of the first tergum. A pair of triangular, short, but transversely stretched plates<sup>2</sup> exist behind the posterior angles of the head. First tergum wide but without any furrow. The two usual median furrows are to be seen from the second tergum to the twentieth. The marginal furrows are distinct on the last five to eight terga, but scarcely

<sup>1</sup> The trinomial nomenclature is in accord with *Dr. Brölemann's M.S.* It is not used in the Australian Museum.

<sup>2</sup> Several authors call these plates “Basalplatten”, a name which does not seem appropriate. The so-called basal plate of *Geophilids* is the tergum of the maxillipedes; but since, in *Scolopendrids*, the latter is fused with the first dorsal tergum, it is likely that these plates lying in front of it belong to the last cephalic segment, viz. to the second pair of maxillæ. It is proposed therefore to call these plates “postcephalic”.

so on the two preceding terga. The last tergum is shorter than long (in the proportion of 4.5:5.0), with moderately produced and rounded posterior margin, and with a distinct median sulcus.

Antennæ 14 mm. in length, reaching at least as far back as the anterior margin of the fourth segment; 16-17 jointed, with the basal 7-9 joints naked.

Dental plates of maxillipedes as long as wide with four teeth, of which the three internal are more or less coalesced, the fourth standing apart. The anterior fourth of the coxosternum of the maxillipedes is sulcate in the middle, the sulcus meeting backwards a transverse sulcus more or less distinct, sometimes hardly visible, at any rate very irregular. Behind the middle a shallow impression is generally to be seen.

Sterna from the second to the twentieth with two entire longitudinal sulci. Last sternum hardly longer than wide at the base, truncate at the apex with sides converging. Another specimen has the last sternum rounded at the apex and provided behind the middle with a very large and deep circular impression, which has to be considered as abnormal.

Legs of the first pair slender. On all the legs the spines are wanting at the distal end of the first tarsal joint, but are present

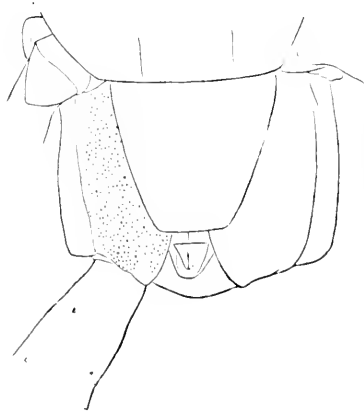


Fig. 5. *C. brevispinatus sulcatus*, Brolemann. Last leg bearing segment, ventral view.

at the base of the claw. The posterior angle of the coxopleuræ of fifteenth pair is produced in a very small conical process, not longer than broad at the base, tipped with two tiny spines. Posterior margin armed laterally with a minute spine (Fig. 5). The porous area is wider than the pleural part, thrilled with minute pores and reaching the posterior margin of the coxæ, leaving untouched a short and narrow linear space in front of the process. Joints of the anal legs short and stout; the measurement of the first three joints give the following figures:—

Femora :	Length	4 mm.	;	breadth at the apex	2.25 mm.
Patella :		2.80 mm.	;	„ „	2 mm.
Tibia :		2.40 mm.	;	„ „	1.50 mm.

Femora armed with:—

(2)-3 spines on the ventral-outer edge.

2 „ on the middle of the ventral-inner edge.

(1)-2 „ on the distal half of the inner surface.

2 „ on the dorsal-inner edge, besides two more on the distal-inner end of the joint which is merely swollen and not produced as in other species. The claw is nearly as long as the preceding joint and is accompanied with thin spines.

There is no doubt that this form is nearly related to Koch's *C. brevispinatus*, but since the last tergum shows a median sulcus (which is deficient in the type), it is necessary to give it a new name.

*Loc.*—Bourke and Wilcannia, Darling River floods, May and June, 1890; seven specimens.

*CORMOCEPHALUS WESTWOODI*, Newport, 1844.

*Scolopendra Westwoodii*, Newport. Ann. Mag. Nat. Hist., xiii., 1844.

*Scolopendra Westwoodii*, Gervais in Walckenaer, Hist. Nat. Ins. Apt., 1847.

*Scolopendra puncticeps*, Gervais, *Loc. cit.*, ? 1847.

„ *polita*, Gervais, *Loc. cit.*, ? 1847.

*Cormocephalus Westwoodii*, Newport, Trans. Linn. Soc., xix., 1845.

*Cormocephalus Westwoodii*, Gray, List Myr. Brit. Mus., 1844.

*Cormocephalus Westwoodii*, Newport and Gray, Cat. Myr. Brit. Mus., 1856.

*Cormocephalus Westwoodii*, Kohlrausch, Arch. Naturg. Troschel, 1881.

*Cormocephalus Westwoodii*, Haase, 1887, Ber. K. Zool. Mus. Dresden, 1886-87.

*Cormocephalus Westwoodii*, Silvestri, Ann. Mus. Civ. Genova, xxxiv., 1894.

*Cormocephalus Westwoodii*, Pocock, Ann. Mag. Nat. Hist. (7), viii., 1901.

*Cormocephalus rugulosus*, Porat, Öfvers. K. Svensk. Akad. Handl., xxviii., 1871.

*Cormocephalus rugulosus*, Porat, *Ibid.* Bihang, iv., 1876.

*Cormocephalus rugulosus*, Meinert, 1884, Vid. Meddel. Naturh. For., 1884-8.

*Cormocephalus lanatipes*, Kohlrausch, Inaug. Dissert. Marburg, 1878.

*Cormocephalus lanatipes*, Kohlrausch, *Loc. cit.*, 1881.

*Rhombcephalus politus*, Newport, *Loc. cit.*, 1845; Newport and Gray, *Loc. cit.*, 1856.

*Rhombcephalus politus*, Kohlrausch, *Loc. cit.*, 1881.

Kraepelin's description, 1903, runs thus:—

“Kopfplatte zerstreut punktiert, mit deutlichen Basalplatten in den Hinterecken und 2 nach Vorn bis zur Mitte des Kopfes reichenden medialen Längsfurchen. Fühler 17 gliedrig,  $6\frac{1}{2}$  bis 10 Grundglieder glatt und glänzend, nicht scharf von den behaarten Gliedern abgesetzt. Mediale Längsfurchen der Rückenplatten im 2 Segment beginnend; Berandung im 8 oder 9 Segment (selten schon im 7) beginnend; letzte Rückenplatte mit durchgehender Medianfurchen. Sternocoxalplatte zerstreut punktiert, ohne erkennbare gewellte Querfurchen im vorderen Drittel; Zahnplatten meist etwa so lang wie breit, jede mit 4 zähnen, von denen die 3 inneren etwas verschmolzen sind. Bauchplatten vom 2-20 Segment mit 2 durchgehenden Längsfurchen, ohne Mediagraben; letzte nach hinten sehr stark verjüngt, etwas länger als am Grunde breit, mit oder ohne schwache Mediandepression, am Hinterrande gestutzt, die Ecken kaum gerundet. 1-20 Beinpaar mit Klauenspornen. Pseudopleuren in einen kegelförmigen, am Ende 2 spitzigen Fortsatz ausgezogen, Hinterrand der pseudopleura meist mit Seitendorn. Femur der Analbeine höchstens doppelt so lang wie breit, unterseits oft mit flachgrübiger Area, ventral aussen normal mit 2, 2 Dornen, ventral innen in der distalen Hälfte mit 2 Dornen (dazu oft basal noch ein winziges Dörnchen), Innenfläche ebenfalls distal mit 2 Dornen, dorsal innen 2 Dornen, dazu ein 2 spitziger Eckdorn; Endklaue ohne Klauensporne, die Endglieder zuweilen etwas kurzborstig (*C. lanatipes*, Kohlr.). Stigmen kurz bis gestreckt dreieckig. Färbung oliv, oft mit hellerer Medianlinie, Seiten- und Hinterränder der Segmente zuweilen dunkelgrün, Kopf und 1 Rückenplatte meist gelbrot. Länge bis 80 mm.”

*Loc.*—Smithfield, N. S. Wales; one very large specimen, measuring 90 mm. in length, answering in all its details the above description. The anal legs are very short and thickened, more so than in young or small adult specimens; the two tarsal joints are very short, the claw is twice as long as the preceding tarsal joint and very sharp.



Genus SCOLOPENDRA, *Linneé* (*Newport*), 1735.

SCOLOPENDRA METUENDA, *Pocock*, 1895.

*Scolopendra metuenda*, *Pocock*, *Ann. Mag. Nat. Hist.*, (6), xvi., 1895.

*Scolopendra metuenda*, *Pocock*, in *Willey's Zool. Results*, 1898.  
 „ „ *Kraepelin*, *Mit. Nat. Mus. Hamburg*, xx., 1903.

Mr. R. I. Pocock gives the following description of the single specimen preserved in the collections of the British Museum:—

“Colour. The terga a deep olive-chestnut, head nearly black; antennæ, legs, and sterna rather greener than the terga; at the posterior end of the body the chestnut colour predominates on the somites.

Head, without sulci, finely punctured, a little wider than long.

Antennæ long and slender, composed of nineteen or twenty long cylindrical segments, whereof the basal five are smooth, though punctured, and the rest pubescent.

Maxillipedes finely punctured, the precoxal plates very short, but wide, with convex distal edges, each furnished with upwards of a dozen or more small, in parts nearly obsolete, teeth, which present the appearance of having been worn away; the femoral process simple, small, and curved back against the appendage.

Tergites. First without either longitudinal or transverse sulci; on the rest the longitudinal sulci start upon the third and extend to the twentieth, but are everywhere faint (except upon the extreme anterior and posterior edges of the terga), and almost die out in the middle of the body; a faint shallow median longitudinal furrow upon the terga. The lateral margin from the third to the twenty-first elevated.

Sternites smooth and shining, weakly bisulcate.

Anal somite small; tergite not measially sulcate, its width equal to the length of its lateral margin, but a little less than its median length; pleuræ densely porous, terminating in a blunt process, which is tipped with four or five small spines; sternite long and narrow, posteriorly attenuate, with truncate hinder edge, its basal width about two-thirds of its length; legs long and slender, nearly four times the length of the head, the segments cylindrical and about four times as long as wide;

femora armed with about fourteen small spines, 3, 3, 2 in three longitudinal rows on the inner surface and 3, 3 in two rows on the external half of the lower surface; the femoral process armed with from four to ten small spines; no tarsal spur, claw basally spurred. The rest of the legs long and slender, with a tarsal spur.

Measurements in millimetres.—Total length, 163, of antenna, 37, of anal leg, 41; width of head, 10.5, length, 10; width of twelfth tergite, 14, of twenty-first, 8.<sup>7</sup>

The only individual variations worth noticing are the following. With the large specimens, the six proximal antennal joints, and in one case the basal half of the seventh are naked whereas Pocock's type is said to have only five smooth antennal segments. The spine armature seems to vary considerably, on one of the large specimens the femora bore 2,3 or 3,3 on its ventral-outer edge, 2,2,2 or 2,3,2 on the inner surface; the other large specimen had five or six spines on the ventral-outer edge and sixteen or nineteen irregularly spread on the inner surface; while on a young specimen were observed 3,3 (or 6 irregular) on the ventral-outer edge and 2,3,2 (or seven irregular) on the inner surface.

*Loc.*—Solomon Islands; three specimens.

SCOLOPENDRA MORSITANS, *Linné*, 1766.

*Scolopendra alfzeli*, Porat, Öfv. K. Svens. Akad. Förh., xxviii., 1871.

*Scolopendra algerina*, Newport, Ann. Mag. Nat. Hist., xiii., 1844.

*Scolopendra algerina*, Newport and Gray, Cat. Myr. Brit. Mus., 1856.

*Scolopendra angulipes*, Newport, *Loc. cit.*, 1844; Trans. Linn. Soc., xix., 1845.

*Scolopendra angulipes*, Gray, List Myr. Brit. Mus., 1844.

*Scolopendra angulipes*, Gervais in Walekenaer, Hist. Nat. Ins. Apt., 1847.

*Scolopendra angulipes*, Newport and Gray, *Loc. cit.*, 1856.

” ” Sauss. and Zehnt. in Grandidier, Hist. Nat. Madagascar (texte), 1902; Abh. Senkenb. Nat. Ges., xxvi., 1901.

*Scolopendra attenuata*, Porat, *Loc. cit.*, 1871.

- Scolopendra bilineata*, Brandt, Bull. Sc. Acad. Petersb., vii., 1840.
- Scolopendra bilineata*, Newport, *Loc. cit.*, 1844; Gervais, *Loc. cit.*, 1847.
- Scolopendra bilineata*, Newport and Gray, *Loc. cit.*, 1856; Tömöswary, Term. Fuz., ix., 1885.
- Scolopendra brachypoda*, Peters, Naturw. Reise Mossambique, v., 1862.
- Scolopendra brandtiana*, Gervais, Ann. Sc. Nat. (2), vii., 1837; *Loc. cit.*, 1847.
- Scolopendra brandtiana*, Gervais, Voyage Castelnau, vii., 1859.
- Scolopendra brandtiana*, Brandt, *Loc. cit.*, 1840.
- „ „ Lucas in Blanchard, Hist. Nat. An. Artie., 1840.
- Scolopendra brandtiana*, C. Koch, Syst. Myriap., iii., 1847.
- „ „ Saussure, Essai faune Myr. Mexique, 1860.
- Scolopendra californica*, Humb. and Sauss., Rev. Mag. Zool., xxii., 1870.
- Scolopendra californica*, Humb. and Sauss., Mission Sc. Mexique, 1872.
- Scolopendra carnivipes*, Humb. and Sauss., *Loc. cit.*, 1870; *Loc. cit.*, 1872.
- Scolopendra chlorocephala*, Porat, *Loc. cit.*, 1871.
- Scolopendra cingulata*, Gervais, *Loc. cit. (nec. auct.)*, 1847.
- „ *cognata*, Porat, *Loc. cit.*, 1871; Bih. K. Sv. Akad. Hand., iv., 1876.
- Scolopendra compressipes*, Wood, Journ. Acad. Nat. Sc. Philad., v., 1863.
- Scolopendra crassipes*, Brandt, *Loc. cit.*, 1840.
- „ *elegans*, Gervais, *Loc. cit.*, 1847.
- „ *erythrocephala*, Brandt, *Loc. cit.*, 1840; Newport, *Loc. cit.*, 1844; *Loc. cit.*, 1845; Gray, *Loc. cit.*, 1844; Gervais, *Loc. cit.*, 1847.
- Scolopendra erythrocephala*, Newport and Gray, *Loc. cit.*, 1856; Tömöswary, *Loc. cit.*, 1885.
- Scolopendra Fabricii*, Newport, *Loc. cit.*, 1845; Gervais, *Loc. cit.*, 1847.
- Scolopendra Fabricii*, Newport and Gray, *Loc. cit.*, 1856.

- Scolopendra formosa*, Newport, *Loc. cit.*, 1845; Gervais, *Loc. cit.*, 1847.
- Scolopendra formosa*, Newport and Gray, *Loc. cit.*, 1856.
- „ *fulvipes*, Brandt, *Loc. cit.*, 1840; Gervais, *Loc. cit.*, 1847.
- Scolopendra fulvipes elegans*, Brandt, *Loc. cit.*, 1840.
- „ *gervaisiana*, C. Koch, Die Myriopoden getreu, &c., 1863 (*nec.* Koch, 1841 and 1847, Gervais, Lucas).
- Scolopendra Grandidieri*, Sauss. and Zehnt. in Grandidier, Hist. Nat. Madagascar (atlas et texte), 1897; *Loc. cit.*, 1901.
- Scolopendra impressa*, Porat, *Loc. cit.*, 1876.
- „ *infesta*, C. Koch, *Loc. cit.*, 1847; *Loc. cit.*, 1863.
- „ *intermedia*, Porat, *Loc. cit.*, 1871.
- „ *leachii*, Newport, *Loc. cit.*, 1844; *Loc. cit.*, 1845; Gray, *Loc. cit.*, 1844.
- Scolopendra Leachii*, Gervais, *Loc. cit.*, 1847; Newport and Gray, *Loc. cit.*, 1856.
- Scolopendra leachii*, Porat, *Loc. cit.*, 1871.
- „ *limbata*, Brandt, *Loc. cit.*, 1840; Newport, *Loc. cit.*, 1845; Gervais, *Loc. cit.*, 1847; Newport and Gray, *Loc. cit.*, 1856.
- Scolopendra lineata*, Sauss. and Zehnt., *Loc. cit.*, 1902 (*nec.* Gervais).
- Scolopendra longicornis*, Newport, *Loc. cit.*, 1844; *Loc. cit.*, 1845; Gray, *Loc. cit.*, 1844.
- Scolopendra longicornis*, Gervais, *Loc. cit.*, 1847; Newport and Gray, *Loc. cit.*, 1856.
- Scolopendra longicornis*, Porat, *Loc. cit.*, 1876 (*nec.* Fabricius).
- Scolopendra lopadusæ*, Pirota, Ann. Mus. Civ. Genova, xi., 1878.
- Scolopendra lopadusæ*, Kohlrausch, Arch. Naturg. Troschel, xvii., 1881.
- Scolopendra marginata*, Say, Journ. Acad. Nat. Sc. Philad., ii., 1821.
- Scolopendra marginata*, Brandt, *Loc. cit.*, 1840; Lucas, *Loc. cit.*, 1840.
- Scolopendra marginata*, Gervais, *Loc. cit.*, 1837; *Loc. cit.*, 1847; *Loc. cit.*, 1859.

- Scolopendra marginata*, Bollman, Bull. U. S. Nat. Mus., 46, 1893.
- Scolopendra morsicans*, Gervais ex. p., 1837, *Loc. cit.* (*excl. syn.*), 1837; Lucas, *Loc. cit.*, 1840; Pocock, Ann. Mag. Nat. Hist., (7), i., 1898.
- Scolopendra morsitans*, Linné, Syst. Nat., ed. xii., et auct., 1766 (*nec.* C. Koch, 1863, Villiers, Rossius, Kutorga, Pal. Bauveis, Kohlrausch, 1881, n° 14, Karsch, 1881).
- Scolopendra mossambica*, Peters, Monatsb. K. preuss. Akad. Wiss., xxix., 1855.
- Scolopendra pella*, Wood, Proc. Acad. Nat. Sc. Philad., 1861.
- „ *picturata*, Porat, *Loc. cit.*, 1871.
- „ *pilosella*, Porat, *Loc. cit.*, 1871.
- „ *planipes*, C. Koch, *Loc. cit.*, 1847; *Loc. cit.*, 1863.
- Scolopendra platypoides*, Newport, *Loc. cit.*, 1844; *Loc. cit.*, 1845; Gray, *Loc. cit.*, 1844.
- Scolopendra platypoides*, Gervais, *Loc. cit.*, 1847; Newport and Gray, *Loc. cit.*, 1856.
- Scolopendra platypus*, Brandt, *Loc. cit.*, 1840; Newport, *Loc. cit.*, 1844; Gray, *Loc. cit.*, 1844.
- Scolopendra platypus*, Gervais, *Loc. cit.*, 1847; de la Sagra, Hist. fis. Cuba, 1856.
- Scolopendra platypus*, Humb. and Sauss., *Loc. cit.*, 1872; Gerstäcker, Decken's Reisen Ostafri., iii., 1873; Porat, *Loc. cit.*, 1876.
- Scolopendra platypus*, Karsch, Berl. entom. Zeits., xxv., 1881.
- „ „ Rainbow, Austr. Mus. Mem., iii., 1897.
- „ *porphyrotenia*, Wood, *Loc. cit.*, 1861.
- „ *Richardsoni*, Newport, *Loc. cit.*, 1845; Gray, *Loc. cit.*, 1844; Gervais, *Loc. cit.*, 1847; Newport and Gray, *Loc. cit.*, 1856.
- Scolopendra saltatoria*, Porat, *Loc. cit.*, 1871.
- Scolopendra scopoliانا*, C. Koch, Wagner's Reise Alg., iii., 1841; *Loc. cit.*, 1847.
- Scolopendra scopoliانا*, Gervais, *Loc. cit.*, 1847; Lucas, Explor. Sc. Alger., 1849; Ann. Soc. Entom. France, (3), i., et Bull., 1853.
- Scolopendra scopoliانا*, Karsch, Arch. Naturg. Troschel, xlvii., 1881.

- Scolopendra scopoliana*, Mattozo, Journ. sc. Acad. Lisboa 1881.
- Scolopendra scopoliana*, Pocock, Ann. Mag. Nat. Hist. (6), vii., 1891.
- Scolopendra spinosella*, Sauss. and Zehnt., *Loc. cit.*, 1897.
- „ *tigrina*, Newport, *Loc. cit.*, 1845; Gervais, *Loc. cit.*, 1847.
- Scolopendra tongana*, Gervais, *Loc. cit.*, 1847.
- Scolopendra tuberculidens*, Newport, *Loc. cit.*, 1844; *Loc. cit.*, 1845; Gray, *Loc. cit.*, 1844.
- Scolopendra tuberculidens*, Gervais, *Loc. cit.*, 1847; Newport and Gray, *Loc. cit.*, 1856.
- Scolopendra tuberculidens*, Humbert, Mem. Soc. Hist. Nat. Genève, xviii., 1865.
- Scolopendra vaga*, Porat, *Loc. cit.*, 1871.
- „ *varia*, Newport, *Loc. cit.*, 1845; Gervais, *Loc. cit.*, 1847.
- Scolopendra varia*, Newport and Gray, *Loc. cit.*, 1856.
- „ *Wahlbergi*, Porat, *Loc. cit.*, 1871.
- Eurylithobius Slateri*, Butler, Ann. Mag. Nat. Hist., (4), xvii., 1876.
- Eurylithobius Slateri*, Pocock, *Loc. cit.*, 1891.
- Heterostoma elegans*, Newport, *Loc. cit.*, 1845; Newport and Gray, *Loc. cit.*, 1856.
- Heterostoma fulvipes*, Newport, *Loc. cit.*, 1845; Newport and Gray, *Loc. cit.*, 1856.

Kraepelin, 1903, gives the following description:—

“Kopfplatte zerstreut schwach punktiert, ohne Längsfurchen. Fühler 18-21 gliedrig (selten einerseits 17 gliedrig oder bis 23 gliedrig), meist 19- oder 20 gliedrig, 6-7 (selten 8-9) Grundglieder glatt und glänzend. 1 Rückenplatte kaum punktiert, ohne Halsringfurchen; die medialen Längsfurchen im 2 oder 3 Segment beginnend bis zum 20 Segment; Berandung sehr variabel und wahrscheinlich bei ♂ und ♀ verschieden, oft schon im 5 (oder sogar schon im 3) Segment beginnend, oft aber auch erst in den mittleren Segmenten (im 8, 11, 13, &c.), zuweilen auch erst in 18 oder 19 Segment, ohne dass diese Verschiedenheiten eine Trennung nach geographischen Gebieten zulassen; letzte

Rückenplatte fast stets<sup>3</sup> mit erkennbarer, durchgehender Medianfurche, glatt, nicht punctiert, ihr Hinterrand flachbogig vorgezogen. Sternocoxalplatte zerstreut punktiert, oft mit Andeutung einer Medianfurche, ohne Querfurche; die Zahnplatten wenig breiter als lang, jederseits mit ziemlich deutlichen 4-5 Zähnen, von denen jedoch die 2 inneren meist etwas verschmolzen und kleiner sind als die übrigen. Bauchplatten glatt, vom 2-20 Segment mit 2 medialen Längsfurchen, die aber in den letzten Segmenten meist nicht bis zum Hinterrande durchgehen; letzte Bauchplatte kaum so lang wie breit, nach hinten verjüngt, ihr Hinterrand gestutzt-gerundet, vor demselben meist flache Mediandepression. 1-19 Beinpaar mit 1 Tarsalsporn, 20 meist ohne, seltener mit Tarsalsporn. Pseudopleuren mit ziemlich kurzen, kegelförmigem Fortsatz, am Ende meist 4 spitzig, seltener 3- oder 5 spitzig, dazu am Hinterrande der Pseudopleura meist ein Seitendörnchen; die Porenarea in der Hinterhälfte der Pseudopleura den "Umschlagsrand" der letzten Rückenplatte nicht erreichend. Femur der Analbeine bei juv. schlank, bei ad. gedrungener, dorsal meist flach, beim ♂ aussen (und oft auch innen) breit berandet, beim ♀ kaum berandet, ventral normal mit 3 reihen von je 3 Dornen (von denen aber einige fehlen können), auf der Innenfläche ohne Dornen, dorsal meist 3, 2 oder 2, 2 oder 2, 4 Dornen, dazu ein meist 4 spitziger (selten nur 3 spitziger oder aber 5-8 spitziger) Eckdorn; Patella dorsal abgeflacht und berandet wie der Femur, bei juv. beide Glieder mehr gerundet. Färbung äusserst variabel, meist lehmgelb bis rotgelb, mit oder ohne grüne Hinterränder der Segmente, seltener olivbraun (wobei Kopf, sowie I und letztes Rückensegment meist heller gelbbraun), hellgrünen Längstreifen (juv.) resp. Hinterrändern der Segmente, oder tief dunkelgrün. Länge in der Regel nur 70-90 mm., doch liegen mir auch Exemplare von 105 ja 120 mm. Länge (und 12 mm. Breite) vor".

*Locs.*—Bourke and Wilcannia, Darling River floods, May to June 1890; six specimens: same locality; four large specimens: same locality; four young specimens. Narrabri, N. S. Wales; two adult and one young specimen. Lawler, South Australia; one specimen.

On two of the large specimens of n° 2a the spines of the anal femora are numerous and irregularly disposed, though the inner surface remains typically spineless. One of these specimens has a crippled anal leg.

<sup>3</sup> Nur bei einigen Exemplaren aus Madagaskar war die Medianfurche nicht entwickelt.

SCOLOPENDRA LETA, *Haase*, 1887.

*Scolopendra lata*, Haase, Ber. K. Zool. Mus. Dresden, 1886-87.

*Scolopendra leta*, Kraepelin, Mit. Nat. Mus. Hamburg, xx., 1903.

*Rhombcephalus latus*, Pocock, Ann. Mag. Nat. Hist., (7), viii., 1901.

Kraepelin, 1903, re-described this species as follows:—

“Kopf und Rückenplatten sind meist deutlich punktiert, die Fühler nur 17-18 gliedrig, 6 Grundglieder glatt und glänzend. Mediale Längsfurchen der Rückenplatten meist schon im 2 Segment beginnend (hier oft abgekürzt), dazu oft vom 6 an ein kurzer Medianstrich am Hinterrande; Berandung im 19 Segment schwach, nur im 20 und 21 Segment deutlich; letzte Rückenplatte mit Medianfurche. Sternocoxalplatte jederseits mit 4-5 Zähnen. Bauchplatten vom 2-20 Segment mit durchgehenden Längsfurchen. Beinpaare im 1-19 Segment mit 1 Tarsalsporn. Pseudopleuren spitz vorgezogen, 2-4 spitzig, Hinterrand der Pseudopleura mit Seitendorn. Femur der Analbeine bedornt, die Dornen lang und spitz, der Eckdorn 3-4 spitzig. Färbung dunkelgrün, an den Seitenrändern wenigstens der letzten Segmente heller, Beine bis zum 17 Segment gelb, die 3-4 letzten Paare nur am Grunde gelb, dann intensiv grün, so dass sie geringelt erscheinen. Länge bis 50 mm.”

*Loc.*—Penrith, N. S. Wales; four specimens.

## GEOPHILOMORPHA.

Genus PACHYMERINUS, *Silvestri*, 1905.

*Pachymerinus*, Silvestri, Zool. Jahrb., Suppl. vi., Fauna Chilen., 1905.

*Pachymerinus*, Silvestri, Mit. Nat. Mus. Hamburg, xxiv., 1907.

This genus needs re-describing, as the characters given by the author are no longer sufficient:—

(Eupleurium as in *Geophilus*).<sup>4</sup>

Labrum with a distinct median plate (more or less developed), destitute of teeth or lashes. Lateral plates fringed.

<sup>4</sup> The characters placed in brackets are not considered so far as having a generic value, and are mentioned *pro memoriam*.



(Mandible with its ventral part enlarged and fringed with spined bristles; with or without a blunt tooth at the apex.)

Coxosternum of first maxillæ undivided (all the elements distinct from one another; lateral palpi present or missing).

Coxosternum of second maxillæ divided into two plates (which remain in contact on the middle line); sternal and pleural parts fused together and with the corresponding coxa<sup>5</sup> (without chitimized suture; anterior inner angle provided with a conical, more developed process; last joint armed with a smooth claw).

Tergum of maxillipedes much narrowed anteriorly; inner margin of pleuræ almost parallel; (joints and claw of maxillipedes armed with more or less developed teeth).

Sterna destitute of porous area; last sternum narrow.

Anal legs, including coxa, seven jointed, the last joint being tipped with a claw coxa bearing isolated pores.

(Anal pores present).

*Type*.—*Pachymerinus millepunctatus* (Gervais?), Silvestri. Several species have been recorded from the Pacific slope of South America, but it is uncertain if they belong to the Genus *Pachymerinus* as outlined above.

#### PACHYMERINUS FROGGATTI, *sp. nov.*

(Figs. 6-17).

Parallel sided on the anterior two-thirds of the body, then tapering backwards.

♂: Length 28 mm. — Breadth of the first tergum 1 mm.; of the penultimate 0.40 mm. — 55 pairs of legs.

Cephalic plate longer than broad (in the proportion of 1.50 to 0.85), leaving uncovered a large part of the maxillipedes. Anterior margin reaching the base of the claw of the maxillipedes, straight, slightly notched in the middle; lateral margins almost parallel; posterior angles rounded. The surface shows no frontal sulcus, but a pale line is to be seen

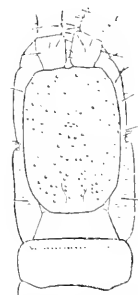


Fig. 6. *P. froggatti*, Brölem. Cephalic plate and tergum of maxillipedes.

<sup>5</sup> Attems, 1909 (*Jena Denkschr.*, xiv.), admits that the part of the coxosternum, hitherto considered as answering the coxa, represents two joints fused together; but his opinion seems by no means justified as the sulcus he refers to does not appear to exist.

and the outer margin is uneven at the very spot where the sulcus could be expected to exist. The basal furrows are very faint and chiefly indicated by irregular rows of punctures rougher at the base than along the sides of the plate. Some other strong punctures are to be seen in the distal third (Figs. 6 and 7).

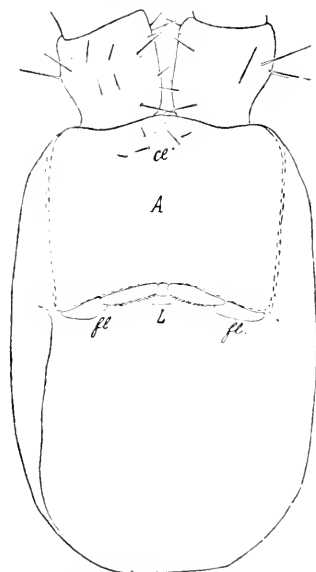


Fig. 7. *P. froggatti*, Brölem. Cephalic plate, ventral view, after removing the mouth-parts.

Antennæ moderately elongate (4.10 mm.), without any special setæ.

Median plate of labrum small, equal to the thirteenth part of the total breadth of the labrum, without any process; lateral plates transversely stretched, five times broader than long, fringed with delicately plumose lashes. Pre-labial zone somewhat shorter than broad, furnished with a so-called "Clypealarea" and with but few bristles, say eight in two rows placed 2 + 6. Sutures of



Fig. 8. *P. froggatti*, Brölem. Labrum (the lower branches of the fulcrum are missing).



Fig. 9. *P. froggatti*, Brölem. Mandibles *in situ*, with hypopharynx (*hyp.*) and lower branches of fulcrum (*fl.*)

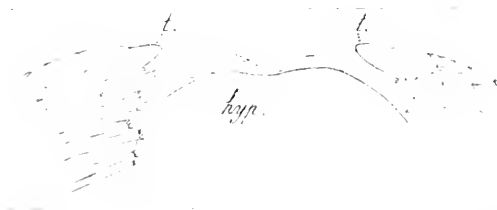


Fig. 10. *P. froggatti*, Brölem. Apex of mandibles, showing the blunt tooth (*t.*); hypopharynx (*hyp.*).

cephalic pleuræ distinct (Fig. 8).

Mandible provided, beside the pectinate lamella, with a blunt and well chitinized tooth at the apex,

and with spined setae along the ventral margin (Fig. 9). These setae are cylindrical bristles truncate and crowned with a few (3-5) strong triangular spines, as shown in the figure (Fig. 10).

Coxosternum of first maxillae undivided; only one pair of short acuminate femoral palpi could be detected (Fig. 11).

Coxosternum of second maxillae divided but still in contact on the middle line. Sternal and pleural plates fused together and with the corresponding coxa without chitinous suture. Anterior inner angle tipped with a short conical process. Surface provided with numerous bristles along the anterior and the inner margin. No tooth at the distal outer end of the patellar joint. The last joint bears a short smooth claw (Fig. 12).

Tergum of maxillipedes narrow, its sides converging strongly in front. Coxosternum of maxillipedes somewhat broader than long, with punctured surface

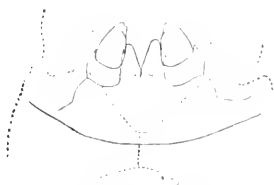


Fig. 11. *P. froggatti*, Brölem. First maxillae, dorsal view.

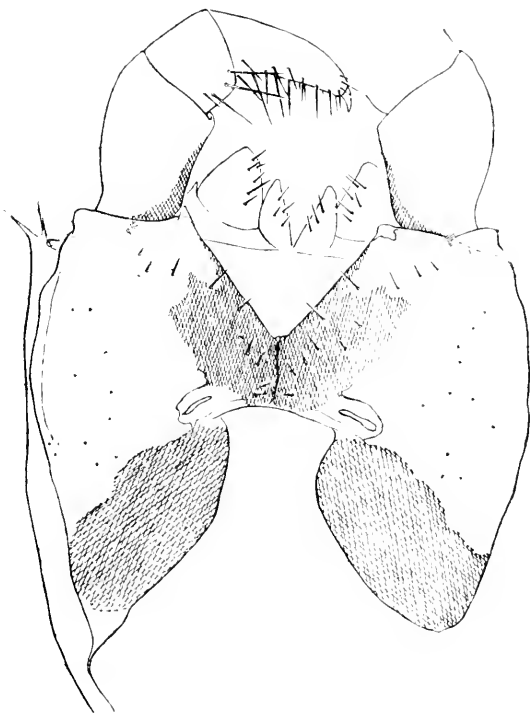


Fig. 12. *P. froggatti*, Brölem. Second maxillae, ventral view.

and with a distinct median sulcus running through. Anterior margin slightly notched allowing the tooth-like angle of the coxa to appear. Little is to be seen of the pleuræ from below; their inner margin is almost parallel (Fig. 13). Femora and claw armed, the former with two chitinized tubercles along the inner edge, the latter with a short but strong basal tooth; it is worth

mentioning that the trace of suture between femora and trochanter passes above the first tooth in order that the latter has to be considered as belonging to the trochanter.

A few only of the anterior terga are faintly punctured, every one from the second to the penultimate is bisulcate. Sterna from the second segment with a median sulcus strongly impressed but short on the anterior part of the body, growing gradually longer and weaker



Fig. 13. *P. froggatti*, Brölem. Maxillipedes, ventral view.

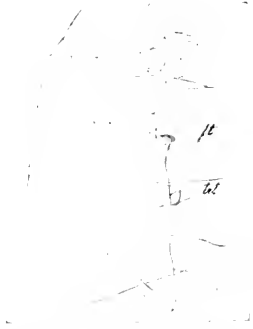


Fig. 14. *P. froggatti*, Brölem. Inner margin of maxillipedes; (*ft.*), femoral tooth; (*trt.*), trochanter tooth.

towards the posterior end. The sterna show besides near the posterior margin—on the anterior segments at least—a rounded swelling which is to be held homologous to what Attems has described for *G. corralinus* as a “zugenformiger lappen”; it is scarcely developed with the present species (Fig. 15).



Fig. 15. *P. froggatti*, Brölem. Sternum and eupleurium of 10th segment. (Signs as in Fig. 31).

Ventral pores wanting. Presterna divided.

Last tergum nearly as long as broad at the base, with margins converging backwards, the breadth of the posterior margin being less than half the breadth of the anterior.

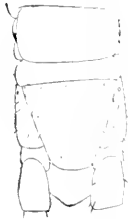


Fig. 16. *P. froggatti*, Brölem. Last leg segment, dorsal view.

Last sternum as long as broad, narrow, scarcely wider at the base than the preceding sternum and far more narrow than the anal segment—coxæ of anal legs included; sides feebly converging and slightly convex; apex truncate.

Anal legs rather short, seven jointed (coxæ included), armed with a claw and furnished with a few long bristles and a clothing of tiny short hairs on the ventral surface. Coxæ almost parallel sided, showing on the ventral and lateral surfaces some ten to twelve pores, of which four to five in one row concealed under the lateral margin of the sternum, the others remaining uncovered. Another set of pores is to be seen on the dorsal surface opening beneath the anterior angle of the tergum and the side of its pretergum (Figs. 16 and 17.)

Male appendages long, acuminate. Anal pores present but feebly chitinized.

This species seems nearly related with *Geophilus concolor*, Gervais, which has a larger number of leg-bearing segments, say sixty-nine to seventy-one, a cephalic plate abruptly narrowed in front and no pores on the dorsal surface of the anal coxæ. Nothing is known as to the structure of the mouth-parts of Gervais' species.

*Loc.*—Penrith, N. S. Wales; one ♂ specimen.

#### Genus *GEOMERINUS*, *gen. nov.*

This genus, the type of which is *Geomerinus curtipes*, Haase, only differs from the preceding *Pachymerinus* by the joints of the anal legs which number six, instead of seven. Since this character ranks as generic amongst the Geophilomorpha, a new division has to be erected for the reception of Haase's species.

Fig. 17. *P. froggatti*, Brölem. Last leg-bearing segment, ventral view.

R. I. Pocock, 1901<sup>5</sup>, has endeavoured to save from oblivion the generic name *Necrophleophagus*, and has used it for some Australian species amongst which is *G. curtipes*, Haase. This could only be justified if 1st, *G. longicornis*, the type of Newport's genus, proved to be generically different from the other true *Geophilus* species: and if 2nd, the Australian species were found to be congeneric with *G. longicornis*. Whatever might be the position of *G. longicornis* can still be disputed, but it is certain that at least *G. curtipes* cannot be placed alongside with *G. longicornis* from which it differs by the structure of the second maxillæ, by the number of joints of the anal legs, &c., &c.

GEOMERINUS CURTIPES (*Haase*), 1887.

(Figs. 18-25).

*Geophilus curtipes*, Haase, Ber. K. Zool. Mus. Dresden, 1886-1887.

*Geophilus curtipes*, Attems, Zool. Jahrb., xviii., heft 2, 1903.

*Necrophleophagus curtipes*, Pocock, Ann. Mag. Nat. Hist. (7), viii., 1901.

A strongly chitinized, dark coloured species, resembling a *Mecistocephalus*; parallel sided in front, slightly tapering in the second half.

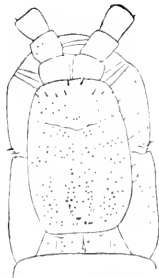


Fig. 18. *G. curtipes*, Haase. Cephalic plate and tergum of maxillipedes.

♀: Length 67 mm.  
—Breadth of the first tergum 2.10 mm.; of the penultimate, 1 mm.  
—71 pair of legs.

Cephalic plate much longer than broad (in the proportion of 2.60 to 1.70), anterior margin reaching the base of the claws of maxillipedes. Anterior and posterior margins almost straight; lateral margins slightly and unevenly curved, the greatest width



Fig. 19. *G. curtipes*, Haase. Cephalic plate, ventral view.

being in the posterior half. Surface showing two very faint longitudinal impressions in front of the posterior margin, and a

<sup>5</sup> Pocock—Ann. Mag. Nat. Hist., (7), viii., p. 339.

hardly distinct linear furrow about the anterior third in the shape of a broad angle, the apex of which is turned backwards; the surface is punctured all over but more densely and more deeply along the middle line and in front of the posterior angles as well as behind the apex (Figs. 18 and 19).

The antennæ seem rather long; the right antenna is broken after the 7th joint, the left is entire but does not appear to be normal, and measures 5 mm.; the joints are longer than broad and irregularly beset with bristles.

Prelabial zone somewhat shorter than broad, with an irregular row of 5 + 5 bristles near the anterior margin, and a "Clypeal-area" of a subquadrate shape. Sutures of the cephalic pleuræ distinct. Labrum divided into three plates; median plate small, longer than broad, equal to about the twentieth part of the total breadth of the labrum, smooth; lateral plates more than four times broader than long, furnished with delicately plumose lashes.



Fig. 20. *G. curtipes*, Haase. Apex of the mandible with the blunt tooth (*t*); *pl.*, pectinate lamella; *sp.*, spined bristles.

Mandible crowned with the usual pectinate lamella; at the distal end of the latter is to be seen a single blunt strongly chitinized tooth shorter than the next teeth of the pectinate lamella. Ventral



Fig. 21, *G. curtipes*, Haase. Three-spined bristles of the mandible, much enlarged.

part of the mandible enlarged; when seen *in situ*, its margin is parallel to the axis of the body, and is furnished with the peculiar spined bristles as described in *Pachymerinus froggatti*; the length of these bristles is about 36 $\mu$ . (Figs. 20 and 21).

Coxosternal plate of the first maxillæ undivided and destitute of palpi; coxal process distinct, triangular, blunt; the next maxillar joint is provided with a rudimental palpus.

Coxosternum of the second maxillæ divided into two halves on the middle line; each half is considered as the equivalent of coxa,

sternum and pleura of one side coalesced into one plate. No division whatever is to be seen; yet the proximal inner margin

shows a reticulate structure covering a wide space which is to be held equivalent to the pleural (or to the pleurosternal?) part of the organ. The process of the distal inner angle is rudimental. The bristles are fairly numerous (a dozen or so), and somewhat distant from the anterior margin. Maxillar joints three, rather stout, the distal joint armed with a very short claw (Fig. 22).

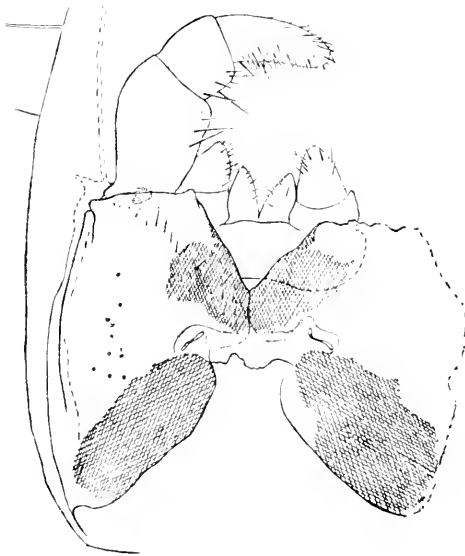


Fig. 22. *G. curtipes*, Haase. First and second maxillae, ventral view.

Maxillipedes wide, largely emerging sideways from under the cephalic

plate, punctured all over. Tergum short, strongly narrowed anteriorly; its surface uneven, punctured. Pleurae covering the dorsal part of the coxae, scarcely visible on the ventral side, their inner margins almost parallel. Coxosternal plate quadrangular, somewhat broader than long with a faint shallow median impression, and with two rudimental teeth in front. Femora long, armed with two blunt tubercles along the inner edge, one in the middle (trochanter tooth) the other next to the distal angle. Claw long, with a basal short hook-like tooth (Fig. 23).

Terga widely punctured; bisulcate from the first segment, where the sulci are converging anteriorly instead of being parallel as on the following segments.

Sterna coarsely punctured on the first segments, less so on the middle and posterior segments. Ventral pores wanting. From the second or third segment to the penultimate the sterna are divided by a median short sulcus equal to nearly one-third of the



total length of the plate; it is more deeply impressed at its anterior end and deeper on the first segments than on the last. Besides the anterior sterna show, immediately in front of the posterior margin, a rounded swelling as witnessed on the preceding species. Presterna divided on the middle line. Euplenium of the Geophilid type.

Last tergum a trifle shorter than broad at the base; sides converging gently; posterior margin



Fig. 23. *G. curtipes*, Haase. Inner margin of maxillipedes.

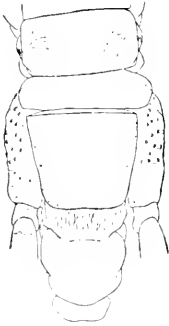


Fig. 24. *G. curtipes*, Haase. Last leg-bearing segment, dorsal view.

truncate or even somewhat excised in the middle.

Last sternum narrow, not wider at the base than the preceding sternum, longer than broad, truncate posteriorly, with lateral margins evenly convex. Presternum divided.



Fig. 25. *G. curtipes*, Haase. Last leg-bearing segment, ventral view.

Anal legs short, six jointed (coxa included), armed with a sharp claw, clothed ventrally with short thin hairs. Coxæ large, somewhat swollen, uneven and with but

few tiny setæ; pores numerous spread all over except on the posterior third of the dorsal surface; the pores are irregular in size, a row of small pores is normally concealed under the lateral margin of the sternum (Figs. 24 and 25).

Anal pores present.

Haase's description mentions that the claw of the maxillipedes, when closed, hardly protrudes beyond the anterior margin of the head, a character which might result from a stronger contraction of the animal. His specimens are said to be furnished with a small tooth inside the third joint of the maxillipedes (missing in the Parramatta specimen), this however is a very unimportant character. Also the last joint of the antennæ, according to the German author, should bear a conical appendage, a fact which could not be controlled here, the antennæ being abnormal. In spite of these differences there seems to be no doubt that the two forms are specifically identical.

*Loc.*—Parramatta, N. S. Wales; one female.

Genus SCHIZORIBAUTIA, *gen. nov.*

(Eupleurium as in *Geophilus*).

Median plate of labrum (more or less developed), destitute of teeth or lashes; lateral plates fringed.

(Mandible with its ventral part enlarged and fringed with spined bristles; without a blunt tooth at the apex).

Coxosternum of first maxillæ undivided, as in *Pachymerinus*.

Coxosternum of second maxillæ divided into two plates (and standing apart from one another on the middle line); coxal, sternal and pleural plates almost entirely free, *i.e.* not fused together into one plate as in the preceding genus; (anterior inner angle tipped with a conical process; patella joint bearing a tooth on its anterior outer angle; last joint armed with a smooth claw).

Tergum of maxillipedes narrowed anteriorly; internal margin of pleuræ parallel; (inner edge of the femoral joint unarmed).

Ventral pores present, condensed on one or two areas on a certain number of sterna; last sternum wide.

Anal legs, coxæ included, seven jointed; (the last joint tipped with a claw); coxa bearing isolated pores.

(Anal pores present).

*Type.*—*Schizoribautia rainbowi*, sp. nov.

SCHIZORHABUTIA RAINBOWI, *sp. nov.*

(Figs. 26-34).

Body fairly robust, scarcely narrowed anteriorly, tapering in its last third.

♀:—Length about 50 mm.—Breadth of the first tergum 1.30 mm., in the middle of the body 1.50 mm.; of the penultimate tergum 1 mm.—65 pairs of legs.

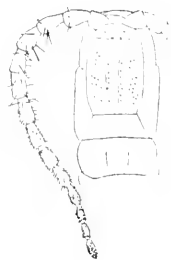


Fig. 26. *S. rainbowi*, Brölem. Cephalic plate and tergum of maxillipedes.

(in the proportion of 1.50 to 0.90), with its anterior margin reaching the base of the claw of the maxillipedes. Anterior margin

rounded and notched in the middle; posterior margin straight; lateral margins evenly curved. Surface bearing on its posterior half two deep furrows slightly diverging frontwards; besides it is roughly punctured in front of the posterior angles and at the bottom of the furrows. There is no distinct frontal sulcus, but a faint transverse depression is to be seen in its stead (Fig. 26).

Antennæ long, over one-tenth of the length of the body (5.50 mm.); joints longer than broad; the five basal joints are clothed with setæ long



Fig. 27. *S. rainbowi*, Brölem. Labrum.



Fig. 28. *S. rainbowi*, Brölem. Apex of right mandible, dorsal view.

and scarce, becoming more numerous and shorter towards the end of the antenna.

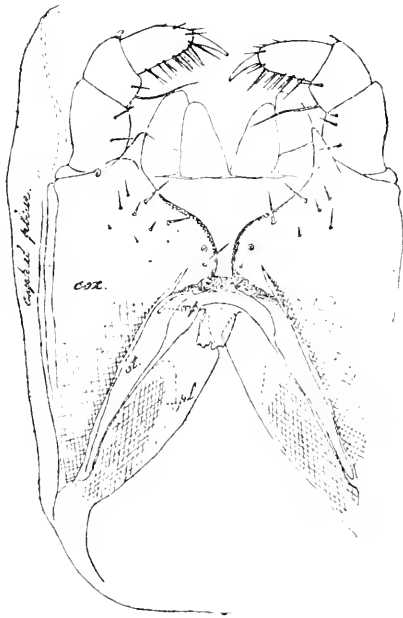


Fig. 29. *S. rainbowi*, Brolem. Second maxillæ, ventral view.

Prelabial zone distinctly shorter than long, with a circular area near the apex and shortish setæ disposed on three rows placed 2, 2 and 5. Median plate of labrum rather large, its breadth being one-tenth of the total breadth of the labrum; its surface is uneven but destitute of teeth or lashes. Lateral plates almost twice as broad as long, furnished with but few lashes at the inner end of its posterior edge. Fulcri broad (Fig. 27).

Mandible as in the preceding species, but without a blunt tooth at the distal end of the pectinate lamella. The inner convex surface just below the apex is densely clothed with

delicate setæ (Figs. 28 and 29).

Coxosternum of first maxillæ undivided, without lateral palpi; coxal process long. Next joint bearing a very small palps.



Fig. 30. *S. rainbowi*, Brolem. Inner margin of maxillipedes.

Coxosternum of second maxillæ divided into two halves which stand apart from one another. Each half is divided into three distinct parts which are considered homologous to the coxa, the sternum and the pleura. The pleural plate stands for itself, being surrounded with membrane; the sternal plate, in shape of a narrow band, is almost entirely isolated by a membranaceous cleft from the coxa with which it is fused only by its inner (anterior) angle; the metameric pore is concealed under the inner end of

the sternal plate. This peculiar structure comes near to that of the genus *Ribautia*, in which the sternal and coxal plates are coalesced, the cleft being replaced by a strongly chitinized ridge. The distal inner angle of the coxa is produced into a long conical process. The patellar joint is armed at its outer distal angle with a short, blunt but strongly chitinized tooth; the claw is long, slender and smooth. The coxal plate bears a set of eight to ten bristles disposed on three rows near the anterior inner margin; a particularly long bristle can be seen emerging from beneath the patellar joint.

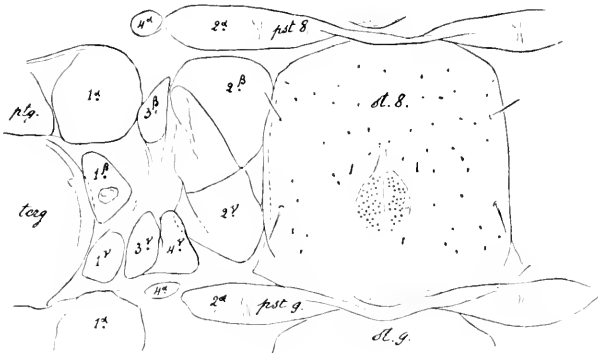


Fig. 31. *S. rainbowi*, Brölem. Sternum and eupleurium of the eighth segment; *st.*, sternum; *psl.*, presternum; 1,2,3,4, pleurites.

Tergum of maxillipedes wide at the base, with sides strongly converging; punctured. Inner margins of the pleuræ parallel (Fig. 30). Maxillipedes largely overlapping the sides of the head. Coxosternum nearly as long as broad, subquadrate, roughly punctured, with straight chitinized lines almost reaching the condyli of the femora, and a faint median sulcus widened into a dimple in front of the centre. Two rudimental teeth emerge from below the anterior margin which is almost straight. Femora long, without any well defined tubercle although the inner edge is somewhat sinuate and chitinized. Claw strong, with a small basal tooth (Fig. 31).

Terga bisulcate from the second segment, widely and faintly punctured on the anterior part of the body.

Anterior sterna roughly punctured and provided with a median sulcus; the sulcus does not reach the anterior margin and widens behind the middle into a flat, rounded or fusiform

dimple the bottom of which is pierced by the ventral pores. On the sterna 32, 33, 34, and to a lesser degree 31 and 35, the median sulcus assumes the shape of a deep, wide, abrupt sided furrow running through from the anterior to the posterior margin.

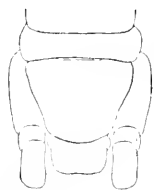


Fig. 32. *S. rainbowi*, Brölem. Last leg-bearing segment, dorsal view (somewhat schematized).

Whether this structure is normal or due to the state of preservation of the only specimen at hand, could not be decided. Further backwards the sulcus grows fainter but never disappears entirely.

Porous area wanting on the first and second segment, single from the third to about the twenty-fourth, and divided into two areas from there on up to the penultimate segment; the areas are difficult to discover on dark well chitinized specimens, especially backwards, unless the

téguments should be prepared on purpose. The sterna are covered with numerous hairs; these are very short, except the two marginal pairs which are of moderate length.

Last tergum almost as long as broad at the base, sides strongly converging, somewhat excised behind the middle and running into the posterior margin which is rather rounded.

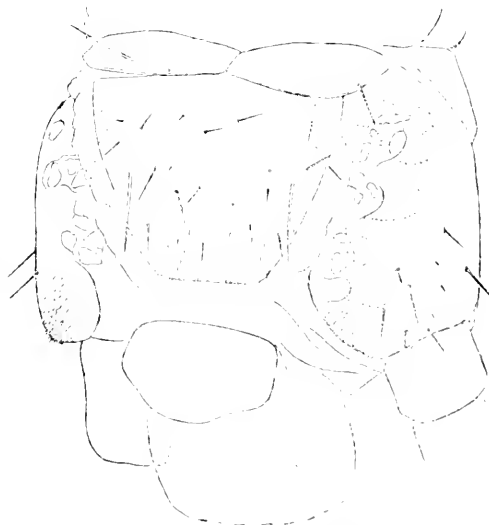


Fig. 33. *S. rainbowi*, Brölem. Last leg-bearing segment, ventral view.

Last sternum wide, its anterior margin wider than the sternum of the preceding segment, truncate, with lateral margins strongly converging backwards; its surface is divided by a faint median furrow.

The anal leg, coxa included, is seven jointed; the joints are clothed underneath with tiny short hairs intermingled with a few long bristles (♀); the last joint is tipped with a moderately strong claw. Coxa swollen; its ventral inner margin is provided with a wide and deep furrow, concealed under the margin of the sternum, in which open the pores of numerous glandulæ independent of one another; three of these (on each side) appear more conspicuous, being nearer to the surface, so that an unwarned superficial observer could easily be mistaken. The free distal end of the same inner margin is swollen and produced, as is often the case with the species of the genus *Schendyla*, and is clothed with dense short hairs (Figs. 32, 33, 34). Anal pores present.



Fig. 34. *S. rainbowi*, Brölem. Anal leg, ventral view.

*Loc.*—Parramatta, N. S. Wales; a single female.

NOTES ON AUSTRALIAN CICADIDÆ.

By HOWARD ASHTON.

(Plate vii).

Division THOPHARIA.

Sub-family CICADINÆ.

Genus *Arunta*, *Distant*.

*ARUNTA FLAVA*, *sp. nov.*

(Plate vii., figs. 1 and 2).

*Head*.—Bright yellow, frontal fascia between eyes, four contiguous spots over front, region of ocelli and hind margins of vertex black. Front depressed and invisible from above.

*Pronotum*.—Bright yellow, two central fasciæ joining at hind and fore borders, and incisures black.

*Mesonotum*.—Yellow, two inner short ob-conical spots, two outer longer fasciæ black margined with light castaneous, two spots before cruciform elevation joining a stout central longitudinal spear-shaped stripe, not reaching anterior margin, black.

*Tegmina*.—Transparent, hyaline, immaculate, venation bright ochraceous merging on apices into warm brown. *Wings* similar, slightly milky on anal area.

*Abdomen* ♂.—Black, margined with light castaneous, tympanal coverings characteristically sac-like and covered with white tomentum. Anal segment also covered similarly. Abdomen below ♂ black, bordered with brown, anal plate yellow; ♀ yellow with central thin, transverse, black fasciæ. ♂ abdomen above light castaneous with central transverse black fasciæ on first six segments.

*Measurements*.—Length of body, ♂ 30 mm.; ♀ 29 mm.; expanse of tegmina, 90 mm.

*Obs*.—Differs from *A. interclusa*, Walk., in its lighter colour, smaller size, less produced front to head, powdered white penultimate segment and unspotted tegmina.

*Hab*.—Rat Island, Port Curtis, Queensland, and Tweed River, New South Wales.



*Division* HEMIDICTYARIA.*Sub-family* TIBICININÆ.*Genus* Lembeja, *Distant*.LEMBEJA AUSTRALIS, *sp. nov.*

(Plate vii., fig. 3).

*Colour*.—Above fuscous or fuscous-reddish.*Head*.—Small, front angularly produced, rostrum tipped with black, barely reaching intermediate coxæ.*Pronotum* and *mesonotum*.—Mottled with dark brown. Black stripe runs over the cruciform elevation as far as hind margin of first abdominal segment in ♂; in ♀ is continued along the dorsal ridge of abdomen.*Abdomen*.—In ♂ inflated a little, the dorsal apices of the abdominal segments being tremendously produced into a series of overlapping spines which are curved back along abdomen and reach beyond its apex. *Opercula* nearly obsolete. *Tympana* very large and fully exposed.*Tegmina*.—Opaque, reddish or brownish-grey, venation fuscous and interrupted giving the effect of dotted lines. Wings milky.*Measurements*.—Length of body ♂ 22 mm., ♀ 19 mm.; expanse of tegmina, 56 mm. to 58 mm.*Obs*.—This is the first species of the genus described from Australia. Several other species have been described from New Guinea, Celebes and Thursday Island.*Hab*.—Cape York, North Queensland. Collected by Mr. H. Elgner.*Genus* LARRAKEEYA, *gen. nov.**Head*.—Small, about half the width of pronotum. Front deeply sulcated, rostrum short, barely reaching intermediate coxæ; ocelli nearer to eyes than to each other.*Pronotum*.—Anteriorly as wide, posteriorly twice as wide as head, posterior margin narrow and rounded over the base of the costa. *Mesonotum* from cruciform elevation to anterior margin

equal in length to head and pronotum together, a little broader than pronotum. *Tympana* small, tympanal openings narrow; opercula triangular, separate.

*Abdomen*.—As long as head and thorax.

*Tegmina*.—Costa sharply arcuate in centre, basal area as long as broad; twice as long as broad at widest point, ulnar veins joined as in *Melampsalta*, before basal area. Immensely wide first and third discoidal cells, divided by a very long, narrow discoidal second. Eight apical areas all very short. Wings with six apical areas.

LARRAKEEYA PALLIDA, ♂ *sp. nov.*

(Plate vii., fig. 4).

*Head*.—Pale ochraceous; eyes and ocelli red.

*Pronotum*, *mesonotum*, and *abdomen*.—Pale ochraceous, beneath pallid, no markings above or below.

*Tegmina*.—Milky, semi-transparent, venation pallid-ochraceous save for apical third of costa, which is red. Wings milky, venation pallid.

*Measurements*.—Length of body 20 mm.; expanse of tegmina 51 mm.

*Obs*.—♀ not known.

*Hab*.—Lawler, Western Australia.

*Division* MELAMPSALTRARIA.

*Genus* MELAMPSALTA, *Amyot*.

MELAMPSALTA VIRIDICINCTA, *sp. nov.*

(Plate vii., fig. 5).

*Head*.—Black, spot behind ocelli, spots above antennae, stripe down centre of face and borders of face narrowly ochraceous.

*Pronotum*.—Fuscous, wider than head, incisures and central fascia black, within central black fascia a central short ochraceous stripe. *Mesonotum* black, two central, inwardly angulated contiguous stripes, lateral edges of scutellum and borders of cruciform elevation fuscous yellow.

*Abdomen*.—Black, laterally fuscous and greyish-pilose margined with green on segmental borders. Below, a central, prominent shining black spot between the opercula, which are large and greyish-ochraceous. Abdomen below greyish-testaceous with central black fascia broadening towards apex but ending at anal plate, which is light-testaceous.

*Tegmina*.—Hyaline; *costa* fuscous margined with black, apically black; venation deep fuscous merging into black at apex. *Wings* hyaline, venation fuscous.

*Measurements*.—Length of body 13 mm. to 14 mm.; expanse of tegmina, 32 mm. to 34 mm.

*Obs*.—Allied to *M. incepta*, Walk.

*Hab*.—Perth, Western Australia.

MELAMPSALTA LANDSBOROUGHII, *Distant*.

*Melampsalta landsboroughii*, Distant, Proc. Zool. Soc., 1882, p. 131; Goding and Froggatt, Proc. Linn. Soc. N. S. Wales, xxix., 1904, p. 639.

*Melampsalta teliope* (nec. Walk.), God. and Frogg., *Loc. cit.*, p. 642.

MELAMPSALTA LANDSBOROUGHII, *var. CONVERGENS*,

*God. and Frogg.*

*Melampsalta convergens*, God. and Frogg., Proc. Linn. Soc. N. S. Wales, xxix., 1904, p. 633.

*Obs*.—Judging from the determinations of Messrs. Goding and Froggatt in the Macleay Museum Collection, these authors have been misled by the very variable form, both in size and colour of the ♂, and in the case of their classification of *M. teliope*, Walk., by reliance on a very faded ♀ specimen, which does not at all agree with their description. The ♀ of *M. landsboroughii* varies in colouration even more than the ♂. In addition to the typical form described by Distant we have at least one well-marked variety. But for the extreme minuteness of *M. murrayensis*, Dist., I would feel inclined to include it as a variety. Leaving it out, however, we find Distant's typical form, with a honey-coloured abdomen, above which runs the broad, characteristic black stripe. The head and thorax are black for the most part, with markings of fuscous or ferruginous.

The second form, *M. convergens*, God. and Frogg., which I propose to reduce to varietal rank, loses the black colouration of the thorax and head, which carry a number of black markings upon a background of greenish-fuscous. This variety is found in the damp ground near creeks and lagoons on the east coast of New South Wales. It is generally smaller than the typical form. It may be found on the edge of a lagoon, while, one hundred feet up one of the enclosing hills the typical form is found. The abdomen is of a paler yellow than that of the original species. A faded ♀ of this variety is Goding and Froggatt's *M. telxiope*, Walk., in the Macleay Museum. The size of the species varies from 15 mm. to 25 mm. in length, and the wing-expansion from 38 mm. to 62 mm.

MELAMPSALTA MARGINATA, Leach.

*Tettigonia marginata*, Leach, Zool. Misc., 1814, p. 89, pl. 39, fig. 1.

*Melampsalta marginata*, Stål., Ann. Soc. Ent. France (4), i., 1861, p. 619; Distant, Syn. Cat. Homopt. Cicad., 1906, p. 170.

*Cicada themiscura*, Walk., List. Hom., i., 1850, p. 181.

*Melampsalta themiscura*, Stål., Öfv. Vet. Ak. Förh., 1862, p. 484.

*Melampsalta fletcheri*, God. and Frogg., Proc. Linn. Soc. N. S. Wales, xxix., 1904, p. 640.

Genus *Pauropsalta*, Goding and Froggatt.

PAUROPSALTA ANNULATA, God. and Frogg.

*Pauropsalta annulata*, God. and Frogg., Proc. Linn. Soc. N. S. Wales, xxix., 1904, p. 620.

*Pauropsalta encaustica*, Distant, Syn. Cat. Homopt. Cicad., 1906, p. 178.

*Obs.*—The two species, though somewhat similar, cannot be mistaken by any field collector. The resemblance is stronger in the ♀ forms than the ♂. Distant has been probably misled either by examination of the ♀ or else by an error of the authors in sending to him specimens of *P. encaustica* labelled *P. annulata*. *P. encaustica* is a very old species of Germar's.

## THE CRINOIDS OF THE SOLOMON ISLANDS.

By A. H. CLARK, U. S. National Museum, Washington.

The first paper in which Crinoids from the Solomon Islands are mentioned was that of Professor F. J. Bell dealing with the Echinoderms brought from Australia to London in connection with the International Fisheries Exhibition in 1883. In it are included notices of two species taken at Ugi, a small island just north of San Christoval or Bauro, the most south-easterly of the group. Only one of these species is identified, this being referred to *Antedon spicata*, Carpenter, described four years previously. This record was accepted by Carpenter and included in the "Challenger" Report in 1888. Since then but a single reference to the Solomon Island fauna has been published, two specimens of *Dichrometra protectus* from Bongainville Island, the most north-westerly of the group, being recorded in the Report, by the present author, on the Crinoids collected by the German steamer "Gazelle."

*Subgenus Comanthina, A. H. Clark.*

COMANTHINA SCHLEGELII (*P. H. Carpenter*).<sup>1</sup>

At the British Museum I examined a beautiful specimen of this species which was collected by H.M.S. "Penguin" in the Solomon Islands.

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<sup>1</sup> The synonymy of this species and of the following species for which no synonymy is given will be found in my paper dealing with "The Recent Crinoids of Australia" (*Austr. Mus. Mem.*, iv., 15, 1911); it has not seemed necessary to repeat here the synonymies there given.

*Subgenus Comanthus, A. H. Clark.*COMANTHUS (BENNETTIA) SAMOANA, *A. H. Clark.*

*Comanthus (Comanthus) samoana*, A. H. Clark, Proc. U.S. Nat. Mus., xxxvii., 1909, p. 30 (SAMOA).

There was contained in the collection one specimen from Ugi, with twenty arms 60 mm. long; three of the nine II Br series present are 2 instead of 4 (3 + 4) as usual; on one ray, which bears two II Br series, there is a III Br series, developed externally.

This species has a peculiar roughness to the touch, due to the development of long spines on the outer pinnule segments, which makes it distinguishable by a characteristic harsh and dry feeling from *Comanthus parvicirra*; it has more numerous and stouter cirri than the latter, and the centrodorsal is larger, encroaching further on the I Br series than does that of *C. parvicirra*.

COMANTHUS (VANIA) ANNULATA (*Bell*).

There is a specimen of this species at the British Museum which was collected by H.M.S. "Penguin" at the Solomon Islands.

*Genus Stephanometra, A. H. Clark.*STEPHANOMETRA OXYACANTHA (*Hartlaub*).

*Antedon oxyacantha*, Hartlaub, Nachr. Ges. Göttingen, Mai, 1890, p. 178 (AMBOINA); Nova Acta Acad. German., lviii., No. 1, 1891, p. 55, pl. iii., figs. 35, 37.

*Stephanometra oxyacantha*, A. H. Clark, Proc. Biol. Soc. Washington, xxii., 1909, p. 10.

*Description*.—Centrodorsal, moderate in size, discoidal, the bare polar area 2.5 mm. in diameter, slightly concave.

Cirri xxxii., 23 to 24, 20 mm. to 25 mm. long; first segment short, the next two about twice as broad as long, the following gradually increasing in length, becoming about as long as broad

on the fifth or sixth; next three or four segments slightly longer than broad, the following very gradually decreasing in length and becoming about half again as broad as long distally. The segments in the proximal half are slightly constricted centrally with somewhat prominent ends, and those in the distal half are slightly compressed laterally, and may be bluntly carinate; opposing spine median to terminal, blunt, triangular, in height equal to one quarter the lateral diameter of the penultimate segment; terminal claw somewhat longer than the penultimate segment, moderately slender, evenly tapering, and moderately curved.

Radials visible only in the angles of the calyx; I Br<sup>1</sup> very short, in contact basally, about four times as broad as long; I Br<sup>2</sup> (axillary) short and broad, almost triangular, twice as broad as long, the lateral edges swollen and produced into rounded lateral processes; II Br<sup>2</sup>, the II Br<sup>1</sup> interiorly united for about three-quarters of their length; ossicles of the division series and first brachials with rounded lateral processes; the III Br series are developed on three rays, always exteriorly.

The twenty-four arms are about 120 mm. long; first two brachials short, wedge shaped, twice as broad as long exteriorly, the first inwardly united for most of its length; third and fourth brachials (syzygial pair) half again as broad as long; next three brachials oblong, slightly over twice as broad as long, then becoming wedge shaped and soon almost triangular, twice as broad as long, and distally gradually becoming less and less obliquely wedge-shaped, and in the terminal portion of the arm about as long as broad. Syzygies occur between the third and fourth brachials, again between the tenth and eleventh to fifteenth and sixteenth (usually between the fourteenth and fifteenth or between the fifteenth and sixteenth) and distally at intervals of from seven to ten (usually eight) oblique muscular articulations.

P<sup>1</sup> 11.5 mm. long, slender, evenly tapering and becoming very slender distally, with twenty-three segments, the first about half again as broad as long, the following gradually increasing in length, becoming squarish on the third and twice as long as broad, or somewhat longer distally; P<sup>2</sup> much stouter, stiff and spinelike, 15 mm. long, with twelve segments, the first two subequal, about half again as broad as long, the third half again as long as broad, the remainder about two and one half times as long as broad; P<sup>3</sup> 12 mm. long, resembling P<sup>2</sup>, with about ten segments, of which the distal are much longer than those of the

preceding pinnule;  $P^4$  7 mm. long, resembling  $P^3$  but not quite so stout, with nine segments;  $P^5$  smaller than  $P^4$  basally, becoming very slender distally, 6 mm. long, with thirteen segments; following pinnules similar to  $P^5$ , but rapidly becoming less stiffened basally; the distal pinnules are 9 mm. long.

*Loc.*—Ugi; one fine specimen was taken at this locality.

STEPHANOMETRA SPICATA (*P. H. Carpenter*)

*Antedon spicata*, P. H. Carpenter, Notes Leyden Museum, iii., 1881, p. 190 (BANDA SEA); Bell, Proc. Linn. Soc. N. S. Wales, ix., (1884), p. 497 (Ugi); P. H. Carpenter, Chall. Rep. Zool., xxvi., 1888, p. 380 (Ugi).

*Stephanometra spicata*, A. H. Clark, Proc. Biol. Soc. Washington, xxii., 1909, p. 10.

This species, originally described from the Banda Sea, has been recorded by Professor Bell from Ugi.

*Genus* Dichrometra, *A. H. Clark*.

DICHROMETRA PROTECTUS (*Lütken*).

*Antedon protectus*, Lütken, Mus. Godeffroy Cat., v., 1874, p. 190 (*nomen nudum*).; in P. H. Carpenter, Trans. Linn. Soc., Zool., (2), ii., 1879, p. 19 (TONGA).

*Dichrometra protectus*, A. H. Clark, Zool. Anzeig., xxxiv., 1909, p. 367 (Bougainville Island).

There is in the collection a typical specimen from Ugi, with thirty arms about 70 mm. long, and cirri xxii., 24, 15 mm. long.

The German steamship "Gazelle" secured an example of this species at Bougainville Island.

*Genus* Colobometra, *A. H. Clark*.

COLOBOMETRA DIADEMA, *A. H. Clark*.

*Colobometra diadema*, A. H. Clark, Proc. Biol. Soc. Washington, xxiii., 1910, p. 7 (Ugi).

*Description.*—Centrodorsal small, discoidal, the bare dorsal pole 2 mm. in diameter, very slightly concave; cirrus sockets arranged in a single slightly irregular marginal row.

Disc completely covered with large plates.



Cirri xi., 33 to 40, 22 mm. long; first segment short; second nearly or quite as long as broad, the following gradually increasing in length to the fifth, which is slightly (sometimes as much as one-third) longer than broad, then remaining uniform up to the tenth or twelfth, from that point gradually decreasing so that the distal segments are about one-third broader than long; the second and following segments are rather strongly constricted centrally and are provided with strongly produced and overlapping distal ends bordered with prominent spines, both of these characters dying away as the segments become shorter; after about the tenth segment the spinous overlap dorsally resolves itself into prominent paired spines, which at the tip of the cirrus become close together and are replaced by a single median spine on the antepenultimate segment; opposing spine large and prominent, triangular, median, about as long as the diameter of the penultimate segment; terminal claw stout and strongly curved, but little longer than the penultimate segment.

Radials short, but extending well up into the angles of the calyx and entirely separating the bases of the I Br<sup>1</sup>; these latter are oblong, slightly over twice as broad as long, with a small spinous tubercle in the middle of the distal edge; I Br<sup>2</sup> broadly pentagonal, half again as broad as long, the lateral edges not quite so long as those of the I Br<sup>1</sup>; the inferior inner angle of these ossicles is slightly turned outward and coarsely dentate; the distal edges of the I Br<sup>2</sup> are everted and finely spinous.

The ten arms are about 70 mm. long; first brachial slightly wedge shaped, about twice as broad as the exterior length, the interior sides united for about two-thirds of their length, the distal thirds making approximately a right angle with each other; the distal edge bears a small spinous tubercle in its centre; second brachial slightly larger, more nearly oblong; third and fourth brachials (syzygial pair) collectively slightly longer inwardly than outwardly, about as broad as the outer length; next four brachials oblong, half again as broad as long, then becoming very obliquely wedge-shaped, slightly longer than broad, and somewhat longer in the terminal portion of the arm. The brachials have strongly overlapping and spinous distal edges. Syzygies occur between the third and fourth brachials, again between the ninth and tenth and fourteenth and fifteenth, and distally at intervals of from four to eight (usually five) oblique muscular articulations.

P<sup>a</sup> absent; P<sup>1</sup> 10 mm. long, stiff and spinelike, with twelve segments, the first two not so long as broad, the third tapering, twice as long as the distal width, the following about four times

as long as broad; the distal edges of the segments from the third, and especially from the fourth, onward are armed with a frill of long spines; P<sup>2</sup> 12 mm. long, similar to P<sup>1</sup> but proportionately stouter, with twelve segments; P<sup>3</sup>, P<sup>4</sup>, and P<sup>5</sup> similar to P<sup>2</sup>; P<sup>5</sup> may be 11 mm. long, or there may be no decrease in length in these pinnules; following pinnules shorter, more slender and less stiffened; the outer pinnules have the distal edges of the segments, except the basal, armed with long and prominent spines.

ANTEDON, *sp.*

*Antedon*, *sp.*, Bell, Proc. Linn. Soc. N. S. Wales, ix., 1885, p. 497 (Ugi).

Of this species Professor Bell says "allied to but not the same as *A. spicata*."

LITERATURE.

(For the complete references see the bibliography given under the "Crinoids of Australia" Austr. Mus. Mem., iv., 15, 1911, p. 799).

1885. BELL, F. JEFFREY—Notes on a Collection of Echinodermata from Australia (*Solomon Islands Crinoids*, p. 497).
1909. CLARK, AUSTIN HOBART—The Crinoids of the "Gazelle" Expedition (*Solomon Islands Crinoids*, p. 367).
1910. —————A New Crinoid from the Solomon Islands. *Proc. Biol. Soc. Washington*, xxiii., p. 7 (*Colobometra diadema*, *sp. nov.*).

DESCRIPTION OF *AUSTROCHAPERINA* A NEW GENUS  
OF ENGYSTOMATIDÆ FROM NORTH AUSTRALIA.

By DENE B. FRY, Junior Assistant.

(Figs. 35-40, and Plates viii., ix.)

In the collection of the Australian Museum are three frogs representing three species of a new genus. While in quest of additional material I was permitted through the kindness of Mr. George Masters, Curator of the Macleay Museum, to examine the collection of that Institution, and was fortunate enough to find a bottle containing ten specimens of frogs which represent two species identical with my own. This collection is from the Russell River, North-east Queensland, and contains nine specimens of one species (*A. robusta*, mihi.), and one of another (*A. ornata*, mihi.). My thanks are due to Professor W. A. Haswell, M.A., for his kind permission to borrow these frogs for descriptive purposes, and for granting an exchange of specimens which enabled me to dissect an example.

An examination of the sacral vertebræ and sternal apparatus of *A. robusta* proves that it belongs to the family Engystomatidæ, which up till the present was unrecorded from the Australian continent. These frogs represent a new genus whose affinities are with *Chaperina*, Mocquard, found in Borneo and New Guinea, and for which I propose the name *Austrochaperina*.

I wish to thank Mr. Charles Hedley for his kind endeavour to procure additional specimens at considerable inconvenience to himself and Mr. A. R. McCulloch for his ever ready assistance.

*AUSTROCHAPERINA*, *gen. nov.*

Pupil oval or nearly round, horizontal. Tongue oval or sub-circular, entire,<sup>1</sup> and free behind. Vomerine teeth none. Palatine ridges weak, oblique. Two transverse dermal ridges across the hinder palate. The anterior is short, usually not serrated being represented by a single dermal lobe, and is situated between the

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<sup>1</sup> The tongue appears to be subject to much variation due to contraction in preservation, and is thus rendered almost useless as a character. In one specimen of *A. gracilipes* and one of *A. ornata*, it is elongate-oval and deeply notched behind, but this is, I think, due to injury.

hinder margins of the orbital bulges. The posterior is long, serrated, and extends across the palate posterior to the orbits. Lower jaw more or less truncate. Tympanum hidden or slightly

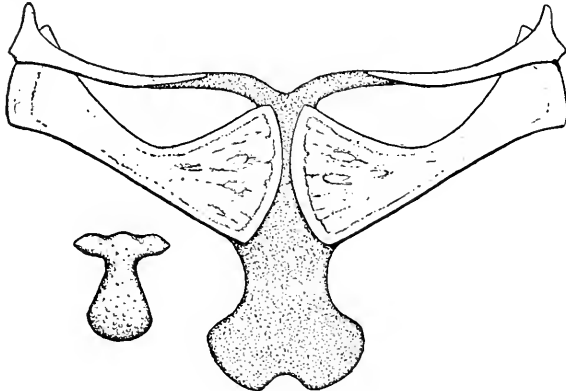


Fig. 35a.

Fig. 35.

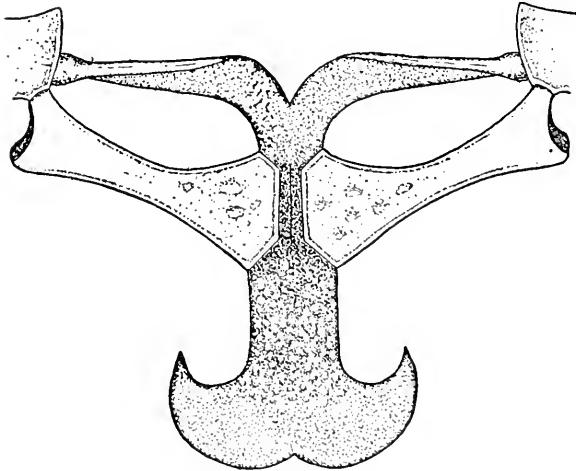


Fig. 36.

Fig. 35. Sternal apparatus of *Austrochaperina robusta*, Fry.

„ 35a. Terminal phalanx of *Austrochaperina robusta*, Fry.

„ 36. Sternal apparatus of *Chaperina polysticta*, Mchely (after Mchely).

visible. Skin smooth. Fingers and toes free, disced. Terminal phalanges stout, T shaped (fig. 35a). Outer metatarsals separated

by a groove. Diapophyses of the sacral vertebra much dilated. Coracoid (fig. 35) very strong, much dilated at the symphysis. Clavicle moderately developed, arched, the proximal end expanded and resting on the coracoid; its distal end tapering and connected with the epicoracoid by a curved band-like procoracoid cartilage. Omosternum absent. Sternum a cartilaginous plate, becoming symmetrically broader and nicked distally.

*Type*.—*A. robusta*, Fry.

This genus is closely allied to *Chaperina*, Mocquard, found in Borneo and New Guinea. It differs chiefly in the indistinct or hidden tympanum, the possession of two dermal palatal ridges, the comparative development of the sternal elements, and certain characters in the skull (see Appendix, p. 101). In the present genus (fig. 35) the clavicle is a strongly arched bone resting firmly on the coracoid. The procoracoid is weak and scarcely wider than the clavicle. The coracoid is a very strong unsymmetrical bone with a very wide expansion at the symphysis. The sternum has no forwardly directed processes. In *Chaperina* (fig. 36) the clavicle is weak and straight and connects with the scapular, not with the coracoid. The procoracoid cartilage is well developed and much broader than the clavicle. The coracoid is moderately developed, nearly symmetrical, and with a much smaller expansion at the symphysis. The sternum has two curved, forwardly directed, lateral processes.

Three species are recognised which may be distinguished by the following key:—

A. Snout slightly prominent.

a. First finger very small. Discs of fingers very large.....*A. ornata*.

b. First finger nearly as long as second. Discs distinct but scarcely enlarged.....*A. robusta*.

AA. Snout very prominent, longer than the orbital diameter .....*A. gracilipes*.

AUSTROCHAPERINA ROBUSTA, *sp. nov.*

(Figs. 35, 35a, 37, Plate viii.; figs. 2, 2a, 2b, and Plate ix.)

Habit moderate or stout. Head four-fifths to five-sixths as long as broad, the measurement taken at a line drawn between the hinder margins of the tympana. Snout rounded, very slightly

prominent, shorter than the orbital diameter. Nostril much nearer the tip of the snout than the eye. Canthus rostralis rounded; loreal region slightly oblique, not concave. Interorbital space broader than the upper eye-lid. Tympanum indistinct, about half, or less, the diameter of the eye. Lower jaw very slightly truncate. Tongue subcircular, entire, and free for about half its length. Choanæ placed well forward, sometimes almost hidden. Palatine ridges hardly distinguishable, oblique. Anterior palatal ridge, situated between the hinder margins of the orbital bulges, represented by a single dermal lobe, or it may bear a short row of irregular papillæ. The posterior ridge is long and serrated, and

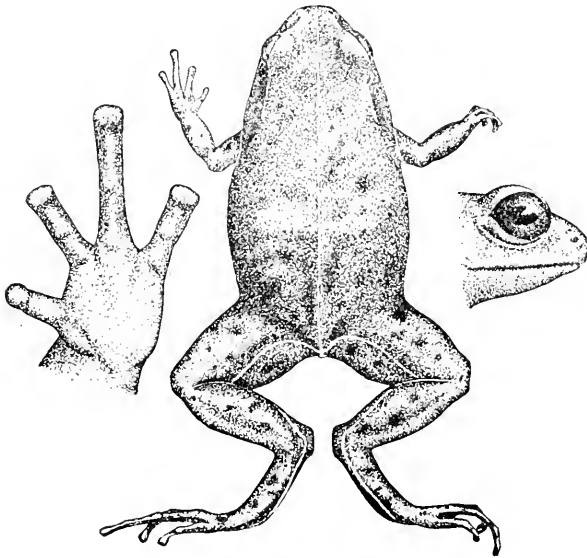


Fig. 37.

extends right across the hinder palate in front of the œsophagus. Arm weak. Fingers sub-cylindrical or depressed, bearing slightly enlarged but distinct discs. A thick fringe is sometimes present on the penultimate phalanx and between the bases of the fingers. First finger not much shorter than second, cylindrical, sometimes with a small disc. A small smooth metacarpale tubercle on the base of the first finger. Hind limb stout. Toes moderately long, depressed, or subcylindrical, the third, fourth and fifth with a more or less distinct thick fringe. Discs well developed, larger than the finger discs. A small oval inner metatarsal tubercle.

The length of the outstretched limb, from the anus to the tibio-tarsal articulation, equals the distance between the anus and the eye.<sup>2</sup> Skin smooth.

*Colour (spirits).*—This species presents two colour varieties.

*Variety A.* (fig. 37).—Upper surfaces uniform brownish, with or without a few brownish speckles, and with a fine light dorsal line running from the tip of the snout to the anus. Another light line borders the thigh posteriorly and runs to the heel. Loreal region dark brown. A dark brown band runs from behind the eye to the shoulder, passing above the tympanum. Under-surfaces lighter, uniform, or with a few faint speckles of darker brown.

*Variety B.* (Pl. viii., fig. 2).—Upper-surfaces uniform brownish, or speckled and spotted with darker brown. These punctulations reach the extreme in the specimen figured. The light dorsal stripe and the stripes on the limbs are absent. Otherwise as in variety A.

Total length (largest specimen), from snout to vent, 28.5 mm.

The specimen figured on Pl. viii., fig. 2, differs considerably from the Russell River specimens. It was collected for the Trustees of the Australian Museum by Mr. George Hislop in 1897 at the Bloomfield River, near Cooktown. It differs in having a broader head, shorter hind limbs, and the more accentuated markings. I have little doubt however, that it will subsequently be proved a mere variety of this variable species.

*Locs.*—Nine specimens from Russell River, North-east Queensland, Pl. viii., fig. 2a, and fig. 37 (Macleay Museum). One specimen (Pl. viii., figs. 2 and 2b), from Bloomfield River, near Cooktown, North-east Queensland (Australian Museum).

*Type.*—In the Australian Museum, Sydney.

AUSTROCHAPERINA ORNATA, *sp. nov.*

(Fig. 38).

Habit moderate. Head five-sixths as long as broad, the measurement taken at a line drawn between the hinder margins of the tympana. Snout rounded, the nasal openings projecting

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<sup>2</sup> In the specimen figured on Pl. viii., fig. 2, the length of the hind limb, from the anus to the tibio-tarsal articulation, only equals the distance between the anus and the tympanum.

slightly and giving it a somewhat truncate appearance; snout not prominent, shorter than the orbital diameter. Nostril much nearer the tip of the snout than the eye. Canthus rostralis rounded; loreal region nearly vertical, not concave. Interorbital space much broader than the upper eye-lid. Tympanum hardly distinguishable, less than half the diameter of the eye. Lower jaw

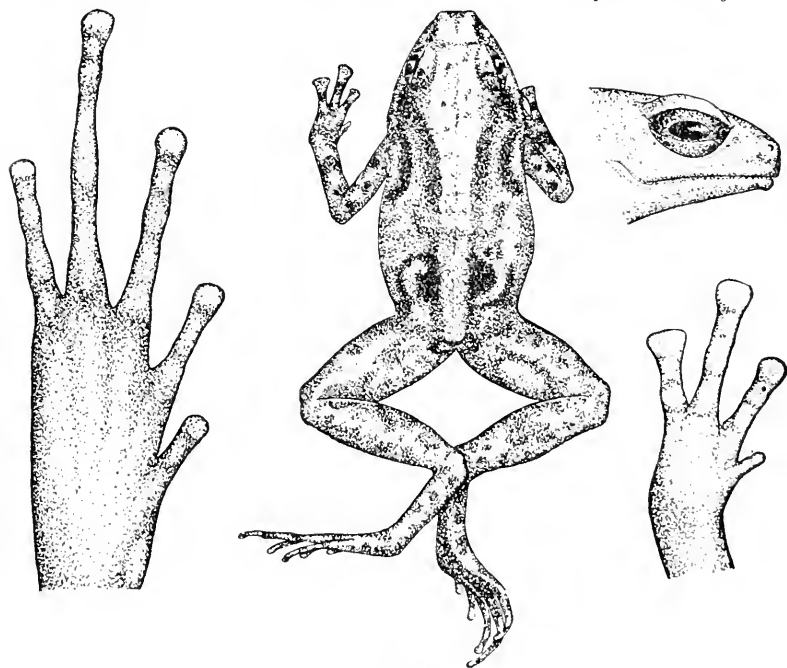


Fig. 38.

slightly truncate. Tongue suboval, entire and free behind. Choanae distinct. Palatine ridges fairly distinct, oblique. Anterior palatal ridge represented by a single, hardly distinguishable dermal lobe, situated between the hinder margins of the orbital bulges. The posterior is long and serrated, and extends across the hinder palate in front of the œsophagus. Arm weak. Fingers cylindrical, compressed at the tips into considerably enlarged discs; disc of the fourth finger much the largest. First finger very small, much shorter than second, cylindrical. Metacarpal tubercle absent. Toes moderate, longer than in the preceding species, not fringed, the discs slightly smaller than the finger discs. A very small oval inner metatarsal tubercle. The length



of the hind limb stretched out, from the anus to the tibiotarsal articulation, equals the distance between the anus and the loreal region. Skin smooth.

*Colour (spirits).*—Brownish above with darker brown spots. Sometimes a light silvery band commencing behind the eye-lids, narrowing and continuing to the anus as a broad dorsal stripe. Upper surface of head light silvery grey. Loreal region dark brown. A more or less broken band of dark brown commences behind the eye and continues to the axilla. In the scapular region, are two brown, light-edged spots, more or less resembling ocelli; a similar marking on each side of the urostyle. Sides and under surfaces light brown, irregularly speckled with lighter brown and yellow.

Total length, from snout to vent, 21 mm.

This species differs from the preceding chiefly in the smaller tympanum, much larger finger discs, very small first finger, and distinctive colouration.

*Locs.*—One specimen from Russell River, North-east Queensland, fig. 38 (Macleay Museum). One specimen from twenty-five miles inland from Cairns, North-east Queensland, collected in 1888 by Messrs E. J. Cairn and R. Grant (Australian Museum).

*Type.*—In the Australian Museum, Sydney.

AUSTROCHAPERINA GRACILIPES, *sp. nov.*

(Fig. 39 and Plate viii., figs. 1, 1a and 1b).

Habit slender. Head almost as long as broad. Snout rounded, depressed at the tip; pointed and produced in profile; longer than the orbital diameter. Nostril slightly nearer the tip of the snout than the eye. Canthus rostralis rounded; loreal region oblique, concave. Interorbital space much broader than the upper eye-lid. Tympanum hidden. Lower jaw distinctly truncate. Tongue elongate (injured<sup>3</sup>). Palatine ridges not distinguishable. Palate very flat; choanæ distinct. Anterior palatal ridge hardly discernible, represented by a small, sessile dermal lobe, situated between the hinder margins of the orbital bulges. Posterior ridge long and serrated, situated across the hinder palate in front of the œsophagus. Arm weak and slender. Fingers very

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<sup>3</sup> The tongue is injured posteriorly and presents a deep nick. It is considerably longer than either of the preceding species.

slender, cylindrical, with scarcely enlarged discs. First finger very small, much shorter than second. A small oval metacarpal tubercle. Hind limb moderate, thigh large. Toes long and slender, cylindrical, with small, not enlarged discs. Metatarsal tubercle absent. The length of the outstretched limb, from the anus to the tibiotarsal articulation, equals the distance between the anus and the anterior border of the eye. Skin smooth.

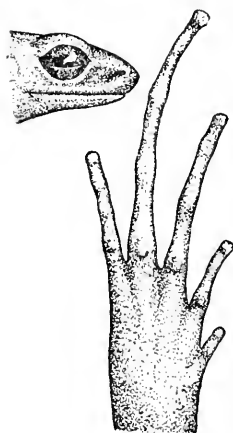


Fig. 39.

*Colour (spirits).*—Pinkish-brown above, with sparsely distributed dark brown spots on the legs and sides of the body. An indistinct inguinal spot present. A dark brown band starts at the nostril, passes through the eye and continues to the shoulder. Under-surfaces pale brownish, with faint brown reticulations and spots.

Total length, from snout to vent, 17 mm.

This species is distinguished from both the preceding by the produced snout, the more median situation of the nostril, the hidden tympanum, the longer toes and smaller discs, and the more slender habit.

*Loc.*—A single specimen, collected for the Trustees of the Australian Museum by Messrs. C. Hedley and A. R. McCulloch at Somerset, Cape York, North Queensland, in October 1907.

*Type.*—In the Australian Museum, Sydney.

Although abundantly represented in New Guinea the family Engystomatidae has not previously been recorded from the Australian continent. New Guinea, whose original stock of Engystomatidae is of Oriental origin, is credited with thirty-one species representative of thirteen genera, showing it to be a country highly favourable to these termite-eating frogs.

During the past connection of Cape York Peninsula to Papua a considerable migration took place, whose influence on the northern and eastern coasts of Australia has resulted in the recognition of a distinct sub-region, the Papuan Sub-region of Mr. C. Hedley<sup>4</sup>, or as later named by Professor W. B. Spencer<sup>5</sup>.

<sup>4</sup> Hedley—Proc. Austr. Assoc. Adv. Sci., v., 1893, p. 444.

<sup>5</sup> Spencer—Rept. Horn. Sci. Exp., Summary, i., 1896, p. 172.

the Torresian Sub-region. At the time of this connection with Papua the group Engystomatidæ was probably less specialised and poorer in species than it is at present, thus accounting for the transmission of a few members only. It is true that our knowledge of this group of vertebrates is not complete, and that the rich eastern slopes of Cape York Peninsula are practically unexplored by biologists. But I think enough material has come to light to allow us to definitely draw conclusions as to the relative abundance of the families of Australian frogs. It is possible that other members of this family will be found in Australia, but we can neither expect the diversity of forms or the abundance of species found in Papua. The genus described, as would be expected, is closely allied to a genus (*Chaperina*) which, because of its comparative abundance of species and its wide distribution, is to be regarded as of the older and more primitive stock. Thus the genus *Chaperina* and a closely allied form, which might have only become differentiated after its disconnection with its original habitat, has a distribution ranging from Borneo, through New Guinea, to North Australia. The sternal apparatus has affinities to a primitive stock. This is speaking comparatively, comparing *Chaperina* with other members of the Engystomatidæ only, for the whole of this family is to be regarded as highly specialised. To quote Dr. Hans Gadow on this point—"On the whole, those genera are to be considered the most primitive which have undergone the fewest losses. Those with a complete shoulder girdle, with an omo and meta-sternum.....are necessarily the older forms." This implies that such forms as *Phrynella*, *Mantophryne*, *Cacopus*, etc., in which the precoracoids and clavicles are much modified or absent, are to be regarded as the most highly specialised.

The Ranidæ, which are also Oriental migrants have become greatly diversified in the Papuan and Melanesian Sub-regions. As far as numbers go this family is not exceptionally abundant, the whole region, Papua and Melanesia, being represented by twenty-one species confined to four genera.

Professor W. Baldwin Spencer<sup>6</sup> suggests that the Hylidæ have entered Australia like the Ranidæ from the north. The author would propose that Papuasia and Melanesia have themselves been supplied by Hylidæ, with Australia as the centre of dispersion, and who in turn derived her original stock from South America, via the supposed Antarctic continent of early Tertiary times. That there has been a certain amount of interchange of

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<sup>6</sup> Spencer—Rept. Horn. Sci. Exp., Summary, i., 1896, p. 192.

forms there is no doubt, for four or five species occur in both Papuasias and Australia, while *Hyla infrafronata* (*H. dolichopsis*, Cope, auctorum) is known from Java, Ceram, New Guinea, New Ireland and North Australia. This is, however, easily explained if we take into consideration the existence of a connection in recent Tertiary times, between Cape York and New Guinea, which in all probability also allowed the transmission of *Phanerotis nova-guineæ* into Papua and *Rana papua* into Australia. Referring again to Gadow's<sup>7</sup> admirable chapters on distribution, he says of the Hylidæ, "with this exception of three closely allied species, the Hylidæ are either American or Australian. We conclude that their original home was Notogaea, and that they have spread northwards through Central and into North America. The enormous moist and steamy forests of South America naturally suggest themselves as a paradise for tree-frogs, and it is in this country, especially in the Andesian and the adjoining Central American Sub-regions, that the greatest diversity of generic and specific forms has been produced. It is all the more remarkable that similar forest regions, like those of Borneo and other Malay islands, are absolutely devoid of Hylidæ (while there are about a dozen species in Papuasias), whose place has been taken for all practical purposes by correspondingly developed Ranidæ, notably the genus *Rhacophorus*. Lastly, the fact that tropical evergreen forests of Africa and Madagascar possess no Hylidæ, but are inhabited by several kinds of tree-climbing *Rhacophorus*, points with certainty to the conclusion that the origin of this large and flourishing family of Hylidæ was not in Arctogaea."

The absence of Hylidæ in the Malay Archipelago, or more strictly speaking Siam, Borneo and Sumatra, is very striking and is in itself fatal to the theory that Papuasias could have been the centre of dispersion of Arctogæan Hylidæ. Allowing this to be possible, two questions remain to be explained. First, during the extension westwards of the three Asiatic Hylas why did they not also populate Siam, Borneo and Sumatra, through which countries they must have passed; and, allowing a rapid extension southwards to Australia and Tasmania, why did they not extend southwards at their western limit into the highly favourable forests of Africa? Secondly, it is obvious that to allow this mode of procedure we must regard the Arctogæan Hylidæ as cases of convergent evolution. As would be expected there is considerable parallelism in development amongst New World and

<sup>7</sup> Gadow—Cambr. Nat. Hist., Rept. & Amph., 1901, p. 186.

Australian species, but this does not warrant our regarding the two divisions of the family Hylidæ, Arctogæan and Notogæan as instances of convergent evolution.

Turn then to the theory proposed, that Australian Hylidæ are directly of Notogæan stock, and have entered the continent from the south, not from the north.

The authenticity of the theory of an Antarctic continent, existing probably in Mesozoic times, with rays extending to South America and Australia, is by now almost generally accepted as established. Amongst the mass of evidence in favour of this connection is the presence of Cystignathous frogs in Australia. The home of the Cystignathidæ is in South America, where they are abundantly represented, and the greatest diversity of forms and the more primitive types are found there. Their distribution in the Australian continent and their dominance in the south-east corner, the Euronotian Sub-region as modified by Mr. Hedley, points to their entrance and early establishment in this corner, from where they have migrated westwards and northwards, one species only, as far as is known, entering New Guinea. Allowing this mode of procedure to explain the presence of the Cystignathidæ in Australia, it is proposed that the presence of the other dominant Arciferous family, the Hylidæ, be explained thus also. It is impossible to regard them as cases of convergent evolution, and the evidence against this view must be the evidence advanced to disprove the existence of an Antarctic continent.

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Since the publication in 1882 of Dr. G. A. Boulenger's monumental "Catalogue of Amphibia in the Collections of the British Museum", numerous additions have been made to the Australian list in this class of vertebrates, both by European and Australian authors. As no list of the species described since its publication has appeared, a reference to the original description of these species is here given. Unless stated to the contrary the species are regarded as valid by the author. I have had the opportunity of examining Mr. J. Douglas Ogilby's types, and what remain of Mr. C. W. de Vis's typical specimens in the Queensland Museum. Through the kindness of Mr. J. J. Fletcher, to whom I am much indebted for his ever ready assistance, I have been enabled from time to time to compare specimens with the types in his fine collection. Of the species described since the "Catalogue" the three recently characterised by Mr. J. Lamb and *Phyllorhina frosti*, Spencer, *Hyla gilleni*, Spencer, *H. dayi*, Günther and *H. maculata*, Spencer, are the only ones that I have not examined.

## RANIDÆ.

*Hyla nobilis*, de Vis, Proc. Roy. Soc. Q'land., i., 1884, p. 129  
(= *Rana papua*, Less., *vide* Boulenger).

## ENGYSTOMATIDÆ

*Austrochaperina robusta*, Fry (*ante*).

*Austrochaperina ornata*, Fry (*ante*).

*Austrochaperina gracilipes*, Fry (*ante*).

## CYSTIGNATHIDÆ.

*Hyla fenestrata*, de Vis, Proc. Roy. Soc. Q'land., i., 1884, p. 128 (= *Mixophyes fasciolatus*, Günther, *vide* Boulenger).

*Limnodynastes lineatus*, de Vis, Proc. Linn. Soc. N. S. Wales, ix., 1884, p. 65 (= *L. peroni*, Dum. and Bibr., *vide* Boulenger).

*Limnodynastes fletcheri*, Boulenger, Ann. Mag. Nat. Hist. (6), ii., 1888, p. 142.

*Limnodynastes marmoratus*, Lamb, Ann. Q'land. Mus. No. 10, 1911, p. 28. Is probably identical with *L. fletcheri*, Boulenger.

*Limnodynastes olivaceus*, de Vis, Proc. Linn. Soc. N.S. Wales, ix., 1884, p. 66.

*Phanerotis fletcheri*, Boulenger, Proc. Linn. Soc. N. S. Wales, (2), v., 1890, p. 593.

*Adelotus*, Ogilby, Proc. Roy. Soc. Q'land., xx., 1907, p. 32 (for *Cryptotis*, Günther, preoccupied).

*Crinia haswelli*, Fletcher, Proc. Linn. Soc. N. S. Wales (2), viii., 1893, p. 522.

*Crinia froggatti*, Fletcher, Proc. Linn. Soc. N. S. Wales, (2), vi., 1891, p. 275 (= *C. lavis*, Günther, var. *froggatti*, Fletcher, *vide* Fletcher).

*Crinia victoriana*, Boulenger, Ann. Mag. Nat. Hist. (6), ii., 1888, p. 142.

- Crinia leai*, Fletcher, Proc. Linn. Soc. N. S. Wales, xxii., 1897, p. 677.
- Chiroleptes dahlui*, Boulenger, Proc. Zool. Soc., 1895, p. 867, pl. xlix., fig. 2 (= *Phractops dahlui*, Boulenger).
- Mitrolysis*, Cope, Batr. N. Amer., 1889, p. 312 (for *Chiroleptes alboguttatus*, Günther, = *Phractops*, Peters, ?).
- Philocryphus flavoguttatus*, Fletcher, Proc. Linn. Soc. N. S. Wales (2), viii., 1893, p. 233.
- Heleioporus sudelli*, Lamb, Ann. Q'land. Mus., No. 10, 1911, p. 26,
- Phyloria frosti*, Spencer, Proc. Roy. Soc. Vict. (n.s.), xiii., 1901, p. 176.

## BUFONIDÆ.

- Pseudophryne deudyi*, Lucas, Proc. Roy. Soc. Vict. (n.s.), iv., 1892, p. 62. Probably *P. bibroni*, Günther.
- Pseudophryne semi-marmorata*, Lucas, Proc. Roy. Soc. Vict. (n.s.), iv., 1892, p. 63 (= *P. bibroni*, Günther, *vide* Fletcher).

## HYLIDÆ.

- Hyla chloris*, Boulenger, Proc. Linn. Soc. N. S. Wales (2), vii., 1892, p. 403 (= *H. gracilentata*, Peters, var.).
- Hyla luteiventris*, Ogilby, Proc. Roy. Soc. Q'land., xx., 1907, p. 31 (= *H. gracilentata*, Peters, var.).
- Hyla gilleni*, Spencer, Rep. Horn. Sci. Exp., pt. 2, 1896, p. 173, pl. xv., figs. 14-17.
- Hyla dayi*, Günther, Nov. Zool., iv., 1897, p. 406.
- Hyla rothi*, de Vis, Proc. Linn. Soc. N. S. Wales, ix., 1884, p. 66 (= *H. peroni*, Bibron, var., *vide* Boulenger).
- Hyla ewingi*, Dum. and Bibr., var. *orientalis*, Fletcher, Proc. Linn. Soc. N. S. Wales, xxii., 1897, p. 670.
- Hyla maculata*, Spencer, Proc. Roy. Soc. Vict. (n.s.), xiii., 1901, p. 177.

*Fanchonia elegans*, Werner, Zool. Anz., xvi., 1893, p. 82.  
(=*H. aurea*, Less., *vide* Werner).

*Hyla vinosa*, Lamb, Ann. Q'land. Mus., No. 10, 1911, p. 27.  
This species appears to be founded on the typical Queensland form of *H. lesneuri*, D. and B.

*Hyla peninsulae*, de Vis, Proc. Roy. Soc. Q'land., i., 1884,  
p. 130 (=*H. nasuta*, Gray, *vide* Boulenger).

*Hyla semoni*, Boettger in Semon, Zool. Forsch., v., 1894,  
p. 112, pl. v., fig. 1. Probably *H. nasuta*, Gray.

*Hyla irrorata*, de Vis, Proc. Roy. Soc. Q'land., i., 1884, p. 128.

Boulenger<sup>8</sup> says that *H. irrorata* "should be compared with *Hyla infratemiata*, Günth.", doubtless meaning *H. infrafrenata*, Günther. I am inclined to doubt the inference that *H. irrorata* is synonymous with *H. infrafrenata* and would suggest its identity with *H. cærulea*, White. In some characters it agrees more closely with *H. infrafrenata*, and in others with *H. cærulea*, but the description is so short there will always be the shadow of doubt. The vomerine teeth are stated by de Vis to be "in two small, rather distant groups behind the choanæ." In *H. infrafrenata* they are between the choanæ, and although hardly behind them in *H. cærulea*, they are nearly so, being between the hinder borders, and in some cases almost behind the level. In the presence of a white mark behind the angle of the mouth it agrees with *H. infrafrenata* and differs from *H. cærulea*, but in the occurrence of irregular white spots on groin and upper surfaces it possesses a character which is typically characteristic of *H. cærulea*. The discs of the fingers are stated to be two-fifths the tympanum. In this respect it differs considerably from both the above species, but I am inclined to overlook this, for, being the only serious difference it would not warrant this frog specific distinction, and might only have arisen as a *lapsus calami*. The main objection to regarding it as synonymous with *H. infrafrenata* is the difference in the position of the teeth and the fact that this species is not recorded from Southern Queensland. Taking the above facts into consideration, and also that the type is lost, I would suggest that *H. irrorata* be regarded as a synonym of *H. cærulea*.

<sup>8</sup> Boulenger—Ann. Mag. Nat. Hist. (v.), xvi., p. 387.



## APPENDIX.

### NOTES ON THE SKULL OF *AUSTROCHAPERINA* *ROBUSTA*, FRY.

(Plate ix. and fig. 40).

With but a single badly preserved specimen at my disposal for dissection, I have dealt at present with only the most important of the osteological features, the skull. As my specimen has been in weak spirits for the past thirty years the preparation has been a difficult matter, and cartilaginous parts have been removed, the cartilage being reduced to the consistency of jelly. This has, however, resulted in only one serious deficiency, the removal of the vomers, which lie attached ventrally to the cartilage of the olfactory capsules. The vomers are therefore not figured *in situ*.

As a result of the fine work of Prof. L. v. Méhely<sup>9</sup> the osteology of the Engystomatidæ has been made a simple matter, and this author has shown that in this family at least, the skull exhibits good generic characters, and a striking range of variation.

Comparing the skull of *Austrochaperina* with that of *Chaperina fusca*, the typical species of the genus, figured by Prof. v. Méhely, the most important differences appear to be:—in *Austrochaperina* the nasals form a median suture, while in *Chaperina* they are separated; the palatine bones in *Austrochaperina* differ in having a distinct ridge, and a well developed palatine plate which forms a broad median suture with its fellow; the pterygoid in *Chaperina* is comparatively weak, while in *Austrochaperina* it is a strongly developed, more twisted bone. Of lesser importance are the more elongate frontoparietals and the smaller quadratomaxilla in *Austrochaperina*.

The *foramen magnum* viewed from behind is roughly oval, slightly produced above. Viewed from above it is seen to be oblique, facing slightly upwards, and concave between the condyles.

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<sup>9</sup> Méhely—Természetráji Füzetek., xxiv., 1901, pl. vi., figs. 4-5.

The *exoccipitals* (Plate ix., fig. 1, *exoc.*) are invisibly fused with the prootics laterally and dorso-laterally. Ventrally they are almost separated by a backward projection of the parasphenoid, which bone also bounds them anteriorly on the ventral surface. Dorsally they are almost separated by an endosteal rudiment of the supraoccipital (Pl. ix., fig. 1, *so.*). The occipital condyles (*oc. con.*), are situated latero-inferiorly and have the smooth articulating surfaces produced anteriorly on the ventral edge. They are separated from one another by a space equal to one and three-quarters their diameter. External to the condyles and piercing their peduncle, is a large, single foramen for the passage of the ninth and tenth nerves (*N.* 9, 10).

The *prootics* (*pro.*) are fused with the exoccipitals and present no sutures with these bones. Antero-mesially on the dorsal surface they lie in contact with the frontoparietals, and are covered ventrally by the lateral wings of the parasphenoid. The auditory capsules are distinctly sculptured above, showing externally the positions of the semi-circular canals. The *anterior semi-circular canal* (Pl. ix., fig. 1, *a.s.c.*) shows externally as a rounded ridge lying in contact with the frontoparietal, and directed backwards and inwards. It is directly continuous behind with the *posterior semi-circular canal* (Pl. ix., fig. 1, *p.s.c.*), which runs outwards, backwards and downwards. The *horizontal semi-circular canal* (*h.s.c.*) runs above the fenestra ovalis, forming the prominent lateral ridge of the capsule. The upper face of the capsule is broader than the lower and bevels away to a narrow base supported by the lateral wings of the parasphenoid, so that none of the three foramina which pierce the prootic laterally are visible from above. The *foramen ovale* (Pl. ix., fig. 2, *f.o.*) is large, situated nearer the ventral surface than the dorsal, and bordered above by the ridge formed by the horizontal semi-circular canal. Anteriorly each prootic is pierced by a single aperture for the transmission of the fifth and seventh nerves (*N.* 5, 7).

The *frontoparietals* (*frp.*) are considerably longer compared with their total width than in *Chaperina fusca*, the respective measurements being, *Austrochaperina* three-fifths as broad as long, *Chaperina* six-sevenths as broad as long. The suture with the nasal is shorter than in *Chaperina*, while the edge of the nasal in contact with the ethmoid is of greater extent. Between the two pairs of bones, nasals and frontoparietals, is a diamond-shaped space enclosing part of the ethmoid. The fontanelles are paired and separate. The *frontal fontanelles* (Pl. ix., fig. 1, *f. fon.*)

are moderately large, and broader behind than in front; the *parietal fontanelles* (Pl. ix., fig. 1, *p. fon.*) are much smaller, about one-quarter the size of the frontal, and are sub-circular and more widely separated; they are separated by half their width from each other, and from the frontal fontanelles. Posteriorly the frontoparietals project slightly on to the auditory capsules, forming a small postorbital process, and then run backwards and inwards along the inner border of the anterior semi-circular canal. Their posterior edge is raised slightly into a bony ridge, and is produced into several weak upward projections. In the inter-orbital region they project laterally and form a ridge which terminates anteriorly on the ethmoid.

The *nasals* (*na.*) are thin, slightly bilobed, and strongly arcuate bones. They form a median suture, thus differing from *Chaperina*. Their hinder edge though sinuate is transverse, which applies also to the fronto- and ethmo-nasal sutures. In front the nasal region is narrow and emarginate, and the bulging of the downturned nasal roofs gives a somewhat bilobate appearance to the snout. The premaxillæ are doubtfully visible from above. The nasal is united by the cartilaginous sub-nasal lamina to the maxillæ and premaxillæ, which cartilage is pierced near the nasal process of the premaxillæ by the nostril. This cartilage is undifferentiated owing to the bad condition of the specimen dissected, and the labial cartilages are lost. The nasal sends off a spike posteriorly which rests on the outer third of the palatine. The *septum nasi* (Pl. ix., fig. 2, *s.n.*) is rather delicate.

The large *parasphenoid* (Pl. ix., fig. 2, *psph.*) reaches practically the limit of its development, underlying the whole of the basis cranii, and auditory capsules. In a few respects this bone differs from the same in *Chaperina fusca*. It forms a suture with the palatines which in *Chaperina* underlie it; the length is only nine-elevenths as long as the greatest width, while in *Chaperina* it is sixteen-seventeenths. It enlarges a little in the interorbital region but narrows again slightly in front of the auditory capsules. The posterior border slants obliquely backwards from the lateral otic extremity almost to the foramen magnum.

The "girdle-bone," *sphenethmoid* or *ethmoid* (*eth.*), is well developed and bounds the whole of the anterior third of the cranial box, but is visible externally only on the sides anterior to the orbitosphenoid cartilage, dorso-laterally, and as a diamond-shaped area situated between the nasals and the frontoparietals. It projects anteriorly beyond the palatine expansions into the

olfactory region as two rounded prominences (a.p.e.). Situated under the projecting dorso-lateral ridge is a small aperture, probably for the passage of the cerebral-carotid artery. The ventral border projects posteriorly into the floor of the orbito-sphenoidal region, thus differing from *Chaperina*, in which the postero-ventral edge is broadly emarginate.

The palato-quadrate "bow" is very strong, and is stronger than in *Chaperina fusca*. This applies more to the pterygoid and suspensorial segments of the arch, the palatine element being of much the same development.

The *palatine bone* (pal.) is nearly straight and sub-cylindrical; it is stouter and slightly arched towards the outer third of its length. Mesially it broadens out into a large flat plate (Pl. ix., fig. 2, p.pl.) which forms a suture in the mid-line with its fellow, and posteriorly with the parasphenoid. This last character, the *palatine plate* is characteristic, and is not present in *Chaperina fusca*. In that genus the palatine is not cylindrical but flattened, and produced anteriorly into a process underlying the vomer, which however could not be considered homologous with the palatine plate. The ethmoidal segment or anterior third of the palatine, is raised into a distinct keel, which does not continue to the median suture of the plates. By the possession of this keel it also differs from *Chaperina fusca*. The post-palatine segment forms a suture with the pterygoid, and is supported by the palatine lamina of the maxilla.

The *pterygoid* (pt.) is a large sigmoid bone, which attains a greater development than in *Chaperina fusca*. Its anterior end forms a suture with and lies over the palatine, while the rest of the anterior third forms a long sinuate suture with the maxilla, and is supported by the palatine lamina of that bone. The pedicle branch is short and twisted. The posterior segment runs along the inner and posterior side of the suspensorium. This bone is compressed, and bears a dorsal and ventral ridge, giving it the characteristic twisted appearance.

The *paraquadrate*, *tympanic* or *squamosal* (pqu.), is moderately developed and well ossified. The main shaft is spatulate and welded on to the suspensorium anteriorly. The otic process is thin and curved with an angular posterior edge. The *zygomatic process* (z. pr.) is somewhat irregular and slightly curved, being directed forwards and inwards.

The *quadrate* (qu.) is stout, bears a rather small condyle, and forms the core of the suspensorium. Seen from above it appears wedged in between the distal half of the paraquadrate and the

pterygoid. Ventrally it forms the large mass of the suspensorium anterior to the pterygoid. Anteriorly it is fused with the short stout quadratomaxilla.

The *quadratomaxilla* or *quadratojugal* (qm.), is short and stout, more so than in *Chaperina fusca*, and forms an oblique suture with the maxilla anteriorly, and is continuous with the quadrate posteriorly. It is compressed and bears a ventral and dorsal ridge which are continuous with the same ridges of the maxilla.

The *maxilla* (mx.) is very compressed and ribbon-like posteriorly, but strengthens towards its junction with the pterygoid. At this junction is given off on the inner side, the *palatine lamina* (Pl. ix., fig. 2, p.l.). This plate is well developed and is widest at its union with the same lamina of the premaxilla. The maxilla is produced ventrally along its whole length into a sharp, biting edge, while above, towards its anterior end, is developed an incurving crest, which attains its greatest height at a level with the hinder margin of the nasals. From this point it slants forward, decreasing in size, to a blunt tip, which overlies the posterior edge of the premaxilla.

The *premaxilla* (Pl. ix., fig. 2, pmx.) are moderately developed. The inner edge of the left lies slightly inside that of the right, and the palatine lamina lies under the inner edge. This shingling of the bones is continued still further, for both premaxilla laminae underlie the same elements of the maxilla. Each bears a sharp biting edge ventrally, which is flush with that of the maxilla. The nasal process is given off dorsally, and runs upwards and bends angularly outwards, reaching almost to the nostril.

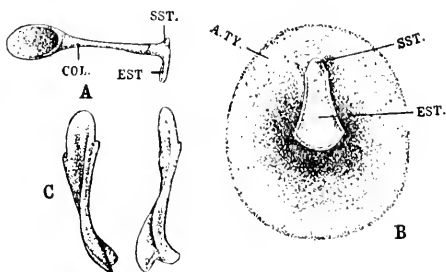


Fig. 40. A. Columella. B. Auditory opening, tympanic membrane removed. C. Vomer, dorsal and lateral view.

The *vomers* (fig. 40 c) are small twisted bones which lie between the anterior process of the ethmoid (a.p.e.) and the terminal portion of the palatine lamina of the maxilla. Owing to the condition of the cartilage of the nasal floor, these bones were removed and cannot be figured *in situ*.

The *stapes* is very large and hollow, and plainly visible from above. It covers the foramen ovale, resembling the attachment of a Limpet shell. Clamped to its apex is the saucer-shaped proximal expansion of the columella. The *columella* (fig. 40 a, col.) is long, straight and cylindrical. Proximally it extends into a shallow saucer-shaped expansion which is applied to the stapes dorsally. The columella is attached distally to a pedate, cartilaginous *extrastapedial* (fig. 40, a and b, est.), which bears dorsally a small *suprastapedial bud* (fig. 40, a and b, sst.). The *annulus tympanicus* (fig. 40 b, a.ty.) supports the tympanic membrane, which rests on the pedate outer surface of the extrastapedial cartilage.

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NOTE.—Since compiling the list on p. 98 I have received Co-Types of *Limnodynastes marmoratus*, Lamb, and *Heleioporus sudelli*, Lamb, and the Type of *Hyla vinosa*, Lamb. For this privilege I am indebted to Dr. R. Hamlyn Harris, Director, and Mr. H. A. Longman of the Queensland Museum. It is evident that they all belong to known species.

*Hyla vinosa*, Lamb, is a varietal form of *H. lesueuri*, D. & B., and should designate Queensland examples of this species.

*Limnodynastes marmoratus*, Lamb, is identical with *L. fletcheri*, Boulenger.

*Heleioporus sudelli*, Lamb, cannot be specifically separated from *H. pictus*, Peters, the only difference being the absence of a black tip to the metatarsal tubercle.

## OCCASIONAL NOTES.

### I. DESCRIPTION OF A NEW CICADA.

Recently, while collecting in the Dorrigo, Mr. R. J. Tillyard, M.A., succeeded in capturing what proves to be a new Cicada. This was submitted to Mr. Howard Ashton, who now describes and figures it. R. E.

#### *Division* CICADATRARIA.

#### *Sub-family* GÆANINÆ.

#### *Genus* Tamasa, *Distant*.

#### TAMASA RAINBOWI, *sp. nov.*

(Fig. 41).

Similar in general appearance to *T. tristigma*, Germ., from which it differs in the broader and more spotted tegmina.

*Body*.—Olivaceous green.

*Head*.—The head with lateral borders of front, region of ocelli, and a line along margins of eyes, black.

*Pronotum*.—With double centre fascia, sub-obsolete except with posterior portions, which are united, and incisive (faintly) blackish.

*Mesonotum*.—With two obconical spots margined with black, a double central longitudinal fascia, and four spots before anterior angles and cruciform elevation black.

*Abdomen*.—With piceous markings on anterior borders of first and second segments, a blotch of same colour on lateral area of second segment, behind a patch of silvery tomentum on first segment, a series of lateral spots on third, fourth, fifth and sixth segments, and the whole of last segment piceous.

*Body*.—Beneath green, two longitudinal fasciæ to front, central fascia to clypeus, tip of rostrum, streaks to coxæ and fore-femora, margins and abdominal segments and anal segment piceous,

*Tegmina* and *Wings*.—Hyaline, venation fuscous, darker towards apices. Tegmina with anastomoses and apices of longitudinal veins to apical areas all infuscated.

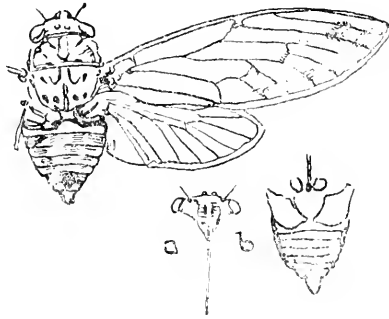


Fig. 41. *T. rainbowi*, Ashton.

*Measurements*.—Length of body, ♂, 24 mm.; ♀, 23 mm.; expanse of tegmina, ♂ and ♀, 81 mm.

*Hab.*—Dorrigo. Two specimens, ♂ and ♀ in Australian Museum.

HOWARD ASHTON.

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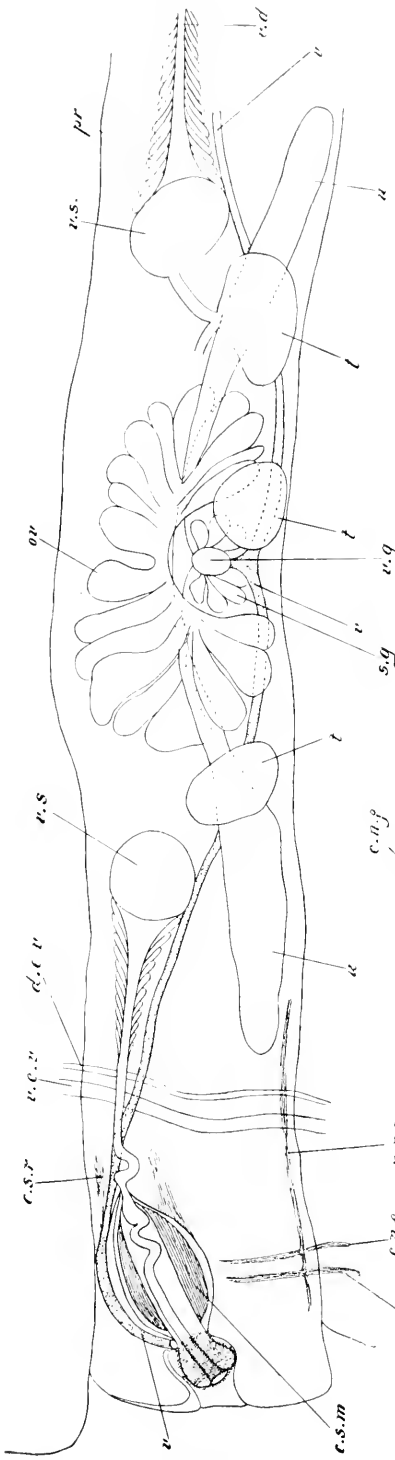


EXPLANATION OF PLATE I.

TENIA TUBERCLATA, *Kreffl* (=DIPLOSTHE LEVIS, *Batsch*).

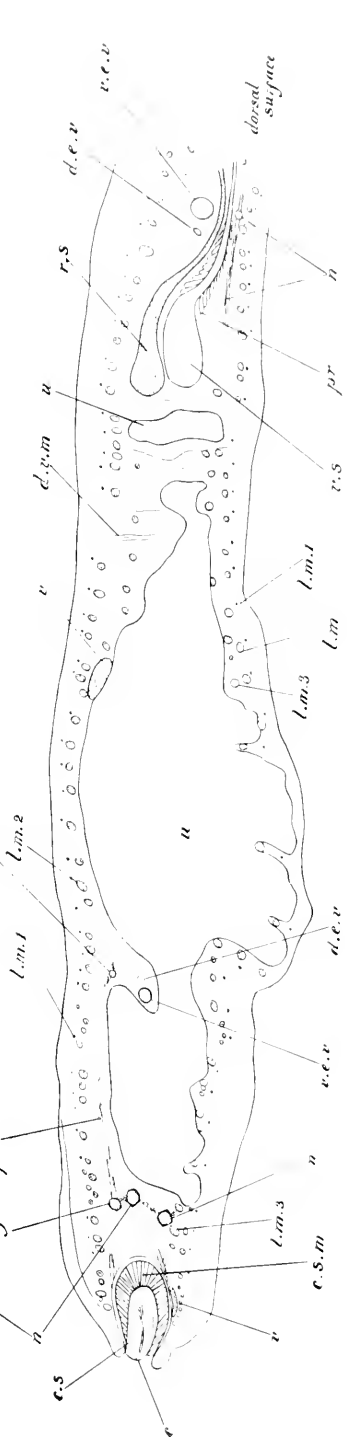
- Fig. 1. Segment showing genitalia, etc. (secn from the dorsal side).  
,, 2. Transverse section of ripe segment showing uterus, musculature, etc.

2



W. A. BIRMINGHAM, del.

1





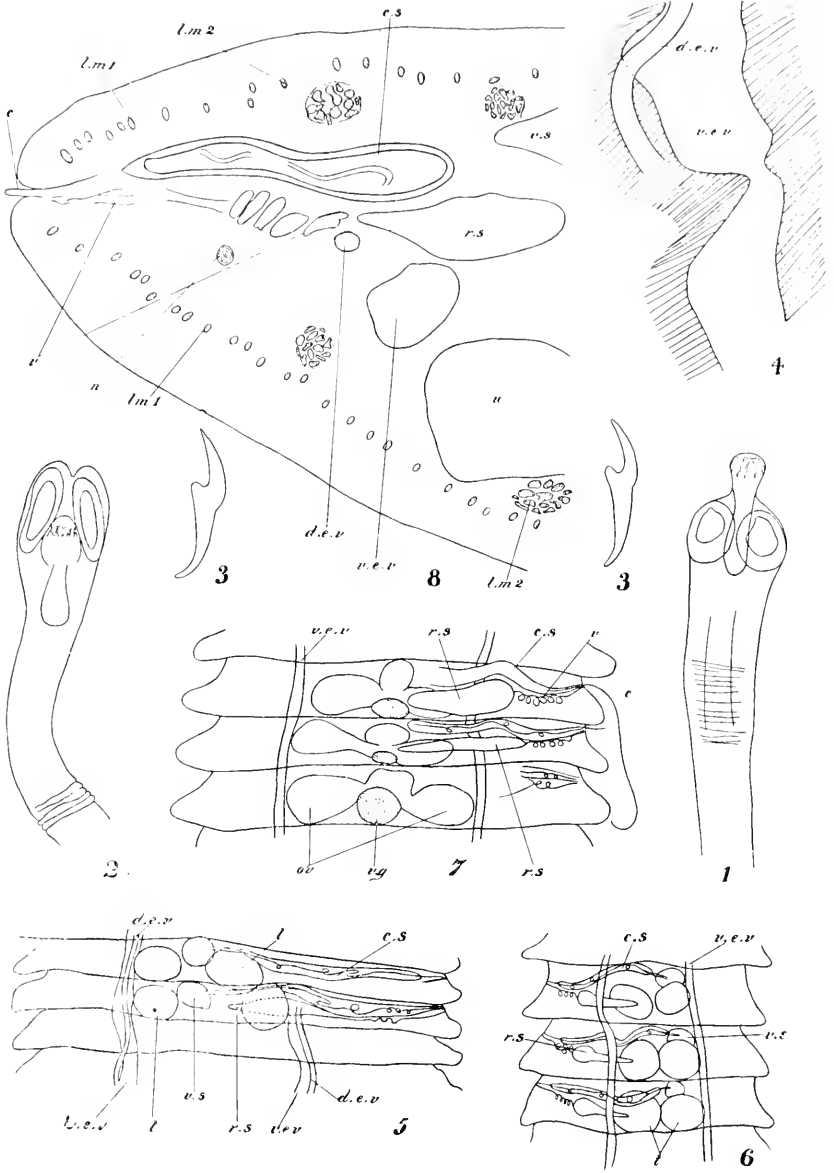


## EXPLANATION OF PLATE II.

*TENIA FLAVESCENS*, *Kreffl* (= *DIORCHIS FLAVESCENS*, *Kreffl*).

- Fig. 1. Scolex—rostellum protracted.  
,, 2. Scolex—rostellum retracted.  
,, 3. Hooks from rostellum.  
,, 4. Sketch showing part of excretory vessels.  
,, 5. Segment showing male genitalia (ventral view).  
,, 6. Segment showing male genitalia (dorsal view).  
,, 7. Segment showing female genitalia.  
,, 8. Part of transverse section of mature segment.

All figures except 3, 4, and 8, have been drawn to the same scale.









EXPLANATION OF PLATE III.

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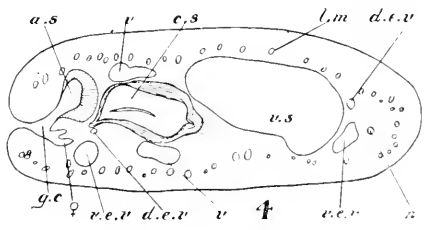
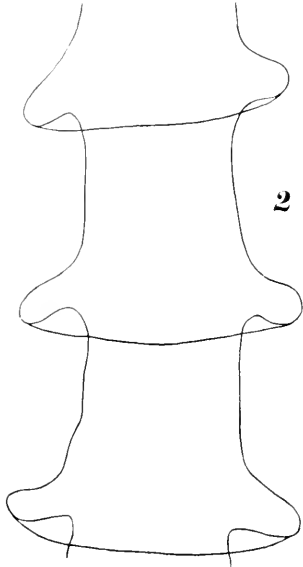
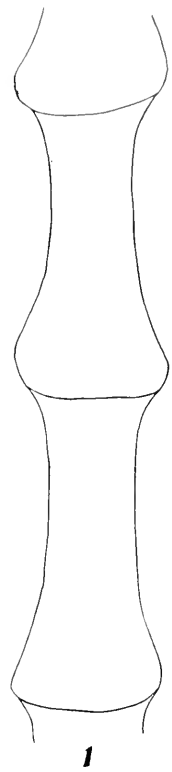
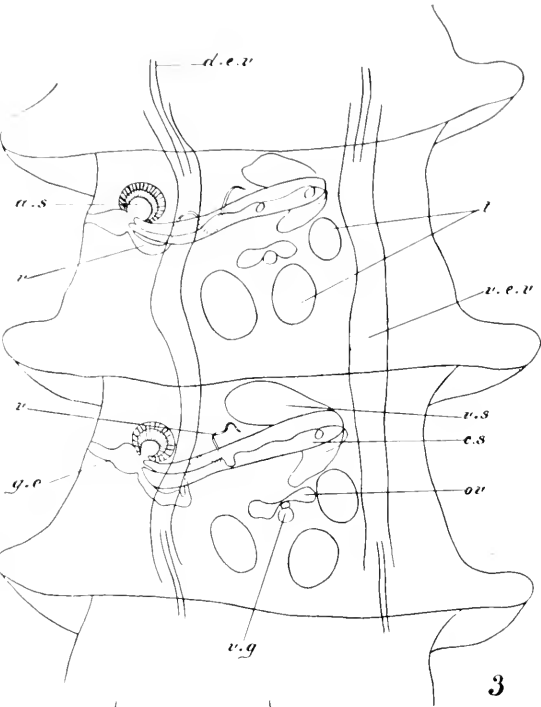
TENIA BAIRDII, *Kreffl* (= HYMENOLEPIS COLLARIS, *Batsch*).

Figs. 1, 2, 3, Showing shape of segments in different parts of the strobila.

Fig. 3. Segments showing young genitalia.

„ 4. Transverse section of mature segment.

Figs. 1, 2, and 3, are drawn from *Kreffl*'s type material.



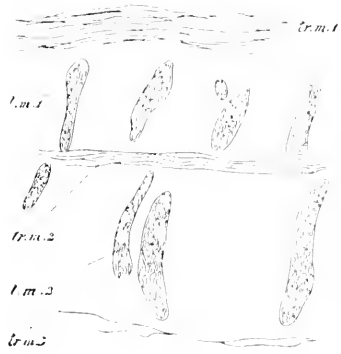
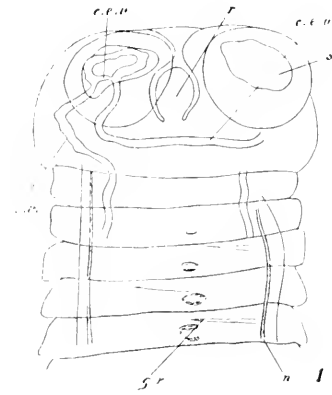
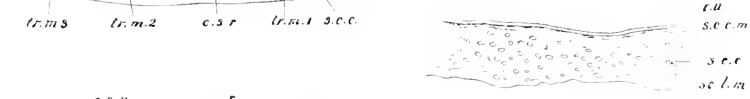
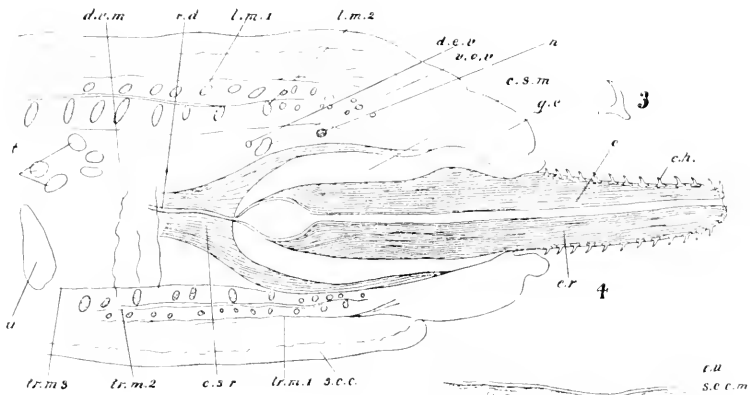
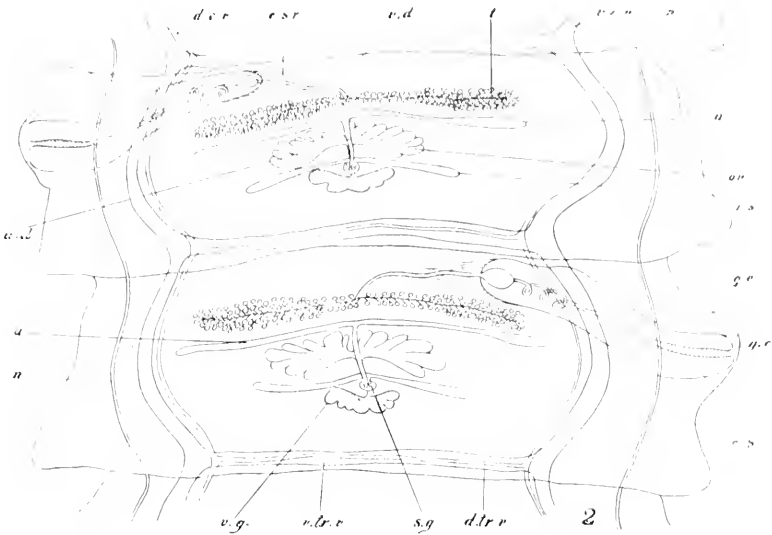




#### EXPLANATION OF PLATE IV.

*TAFNIA RUGOSA*, *Kreffl* ( = *ACOLEUS HEDLEYI*, *Johnston*).

- Fig. 1. Anterior end of strobila.  
,, 2. Segments viewed from dorsal surface—showing anatomy.  
,, 3. Hook from cirrus.  
,, 4. Portion of transverse section of segment—passing through genital pore.  
,, 5. Transverse section of part of body wall—showing musculature.







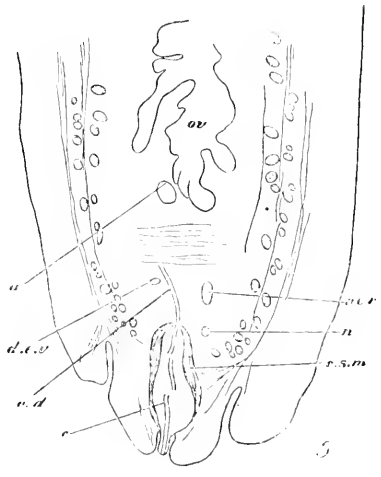
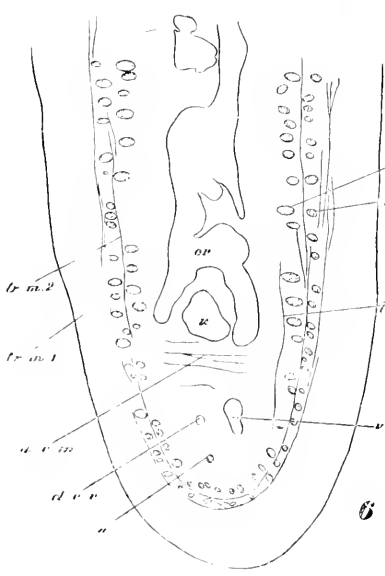
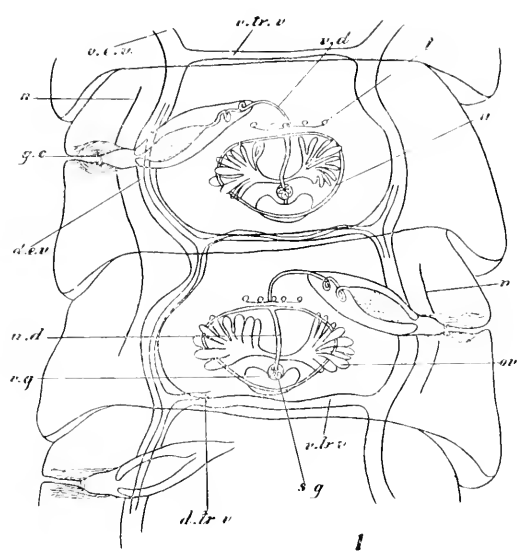
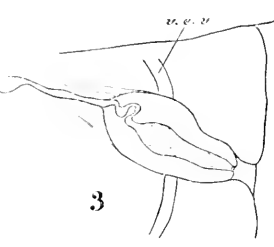
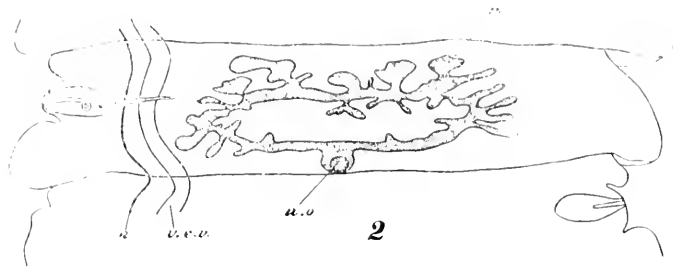


EXPLANATION OF PLATE V.

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TENIA CORONATA, *Kreff* (= GYROCCELIA AUSTRALIENSIS, *Johnston*).

- Fig. 1. Young segments showing genitalia, etc.  
.. 2. Segments showing fairly mature uterus.  
.. 3. Mature cirrus sac.  
.. 4. Cirrus sac with everted cirrus.  
Figs. 5 and 6. Transverse sections of mature segment.





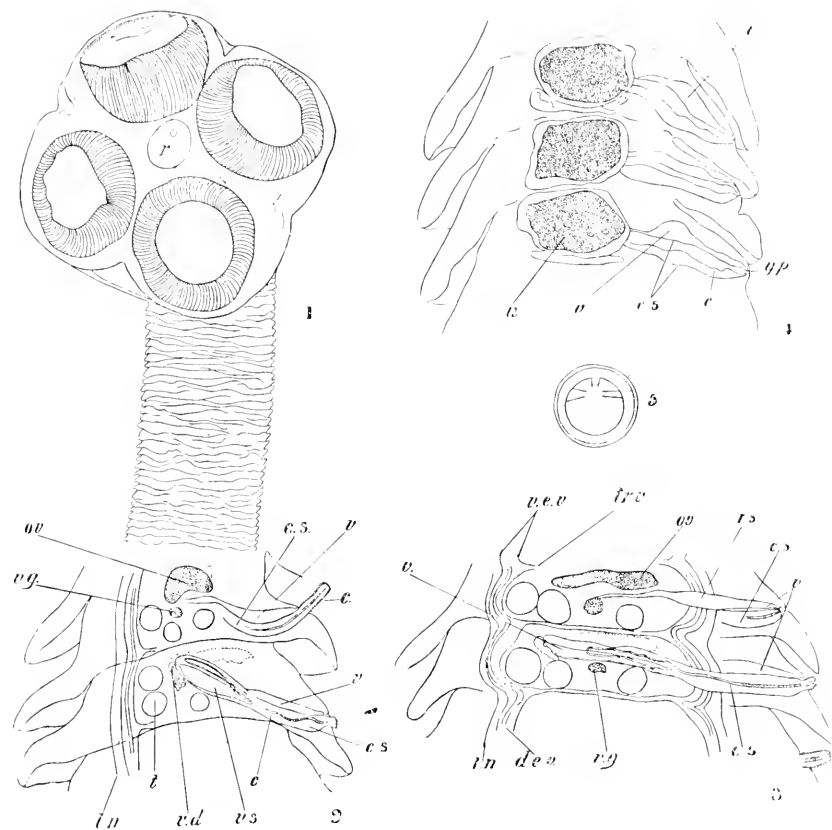


EXPLANATION OF 'PLATE VI.

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TÆNIA CYLINDRICA, *Kreffl?* (=HYMENOLEPIS MEGALOPS, *Nitzsch*).

- Fig. 1. Scolex.  
Figs. 2 and 3. Segments showing anatomy (No. 2 from one of Krefft's specimens).  
Fig. 4. Segments showing mature uterus.  
„ 5. Egg.









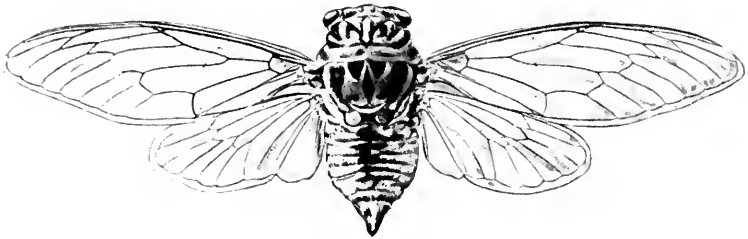
EXPLANATION OF PLATE VII.

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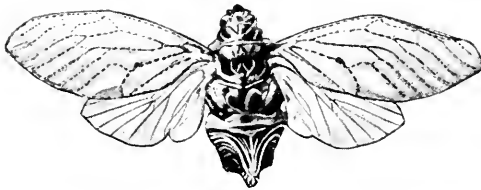
- Fig. 1. *Arunta flava* ♂, Ashton.  
,, 2. ,, ,, ♀, ,,  
,, 3. *Lembeja australis* ♂, Ashton.  
,, 4. *Larrakeya pallida*, ♂, Ashton.  
,, 5. *Melampsalta viridicincta* ♂, Ashton.



1



2



3



4



5

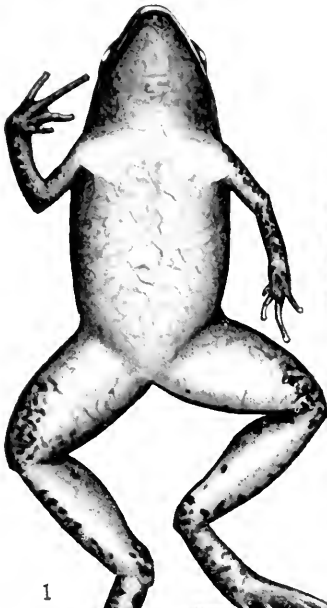




EXPLANATION OF PLATE VIII.

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- Fig. 1. *Austrochaperina gracilipes*, Fry. Under surface.  
" 1a. " " " Upper surface.  
" 1b. " " " Right hand.  
" 2. *Austrochaperina robusta*, Fry, var. B.  
" 2a. " " " var. A. Mouth.  
" 2b. " " " var. B. Right foot.



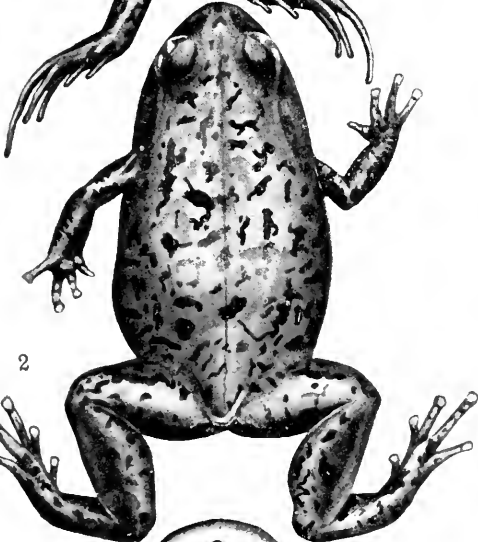
1



1b



2b



2



1a



2a



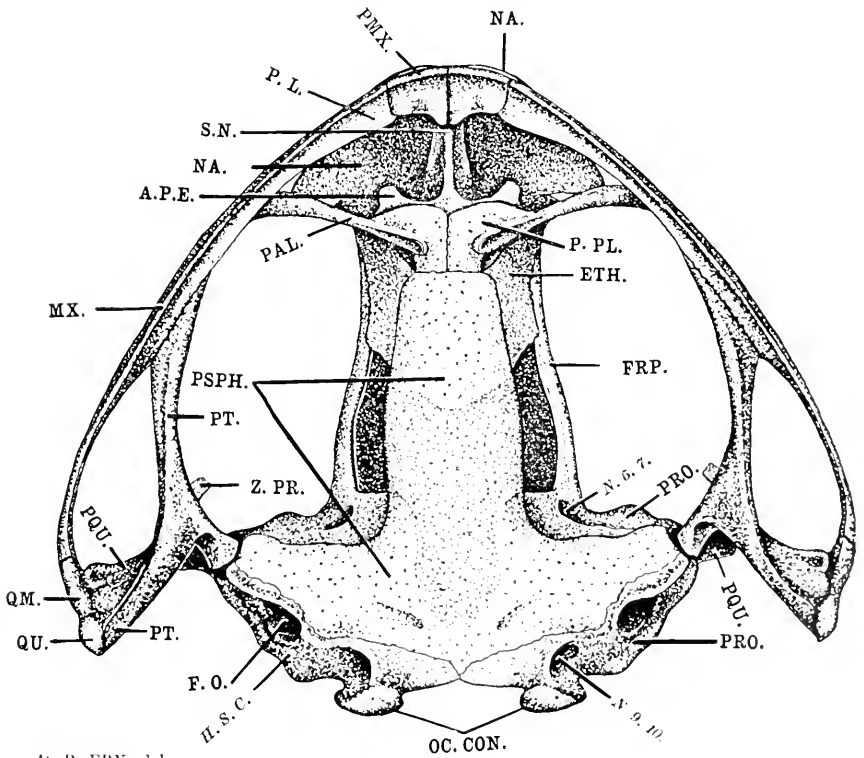
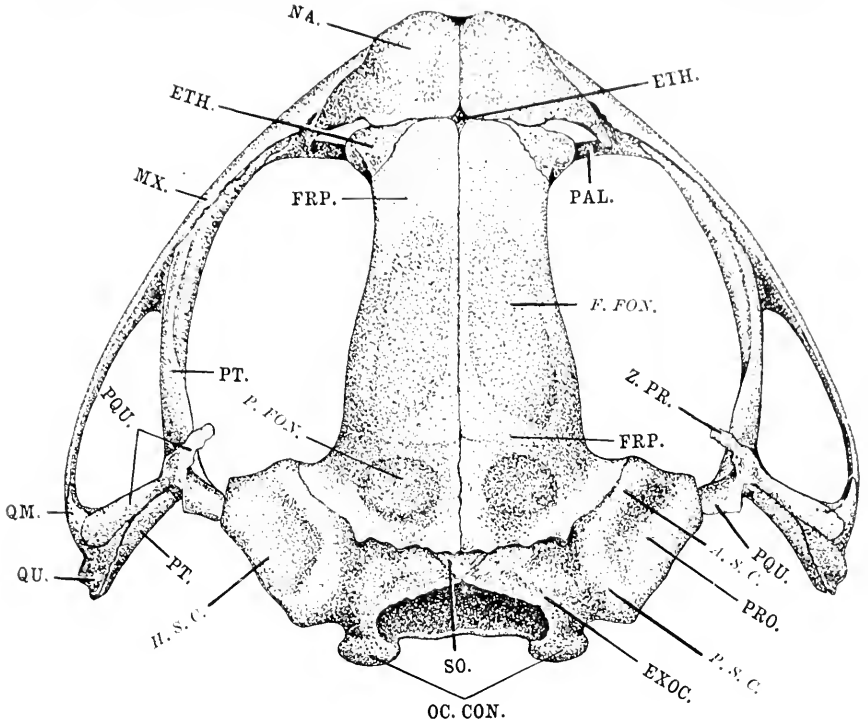




EXPLANATION OF PLATE IX.

Fig. A. *Austrochaperina robusta*, Fry. Dorsal view of skull.  
 „ B. „ „ „ „ Ventral view of skull.

a.p.e.	Anterior process of the ethmoid.
a.s.c.	Anterior semicircular canal.
eth.	Ethmoid.
exoc.	Exoccipital.
f. fon.	Frontal fontanelle.
f.o.	Foramen ovale.
fr.p	Frontoparietal.
h.s.c.	Horizontal semicircular canal.
mx.	Maxilla.
N.5.7.	Foramen for fifth and seventh nerves.
N.9.10.	Foramen for ninth and tenth nerves.
na.	Nasal.
oc. con.	Occipital condyle.
p. fon.	Parietal fontanelles.
p.l.	Palatine lamina of maxilla.
pmx.	Premaxilla
p.pl.	Palatine plate.
p.s.c.	Posterior semicircular canal.
pal.	Palatine.
pqu.	Paraquadrate.
pro.	Prootic.
psph.	Parasphenoid.
pt.	Pterygoid.
qm.	Quadratmaxilla.
qu.	Quadrate.
s.n.	Septum nasi.
so.	Supraoccipital rudiment.
z.pr.	Zygomatic process of paraquadrate.





## A CENSUS OF AUSTRALIAN ARANEIDÆ.

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

This is the first Catalogue of Australian Araneida yet issued. It contains the enumeration of about 1,200 species, spread over 285 genera and 24 families. In addition to the species listed in the following pages, many new forms, at present in the hands of different collectors, await description. Considering what a vast area of this island continent has not yet been systematically "collected," it is not possible to forecast the number of species that must ultimately be made known, especially when we consider the faunistically rich areas in the Northern Rivers Districts of N. S. Wales, the tropical hinterland of Northern Queensland, and what is known as "The Northern Territory." And to these zones must be added those of Gippsland and of Western Australia.

The systematic arrangement of this Census is based on Simon's "Histoire Naturelle des Araignees," by the assistance of which many generic corrections—especially in the family Salticida—have been made. It may, therefore, be assumed that our genera have now been placed on a fair basis. A few changes of specific names have been made owing to the occurrence of preoccupied terms.

### THE TERRITELARIÆ.

Family AVICULARIDÆ.

Subfamily ACTINOPODINÆ.

Genus *Eriodon*, Latr.

(=*Missulena*, Walck.; *Pachyloscelis*, Lucas; *Sphodros*, Walck.; *Closterochilus* et *Theragretes*, Auss.)

*Obs.*—Hogg remarks that "the specimen on which Latreille founded this genus was probably the first spider brought from Australia to Europe."<sup>1</sup>

For Notes on the Nesting Habits of the Territelariæ, see my paper.<sup>2</sup>

ERIDON CRASSUM, O. P. Cambr.

*Eriodon crassum*, O. P. Cambr., Journ. Linn. Soc., Zool., x., 1868, p. 269.

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<sup>1</sup> Hogg—Proc. Zool. Soc., 1891, p. 219.

<sup>2</sup> Rainbow—Rec. Austr. Mus., iv., 1, 1901, p. 5, *et seq.*

*Eriodon crassum*, L. Koch, Die Arach. des Austr., i, 1873, p. 456

*Eriodon crassum*, Hogg, Proc. Zool. Soc., 1901, p. 222.

*Hab.*—Swan River, W. Australia.

ERIODON FORMIDABILE, *O. P. Cambr.*

*Eriodon formidabile*, O. P. Cambr., Journ. Linn. Soc. Zool., x., 1868, p. 266.

*Eriodon formidabile*, L. Koch, Die Arach. des Austr., 1873, i., p. 454.

*Eriodon formidabile*, Hogg, Proc. Zool. Soc., 1901, p. 222; *op. cit.*, ii., 1902, p. 121 (footnote).

*Hab.*—Swan Hill (River Murray), Victoria.

*Obs.*—There is a mutilated specimen in the National Museum of Victoria, Melbourne, which Mr. H. R. Hogg attributes to this species.

ERIODON GRANULOSUM, *O. P. Cambr.*

*Eriodon granulorum*, O. P. Cambr., Journ. Linn. Soc., Zool., x., 1868, p. 268.

*Eriodon granulorum*, L. Koch., Die Arach. des Austr., i., 1873, p. 455.

*Eriodon granulorum*, Hogg, Proc. Zool. Soc., 1901, p. 222.

*Hab.*—Swan River, W. Australia.

ERIODON INCERTUM, *O. P. Cambr.*

*Eriodon incertum*, O. P. Cambr., Ann. Mag. Nat. Hist., xix., 4, 1877, p. 30.

*Eriodon incertum*, Hogg, Proc. Zool. Soc., 1901, p. 224, figs. 22, a, b.

*Hab.*—Swan River, W. Australia.

ERIODON INSIGNE, *O. P. Cambr.*

*Eriodon insigne*, O. P. Cambr., Ann. Mag. Nat. Hist., xix., 4, 1877, p. 29.

*Eriodon insigne*, Hogg, Proc. Zool. Soc., 1901, p. 223, figs. 21, a, b.

*Hab.*—Swan River, W. Australia; Dimboola, Victoria.

ERIODON NIGRIPES, *Lucas.*

*Pachyloscelis nigripes*, Lucas, Ann. Soc. Ent. France, iii., 1834, p. 364, pl. vii., figs. 1 and 2.

*Sphodros abboti*, Walck., Ins. Apt., i., 1837, p. 243.

*Eriodon nigripes*, Simon, Hist. Nat. des. Araign., i., 1892, p. 81.

*Eriodon nigripes*, Hogg, Proc. Zool. Soc., 1901, p. 227.

*Hab.*—Australia.

*Obs.*—Lucas described this species from Brazil, but Simon, who has examined the type, thinks this a mistake, as he finds it to be a ♂ *Eriodon*. The same author has also ascertained that Walckenaer used the same specimen as the type of his *Sphodros abboti*. For further observations upon this species, see Mr. H. R. Hogg's remarks in the Proceedings of the Zoological Society of London as quoted above.

#### ERIODON RUBROCAPITATUM, *Auss.*

*Eriodon rubrocapitatum*, Auss., Verh. zool. bot. Ges. Wien, xxv., 1875, p. 140, pl. v., figs. 1-4.

*Eriodon semicoccineum*, Simon in Semon, Zool. Forsch. Austr. Malay Archipel., 1896, Lief. 8, p. 343.

*Actinopus formosus*, Rainbow, Proc. Linn. Soc. N.S. Wales, xxi., 1896, p. 328, pl. xx.; *loc. cit.*, xxii., 1897, p. 253.

*Eriodon rubrocapitatum*, Hogg, Proc. Zool. Soc., 1901, p. 226, fig. 23a and ? fig. 23b.

*Eriodon semicoccineum*, Hogg, Proc. Zool. Soc., 1901, p. 228.

*Eriodon rubrocapitatum*, Rainbow, Rec. Austr. Mus., v., 1, 1903, p. 64, fig. 6.

*Hab.*—Northern, Eastern, and Western Australia.

#### ERIODON OCCATORIUM, *Walck.*

*Missulena occatoria*, Walck., Tab. des Arañ., 1805, p. 8, pl. 2, figs. 11-14; *id.*, Ins. Apt., 1837, i., p. 252.

*Eriodon occatorium*, Lucas, Ann. Soc. Ent. France, v., sér. 4, 1865, p. 309, pl. 8.

*Eriodon occatorium*, L. Koch., Die Arach. des Austr., i., 1873, p. 457.

*Eriodon occatorium*, Hogg, Proc. Zool. Soc., 1901, p. 220.

*Eriodon occatorium*, Rainbow, Rec. Austr. Mus., v., 1, 1903, p. 63, fig. 5.

*Missulena (Eriodon) occatoria*, Hogg, Proc. Zool. Soc., 1908, p. 335, figs. a-b.

*Hab.*—Eastern, Southern, and Western Australia.

*Obs.*—This species is the type of the genus.

## Subfamily MIGINÆ.

## Genus Migas, L. Koch.

## MIGAS PARADOXUS, L. Koch.

*Migas paradoxus*, L. Koch, Die Arach. des Austr., i., 1873, p. 467, tab. 36, fig. 1.

*Migas paradoxus*, Hogg, Report Horn Expl. Exp., ii., 1896, Zoology, p. 334; Proc. Zool. Soc., 1901, p. 228.

*Migas paradoxus*, Rainbow, Rec. Austr. Mus., iv., 1, 1901, p. 6.

*Hab.*—New Zealand: Palm Creek, Central Australia(?)

*Obs.*—*M. paradoxus* is the type of the genus. It is very doubtful if it occurs in Australia at all. For notes on this side of the subject, see Rainbow as above quoted, and Hogg in Proceedings of the Zoological Society of London for 1901.

## Genus Heteromigas, Hogg.

## HETEROMIGAS DOVEI, Hogg.

*Heteromigas dovei*, Hogg, Proc. Zool. Soc., 1902, p. 123, figs. a, b.

*Hab.*—Table Top, North Coast of Tasmania.

*Obs.*—This is the type species of the genus.

## Subfamily CTENIZINÆ.

## Genus Conothele, Thor.

## CONOTHELE MALAYANA, Dol.

*Cteniza malayana*, Dol., Tweede Bijdr., 1859, p. 5, tab. vi., figs. 8, 8a, 8b, 8c.

*Conothele malayana*, Rainbow, Austr. Nat., i., 6, 1907, p. 76.

*Hab.*—Malayana, Papua, Port Darwin, N. Territory.

*Obs.*—This is the type species of the genus.

## Genus Idiosoma, Auss.

*Obs.*—*Idiosoma sigillatum*, O. P. Cambr., is the type species of this genus.

## IDIOSOMA SIGILLATUM, O. P. Cambr.

*Idiops sigillatus*, O. P. Cambr., Proc. Zool. Soc., 1870, p. 105, pl. viii., fig. 2.



*Acanthodon sigillatum*, O. P. Cambr., Hist. Nat. des Araign. i., 1892, p. 91.

*Idiosoma sigillatum*, Pocock, Ann. Mag. Nat. Hist., xix. (6), 1897, p. 109.

*Idiops sigillatus*, Rainbow, Rec. Austr. Mus., iv., 1, p. 7.

*Acanthodon sigillatum*, Rainbow, *op. cit.*

*Idiosoma sigillatum*, Hogg, Proc. Zool. Soc., 1901, p. 230.

*Hab.*—Perth and Swan River, W. Australia.

*Obs.*—This species is the type of the genus.

*Genus Aganippe*, O. P. Cambr.

(=*Eucyrtops*, Pocock).

AGANIPPE SUBTRISTIS, O. P. Cambr.

*Aganippe subtristis*, O. P. Cambr., Ann. Mag. Nat. Hist., xix. (4), 1897, p. 28, pl. vi, fig. 3.

*Aganippe subtristis*, Pocock, Ann. Mag. Nat. Hist., xix. (6), p. 112.

*Aganippe subtristis*, Hogg, Proc. Zool. Soc., 1901, p. 231; *loc. cit.*, ii., 1902, p. 126.

*Hab.*—Adelaide, S. Australia.

*Obs.*—This is the type species of the genus.

AGANIPPE LATIOR, O. P. Cambr.

*Aganippe latior*, O. P. Cambr., Ann. Mag. Nat. Hist., xix. (4), 1877, p. 29, pl. vi, fig. 4.

*Eucyrtops latior*, Pocock, Ann. Mag. Nat. Hist., xix. (6), 1897, p. 113.

*Eucyrtops latior*, Hogg, Proc. Zool. Soc., 1901, p. 232.

*Hab.*—Western Australia.

AGANIPPE OCCIDENTALIS, Hogg.

*Aganippe occidentalis*, Hogg, Ann. Mag. Nat. Hist., xi.(7), 1903, p. 309, figs. *a*, *b*, p. 310, figs. *a*, *b*.

*Hab.*—Roeburn, N.W. Australia.

AGANIPPE PULLEINEI, Hogg.

*Aganippe pulleinei*, Hogg, Proc. Zool. Soc., 1902, p. 128, figs. *a*, *b*, *c*.

*Hab.*—Blakiston and Hallett's Cove, S. Australia.

*AGANIPPE SMEATONI*, Hogg.

*Aganippe smeatoni*, Hogg, Proc. Zool. Soc., ii., 1902, p. 126, figs. a, b, c.

*Aganippe smeatoni*, Simon, Hist. Nat. des Araign., ii., 1897(1903), p. 903.

*Hab.*—Blakiston, S. Australia.

*Genus Anidiops*, Pocock.

## ANIDIOPS MANSTRIDGEI, Pocock.

*Anidiops manstridgei*, Pocock, Ann. Mag. Nat. Hist., xix. (6), 1897, p. 114.

*Anidiops manstridgei*, Hogg, Proc. Zool. Soc., 1901, p. 231.

*Hab.*—Lawlers, East Murchison Goldfields, W. Australia.

*Obs.*—This is the type species of the genus.

*Genus Blakistonia*, Hogg.

## BLAKISTONIA AUREA, Hogg.

*Blakistonia aurea*, Hogg, Proc. Zool. Soc., 1902, p. 132, pl. xiii., figs. 1, 2, and text-figs. 25b-e.

*Hab.*—Adelaide, Blakiston, and Mt. Lofty Ranges, S Australia.

*Obs.*—This is the type species of the genus.

*Genus Arbanitis*, L. Koch.

(= *Pholeuon*, L. Koch, *nom. proœcc.*).

## ARBANITIS LONGIPES, L. Koch.

*Pholeuon longipes*, L. Koch, Die Arach. des Austr., i., 1874, pp. 472 and 491, tab. xxxvi., figs. 3, 3a-3c.

*Arbanitis longipes*, Hogg, Proc. Zool. Soc., 1901, p. 236.

*Arbanitis longipes*, Rainbow, Rec. Austr. Mus., iv., 1, 1901, p. 7.

*Hab.*—Bowen, N. Queensland.

*Obs.*—This is the type species.

*ARBANITIS MACULIPES*, Hogg.

*Arbanitis maculipes*, Hogg, Ann. Mag. Nat. Hist., xi. (7), 1903, p. 311, figs. a, b.

*Hab.*—Tasmania.

*Genus Cantuaria, Hogg.*

(=*Maoricana*, Hogg, *nom. proœc.*).

*Obs.*—*Cantuaria dundyi*, Hogg, is the type species of this genus.

CANTUARIA HOGGI, *Simon.*

*Cantuaria hoggi*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 361.

*Hab.*—Eradu, W. Australia.

*Genus Cantuarides, Strand.*

CANTUARIDES EXSICCATUS, *Strand.*

*Cantuarides exsiccatus*, Strand, Jahr. Ver. Natk., 1897, p. 8.

*Hab.*—Central Australia.

*Obs.*—This is the type species of the genus.

*Genus Proshermacha, Simon.*

PROSHERMACHA SUBARMATA, *Simon.*

*Proshermacha subarmata*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 364.

*Hab.*—W. Australia.

*Obs.*—This is the type species of the genus.

PROSHERMACHA TIGRINA, *Simon.*

*Proshermacha tigrina*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 363.

*Hab.*—W. Australia.

*Genus Darcyops, Hogg.*

DYARCYOPS ANDREWSI, *Hogg.*

*Darcyops andrewsi*, Hogg, Proc. Zool. Soc., 1902, p. 130, pl. xiii., fig. 10 and text-fig. 25a.

*Hab.*—Mt. Compass, S. Australia.

*Obs.*—This is the type species of the genus.

DYARCYOPS BIROI, *Kulez.*

*Dyarcyops birói*, Kulez., Ann. Mus. Nat. Hung., vi., 1908, p. 435

*Hab.*—Mt. Victoria, Blue Mountains, N. S. Wales.

## Subfamily BARYCHELINÆ.

Genus *Idiommata*, *Auss.*

In 1888,<sup>3</sup> Simon proposed *Eucyocrypta* as a genus of this subfamily, his type being *E. melagris*, Sim., a New Caledonian species, but in 1892<sup>4</sup> he sank it as a synonym of *Idiommata*. In 1895 Pocock, in examining a male of *I. blackwalli*, O. P. Cambr., discovered that it possessed a Wood-Mason's stridulating organ which no species of *Eucyocrypta* has. For the reason herein stated, he re-characterised *Eucyocrypta*, and in 1901, Hogg,<sup>5</sup> in his "Australian and New Zealand Spiders of the suborder *Mygalomorphae*," catalogues both genera as branches of our fauna, until, at any rate, more specimens (males and females) shall have been examined to see how far they agree respectively with those of *I. blackwalli*, O. P. Cambr. In so far as the two genera under discussion are concerned, I follow Pocock and Hogg.

## IDIOMMATA BLACKWALLI, O. P. Cambr.

*Iliops blackwalli*, O. P. Cambr., Proc. Zool. Soc., 1870, p. 154, pl. viii., fig. 5.

*Idiommata blackwalli*, Pocock, Ann. Mag. Nat. Hist., xvi. (6), 1895, p. 225.

*Idiommata blackwalli*, Auss., Verh. zool.-bot. Ges. Wien., xxv., 1875, p. 164.

*Idiommata blackwalli*, Hogg, Proc. Zool. Soc., 1901, p. 240.

*Hab.*—Swan River, W. Australia.

*Obs.*—This species is the type of the genus.

IDIOMMATA, *sp.?*

*Idiommata*, *sp.?*, Simon, Fauna Süd-west Austr., i., 1908, p. 365.

*Hab.*—Mundaring Wier, Darling Ranges, W. Australia.

*Obs.*—Simon says this species is similar to *I. blackwalli* (*supra*).

Genus *Eucyocrypta*, *Simon*.

*Obs.*—*Eucyocrypta melagris*, Simon, is the type species of this genus.

<sup>3</sup> Simon—Ann. Soc. Ent. France, 1888, p. 247.

<sup>4</sup> Pocock—Ann. Mag. Nat. Hist., xvi. (6), 1895, p. 225.

<sup>5</sup> Hogg—Proc. Zool. Soc., 1901, pp. 239-240.

ENCYOCRYPTA FULIGINATA, *Thor.*

*Idiomnata fuliginata*, Thor., Ann. Mus. Gen., xvii, 1881, p. 243.

*Encyocrypta fuliginata*, Hogg, Proc. Zool. Soc., 1901, p. 241.

*Hab.*—Cape York.

ENCYOCRYPTA FUSCA, *L. Koch.*

*Idiomnata fusca*, L. Koch, Die Arach. des Austr., i., 1873, p. 478, tab. xxxvii., figs. 1, 1a, 1b.

*Encyocrypta fusca*, Hogg, Proc. Zool. Soc., 1901, p. 241.

*Hab.*—Rockhampton, Queensland.

ENCYOCRYPTA RETICULATA, *L. Koch.*

*Idiomnata reticulata*, L. Koch, Die Arach. des Austr., i., 1873, p. 474, tab. xxxvi., figs. 4, 4a, 4b, and 5, 5a-5c.

*Encyocrypta reticulata*, Pocock, Ann. Mag. Nat. Hist., xvi. (6), 1895, p. 225.

*Encyocrypta reticulata*, Hogg, Proc. Zool. Soc., 1901, p. 240.

*Hab.*—Port Mackay, Rockhampton, and Sydney.

*Genus* TRITTAME, *L. Koch.*TRITTAME GRACILIS, *L. Koch.*

*Trittame gracilis*, L. Koch, Die Arach. des Austr., i., 1873, p. 482, tab. xxxvii., figs. 2, 2a, 2b.

*Trittame gracilis*, Hogg, Proc. Zool. Soc., 1901, p. 241.

*Hab.*—Bowen, Queensland.

*Obs.*—This is the type of the genus. It is interesting to note that no specimen has been recorded since the one described by L. Koch.

*Genus* IDIOCTIS, *L. Koch.*

*Obs.*—The type of this genus is *I. helva*, L. Koch., originally recorded from Ovalau, Fiji. In 1896, Hogg<sup>6</sup> included the name of this species amongst those collected by the Horn Exploring Expedition. In 1901, in one of my papers on "Notes on the Architecture, Nesting-habits, and Life-Histories of Australian Araneidæ,"<sup>7</sup> I questioned the accuracy of this determination. Shortly after the publication of my paper, my esteemed friend

<sup>6</sup> Hogg—Report Horn Explor. Expd., ii, 1896, Zool., pp. 312 and 335.

<sup>7</sup> Rainbow—Rec. Austr. Mus., iv., 1, 1901, p. 10.

and correspondent, having had access to authenticated specimens<sup>8</sup> of *I. helva* in the British Museum, and having compared Palm Creek specimens with those from Fiji, came to the conclusion that Central Australian examples were distinct, and he therefore described them as *I. palmarum*.

*IDIOCTIS PALMARUM, Hogg.*

*Idioctis palmarum*, Hogg, Proc. Zool. Soc., 1901, p. 242,<sup>9</sup> figs. 26 *a* and *c*.

*Hab.*—Palm Creek, Central Australia.

*Genus Synothele, Simon.*

SYNOTHELE MICHAELSENI, *Simon.*

*Synothele michaelseui*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 364.

*Hab.*—Lion Mill, W. Australia.

*Obs.*—This species is the type of the genus.

*Subfamily AVICULARINÆ.*

*Genus Ischnocolus, Auss.*

*Obs.*—Ausserer's species, *I. holosericeus*, is the type of this genus.

ISCHNOCOLUS LUCUBRANS, *L. Koch.*

*Ischnocolus lucubrans*, L. Koch, Die Arach. des Austr., i., 1874, p. 487, tab. xxxvii., figs. 4, 4*a*.

*Ischnocolus lucubraus*, Hogg, Proc. Zool. Soc., 1901, p. 244.

*Hab.*—Port Mackay, N. Queensland,

*Obs.*—Of this species, Hogg (*supra*) says:—"Herr Koch's type of this species is not available. I leave the record as it stands, but the presence of the genus in Australia requires confirmation."

*Genus Sclenocosmia, Auss.*

(=*Phricetus*, L. Koch, *nom. provoc.*: *Phlogius*, Simon).

*Obs.*—The type of this genus is *S. javanensis*, Walek.

<sup>8</sup> Hogg—Proc. Zool. Soc., 1901, p. 242.

<sup>9</sup> Hogg—*Loc. cit.*, text-fig. 26*b*, *I. helva*, from an example in the Keyserling Collection.

SELENOCOSMIA CRASSIPES, *L. Koch.*

*Phriectus crassipes*, L. Koch, Die Arach. des Austr., i., 1874, p. 490, tab. xxxvii., figs. 5, 5a.

*Phlogius crassipes*, Simon, Bull. Soc. Ent. France, vii. (6), 1887, p. excv.; Hist. Nat. des Araign., I, 1892, p. 146.

*Phriectus crassipes*, Hogg, Rep. Horn. Expl. Exped., ii., 1896, Zoology, pp. 309 and 313.

*Phlogius crassipes*, Spencer, Rep. Horn. Expl. Exped., ii., 1896, Zoology, p. 412, pl. 28.

*Phlogius crassipes*, Rainbow, Rec. Austr. Mus., iv., 1, 1901, p. 11.

*Selenocosmia crassipes*, Hogg, Proc. Zool. Soc., 1901, p. 245.

*Hab.*—Australia (widely distributed) and New Guinea.

SELENOCOSMIA STALKERI, *Hirst.*

*Selenocosmia stalkeri*, Hirst, Ann. Mag. Nat. Hist., xix. (7), 1907, p. 522.

*Hab.*—S. Australia.

SELENOCOSMIA STIRLINGI, *Hogg.*

*Selenocosmia stirlingi*, Hogg, Proc. Zool. Soc., 1901, p. 245, text-fig. 27.

*Hab.*—South and West Australia.

SELENOCOSMIA STRENUA, *Thor.*

*Selenocosmia strenua*, Thor., Ann. Mus. Genova, xvii., 1881, p. 253.

*Selenocosmia strenua*, Hogg, Proc. Zool. Soc., 1901, p. 246.

*Hab.*—Somerset, Cape York, and New Guinea.

SELENOCOSMIA SUBVULPINA, *Strand.*

*Selenocosmia subvulpina*, Strand, Zietsch. f. Naturw., 1907, p. 83.

*Hab.*—Queensland.

SELENOCOSMIA VULPINA, *Hogg.*

*Selenocosmia vulpina*, Hogg, Proc. Zool. Soc., 1901, p. 246, text-fig. 28.

*Hab.*—Cape Upstart, near Bowen, Queensland.

*Obs.*—Hogg remarks, at the foot of his diagnosis of this species, that "coming from the same neighbourhood, this may prove to be the male (unknown) of L. Koch's *S. crassipes*."

*Genus Selenotholus, Hogg.*SELENOTHOLUS FOELSCHERI, *Hogg.*

*Selenotholus foelscheri*, Hogg, Proc. Zool. Soc., 1902, p. 134, fig. 26.

*Hab.*—Palmerston, Northern Territory.

*Obs.*—This species is the type of the genus.

*Genus Selenotypus, Pocock.*SELENOTYPUS PLUMIPES, *Pocock.*

*Selenotypus plumipes*, Pocock, Ann. Mag. Nat. Hist., xv.(6), 1895, p. 176.

*Selenotypus plumipes*, Hogg, Proc. Zool. Soc., 1901, p. 249, fig. 29.

*Hab.*—Major's Creek, Townsville, Queensland.

*Obs.*—This, the largest of our Australian Spiders, is the type of its genus. Hogg gives its total length measurement of 50 mm.

*Subfamily DIPLURINÆ.**Genus Aname, L. Koch.*

*Obs.*—This genus was sunk by Simon<sup>10</sup> as a synonym of *Brachythelc*, Auss., but it was afterwards rehabilitated by Hogg<sup>11</sup>. Later, Simon, in the Supplement<sup>12</sup> to his great work, accepted the decision of Hogg, and concurred in the re-establishment of L. Koch's genus. The confusion of *Aname* and *Brachythelc*<sup>13</sup> was due to the incomplete definition of the former by its author. The type of the genus is *Aname pallida*, L. Koch.

ANAME ARBOREA, *Hogg.*

*Aname arborea*, Hogg, Proc. Zool. Soc., 1901, p. 254, fig. 31.

*Hab.*—Macedon, Victoria.

ANAME GRISEA, *Hogg.*

*Aname grisea*, Hogg, Proc. Zool. Soc., 1901, 252, fig. 30.

*Hab.*—Macedon, Victoria.

<sup>10</sup> Simon—Hist. Nat. Araign., 1902, p. 180.

<sup>11</sup> Hogg—Proc. Zool. Soc., 1901, p. 251.

<sup>12</sup> Simon—*Loc. cit.*, ii., 1897 (1903), p. 965.

<sup>13</sup> Rainbow—Rec. Austr. Mus., iv., 1, 1901, p. 12.



ANAME MINOR, *Kulcz.*

*Aname minor*, Kulcz., Ann. Mus. Nat. Hung., vi., 1908, p. 457.

*Hab.*—Mt. Victoria, Blue Mountains, N.S. Wales.

ANAME PALLIDA, *L. Koch.*

*Aname pallida*, L. Koch, Die Arach. des Austr., i., 1873, p. 465, tab. xxxv., figs. 8 and 8a.

*Aname pallida*, Hogg, Proc. Zool. Soc., 1901, p. 252.

*Hab.*—Bowen, Queensland.

*Obs.*—This species was described by L. Koch from a newly-moulted spider, hence the specific name, although it must stand, is not appropriate.

ANAME PELLUCIDA, *Hogg.*

*Aname pellucida*, Hogg, Proc. Zool. Soc., 1901, p. 255, fig. 32.

*Hab.*—Macedon, Victoria.

ANAME TASMANICA, *Hogg.*

*Aname tasmanica*, Hogg, Proc. Zool. Soc., 1902, p. 140, pl. xiii., fig. 12.

*Hab.*—Table Cape, North Coast of Tasmania.

*Genus Brachythele, Auss.*

*Obs.*—*B. icteria*, C. Koch, is the type of this genus.

BRACHYTHELE PLATIPUS, *Auss.*

*Brachythele platipus*, Auss., Verh. Zool. Bot. Ges. Wien, 1875, p. 159.

*Brachythele platipus*, Hogg, Proc. Zool. Soc., 1901, p. 257.

*Hab.*—Australia.

*Obs.*—*B. platipus* was described by Aüsserer from a cephalothorax only. The locality given was New Holland.

*Genus Chenistonia, Hogg.*

*Obs.*—*Chenistonia maculata*, Hogg, is the type of this genus.

CHENISTONIA MACULATA, *Hogg.*

*Chenistonia maculata*, Hogg, Proc. Zool. Soc., 1901, p. 262, fig. 35.

*Hab.*—Macedon, Victoria.

*CHENISTONIA MAJOR*, Hogg.

*Chenistonia major*, Hogg, Proc. Zool. Soc., 1901, p. 263, fig. 36.

*Hab.*—Upper Macedon, Victoria.

*CHENISTONIA TEPPERI*, Hogg.

*Chenistonia tepperi*, Hogg, Proc. Zool. Soc., 1902, p. 137, pl. xiii., fig. 13.

*Hab.*—Ardrossan, Kangaroo Is., Burnside, and Blakiston, S. Australia.

*Genus Dekana*, Hogg.*DEKANA DIVERSICOLOR*, Hogg.

*Dekana diversicolor*, Hogg, Proc. Zool. Soc., 1902, p. 138, fig. 27.

*Hab.*—Deka Station, near Blackhall, Victoria.

*Obs.*—This is the type species of the genus.

*Genus Macrothele*, Auss.

*Obs.*—*Macrothele calpetana*, Walck., is the type species of this genus.

*MACROTHELE ACULEATA*, Urquhart.

*Macrothele aculeata*, Urquhart, Proc. Roy. Soc. Tasm., 1893, p. 94.

*Hab.*—Tasmania.

*Genus Ixamatus*, Simon.

(= *Leatus*, L. Koch, *nom. præocc.*; *Haplothele*, H. Lenz, *ad part.*).

*Obs.*—*I. varius*, L. Koch, is the type of the genus.

*Obs.*—This genus was sunk by Simon<sup>14</sup>, and afterwards re-habilitated by Hogg<sup>15</sup>. Simon also acquiesced in its restoration<sup>16</sup>.

*IXAMATUS BROOMI*, Hogg.

*Ixamatus broomi*, Hogg, Proc. Zool. Soc., 1901, p. 260, fig. 34.

*Hab.*—Hillgrove, N. S. Wales.

*IXAMATUS GREGORII*, Hogg.

*Ixamatus gregorii*, Hogg, Proc. Zool. Soc., 1901, p. 258, fig. 33.

*Hab.*—Macedon, Victoria.

<sup>14</sup> Simon—Hist. Nat. Araign., 1, 1892, p. 180.

<sup>15</sup> Hogg—Proc. Zool. Soc., 1901, p. 257.

<sup>16</sup> Simon—*Loc. cit.*, ii., 1897 (1903), p. 967.

*Ixamatus varius*, L. Koch.

*Ixamatus varius*, L. Koch, Die Arach. des Austr., i., 1873, p. 469, tab. xxxvi., figs. 2, 2a-2c.

*Ixamatus varius*, Hogg, Proc. Zool. Soc., 1901, p. 258.

*Hab.*—Bowen, Queensland.

Genus *Stenyrocercus*, Simon.

(= *Macrothele*, Simon (*ad part*), *silvicola*).

*Obs.*—*Stenyrocercus silvicola*, Simon, is the type of its genus.

## STENYROCERCUS BROOMI, Hogg.

*Stenyrocercus broomi*, Hogg, Proc. Zool. Soc., 1901, p. 270, fig. 38.

*Hab.*—Hillgrove, N.S. Wales.

Genus *Atrax*, O. P. Cambr.

*Obs.*—*Atrax robustus*, O. P. Cambr., is the type of this genus.

## ATRAX MODESTA, Simon.

*Atrax modesta*, Simon, Ann. Soc. Ent. France, x., 1891, p. 302.

*Atrax modesta*, Hogg, Proc. Zool. Soc., 1901, p. 274.

*Hab.*—Melbourne, Victoria.

## ATRAX ROBUSTUS, O. P. Cambr.

*Atrax robustus*, O. P. Cambr., Ann. Mag. Nat. Hist., xix. (1), 1877, p. 26, pl. vi., fig. 1.

*Atrax robustus*, Simon, Ann. Soc. Ent. France, x., 1891, p. 301.

*Atrax robustus*, Hogg, Proc. Zool. Soc., 1901, p. 273, fig. 39.

*Hab.*—Queensland and New South Wales.

Genus *Hadronyche*, L. Koch.

## HADRONYCHE CERBEREA, L. Koch.

*Hadronyche cerberea*, L. Koch, Die Arach. des Austr., i., 1873, p. 463, tab. xxxv., figs. 6, 6a, 6b, 6c.

*Hadronyche cerberea*, Hogg, Proc. Zool. Soc., 1901, p. 274, fig. 40.

*Hab.*—Sydney, New South Wales.

*Obs.*—This species is the type of the genus.

*Genus Palaevagrus, Simon.*PALAEVAGRUS FUGAX, *Simon.*

*Palaevagrus fugax*, Simon, Fauna Süd-west Austr., 1, 1908, p. 365.

*Hab.*—Geraldton and Lion Mill, W. Australia.

*Obs.*—This species forms the type of its genus

## THE CRIBELLATÆ.

## Family HYPOCHILIDÆ.

*Obs.*—For notes on the nests and nesting habits, see my papers.<sup>17</sup>

*Genus Ectatosticta, Simon.*

*Obs.*—Only two species are known in this genus, one of which, the type, *E. davidi*, Simon, occurs in China, and the other, *E. troglodytes*, Higg. & Pett., in Tasmania.

ECTATOSTICTA TROGLODYTES, *Higg. & Pett.*

*Theridion troglodytes*, Higg. & Pett., Proc. Roy. Soc. Tasm., 1883, p. 191.

*Ectatosticta australis*, Simon, Bull. Ent. Soc. France, 1902, p. 240.

*Ectatosticta australis*, Rainbow, Rec. Austr. Mus., v, 5, 1904, p. 326, *et seq.*, pl. xlvi., figs. 1-4.

*Ectatosticta troglodytes*, Rainbow, *loc. cit.*

*Hab.*—Tasmania.

## Family ULOBORIDÆ.

## Subfamily ULOBORINÆ.

*Genus Dinopsis, Mael.*

*Obs.*—*Dinopsis lamia*, Mael., is the type species of this genus.

DINOPSIS BICORNIS, *L. Koch.*

*Dinopsis bicornis*, L. Koch, Die Arach. des Austr., ii., 1879, p. 1049.

*Dinopsis bicornis*, Rainbow, Rec. Austr. Mus., iv., 3, 1901, p. 138.

*Hab.*—New South Wales. Common around Sydney.

<sup>17</sup>Rainbow—Rec. Austr. Mus., iv., 4, 1901, p. 135 *et seq.*, figs. 15, 16, and 17; *op. cit.*, vi., 5, 1907, p. 338, fig. 54.

DINOPIS FASCIATUS, *L. Koch.*

*Dinopis fasciatus*, L. Koch, Die Arach. des Austr., ii., 1879, p. 1045, tab. xcii., figs. 1 and 2.

*Dinopis fasciatus*, Rainbow, Rec. Austr. Mus., iv., 3, p. 138.

*Hab.*—Bowen and Gayndah, Queensland.

DINOPIS RAVIDUS, *L. Koch.*

*Dinopis ravidus*, L. Koch, Die Arach. des Austr., ii., 1879, p. 1041, tab. xci., figs. 3, 3a-3c.

*Hab.*—Gayndah, Queensland.

DINOPIS SUBRUFUS, *L. Koch.*

*Dinopis subrufus*, L. Koch, Die Arach. des Austr., ii., 1879, p. 1039, tab. xci., fig. 2.

*Dinopis subrufus*, Rainbow, Rec. Austr. Mus., iv., 3, 1901, p. 138.

*Hab.*—Queensland and New South Wales.

DINOPIS TABIDUS, *L. Koch.*

*Dinopis tabidus*, L. Koch, Die Arach. des Austr., ii., 1879, p. 1047, tab. xcii., fig. 3.

*Hab.*—Cape York, N. Queensland.

DINOPIS UNICOLOR, *L. Koch.*

*Dinopis unicolor*, L. Koch, Die Arach. des Austr., ii., 1879, p. 1043, tab. xci., fig. 4.

*Hab.*—King George Sound, W. Australia.

DINOPIS SCHOMBURGKI, *Karsch.*

*Dinopis schomburgki*, Karsch, Zeit. ges. Naturw., iii. (3), 1878, p. 332.

*Hab.*—Adelaide, S. Australia.

*Genus Menneus, Simon.*

(= *Avella*, O. P. Cambr.).

*Obs.*—*Menneus tetraguathoides*, Simon, is the type species of this genus.

MENNEUS ANGULATA, *L. Koch.*

*Menneus angulata*, L. Koch, Die Arach. des Austr., ii., 1879, p. 1037, tab. xci., figs. 1, 1a, 1b.

*Hab.*—Rockhampton, Queensland.

MENNEUS DESPICIENS, *O. P. Cambr.*

*Avella despiciens*, *O. P. Cambr.*, Proc. Zool. Soc., 1877, p. 574,  
pl. lvii., fig. 10.

*Avella despiciens*, Die Arach. des Austr., ii, 1879, p. 1033, tab.  
xc., figs. 5, 5a, 5b.

*Hab.*—N. Queensland to N. S. Wales.

MENNEUS SUPERCILIOSUS, *Thor.*

*Avella superciliosa*, *Thor.*, Ann. Mus. Genova., xvii., 1881, p. 200.

*Hab.*—Cape York, N. Queensland.

MENNEUS UNIFASCIATA, *L. Koch.*

*Avella unifasciata*, *L. Koch.*, Die Arach. des Austr., ii., 1879, p.  
1035, tab. xc., figs. 6, 6a.

*Hab.*—Sydney, N. S. Wales.

*Genus Uloborus, Latr.*

= *Orithyia*, Blackw.; *Philoponus*, *Thor.*; *Ariston*, *O. P. Cambr.*).

*Obs.*—*U. walckenaerius*, *Latr.*, is the type species of this genus.

ULOBORUS BARBIPES, *L. Koch.*

*Uloborus barbipes*, *L. Koch.*, Die Arach. des Austr., i., 1871, p. 229,  
tab. xix., figs. 9 and 9a.

*Uloborus barbipes*, *Rainbow*, Rec. Austr. Mus., iv., 3, p. 138.

*Hab.*—Port Mackay, Queensland.

ULOBORUS CANUS, *Macl.*

*Uloborus canus*, *Macl.*, King's Survey of Intertrop. and W. Coast  
of Austr., ii., 1827, p. 468, No. 190.

*Uloborus canus*, *Walck.*, Hist. Nat. des Ins., Apt. ii., 1837, p. 503.

*Uloborus canus*, *Rainbow*, Rec. Austr. Mus., iv., 3, p. 138.

*Hab.*—This species is unknown to me; but its immediate  
habitat is somewhat vague, as *Macleay* (*supra*) gives no specific  
locality.

ULOBORUS PANTHERINUS, *Keys.*

*Uloborus pantherinus*, *Keys.*, Die Arach. des Austr., Suppl., 1890,  
p. 234, tab. xx., figs. 2, 2a, 2b, 2c.

*Uloborus pantherinus*, Rainbow, Rec. Austr. Mus., iv., 3, 1901, p. 138.

*Hab.*—Sydney, New South Wales.

ULOBORUS SPINITARSIS, *Keys.*

*Uloborus spinitarsis*, Keys., Die Arach. des Austr., Suppl., 1887, p. 231, tab. xx., figs. 9, 9a-9c.

*Uloborus spinitarsis*, Rainbow, Rec. Austr. Mus., iv., 3, 1901, p. 138.

*Hab.*—Head of Middle Harbour, Sydney.

ULOBORUS VARIABILIS, *Keys.*

*Uloborus variabilis*, Keys., Die Arach. des Austr., Suppl., 1887, p. 229, tab. xx., figs. 8, 8a, 8b.

*Uloborus variabilis*, Rainbow, Rec. Austr. Mus., iv., 3, 1901, p. 138.

*Hab.*—Queensland, New South Wales.

Subfamily MIAGRAMMOPINÆ.

Genus *Miagrammopes*, O. P. Cambr.

*Obs.*—*Miagrammopes thwaitesii*, O. P. Cambr., is the type of this genus.

MIAGRAMMOPES BRADLEYI, O. P. Cambr.

*Miagrammopes bradleyi*, O. P. Cambr., Ann. Mag. Nat. Hist., xiv. (4), 1874, p. 177.

*Hab.*—Sydney, N. S. Wales.

MIAGRAMMOPES CANDATA, *Keys.*

*Miagrammopes candata*, Keys., Die Arach. des Austr., Suppl., 1890, p. 253, tab. xxiii., figs. 5, 5a.

*Miagrammopes candata*, Rainbow, Rec. Austr. Mus., iv., 3, p. 138.

*Hab.*—Peak Downs, Queensland.

Family PSECHRIDÆ.

Genus *Stiphidion*, Simon.

STIPHIDION FACETUM, Simon.

*Stiphidion facetum*, Simon, Bull. Soc. Ent. France, 1902, p. 242.

*Hab.*—Tasmania.

*Obs.*—This species is the type of the genus.

## Family DICTYNIDÆ.

Genus *Amaurobius*, C. Koch.

(=*Ciniflo*, Blackw.; *Titanoca*, Thor.).

*Obs.*—*Amaurobius fenestralis*, Ström., is the type of this genus.

## AMAUROBIUS ANNULIPES, L. Koch.

*Amaurobius annulipes*, L. Koch, Die Arach. des Austr., i., 1872, p. 341, tab. xxvii., figs. 3, 3a, 4, 4a, 4b.

*Hab.*—Rockhampton, N. Queensland, and Cobbitty, New South Wales.

## AMAUROBIUS BIMETALLICUS, Hogg.

*Amaurobius bimetallicus*, Hogg, Rep. Horn Expl. Exped., ii., Zoology, 1896, p. 322, pl. xxiv., figs. 6, 7.

*Hab.*—Reedy Hole, Central Australia.

## AMAUROBIUS BLOCHMANNI, Strand.

*Amaurobius blochmanni*, Strand, Zool. Jahrb. Syst., xxiv., 1907, p. 459.

*Hab.*—Sydney, N. S. Wales.

## AMAUROBIUS CANDIDUS, L. Koch.

*Amaurobius candidus*, L. Koch, Die Arach. des Austr., i., 1872, p. 333, tab. xxvi., figs. 6, 6a.

*Hab.*—From N. Queensland to W. Australia.

## AMAUROBIUS CHALYBEIUS, L. Koch.

*Amaurobius chalybeius*, L. Koch, Die Arach. des Austr., i., 1872, p. 328, tab. xxvi., figs. 4, 4a, 4b.

*Hab.*—From Queensland to Victoria.

## AMAUROBIUS GAUSAPATUS, Simon.

*Amaurobius gausapatus*, Simon, Ann. Soc. Ent. Belg., l., 1906, p. 294.

*Hab.*—Victoria.

## AMAUROBIUS INSIGNIS, L. Koch.

*Amaurobius insignis*, L. Koch, Die Arach. des Austr., i., 1872, p. 330.

*Hab.*—Vaguely recorded "Neuholland."



AMAUROBIUS LONGINQUUS, *L. Koch.*

*Amaurobius longinquus*, L. Koch, Verh. K.K. zool.-bot. Ges. Wien, 1867, p. 196.

*Amaurobius longinquus*, L. Koch, Die Arach. des Austr., i., 1872, p. 336, tab. xxvi., fig. 8.

*Hab.*—Brisbane, Queensland. Koch records that in the K.K. Museum in Vienna, there are two examples from New Zealand.

AMAUROBIUS MICRIPS, *Simon.*

*Amaurobius microps*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 366.

*Hab.*—Bridgetown and Albany, W. Australia.

AMAUROBIUS PILOSUS, *Hogg.*

*Amaurobius pilosus*, Hogg, Proc. Roy. Soc. Viet., xii, 1900, p. 80, pl. xiii., fig. 1.

*Hab.*—Macedon, Victoria.

AMAUROBIUS PRAECALOUS, *Simon.*

*Amaurobius praecolous*, Simon, Ann. Soc. Ent. Belg., xv., 1906, p. 295.

*Hab.*—Tasmania.

AMAUROBIUS ROBUSTUS, *L. Koch.*

*Amaurobius robustus*, L. Koch, Die Arach. des Austr., i., 1872, p. 331, tab. xxvi., figs. 5, 5a.

*Hab.*—From N. Queensland to W. Australia.

AMAUROBIUS SCALARIS, *L. Koch.*

*Amaurobius scalaris*, L. Koch, Die Arach. des Austr., i., 1872, p. 334, tab. xxvi., figs. 7, 7a; *loc. cit.*, p. 337.

*Amaurobius scalaris*, Hogg, Rep. Horn Expl. Exped., ii., Zoology, 1896, pp. 312 and 324.

*Hab.*—Port Mackay, N. Queensland, and Central Australia.

AMAUROBIUS SEGESTRINUS, *L. Koch.*

*Amaurobius segestrinus*, L. Koch, Die Arach. des Austr., i., 1872, p. 343, tab. xxvii., figs. 5, 5a.

*Hab.*—Sydney, N. S. Wales.

AMAUROBIUS SENILELLUS, *Strand.*

*Amaurobius senilellus*, Strand, Wiesbaden Jahrb. Ver. Natk.,  
ix., 1907, p. 200.

*Hab.*—Australia.

AMAUROBIUS SENILIS, *L. Koch.*

*Amaurobius senilis*, L. Koch, Die Arach. des Austr., i., 1872, tab.  
xxvi., figs. 3, 3a.

*Amaurobius senilis*, Hogg, Rep. Horn Expl. Exped., ii., Zoology,  
1896, p. 324.

*Hab.*—Rockhampton, Queensland.

AMAUROBIUS SILVANUS, *L. Koch.*

*Amaurobius silvanus*, L. Koch, Die Arach. des Austr., i., 1872,  
p. 337, tab. xxvii., figs. 1, 1a.

*Hab.*—Rockhampton, N. Queensland.

AMAUROBIUS SOCIALIS, *Rainbow.*

*Amaurobius socialis*, Rainbow, Rec. Austr. Mus., vi., 1, 1905,  
p. 9, pl. iii., fig. 1.

*Hab.*—Grand Arch, Jenolan Caves, N. S. Wales.

*Genus Taurongia, Hogg.*

(=*Hylobius*, Hogg, *nom. privocc.*.)

TAURONGIA DIVERGENS, *Hogg.*

*Hylobius divergens*, Hogg, Proc. Roy. Soc. Vict., 1900, p. 82,  
pl. xiii., fig. 2.

*Taurongia divergens*, Hogg, Proc. Zool. Soc., 1901, p. 278, *note*.

*Hab.*—Macedon, Victoria.

*Obs.*—This is the type species of the genus.

TAURONGIA PUNCTATUS, *Hogg.*

*Hylobius punctatus*, Hogg, Proc. Roy. Soc. Vict., 1900, p. 84,  
pl. xiii., fig. 3.

*Hab.*—Macedon, Victoria.

*Genus Badumma, Thorell.*

*Obs.*—*Badumma hirsuta*, Thorell, is the type species of the  
genus.

BADUMNA CINCTIPES, *Simon*.

*Badumna cinctipes*, Simon, Ann. Soc. Ent. Belg., xvi., 1906, p. 297.

*Hab.*—Victoria.

BADUMNA INORNATUS, *L. Koch*.

*Amaurobius (?) inornatus*, L. Koch, Die Arach. des Austr., i., 1871, p. 325, tab. xxvi., figs. 2, 2a.

*Badumna inornatus*, Simon, Hist. Nat. des Araign., i., 1892, p. 238.

*Hab.*—From Rockhampton (Queensland) to Victoria.

BADUMNA VARIA, *Simon*.

*Badumna varia*, Simon, Ann. Soc. Ent. Belg., xvi., 1906, p. 296.

*Hab.*—Victoria.

*Genus Phryganoporus, Simon.*

*Obs.*—*Phryganoporus gausapatus*, Simon, is the type species of this genus.

PHRYGANOPORUS GAUSAPATUS, *Simon*.

*Amaurobius gausapatus*, Simon, Ann. Soc. Ent. Belg., xv., 1906, p. 295.

*Phryganoporus gausapatus*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 367.

*Hab.*—Victoria.

PHRYGANOPORUS GAUSAPATUS, *var. OCCIDENTALIS, Simon*.

*Phryganoporus gausapatus*, *var. occidentalis*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 367.

*Hab.*—Cannington, W. Australia.

PHRYGANOPORUS NIGRINUS, *Simon*.

*Phryganoporus nigrinus*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 368.

*Hab.*—Boyanup, W. Australia.

PHRYGANOPORUS TUBICOLA, *Simon*.

*Phryganoporus tubicola*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 367, fig. 1.

*Hab.*—Denham, W. Australia.

*Genus* *Aphyctoschaema*, *Simon*.

*Obs.*—*Aphyctoschaema hygrophila*, Simon, is the type species of this genus.

APHYCTOSCHAEMA ALBICAUDA, *Simon*.

*Aphyctoschaema albicauda*, Simon, Die Fauna Süd-west Austr., i., 1098, p. 374.

*Hab.*—Eradu, W. Australia.

APHYCTOSCHAEMA ARMIGERUM, *Simon*

*Aphyctoschaema armigerum*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 370.

*Hab.*—W. Australia (widely distributed).

APHYCTOSCHAEMA BIVITTATUM, *Simon*.

*Aphyctoschaema bivittatum*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 374.

*Hab.*—Dongarra, W. Australia.

APHYCTOSCHAEMA CRYPHOECIFORME, *Simon*.

*Aphyctoschaema cryphoeciforme*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 374.

*Hab.*—Kalgoorlie and Guildford, W. Australia.

APHYCTOSCHAEMA GUTTIPES, *Simon*.

*Aphyctoschaema guttipes*, Simon, Ann. Soc. Ent. Belg., xvi, 1906, p. 297.

*Hab.*—Launceston, Tasmania.

APHYCTOSCHAEMA HYGROPHILA, *Simon*.

*Aphyctoschaema hygrophila*, Simon, Bull. Soc. Ent. France, 1902, p. 242.

*Hab.*—Cooktown, N. Queensland.

APHYCTOSCHAEMA SEDULA, *Simon*.

*Aphyctoschaema sedula*, Simon, Ann. Soc. Ent. Belg., xvi, 1906, p. 298.

*Hab.*—Victoria.

APHYCTOSCHAEMA STORENIFORME, *Simon*.

*Aphyctoschaema storeniforme*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 371.

*Hab.*—Day Dawn, W. Australia.

APHYCTOSCHAEMA VELIFERUM, *Simon*.

*Aphyctoschaema veliferum*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 372, fig. 3.

*Hab.*—Dirk Hartog, Brown Station, W. Australia.

APHYCTOSCHAEMA VIRGOSUM, *Simon*.

*Aphyctoschaema virgosum*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 369, fig. 2.

*Hab.*—Kalgoorlie and Coolgardie, W. Australia.

APHYCTOSCHAEMA VULTUOSUM, *Simon*.

*Aphyctoschaema vultuosum*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 373.

*Hab.*—W. Australia (widely distributed).

*Genus Syrorisa, Simon.*

*Obs.*—*Syrorisa misella*, Simon, is the type species of this genus.

SYRORISA SERIATA, *Simon*.

*Syrorisa seriata*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 376.

*Hab.*—Yalgoo, W. Australia.

*Genus Epimecinus, Simon.*

*Obs.*—*Epimecinus neviribilis*, Simon, is the type of this genus.

EPIMECINUS TEGENARIOIDES, *Simon*.

*Epimecinus tegenarioides*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 376.

*Hab.*—Collie, W. Australia.

EPIMECINUS VOLUCRIPES, *Simon*.

*Epimecinus volucripes*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 377.

*Hab.*—W. Australia (widely distributed).

*Genus Lathyarcha, Simon.*LATHYARCHA TETRICA, *Simon.*

*Lathyarcha tetrica*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 377.

*Hab.*—Boyanup, W. Australia.

*Obs.*—This is the type species of the genus.

*Genus Callevophthalmus, Simon.*CALLEVOPHTHALMUS ALBUS, *Keys.*

*Lathys alba*, Keys., Die Arach. des Austr., Suppl., 1890, p. 250, tab. xxiii., figs. 2, 2a, 2b, 2c.

*Callevophthalmus albus*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 378.

*Hab.*—Sydney, New South Wales.

*Obs.*—This is the type species of the genus.

CALLEVOPHTHALMUS LIVIDUS, *Simon.*

*Callevophthalmus lividus*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 378.

*Hab.*—Buckland Hill and East Fremantle, W. Australia.

*Genus Lathys, Simon.*

*Obs.*—*Lathys humilis*, Blackw., is the type species of this genus.

LATHYS MACULATA, *Keys.*

*Lathys maculata*, Keys., Die Arach. des Austr., Suppl., 1890, p. 251, tab. xiii., fig. 3.

*Hab.*—Sydney, New South Wales.

*Genus Derexema, Simon.*DEREXEMA ARGUTA, *Simon.*

*Derexema arguta*, Simon, Ann. Soc. Ent. Belg., l., 1906, p. 303.

*Hab.*—Cooktown, N. Queensland

*Obs.*—This is the type species of the genus.

*Genus Dictyna, Sund.*

*Obs.*—*Dictyna arundinocea*, Linn., is the type of this genus

DICTYNA ANAULAX, *Simon*.

*Dictyna anaulax*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 379.

*Hab.*—Cottesloe, W. Australia.

*Family* ECOBIIDÆ.

*Genus* Ecobius, *Lucas*.

(=*Thalamia*, Hentz; *Omanus*, Thor.).

*Obs.*—*Ecobius cellariorum*, Dugès, is the type of this genus.

ECOBIUS NAVUS, *Blackw*

*Ecobius navus*, Blackw., Ann. Mag. Nat. Hist., vi, (3), 1859, p. 266.

*Ecobius navus*, Rainbow, Rec. Austr. Mus., vi., 1, 1905, p. 11.

*Hab.*—Sydney, New South Wales (introduced).

*Obs.*—This form has been previously recorded from the islands of the Atlantic, Japan, New Caledonia, Venezuela, southern parts of the United States, and the Antilles.

*Family* FILISTATIDÆ.

*Genus* Filistata, *Latr.*

(=*Teratodes*, C. Koch).

*Obs.*—*Filistata testacea*, Latr., is the type species of this genus.

FILISTATA AUSTRALIENSIS, *L. Koch*.

*Filistata australiensis*, L. Koch, Die Arach. des Austr., i., 1872, p. 451, tab. xxxv., fig. 4.

*Hab.*—Rockhampton, N. Queensland.

## THE ECRIBELLATÆ—Haplogynæ.

*Family* SICARIIDÆ.

*Subfamily* SCYTODINÆ.

*Genus* Scytodes, *Latr.*

(=*Dictis*, L. Koch).

*Obs.*—*Scytodes thoracica*, Latr., is the type species of this genus.

SCYTODES MARMORATA, *L. Koch.*

*Scytodes marmorata*, L. Koch, Die Arach. des Austr., i., 1871, p. 292, tab. xxiv., figs. 4, 4a to 4e.

*Scytodes marmorata*, Rainbow, Austr. Rec. Mus., iv., 7, 1902, p. 312, figs. 24, 25.

*Hab.*—Sydney, New South Wales.

*Obs.*—Previously recorded from the islands of Upolu and Rarotonga.

SCYTODES STRIATIPES, *L. Koch.*

*Dictis striatipes*, L. Koch, Die Arach. des Austr., i., 1871, p. 294, tab. xxiv., figs. 5, 5a, 5b, 5c.

*Scytodes striatipes*, Rainbow, Rec. Austr. Mus., iv., 7, 1902, p. 312.

*Hab.*—Sydney, New South Wales.

*Obs.*—Previously recorded from the islands of Upolu, Tonga and Viti.

SCYTODES THORACICA, *Latr.*

*Aranea thoracica*, Latr., Tab. Meth. des Ins., in Nouv. Dic. d'hist. Nat., xxiv., 1804, p. 135.

*Scytodes thoracica*, Rainbow, Rec. Austr. Mus., iv., 7, 1902, p. 312.

*Hab.*—Sydney, New South Wales.

*Obs.*—This is a European spider, and it has doubtless made its way hither by the agency of commerce.

*Genus* Gamasomorpha, *Simon.*

(=*Cinetomorpha*, Simon).

*Obs.*—*Gamasomorpha cataphracta*, Karsch, is the type species of this genus.

GAMASOMORPHA LORICATA, *L. Koch.*

*Oonops loricatus*, L. Koch, Die Arach. des Austr., i., 1872, p. 449, tab. xxxv., figs. 3, 3a to 3d.

*Gamasomorpha loricata*, Rainbow, Rec. Austr. Mus., iv., 7, p. 314.

*Hab.*—Eastern Coast of Australia; also, the island of Upolu.

GAMASOMORPHA SERVULA, *Simon.*

*Gamasomorpha servula*, Simon, Die Arach. Süd-west Austr., i., 1908, p. 379.

*Hab.*—Eradu, W. Australia.



## Family HADROTARSIDÆ.

Genus *Gmogala*, *Keys*.*GMOGALA SCARABEUS*, *Keys*.*Imogala scarabeus*, *Keys*, Die Arach. des Austr., Suppl., 1890, p. 270, tab. xxiv., figs. 9, 9a to 9d.*Gmogala scarabeus*, *Rainbow*, Rec. Aust. Mus., iv., 7, p. 315, fig. 27.*Hab.*—Sydney, New South Wales.

## Family DYSDERIDÆ.

Subfamily DYSDERINÆ.

Genus *Dysdera*, *Latr.**Obs.*—*Dysdera erythina*, *Latr.*, is the type species of this genus.DYSDERA AUSTRALIENSIS, *Rainbow*.*Dysdera australiensis*, *Rainbow*, Proc. Linn. Soc. N.S. Wales, xxv., 1900, pp. 483 and 485, pl. xxiii., figs. 1, 1a; *id.*, Rec. Austr. Mus., iv., 7, 1902, p. 315.*Hab.*—Queensland and New South Wales.

Subfamily SEGESTRIINÆ.

Genus *Segestria*, *Latr.*(=*Gippsicola*, *Hogg*.)*Obs.*—*Segestria florentina*, *Rossi*, is the type species of this genus.SEGESTRIA RALEIGHI, *Hogg*.*Gippsicola raleighi*, *Hogg*, Proc. Roy. Soc. Vict., 1900, p. 88, pl. xiii., fig. 5.*Hab.*—Gippsland, Victoria.Genus *Ariadna*, *Aud. in Sav.*(=*Pylarus*, *Hentz*; *Macedonia*, *Hogg*.)*Obs.*—*Ariadna insidiatrix*, *Aud. in Sav.*, is the type species of this genus.

ARIADNA BURCHELLI, *Hogg.*

*Macedonia burchelli*, Hogg, Proc. Roy. Soc. Viet., 1900, p. 86, pl. xiii., fig. 4.

*Ariadna burchelli*, Simon, Die Arach. Süd-west Austr., i., 1908, p. 380.

*Hab.*—Macedon, Victoria.

ARIADNA DYSDERINA, *L. Koch.*

*Ariadne dysderina*, L. Koch, Die Arach. des Austr., i., 1872, p. 447, tab. xxv., fig. 2.

*Ariadna dysderina*, Simon, Die Arach. Süd-west Austr., i., 1908, p. 380.

*Hab.*—Bowen, N. Queensland.

ARIADNA SEGMENTATA, *Simon.*

*Ariadna segmentata*, Simon, Ann. Soc. Ent. France, lxii., 1893, p. 306; *id.* Die Arach. Süd-west Austr., i., 1908, p. 380.

*Hab.*—Tasmania.

ARIADNA THYRIANTHINA, *Simon.*

*Ariadna thyrinthina*, Simon, Die Arach. Süd-west Austr., i., 1908, p. 380.

*Hab.*—W. Australia (widely distributed).

## THE ENTELEGYNÆ.

## Family DRASSIDÆ.

*Obs.*—For notes on the nesting and spinning habits of the spiders of this family, see my paper.<sup>15</sup>

## Subfamily HEMICLEINÆ.

Genus *Hemiclea*, *Thor.*

<sup>15</sup> *Obs.*—*Hemiclea sundevalli*, Thor., is the type species of this genus.

HEMICLEA AFFINIS, *L. Koch.*

*Hemiclea affinis*, L. Koch, Die Arach. des Austr., i. 1875, p. 632, tab. 1, figs. 4, 4a, 4b.

*Hab.*—Sydney, New South Wales.

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<sup>15</sup> Rainbow—Rec. Austr. Mus. v., 5, 1904, p. 318, *et seq.*

HEMICLÆA CINERACEA, *L. Koch.*

*Hemiclæa cineracea*, L. Koch., Die Arach. des Austr., ii., 1876, p. 843, tab. xxii., figs. 5, 5a.

*Hab.*—Rockhampton, Queensland.

HEMICLÆA CROCOTILA, *Simon.*

*Hemiclæa crocotila*, Simon, Die Fauna Süd-west Austr., i., p. 38 f, fig. 5.

*Hab.*—W. Australia.

HEMICLÆA FUMOSA, *L. Koch.*

*Hemiclæa fumosa*, L. Koch, Die Arach. des Austr., ii., 1876, p. 840, tab. lxxii., figs. 3, 3a, 3b.

*Hab.*—Gayndah, Queensland.

HEMICLÆA INSIDIOSA, *Simon.*

*Hemiclæa insidiosa*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 382.

*Hab.*—W. Australia.

HEMICLÆA LIMBATA, *L. Koch.*

*Hemiclæa limbata*, L. Koch, Die Arach. des Austr., i., 1875, p. 634, tab. l., figs. 5, 5a, 6, 6a to 6c.

*Hemiclæa limbata*, Simon, Hist. Nat. des Araign., i., 1892, p. 342, fig. 307.

*Hab.*—Sydney, New South Wales.

HEMICLÆA LONGIPES, *Hogg.*

*Hemiclæa longipes*, Hogg, Rep. Horn Expl. Exped., ii., Zoology, 1896, p. 337.

*Hab.*—Illamurta, Central Australia.

HEMICLÆA MAJOR, *L. Koch.*

*Hemiclæa major*, L. Koch, Die Arach. des Austr., i., 1875, p. 624, tab. xlix., figs. 5, 5a, 5b.

*Hemiclæa major*, Rainbow, Rec. Austr. Mus., v., 5, 1904, p. 319.

*Hemiclæa major*, L. Koch, *op. cit.*, ii., 1876, p. 841, tab. lxxii., figs. 4, 4a.

*Hab.*—Sydney, New South Wales.

HEMICLŒA MICHAELSENI, *Simon*.

*Hemiclœa michaelseni*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 383.

*Hab.*—W. Australia.

HEMICLŒA MURINA, *L. Koch*.

*Hemiclœa murina*, L. Koch, Die Arach. des Austr., i., 1875, p. 639, tab. li., figs. 2, 2a, 3, 3a.

*Hab.*—Queensland.

HEMICLŒA PLANA, *L. Koch*.

*Hemiclœa plana*, L. Koch, Die Arach. des Austr., i., 1875, p. 626, tab. xlix., figs. 6, 6a, 6b, 6c; *op. cit.*, ii., 1876, p. 845, tab. lxxii., figs. 6, 6a, 6b.

*Hab.*—Queensland and New South Wales.

HEMICLŒA PLUMEA, *L. Koch*.

*Hemiclœa plumea*, L. Koch, Die Arach. des Austr., i., 1875, p. 627, tab. l., figs. 1, 1a; *op. cit.*, ii., 1876, p. 846.

*Hemiclœa plumea*, Simon, Hist. Nat. des Araign., i., 1892, p. 342, fig. 304.

*Hab.*—Queensland and New South Wales.

HEMICLŒA ROGENHOFERI, *L. Koch*.

*Hemiclœa rogenhoferi*, L. Koch, Die Arach. des Austr., i., 1875, p. 636, tab. li., figs. 1, 1a.

*Hab.*—New South Wales and Queensland.

HEMICLŒA SEMIPLUMOSA, *Simon*.

*Hemiclœa semiplumosa*, Simon, Die Fauna Süd-west Austr., i., p. 385, fig. 6.

*Hab.*—W. Australia.

HEMICLŒA SUBLIMBATA *Simon*.

*Hemiclœa sublimbata*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 383, fig. 4.

*Hab.*—W. Australia.

HEMICLŒA SUNDEVALLI, *Thor.*

*Hemiclœa sundevalli*, Thor., Öfver. Kongl. Vetensk. Akad. Forhandl., 1870, p. 381.

*Hemiclœa sundevalli*, L. Koch, Die Arach. des Austr., i., 1875, p. 629, tab. 1., figs. 2, 2a, 3, 3a.

*Hemiclœa sundevalli*, L. Koch, *op. cit.*, ii., 1876, p. 846.

*Hemiclœa sundevalli*, Rainbow, Rec. Austr. Mus., v., 5, 1904, p. 318.

*Hab.*—Queensland and New South Wales.

HEMICLŒA TENERA, *L. Koch.*

*Hemiclœa tenera*, L. Koch, Die Arach. des Austr., ii. 1876, p. 847, tab. lxxiii., figs. 1, 1a.

*Hab.*—Peak Downs, Queensland.

*Genus* Rebilus, *Simon.*

*Obs.*—*Rebilus lugubris*, L. Koch, is the type species of this genus.

REBILUS CASTANEUS, *Simon.*

*Rebilus castaneus*, Simon, Die Fauna Süd-west Austr., i., 1908 p. 382.

*Hab.*—W. Australia.

REBILUS DIVERSA, *L. Koch.*

*Hemiclœa diversa*, L. Koch, Die Arach. des Austr., i., 1875, p. 622, tab. xlix., figs. 4, 4a.

*Hab.*—Bowen, N. Queensland.

REBILUS LUGUBRIS, *L. Koch.*

*Rebilus lugubris*, L. Koch, Die Arach. des Austr., i., 1875, p. 621, tab. xlix., figs. 3, 3a.

*Rebilus lugubris*, Simon, Hist. Nat. des Araign., i., 1892, p. 342, figs. 305, 306.

*Rebilus lugubris*, Rainbow, Rec. Austr. Mus., v., 5, 1904, p. 319, fig. 37.

*Hab.*—Queensland and New South Wales.

REBILUS PRÆSIGNIS, *L. Koch.*

*Hemiclœa præsignis*, L. Koch, Die Arach. des Austr., ii., 1876, p. 837, tab. lxxii., figs. 1, 2, 2a, 2b.

*Hab.*—Peak Downs, Queensland.

*Genus Prynus, Simon.*

*Obs.*—*Prynus fulvus*, L. Koch, is the type species of this genus.

PRYNUS FLAVITARSUS, *L. Koch.*

*Hemiclœa flavitarsus*, L. Koch, Die Arach. des Austr., i., 1875, p. 620, tab. xlix., fig. 2.

*Prynus flavitarsus*, Rainbow, Rec. Austr. Mus., v., 5, 1904, p. 320, figs. 38 and 39.

*Hab.*—Sydney, N. S. Wales.

PRYNUS FULVUS, *L. Koch.*

*Hemiclœa fulvus*, L. Koch, Die Arach. des Austr., i., 1875, p. 618, tab. xlix., figs. 1, 1a.

*Prynus fulvus*, Rainbow, Rec. Austr. Mus., v., 5, 1904, p. 320.

*Hab.*—No locality given by Koch; merely the vague remark "Ein Exemplar in Mr. Bradley's Sammlung."

*Genus Corimæthes, Simon.*CORIMÆTHES CAMPESTRATUS, *Simon.*

*Corimæthes campestratus*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 385.

*Hab.*—Day Dawn, W. Australia.

*Obs.*—This is the type species of this genus.

*Genus Trachytrema, Simon.*TRACHYTREMA CASTANEUM, *Simon.*

*Trachytrema castaneum*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 157.

*Hab.*—Day Dawn, W. Australia.

*Obs.*—This is the type species of its genus.

*Genus* Trachycosmus, Simon.

## TRACHYCOSMUS SCULPTILIS, Simon.

*Trachycosmus sculptilis*, Simon, Hist. Nat. des Araign., i., 1902, p. 347.

*Hab.*—Tasmania.

*Obs.*—This is the type species of the genus.

*Genus* Gnaphosoides, Hogg.

## GNAPHOSOIDES ALBOPUNCTATUS, Hogg.

*Gnaphosoides albopunctata*, Hogg, Rep. Horn Expl. Exped., ii., Zool., 1896, p. 333, pl. 24, fig. 10.

*Gnaphosoides albopunctatus*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 394.

*Hab.*—Storm Creek, Central Australia, and Coolgardie, W. Australia.

*Obs.*—This is the type species of its genus.

## GNAPHOSOIDES SIGNATUS, Hogg.

*Gnaphosoides signatus*, Hogg, Proc. Roy. Soc. Vict., 1900, p. 93, pl. xiv., fig. 2.

*Hab.*—Macedon, Victoria.

*Subfamily* DRASSODINÆ.*Genus* Drassodes, Westr.

*Drassodes lapidosus*, Walck., is the type species of this genus.

## ? DRASSODES BRUNNEOLUS, Urqnh.

?*Drassodes brunneolus*, Urqnh., Proc. Roy. Soc. Tas., 1892 [1893], p. 98.

*Hab.*—Tasmania.

## ? DRASSODES (DRASSUS) DEBILIS, Hogg.

?*Drassus debilis*, Hogg, Proc. Roy. Soc. Vict., 1900, p. 90, pl. xiv., fig. 1.

?*Drassus debilis*, Rainbow, Rec. Austr. Mus., v., 5, 1904, p. 321.

*Hab.*—Macedon, Victoria.

*Obs.*—This interesting species will, doubtless, form the type of a new genus, but before this can be done more material will be required. At present only one example, a ♀, the type, is known. See Hogg's remarks (*supra*).

DRASSODES DIMOTUS, *Simon*.

*Drassodes dimotus*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 392, fig. 8.

*Hab.*—Interior of Victoria.

DRASSODES (DRASSUS) INVENUSTUS, *L. Koch*.

*Drassodes (Drassus) invenustus*, L. Koch, Die Arach. des Austr., i., 1872, p. 382, tab. xxx., figs. 1, 1a.

*Drassodes (Drassus) invenustus*, Rainbow, Rec. Austr. Mus., v., 5, 1904, p. 321.

*Hab.*—Sydney, N. S. Wales.

DRASSODES MICACEUS, *Simon*.

*Drassodes micaceus*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 390.

*Hab.*—Dongarra, N. Australia.

DRASSODES MUSTECULUS, *Simon*.

*Drassodes musteculus*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 390.

*Hab.*—Boyanup, W. Australia.

DRASSODES NUGATORIUS, *Simon*.

*Drassodes nugatorius*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 389.

*Hab.*—Victoria and W. Australia.

DRASSODES PELLUS, *Urquh.*

?*Drassodes pellus*, Urquh., Proc. Roy. Soc. Tasm., 1892 [1893] p. 97.

*Hab.*—Tasmania.

DRASSODES (DRASSUS) PERELEGANS, *Rainbow*.

*Drassus perelegans*, Rainbow, Proc. Linn Soc. N. S. Wales, ix. (2), [xix.], 1894, p. 153, pl. x., figs. 1, 1a.

*Hab.*—Sydney, N. S. Wales.

DRASSODES PETILUS, *Simon*.

*Drassodes petilus*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 388.

*Hab.*—Fremantle and Bunbury, W. Australia.



DRASSODES RESPERSUS, *Simon*.

*Drassodes respersus*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 387, fig. 7.

*Hab.*—Northampton, W. Australia.

DRASSODES SARRITUS, *Simon*.

*Drassodes sarritus*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 391.

*Hab.*—Launceston, Hobart, Tasmania.

DRASSODES (DRASSUS) SILACEUS, *L. Koch*.

*Drassodes (Drassus) silaceus*, L. Koch, Die Arach. des Austr., i., 1872, p. 383, tab. xxx., fig. 2.

*Drassodes (Drassus) silaceus*, Rainbow, Rec. Austr. Mus., v., 5, 1904, p. 321.

*Hab.*—Sydney, N. S. Wales.

*Genus* Homeothele, *Simon*.HOMEOTHELE MICANS, *Simon*.

*Homeothele micans*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 392, fig. 9.

*Hab.*—Denham and Moonyoonooka, W. Australia.

*Obs.*—This is the type species of the genus.

*Genus* Megamyrmeleon, *Reuss*.

(=*Dyction*, Walck.).

*Obs.*—*Megamyrmeleon caudatum*, Reuss, is the type species of this genus.

MEGAMYRMELEON AUSTRINUM, *Simon*.

*Megamyrmeleon austrinum*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 396, fig. 12.

*Hab.*—Geraldton, W. Australia.

MEGAMYRMELEON ECHENOPHTHALMUM, *Simon*.

*Megamyrmeleon echenophthalmum*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 396, fig. 13.

*Hab.*—Pickering Brook and York, W. Australia.

MEGAMYRMÆCION PENICILLATUM, *Simon*.

*Megamyrmæcion penicillatum*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 394, fig. 10.

*Hab.*—W. Australia (widely distributed).

MEGAMYRMÆCION PERPUSILLUM, *Simon*.

*Megamyrmæcion perpusillum*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 397, fig. 14.

*Hab.*—Edel Land, Tamala, Wooroloo, W. Australia.

MEGAMYRMÆCION VESTIGATOR, *Simon*.

*Megamyrmæcion vestigator*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 395, fig. 11.

*Hab.*—Mt. Robinson, near Kalgoorlie, W. Australia.

*Genus Echemus, Simon.*

*Obs.*—*Echemus ambiguus*, Simon, is the type species of this genus.

? *Echemus dilutus*, *L. Koch.*

?*Drassus dilutus*, L. Koch, Die Arach. des Austr., i. 1873, p. 389, tab. xxx., fig. 6.

?*Echemus dilutus*, Rainbow, Rec. Austr. Mus., v., 5, 1904, p. 321.

*Hab.*—Rockhampton, Queensland.

? *Echemus griseus*, *L. Koch.*

?*Drassus griseus*, L. Koch., Die Arach. des Austr., i., 1873, p. 391, tab. xxx., figs. 8, 8a.

?*Echemus griseus*, Rainbow, Rec. Austr. Mus., v., 5, 1904, p. 321.

*Hab.*—“Neuholland.”

*Genus Melanophora, L. Koch.*

(=*Prothesima*, L. Koch.)

*Obs.*—*Melanophora subterranea*, C. Koch, is the type species of this genus.

MELANOPHORA FLAVENS, *L. Koch.*

*Prothesima flavens*, L. Koch, Die Arach. des Austr., i., 1873, p. 393, tab. xxx., figs. 9, 9a, 9b.

*Melanophora flavens*, Rainbow, Rec. Austr. Mus., v., 5, 1904, p. 321.

*Hab.*—Swan River, W. Australia.

*Genus Aphantaulax, Simon.*

*Obs.*—*Aphantaulax albini*, Aud. in Sav., is the type species of this genus.

APHANTAULAX SCOTOPHÆUS, *Simon.*

*Aphantaulax scotophæus*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 397.

*Hab.*—Boyanup, W. Australia.

*Genus Sergiolus, Simon.*

*Obs.*—*Sergiolus variegatus*, Hentz, is the type species of this genus.

SERGIOLUS AUSTRALIANUS, *Simon.*

*Sergiolus australianus*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 398.

*Hab.*—Northampton, W. Australia.

*Genus Lampona, Thor.*

(=*Latona*, L. Koch, *nom. provocc.*)

*Obs.*—*Lampona cylindrata*, L. Koch, is the type species of this genus.

LAMPONA BREVIPES, *L. Koch.*

*Lampona brevipes*, L. Koch, Die Arach. des Austr., i., 1872, p. 363, tab. xxviii., figs. 3 and 3a.

*Hab.*—Swan River, W. Australia.

LAMPONA CYLINDRATA, *L. Koch.*

*Latona cylindrata*, L. Koch, Die Arach. fam. der Drass., 1866, p. 3, tab. i., figs. 2 and 3.

*Lampona cylindrata*, L. Koch, Die Arach. des Austr., i., 1873, p. 373, tab. xxix., figs. 4, 4a, 4b.

*Lampona cylindrata*, Simon, Hist. Nat. des Araign., i., 1892, p. 376, figs. 331 and 334.

*Lampona cylindrata*, Rainbow, Rec. Austr. Mus., v., 5, 1904, p. 332.

*Lampona cylindrata*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 401.

*Hab.*—New South Wales, Victoria, S. and W. Australia.

LAMPONA FASCIATA, *L. Koch.*

*Lampona fasciata*, L. Koch, Die Arach. des Austr., i., 1872, p. 366, tab. xxviii., fig. 5.

*Lampona fasciata*, Simon, Hist. Nat. des Araign., i., 1892, p. 376, figs. 332 and 333.

*Lampona fasciata*, Rainbow, Rec. Austr. Mus., v., 5, 1904, p. 322.

*Hab.*—Queensland, New South Wales, and Victoria.

LAMPONA FLAVIPES, *L. Koch.*

*Lampona flavipes*, L. Koch, Die Arach. des Austr., i., 1872, p. 368, tab. xxviii., figs. 6, 6a.

*Hab.*—N. Queensland.

LAMPONA FOLIIFERA, *Simon.*

*Lampona foliifera*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 400.

*Hab.*—Boorabbin, W. Australia.

LAMPONA MACILENTA, *L. Koch.*

*Lampona macilenta*, L. Koch, Die Arach. des Austr., i., 1873, p. 369, tab. xxviii., figs. 7, 7a.

*Hab.*—"Neuholland."

LAMPONA MURINA, *L. Koch.*

*Lampona murina*, L. Koch, Die Arach. des Austr., i., 1873, p. 378, tab. xxix., figs. 7, 7a.

*Lampona murina*, Rainbow, Rec. Austr. Mus., v., 5, 1904, p. 322.

*Hab.*—Queensland, New South Wales, and Victoria.

LAMPONA OENUBILA, *Simon.*

*Lampona oenubila*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 400.

*Hab.*—Boyanup, W. Australia.

LAMPONA OBSCURNA, *L. Koch.*

*Lampona obscura*, L. Koch, Die Arach. des Austr., i, 1873, p. 376, tab. xxix., figs. 6, 6a.

*Lampona obscura*, Rainbow, Rec. Austr. Mus., v., 5, 1904, p. 322.

*Hab.*—New South Wales, Victoria, S. and W. Australia.

LAMPONA PANPERCULA, *Simon.*

*Lampona panpercula*, Simon, Die Fauna Süd-west Austr., i, 1908, p. 402.

*Hab.*—Boyanup, W. Australia.

LAMPONA PUNCTIGERA, *Simon.*

*Lampona punctigera*, Simon, Die Fauna Süd-west Austr., i, 1908, p. 399.

*Hab.*—W. Australia (widely distributed).

LAMPONA PUSILLA, *L. Koch.*

*Lampona pusilla*, L. Koch, Die Arach. des Austr., i, 1873, p. 371, tab. xxviii., figs. 8, 8a.

*Hab.*—“Neuholland.”

LAMPONA QUADRIMACULATA, *L. Koch.*

*Lampona quadrimaculata*, L. Koch, Die Arach. des Austr., i, 1872, p. 365, tab. xxviii., fig. 4.

*Hab.*—Bowen, Queensland.

LAMPONA QUINQUEPLAGIATA, *Simon.*

*Lampona quinqueplagiata*, Simon, Die Fauna Süd-west Austr., i, 1908, p. 403.

*Hab.*—Dirk Hartog, Brown Station, and Boyanup, W. Australia.

LAMPONA RUIDA, *L. Koch.*

*Lampona ruida*, L. Koch, Die Arach. des Austr., i, 1873, p. 375, tab. xxix., figs. 5, 5a.

*Hab.*—“Neuholland.”

LAMPONA SORDIDA, *L. Koch.*

*Lampona sordida*, L. Koch. Die Arach. des Austr., i., 1873  
p. 373, tab. xxix., fig. 3.

*Lampona sordida*, Rainbow, Rec. Austr. Mus., v., 5, 1904, p. 322.

*Hab.*—New South Wales and Victoria.

LAMPONA SUBAQUILA, *Urquh.*

*Lampona subaquila*, Urquh., Proc. Roy. Soc. Tasm., 1893, p. 96.

*Hab.*—Tasmania.

## Family ZODARIIDÆ.

## Subfamily CRYPTOHELINÆ.

Genus *Cryptothele*, *L. Koch.*

*Obs.*—*Cryptothele verrucosa*, L. Koch, is the type species of this genus.

CRYPTOTHELE DOREYANA, *Simon.*

*Cryptothele doreyana*, Simon, Ann. Soc. Ent. France, 1890, p. 132.

*Cryptothele doreyana*, Rainbow, Rec. Austr. Mus., v., 5, 1904,  
p. 322.

*Hab.*—Fitzroy Island, Great Barrier Reef, N. Queensland.  
Previously recorded from New Guinea.

## Subfamily ZODARIINÆ.

Genus *Storena*, *Walek.*

(= *Selamia*, Simon ; *Habronestes*, L. Koch ; *Storenosoma*, Hogg.)

*Obs.*—*Storena cyanea*, Walek., is the type species of this genus.

STORENA ALBOMACULATA, *Rainbow.*

*Storena albomaculata*, Rainbow, Proc. Linn. Soc. N. S. Wales,  
xxvii., 1902, p. 485, pl. xviii., figs. 1, 1a.

*Storena albomaculata*, Rainbow, Rec. Austr. Mus., v., 5, 1904,  
p. 323.

*Hab.*—Sydney (Burwood and Belmore), N. S. Wales.

STORENA ANNULIPES, *L. Koch.*

*Euryo annulipes*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien,  
1867, p. 194.

*Habronestes annulipes*, L. Koch, Die Arach. des Austr., i., 1872, p. 308, tab. xxv., figs. 1, 1a, 1b, 1c.

*Hab.*—Brisbane, Queensland.

STORENA AUSTRALIENSIS, O. P. Cambr.

*Storena australiensis*, O. P. Cambr., Ann. Mag. Nat. Hist., iii. (4), 1869, p. 7, pl. iv., figs. 21-26.

*Habronestes australiensis*, L. Koch, Die Arach. des Austr., i., 1872, p. 307.

*Hab.*—Australia.

STORENA BRACCATA, L. Koch.

*Enyo braccata*, L. Koch., Verh. der K.K. zool.-bot. Ges. Wien, 1865, p. 859.

*Habronestes braccatus*, L. Koch, Die Arach. des Austr., i., 1872, p. 310, tab. xxv., figs. 2, 2a, 2b, 2c.

*Hab.*—Wollongong, N. S. Wales.

STORENA BRADLEYI, O. P. Cambr.

*Storena bradleyi*, O. P. Cambr., Ann. Mag. Nat. Hist., iii. (4), 1869, p. 5, pl. iv., figs. 12-20.

*Habronestes bradleyi*, L. Koch, Die Arach. des Austr., i., 1872, p. 305.

*Hab.*—N. S. Wales.

STORENA CYANEA, Walck.

*Storena cyanea*, Walck., Tabl. des Aran., 1805, p. 83, pl. 9, figs. 85 and 86.

*Storena cyanea*, Walck., Hist. Nat. des Ins., Apt., i. 1837, p. 361.

*Storena cyanea*, L. Koch., Die Arach. des Austr., i., 1872, p. 299.

*Hab.*—Eastern Australia.

STORENA EXIMIA, Simon. |

*Storena eximia*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 405.

*Hab.*—Kalgoorlie and Boorabbin, W. Australia.

STORENA FLAVIPEDES, Urquh.

*Habronestes flavipedes*, Urquh., Proc. Roy. Soc. Tasm., 1893, p. 111.

*Hab.*—Tasmania.

STORENA FORMOSA, *Thor.*

*Storena formosa*, Thor., Oefv. Kongl. Vet.-Akad., Förh., 1870,  
n. 4, p. 374.

*Habronestes formosus*, L. Koch., Die Arach. des Austr., i., 1872,  
p. 314, tab. xxv., figs. 5, 5a, 5b, 5c.

*Storena formosa*, Simon, Die Fauna Süd-west Austr., i., 1908,  
p. 405.

*Hab.*—Queensland, N. S. Wales, Victoria, and Central Australia.

STORENA GRAEFFEI, *L. Koch.*

*Storena graeffei*, L. Koch., Die Arach. Fam. der Drass., 1866,  
p. 192.

*Habronestes graeffei*, L. Koch., Die Arach. des Austr., i., 1872,  
p. 319, tab. xxv., figs. 8, 8a, 8b, 8c.

*Hab.*—Wollongong, N. S. Wales.

STORENA LYCOSOIDES, *Hogg.*

*Stenomusonia lycosoides*, Hogg, Proc. Roy. Soc. Vict., xiii., 1900,  
p. 95, pl. xiv., fig. 3

*Hab.*—Macedon, Victoria.

STORENA MACEDONENSIS, *Hogg.*

*Stomusonia macedonensis*, Hogg, Proc. Roy. Soc. Vict., xiii., 1900,  
p. 98, pl. xiv., fig. 4.

*Hab.*—Macedon, Victoria.

STORENA MACULATA, *O. P. Cambr.*

*Stomusonia maculata*, O. P. Cambr., Ann. Mag. Nat. Hist., iii. (4),  
1869, p. 8, pl. iv., figs. 27-32.

*Habronestes maculatus*, L. Koch., Die Arach. des Austr., i., 1872,  
p. 321.

*Hab.*—Queensland.

STORENA ORNATA, *Bradley.*

*Habronestes ornatus*, Bradley, Proc. Linn. Soc. N. S. Wales, ii.,  
1877, p. 119.

*Hab.*—Cocoanut Island, Torres Strait.



STORENA PICTA, *L. Koch.*

*Ergo picta*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien, 1865, p. 861.

*Habronestes pictus*, L. Koch, Die Arach. des Austr., i., 1872, p. 311, tab. xxv., figs. 3, 3a, 3b, 3c.

*Hab.*—Wollongong, N. S. Wales.

STORENA SCENICA, *L. Koch.*

*Habronestes scenicus*, L. Koch, Die Arach. des Austr., i., 1872, p. 316.

*Hab.*—Queensland.

STORENA PROCERA, *Thor.*

*Storena procera*, Thor., Ragni Mal. e Papuani, i., 1890, p. 340.

*Hab.*—Northern Australia.

STORENA SCINTILLANS, *O. P. Cambr.*

*Storena scintillans*, O. P. Cambr., Ann. Mag. Nat. Hist., iii. (4), 1869, p. 3, pl. iv., figs. 7-11.

*Habronestes scintillans*, L. Koch, Die Arach. des Austr., i., 1872, p. 303.

*Hab.*—Swan River, W. Australia; Central Australia.

STORENA SPIRAFER, *L. Koch.*

*Habronestes spirifer*, L. Koch, Die Arach. des Austr., i., 1872, p. 318, tab. xxv., figs. 7, 7a-7d.

*Hab.*—Port Mackay, Queensland, New South Wales, and Victoria.

STORENA STRIATIPES, *L. Koch.*

*Habronestes striatipes*, L. Koch, Die Arach. des Austr., i., 1872, p. 313, tab. xxv., figs. 4, 4a-4d.

*Hab.*—Queensland, New South Wales, and Victoria.

STORENA TETRICA, *Simon.*

*Storena tetrica*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 403.

*Hab.*—Albany, W. Australia.

STORENA TOROSA, *Simon*.

*Storena torosa*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 404.

*Hab.*—Northampton, W. Australia.

STORENA TRICOLOR, *Simon*.

*Storena tricolor*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 405.

*Hab.*—Lion Mill, Collie, and Boyanup, W. Australia.

STORENA VARIEGATA, *O. P. Cambr.*

*Storena variegata*, O. P. Cambr., Ann. Mag. Nat. Hist., iii. (4), 1869, p. 2, pl. iv., figs. 1-6.

*Habronestes variegatus*, L. Koch, Die Arach. des Austr., i., 1872, p. 302.

*Hab.*—Swan River, W. Australia.

## Family HERSILIIDÆ.

Genus TAMA, *Simon*.

(= *Rhadine*, Simon, *nom. provoc.*; *Chalinura*, Thor.).

*Obs.*—*Tama edwardsi*, Lucas, is the type species of this genus.

TAMA BRACHYURA, *Simon*.

*Tama brachyura*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 406.

*Hab.*—W. Australia (widely distributed).

TAMA EUCALYPTI, *Rainbow*.

*Tama eucalypti*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxv., 1900, p. 486, pl. xxiii., figs. 2, 2a-2c.

*Tama eucalypti*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 406.

*Hab.*—Balmoral, Port Jackson, New South Wales.

TAMA FICKERTI, *L. Koch*.

*Chalinura fickerti*, L. Koch, Die Arach. des Austr., ii., 1876, p. 830, tab. lxxi., figs. 2, 2a, 2b, 2c.

*Tama fickerti*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 406.

*Hab.*—New South Wales.

TAMA NOVE-HOLLANDIÆ, *L. Koch.*

*Chalinnura nove-hollandiæ*, L. Koch, Die Arach. des Austr., ii., 1876, p. 828, tab. lxxi., figs. 1, 1a-1d.

*Hab.*—Queensland and New South Wales.

*Family* PHOLCIDÆ.

*Subfamily* PHOLCINÆ.

*Genus* Pholcus, *Walck.*

*Obs.*—*Pholcus phalangioides*, Fuess., is the type species of this genus.

PHOLCUS LITORALIS, *L. Koch.*

*Pholcus litoralis*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien, 1867, p. 193.

*Pholcus litoralis*, L. Koch, Die Arach. des Austr., i., 1872, p. 285, tab. xxiv., figs. 1, 1a to 1g.

*Pholcus litoralis*, Rainbow, Rec. Austr. Mus., vi., 1, 1905, p. 22, fig. 3.

*Hab.*—Queensland, New South Wales, and Victoria.

PHOLCUS PHALANGIOIDES, *Fuess.*

*Aranea phalangioides*, Fuess., Verz. der ihm bekannt. Schweizer. Insek., 1775, p. 61.

*Pholcus phalangioides*, Walck., Tab. des Aran., 1805, p. 80.

*Pholcus phalangioides*, Dugès in Cuvier, Règne animal, vii., 1836, Arachn., p. 49, pl. ix., fig. 6.

*Pholcus nemastomoides*, C. Koch, Die Arachniden, iv., 1838, p. 97, fig. 312.

*Pholcus opilionoides*, Westr., Aran. Suec. descrip., 1861, p. 296.

*Pholcus phalangioides*, Blackwall, Spiders of Great Britain, ii., 1864, p. 208, pl. xv., fig. 137.

*Pholcus opilionoides*, Simon, Ann. Soc. Ent. France, 1866, p. 120, pl. ii., figs. 1-7.

*Pholcus nemastomoides*, Comest. et Pavesi, Aran. Ital., 1869, p. 65.

*Pholcus phalangioides*, Thor., Rem. on Syn., 1870, p. 145.

*Pholcus phalangioides*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 406.

*Hab.*—Eastern, Southern, and Western Australia (introduced); world-wide distribution.

*Genus* *Trichocyclus*, Simon.

*TRICHOCYCLUS NIGROPUNCTATUS*, Simon.

*Trichocyclus nigropunctatus*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 407.

*Hab.*—Yalgoo, W. Australia.

*Obs.*—This is the type species of the genus.

*Genus* *Micromerys*, Bradley.

(=*Calapnita*, Simon).

*MICROMERYS GRACILIS*, Bradley.

*Micromerys gracilis*, Bradley, Proc. Linn. Soc. N. S. Wales, ii., 1877, p. 118.

*Hab.*—Cape York, N. Queensland.

*Obs.*—This is the type species of the genus.

*Genus* *Psilochorus*, Simon.

*Obs.*—*Psilochorus pullulus*, Hentz., is the type species of this genus.

*PSILOCHORUS SPILEROIDES*, L. Koch.

*Pholcus spheroides*, L. Koch., Die Arach. des Austr., i., 1872, p. 283, tab. xxiii., figs. 6, 6a-6d.

*Hab.*—Rockhampton, N. Queensland.

*Family* THERIDIIDÆ.

*Genus* *Ariamnes*, Thor.

(=*Ariadne*, Dolesch., *nom. præoc.*).

*Obs.*—*Ariamnes flagellum*, Dolesch., is the type species of this genus.

*ARIAMNES COLUBRINUS*, Keys.

*Ariamnes colubrinus*, Keys., Die Arach. des Austr., Suppl., 1890, p. 237, tab. xxi., figs. 5, 5a-5c.

*Ariamnes colubrinus*, Rainbow, Rec. Austr. Mus., vi., 1, 1905, p. 24.

*Hab.*—Queensland and New South Wales.

ARIAMNES FLAGELLUM, *Dolesch.*

*Ariadne flagellum*, Dolesch., Bidjr. Nat. Tijdschr., xiii., 1857, p. 411, fig. 1.

*Ariamnes flagellum*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxiii., 1899, p. 652.

*Hab.*—Malaysia, Papua, and Australia.

Genus *Argyrodes*, *Simon.*

(= ?*Conopistha*, Karsch ; *Bellinda*, Keys.).

*Obs.*—*Argyrodes argyrodes*, Walek., is the type species of this genus.

ARGYRODES ANTIPODIANA, *O. P. Cambr.*

*Argyrodes antipodiana*, O. P. Cambr., Proc. Zool. Soc., 1880, p. 327.

*Argyrodes antipodiana*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxiii., 1898, p. 172 ; Rec. Austr. Mus., vi., 1, 1905, p. 25 ; Proc. Linn. Soc. N. S. Wales, xxvi., 1901, p. 524.

*Hab.*—Australia, New Zealand, and New Caledonia.

ARGYRODES INCISIFRONS, *Keys.*

*Argyrodes incisifrons*, Keys., Die Arach. des Austr., Suppl., 1890, p. 246, tab. xxii., figs. 5, 5a, 5b.

*Hab.*—Bowen, N. Queensland.

ARGYRODES MARGARITARIUM, *Rainbow.*

*Theridion margaritarium*, Rainbow, Proc. Linn. Soc. N. S. Wales, xviii. [viii., 2], 1893, p. 290, pl. x., figs. 3, 3a, 3b, 3c.

*Hab.*—Clarence River, New South Wales.

Genus *Moneta*, *O. P. Cambr.*

*Obs.*—*Moneta spinigera*, O. P. Cambr., is the type species of this genus.

MONETA AUSTRALIS, *Keys.*

*Episimus australis*, Keys., Die Arach. des Austr., Suppl., 1890,  
p. 251, tab. xxiii., figs. 4, 4a.

*Moneta australis*, Simon, Die Fauna Süd-west Austr., 1908, i.,  
p. 408.

*Hab.*—Peak Downs, Queensland.

MONETA LONGICAUDA, *Simon.*

*Moneta longicauda*, Simon, Die Fauna Süd-west Austr., i., 1908,  
p. 407.

*Hab.*—Subiaco N., W. Australia.

*Genus* Janulus, *Thor.*JANULUS BICORNIS, *Thor.*

*Janulus bicornis*, Thor., Studi Ragni. Mal. e Papuana, iii., 1881,  
p. 163.

*Hab.*—Cape York, N. Queensland.

*Obs.*—This is the type species of the genus.

*Genus* Euryopis, *Menge.*

*Obs.*—*Euryopis flavomaculata*, C. Koch., is the type species of  
this genus.

EURYOPIS MAGA, *Simon.*

*Euryopis maga*, Simon, Die Fauna Süd-west Austr., i., 1908,  
p. 408.

*Hab.*—Torbay, W. Australia.

EURYOPIS SUPERBA, *Rainbow.*

*Pachygnatha superba*, Rainbow, Proc. Linn. Soc. N. S. Wales,  
xxii., 1896, p. 630, pl. xlix., fig. 2.

*Hab.*—New South Wales and Victoria.

EURYOPIS UMBILICATA, *L. Koch.*

*Euryopis umbilicata*, L. Koch, Die Arach. des Austr., i., 1872,  
p. 274, tab. xxiii., figs. 1, 1a, 1b.

*Hab.*—Port Mackay, N. Queensland.

*Genus* Diaprocopus, *Simon*.DIAPROCOPUS MULTIPUNCTATUS, *Simon*.

*Diaprocopus multipunctatus*, Simon, Ann. Soc. Ent. France, 1894, p. 137.

*Hab.*—Interior of Victoria.

*Obs.*—This is the type species of the genus.

*Genus* Phylarchus, *Simon*.

(=*Phycus*, O. P. Cambr.).

*Obs.*—*Phylarchus brevis*, O. P. Cambr., is the type species of this genus.

PHYLARCHUS ELEGANS, *Keys*.

*Euryopsis elegans*, Keys., Die Arach. des Austr., Suppl., 1890, p. 249, tab. xxiii., figs. 1, 1a.

*Hab.*—N. Queensland to W. Australia.

*Genus* Theridion, *Walck*.

(=*Theridium*, *Steatoda* and *Neottiura*, Menge; *Phyllonethis*, Thor.; *Chryso* and *Coleosoma*, O. P. Cambr.; *Faitidius* and *Tobesoa*, Keys.; *Mastostigmus*, *Adelosomus*, Simon; ? *Microdipoena*, Banks; *Hubba*, *Anelosimus* and *Coleosoma*, F. O. P. Cambr.).

*Obs.*—*Theridion lineatum*, Cl., is the type species of this genus.

THERIDION ALBO-STRIATUM, *L. Koch*.

*Theridium albo-striatum*, L. Koch, Verh. der K. K. zool.-bot. Ges. Wien, 1867, p. 187; L. Koch, Die Arach. des Austr., i., 1872, p. 270, tab. xxii., fig. 7.

*Theridion albo-striatum*, Rainbow, Rec. Austr. Mus., vi., 1, 1905 p. 27.

*Hab.*—Queensland, New Guinea, and the Island of Tonga

THERIDION CONVEXUM, *Keys*.

*Theridium convexum*, Keys., Die Arach. des Austr., Suppl., p. 241, tab. xxii., figs. 1, 1a, 1b.

*Hab.*—Queensland and New South Wales.

THERIDION CRINITUM, *L. Koch.*

*Theridium crinitum*, L. Koch, Die Arach. des Austr., i., 1872, p. 271, tab. xxii., figs. 8, 8a.

*Hab.*—New South Wales and Victoria.

THERIDION DECORATUM, *L. Koch.*

*Theridium decoratum*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien., 1867, p. 188; Die Arach. des Austr., i., 1872, p. 265, tab. xxii., fig. 4.

*Hab.*—Queensland, New South Wales, and Victoria.

THERIDION EXTRILIDUM, *Keys.*

*Theridium extrilidum*, Keys., Die Arach. des Austr., Suppl., 1890, p. 244, tab. xxii., figs. 3, 3a.

*Hab.*—New South Wales, Victoria, S. and W. Australia.

THERIDION GIGANTIPES, *Keys.*

*Theridium gigantipes*, Keys., Die Arach. des Austr., Suppl., p. 245, tab. xxii., figs. 4, 4a.

*Hab.*—New South Wales and Victoria.

THERIDION HARTMEYERI, *Simon.*

*Theridium hartmeyeri*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 410.

*Hab.*—Moorabool, W. Australia.

THERIDION LIMITATUM, *L. Koch.*

*Theridium limitatum*, L. Koch, Die Arach. des Austr., i., 1872, p. 256, tab. xxi., figs. 8, 8a, 8b.

*Hab.*—Queensland and New South Wales.

THERIDION MORTUALE, *Simon.*

*Theridium mortuale*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 409.

*Hab.*—W. Australia.

THERIDION MUNDULUM, *L. Koch.*

*Theridium mundulum*, L. Koch., Die Arach. des Austr., i., 1872, p. 263, tab. xxii., figs. 3, 3a.

*Hab.*—Queensland, New South Wales, and Victoria.



THERIDION PILATUM, *Urquh.*

*Theridium pilatum*, Urquh., Proc. Roy. Soc. Tasm., 1892 [1893], p. 109.

*Hab.*—Tasmania.

THERIDION PROPERUM, *Keys.*

*Theridium properum*, Keys., Die Arach.<sup>2</sup>des Austr., Suppl., 1890, p. 242, tab. xxii., figs. 2, 2a.

*Hab.*—New South Wales.

THERIDION PYRAMIDALE, *L. Koch.*

*Theridium pyramidale*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien, 1867, p. 190; Die Arach. des Austr., i., 1872, p. 266, tab. xxii., fig. 5.

*Hab.*—Queensland and New South Wales.

THERIDION SETOSUM, *L. Koch.*

*Theridium setosum*, L. Koch, Die Arach. des Austr., i., 1872, p. 261, tab. xxii., figs. 1, 1a.

*Theridium setosum*, Simon, Ann. Soc. Ent. France, 1897, p. 272.

*Hab.*—The island of Upolu; and Cooktown, N. Queensland.

THERIDION SUBPINGUE, *Simon.*

*Theridium subpingue*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 410.

*Hab.*—W. Australia.

THERIDION TEPIDARIORUM, *C. Koch.*

*Theridium tepidarium*, C. Koch., Die Arachniden, viii., 1841, p. 75, tab. cclxiii., fig. 646, tab. cclxxiv., figs. 644 and 645.

*Theridium tepidarium*, L. Koch, Die Arach. des Austr., i., 1872, p. 268.

*Theridium tepidarium*, Rainbow, Rec. Austr. Mus., vi., 1, 1905, p. 27.

*Hab.*—World-wide. Common around Sydney.

THERIDION THERIDIOIDES, *Keys.*

*Tobeson theridioides*, Keys., Die Arach. des Austr., Suppl., 1890, p. 240, tab. xxi., figs. 6, 6a, 6b.

*Hab.*—Queensland and New South Wales.

THERIDIUM THORELLII, *L. Koch.*

*Theridium thorellii*, L. Koch, Verh. der K.K. zool.-bot. Ges.  
Wien, 1865, p. 857 : Die Arach. des Austr., i., 1872, p. 258.

*Hab.*—Sydney, New South Wales.

*Genus Ulesanis, L. Koch.*

(=*Stegosoma*, O. P. Camb.; *Sclerogaster*, Cuvanna; *Heribertus*  
and *Wirada*, Keys.).

*Obs.*—*Ulesanis chelys*, L. Koch, is the type species of this  
genus.

ULESANIS ROTUNDA, *Keys.*

*Wirada rotunda*, Keys., Die Arach. des Austr., Suppl., 1890,  
p. 336, tab. xxi., figs. 4, 4a-4c.

*Hab.*—Peak Downs, Queensland.

ULESANIS SEXTUBERCULATA, *Keys.*

*Ulesanis sextuberculata*, Keys., Die Arach. des Austr., Suppl.,  
1890, p. 235, tab. xxi., figs. 3, 3a, 3b.

*Hab.*—Gayndah, Queensland.

*Genus Dipena, Thor.*

(=*Pachydactylus*, Menge, *nom. provoc.*; *Lasvola*, Simon;  
*Delania*, Keys.).

*Obs.*—*Dipena melanogaster*, C. Koch, is the type species of  
this genus.

DIPENA AUSTERA, *Simon.*

*Dipena austera*, Simon, Die Fauna Süd west Austr., i., 1908,  
p. 411.

*Hab.*—Denham, W. Australia.

*Genus Latrodectus, Walck.*

(= *Lathrodectus*, Thor.).

*Obs.*—*Latrodectus tredecim guttatus*, Rossi, is the type species  
of this genus.

LATRODECTUS HASSELTHI, *Thor.*

*Latrodectus hasseltii*, Thor, Oefv. af Kongl. Vetensk. Akad. Förh., 1870, p. 369.

*Latrodectus scelio*, Thor, *loc. cit.*, p. 370.

*Latrodectus katipo*, Powel, Trans. N. Z. Inst., iii., 1870, p. 56, pl. v.

*Latrodectus hasseltii*, L. Koch., Die Arach. des Austr., i., 1872, p. 276, tab. xxiii., figs. 2, 3, 3a.

*Latrodectus scelio*, L. Koch, *loc. cit.*, p. 279, tab. xxiii., fig. 4.

*Latrodectus hasseltii*, Rainbow, Rec. Austr. Mus., vi., 1, p. 28.

*Hab.*—Throughout Australia, New Zealand, S. Pacific Islands, India, Malaysia, Papua, and Eastern Arabia.

*Genus Crustulina, Menge.*

(= *Wamba*, F. O. P. Cambr.)

*Obs.*—*Crustulina guttata*, Wider, is the type species of this genus.

CRUSTULINA BICRUCIATA, *Simon.*

*Crustulina bicrucata*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 412.

*Hab.*—Eradu, W. Australia.

*Genus Ancocœlus, Simon.*

ANCOCÆLUS LIVENS, *Simon.*

*Ancocœlus livens*, Simon, Ann. Soc. Ent. France, 1894, p. 150.

*Hab.*—Launceston, Tasmania.

*Obs.*—This is the type species of the genus.

*Genus Teutana, Simon.*

*Obs.*—*Teutana triangulosa*, Walck., is the type species of this genus.

TEUTANA ADUMBRATA, *Simon.*

*Teutana adumbrata*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 413.

*Hab.*—Yalgoo, W. Australia.

*TEUTANA GROSSA, C. Koch.*

*Theridium grossum*, C. Koch, Die Arach., iv., 1838, p. 112, tab. xli., fig. 234.

*Theridium cælifera*, L. Koch., Verh. der K.K. zool.-bot. Ges. Wien, 1867, p. 189; Die Arach. des Austr., i., 1872, p. 269, tab. xxii., fig. 6.

*Teutana grossa*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 413.

*Hab.*—Australia generally; almost world-wide.

*Genus Lithyphantes.*

(=*Phrurolithus*, Ohl.).

*Obs.*—*Lithyphantes corollatus*, Linn., is the type species of this genus.

*LITHYPHANTES NIVEOSIGNATUS, Simon.*

*Lithyphantes niveosignatus*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 413.

*Hab.*—Denham and Eradu, W. Australia.

*LITHYPHANTES OCTONOTATUS, Simon.*

*Lithyphantes octonotatus*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 414.

*Hab.*—Day Dawn, W. Australia.

*Genus Enoplognatha, Pavesi.*

(=*Drepanodus*, Menge, *nom. preocc.*).

*Obs.*—*Enoplognatha mandibularis*, Lucas, is the type species of this genus.

*ENOPLOGNATHA BIDENS, Simon.*

*Enoplognatha bidens*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 414.

*Hab.*—W. Australia.

*Family ARGIOPIDÆ.**Subfamily LINYPHINÆ.**Genus Delorhipis, Simon.*

*Obs.*—*Delorhipis fronticornis*, Simon, is the type species of this genus.

DELORRHIPIS ERYTHORCEPHALUS, *Simon*.

*Delorhhipis erythrocephalus*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 415.

*Hab.*—North Fremantle, W. Australia.

*Genus* Gonatium, *Menge*.

(= *Dicyphus*, Menge).

GONATIUM (!) LIVIDLULUM, *Simon*.

*Gonatium* (!) *lividulum*, Simon, Die Fauna Süd-west Austr., 1908, p. 416.

*Hab.*—Torbay, W. Australia.

*Genus* Neriene, *Blackw.*

(= *Edothorax*, *Stylothorax*, Bertk. ; *Trachygnatha*, Chyz. et Kulez ; ?*Gnathouarium*, Karsch.).

*Obs.*—*Neriene fusca*, Blackw., is the type species of this genus.

NERIENE ANALIS, *Simon*.

*Neriene analis*, Simon, Hist. Nat. des Araign., i., 1892 [1894], p. 667.

*Hab.*—Victoria.

*Genus* Ceratinopsis, *Emert*.

*Obs.*—*Ceratinopsis interpres*, O. P. Cambr., is the type species of this genus.

CERATINOPSIS MELANURA, *Simon*.

*Ceratinopsis melanura*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 416.

*Hab.*—Fremantle, W. Australia.

*Genus* Bathyphantes, *Menge*.

(= *Stylophora*, Menge ; *Diplostyla*, Emerton ; *Pæciloneta*, Chyz. et Kulez.).

*Obs.*—*Bathyphantes nigrinus*, Westr., is the type species of this genus.

*BATHYPHANTES WEBURDI, Urquh.*

*Linyphia weburdi*, Urquh., Trans. N. Z. Inst., xxii., 1889, p. 236,  
pl. xvi., fig. 2.

*Hab.*—Jenolan Caves, New South Wales.

*Genus Linyphia, Latr.*

(=*Helophora*, *Stemonyphantes*, Menge; *Frontina*, Keys.).

*Obs.*—*Linyphia triangularis*, Clerck., is the type species of this genus.

LINYPHIA CUPIDINEA, *Simon.*

*Linyphia cupidinea*, Simon, Die Fauna Süd-west Austr., i., 1908,  
p. 417.

*Hab.*—Subiaco, W. Australia.

LINYPHIA MELOXANTHA, *Urquh.*

*Linyphia meloxantha*, Urquh., Proc. Roy. Soc. Tasm., 1892 [1893],  
p. 103.

*Hab.*—Tasmania.

LINYPHIA NITENS, *Urquh.*

*Linyphia nitens*, Urquh., Trans. Roy. Soc. Tasm., 1892 [1893],  
p. 108.

*Hab.*—Tasmania.

LINYPHIA QUINDECIM-PUNCTATA, *Urquh.*

*Linyphia quindecim-punctata*, Urquh., Trans. Roy. Soc. Tasm.,  
1892 [1893], p. 105.

*Hab.*—Tasmania.

LINYPHIA SUB-LUTEA, *Urquh.*

*Linyphia sub-lutea*, Urquh., Trans. Roy. Soc. Tasm., 1892 [1893],  
p. 107.

*Hab.*—Tasmania.

*Genus Laetesia, Simon.*

*Obs.*—*Laetesia mollita*, Simon, is the type species of this genus.

LETESIA EGREGRIA, *Simon*.

*Latesia egregria*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 419.

*Hab.*—Eradu, W. Australia.

LETESIA MOLLITA, *Simon*.

*Latesia mollita*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 419.

*Hab.*—W. Australia.

## Subfamily TETRAGNATHINÆ.

Genus *Tetragnatha*, *Latr.*

(=*Eugnatha*, Aud. in Sav.; *Deinognatha*, White; *Limocera*, Thor.).

*Obs.*—*Tetragnatha extensa*, Linn., is the type species of this genus.

TETRAGNATHA BITUBERCULATA, *L. Koch*.

*Tetragnatha bituberculata*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien, 1867, p. 184.

*Tetragnatha bituberculata*, L. Koch, Die Arach. des Austr., 1871, p. 183, tab. xv., figs. 5, 5a, 5b.

*Tetragnatha bituberculata*, Keys., *op. cit.*, Suppl., 1887, p. 220, tab. xx., figs. 2, 2a.

*Hab.*—Queensland and New South Wales.

TETRAGNATHA CYLINDRICA, *Walck*.

*Tetragnatha cylindrica*, Walck., Nat. des Ins. Apt., ii., 1837, p. 210.

*Tetragnatha cylindrica*, L. Koch., Verh. der K.K. zool.-bot. Ges. Wien, 1865, p. 842, tab. xx., figs. 18 and 19.

*Tetragnatha cylindrica*, L. Koch, Die Arach. des Austr., i., 1871, p. 181, tab. xv., figs. 3, 3a, 3b, 3c.

*Tetragnatha cylindrica*, Rainbow, Rec. Austr. Mus., vi, 5, 1907, p. 333.

*Eugnatha cylindrica*, Keys., Die Arach. des Austr., Suppl., 1887, p. 226.

*Hab.*—New South Wales and Victoria.

TETRAGNATHA DEMISSA, *L. Koch.*

*Tetragnatha demissa*, L. Koch, Die Arach. des Austr., i., 1871, p. 185, tab. xvi., figs. 1, 1a, 1b.

*Tetragnatha demissa*, Keys., *op. cit.*, Suppl., 1887, p. 221, tab. xx., figs. 3, 3a, 3b.

*Hab.*—N. Queensland, New South Wales, and Central Australia.

TETRAGNATHA GEMMATA, *L. Koch.*

*Tetragnatha gemmata*, L. Koch, Die Arach. des Austr., i., 1871, p. 186, tab. figs. 2, 2a-2d.

*Hab.*—Port Mackay, N. Queensland.

TETRAGNATHA LUTEO-CINCTA, *Simon.*

*Tetragnatha luteo-cincta*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 420.

*Hab.*—W. Australia.

TETRAGNATHA MAEANDRATA, *Simon.*

*Tetragnatha meandrata*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 421.

*Hab.*—W. Australia.

TETRAGNATHA MANDIBULATA, *Walck.*

*Tetragnatha mandibulata*, Walck., Hist. Nat. des Ins., Apt., ii., 1837, p. 211.

*Tetragnatha mandibulata*, Keys., Verh. der K.K. zool.-bot. Ges. Wien, 1865, p. 848, tab. xxi., figs. 6-9.

*Tetragnatha mandibulata*, L. Koch, Die Arach. des Austr., i., 1871, p. 194, tab. xvii., figs. 2, 2a, 2b, 3, 3a, 3b.



*Tetragnatha mandibulata*, Keys., *op. cit.*, Suppl., 1887, p. 223.

*Hab.*—New South Wales and Victoria; also India, New Granada, Ovalau, Upolu, and Tahiti.

TETRAGNATHA MARGARITATA, *L. Koch.*

*Tetragnatha margaritata*, L. Koch, Die Arach. des Austr., i., 1871, p. 172, tab. xiv., figs. 3, 3a-3c.

*Hab.*—Port Mackay, N. Queensland.

TETRAGNATHA NITENS, *Aud. in Sav.*

*Enguatha nitens*, Aud. in Sav., Descrip. de l'Égypt, xxii., 1827 p. 323, pl. ii., fig. 2.

*Tetragnatha nitens*, Aud. in Sav., Keys., Verh. der K.K. zool.-bot. Ges. Wien, 1865, p. 845, tab. xxi., figs. 1-4.

*Tetragnatha ferox*, L. Koch, Die Arach. des Austr., i., 1871, p. 173, tab. xiv., figs. 4, 4a-4c, 5, 5a-5e.

*Hab.*—Queensland and New South Wales; also Corsica, Egypt, Mauritius.

TETRAGNATHA PANOPEA (?), *L. Koch.*

*Tetragnatha panopea*, L. Koch, Die Arach. des Austr., i., 1871, p. 189, tab. xvi., figs. 3, 3a, 3b, 3c, 4, 4a, 4b.

*Tetragnatha panopea* (?), Hogg, Proc. Roy. Soc. Viet., xiii., 1900, p. 73.

*Hab.*—Upolu, Samoan Islands. Hogg (*infra*) records this species from Victoria with a query.

TETRAGNATHA PROTENSA, *Walck.*

*Tetragnatha protensa*, Walck., Hist. Nat. des Ins. Apt., ii., 1837, p. 209.

*Tetragnatha protensa*, Keys., Verh. der K.K. zool.-bot. Ges. Wien, 1865, p. 847, tab. xxi., figs. 14-17.

*Tetragnatha conica*, L. Koch, Die Arach. des Austr., i., 1871, p. 182, tab. xv., figs. 4, 4a, 4b, 4c.

*Tetragnatha protensa*, Keys., *op. cit.*, Suppl., 1887, p. 222, tab. xx., figs. 4, 4a, 4b, 4c.

*Hab.*—N. Queensland, and the islands of Palao and Ovalau.

TETRAGNATHA QUADRI-NOTATA, *Urquh.*

*Tetragnatha quadri-notata*, Urquh., Proc. Roy. Soc. Tasm., 1892  
[1893], p. 113.

*Hab.*—Tasmania.

TETRAGNATHA VALIDA, *Keys.*

*Tetragnatha valida*, Keys., Die Arach. des Austr., Suppl., 1887,  
p. 218, tab. xx., figs. 1. 1a, 1b.

*Hab.*—Queensland, New South Wales, and Victoria.

*Genus Eucta, Simon.*

*Obs.*—*Eucta gallica*, Simon, is the type species of this genus.

EUCTA ANGUILLA, *Thor.*

*Tetragnatha anguilla*, Thor., Studi sui Ragni Mal. e Papuani, i,  
1877, p. 103.

*Tetragnatha filiformis*, Keys. (*nec* Aud. *in* Sav.), Verh. zool.-bot.  
Ges. Wien, 1865, p. 843 (45), tab. xx., fig. 20.

*Eucta anguilla*, Keys., Die Arach. Austr., Suppl., 1889, p. 227,  
tab. xx., figs. 7, 7a, 7b, 7c.

*Hab.*—Rockhampton, N. Queensland, and Malaysian Archi-  
pelago.

EUCTA CAUDIFERA, *Keys.*

*Eucta caudifera*, Keys., Die Arach. des Austr., Suppl., 1889,  
p. 226.

*Hab.*—Sydney, New South Wales.

*Genus Meta, C. Koch.*

(= *Metabolius*, F. O. P. Cambr.).

*Obs.*—*Meta menardi*, Latr., is the type species of this genus.

META LONGULA, *Thor.*

*Meta longula*, Thor., Studi sui Ragni Mal. e Papuani, iii., 1881,  
p. 128.

*Hab.*—Cape York, N. Queensland.

META MONOGRAMMATA, *Butler*.

*Meta monogrammata*, Butler, Cist. Ent., 1876, p. 352, pl. x, fig. 3.

*Hab.*—Rockhampton, N. Queensland.

META CÆREA, *Hogg*.

*Meta cærea*, Hogg, Rep. Horn Expl. Exped., ii., Zool., 1896, p. 320, pl. xiv., figs. 4, 5.

*Hab.*—Tempe Downs, Central Australia.

META ORNATA, *L. Koch*.

*Meta ornata*, L. Koch, die Arach. des Austr., i., 1871, p. 134, tab. xl., fig. 6.

*Meta ornata*, Rainbow, Rec. Austr. Mus., vi., 5, 1907, p. 334.

*Hab.*—Queensland and New South Wales.

META TRIVITTATA, *Keys*.

*Meta trivittata*, Keys., Die Arach. des Austr., Suppl., 1887, p. 213, tab. xix., figs. 4, 4a.

*Hab.*—New South Wales and Victoria.

META TUBATRIX, *Keys*.

*Meta tubatrix*, Keys., Die Arach. des Austr., Suppl., 1887, p. 212, tab. xix., figs. 3, 3a.

*Hab.*—New South Wales.

*Genus Nanometa*, *Simon*NANOMETA GENTILIS, *Simon*.

*Nanometa gentilis*, Simon, Die Fauna Süd-west Austr., i., 1908 p. 421.

*Hab.*—W. Australia (widely distributed).

*Obs.*—This is the type species of the genus.

*Genus ARGYROPEIRA, Emert.*(=*Callinethis*, Thor.).

*Obs.*—*Argyropeira hortorum*, Hentz, is the type species of this genus.

ARGYROPEIRA CELEBESIANA, *Walck.*

*Tetragnatha celebesiana*, Walck., Hist. Nat. des Ins., Apt., ii., 1837, p. 222.

*Tetragnatha decorata*, Blackw., Ann. Mag. Nat. Hist., xiv. (3), 1864, p. 44.

*Tetragnatha decorata*, O. P. Cambr., Journ. Linn. Soc., Zool., x., 1870, p. 389, pl. xiii., figs. 61-68.

*Meta decorata*, L. Koch, Die Arach. des Austr., i., 1871, p. 141, tab. xl., fig. 5.

*Meta celebesiana*, Thor., Studi Ragni Mal. e Papuani, i., 1877, p. 422; *loc. cit.*, ii. 1878, pp. 91 and 297; *loc. cit.*, iii., 1881, p. 126.

*Argyropeira celebesiana*, Thor., Studi Ragni Birmani, p. 138; Ragni Mal. e Papuani, iv., 2, 1890, p. 198; Spiders of Burma, 1895, p. 155.

*Argyropeira celebesiana*, Workman, Malaysian Spiders, 1896, p. 52, pl. 52.

*Argyropeira celebesiana*, Rainbow, Rec. Austr. Mus., vi., 5, 1907, p. 335.

*Hab.*—New South Wales, Queensland, Papua, Malaysia, India generally, and Ceylon.

ARGYROPEIRA GRANULATA, *Walck.*

*Tetragnatha granulata*, Walck., Hist. Nat. des Ins., Apt., ii., 1837, p. 222.

*Tetragnatha granulata*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien, 1867, p. 185.

*Meta granulata*, L. Koch, Die Arach. des Austr., i., 1871, p. 136, tab. x., figs. 5, 5a.

*Argyropeira granulata*, Rainbow, Rec. Austr. Mus., vi., 5, 1907, p. 335.

*Hab.*—New South Wales, Queensland, Papua, and New Zealand.

## Subfamily NEPHILINÆ.

Genus *Phonognatha*, *Simon*.PHONOGNATHA GRAEFFEI, *Keys*.

*Epeira graeffei*, *Keys*, Verh. der K. K. zool.-bot. Ges. Wien, 1865, p. 811, tab. xix., figs. 12, 13.

*Epeira graeffei*, *L. Koch*, Die Arach. des Austr., i., 1871, p. 98.

*Hab.*—Queensland and New South Wales, Victoria and Tasmania.

*Obs.*—This is the type species of the genus.

Genus *Singotypa*, *Simon*.SINGOTYPA MELANIA, *L. Koch*.

*Epeira melania*, *L. Koch*, Die Arach. des Austr., i., 1871, p. 100, tab. viii., figs. 3, 3a, 3b.

*Hab.*—Queensland and New South Wales (Broken Hill), Victoria and Tasmania.

*Obs.*—This is the type species of the genus.

SINGOTYPA MELANOPYGA, *L. Koch*.

*Epeira melanopyga*, *L. Koch*, Die Arach. des Austr., i., 1871, p. 97, tab. viii., figs. 2, 2a.

*Hab.*—Queensland, New South Wales, Victoria and Tasmania.

Genus *Doliochus*, *Simon*.DOLIOCHUS ZELIVIRA, *Keys*.

*Meta zelvira*, *Keys*, Die Arach. des Austr., Suppl., 1887, p. 210, tab. xix., figs. 1, 1a, 2, 2a.

*Hab.*—Queensland, New South Wales, Victoria and Tasmania.

*Obs.*—This is the type species of the genus.

Genus *Nephila*, *Leach*.

*Obs.*—*Nephila maculata*, *Fab.*, is the type species of this genus.

NEPHILA ADELAIIDENSIS, *Hogg.*

*Nephila adelaidensis*, Hogg, Trans. Roy. Soc. S. Austr., xxxiv., 1910, p. 61, pl. xviii., figs. 2, 2a, 2b, 2c.

*Hab.*—S. Australia.

NEPHILA AUROSA, *L. Koch.*

*Nephila aurosa*, L. Koch, Die Arach. des Austr., i., 1871, p. 160, tab. xiii., fig. 4.

*Nephila aurosa*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 152.

*Hab.*—N. Queensland and New Guinea.

NEPHILA EDWARDSII, *Rainbow.*

*Nephila edwardsii*, Rainbow, Proc. Linn. Soc. N. S. Wales, xx., 1895, p. 349, pl. xxii., figs. 2, 2a.

*Hab.*—Sydney, New South Wales.

NEPHILA EREMIANA, *Hogg.*

*Nephila eremiana*, Hogg, Rep. Horn Expl. Exped., ii., Zoology, 1896, p. 318, pl. 24, fig. 3.

*Hab.*—Oodnadatta and Guyder River, Central Australia; S. Australia.

NEPHILA FLAGELLANS, *L. Koch.*

*Nephila flagellans*, L. Koch, Die Arach. des Austr., i., 1871, p. 153, tab. xii., figs. 5, 5a, 6, 6a.

*Hab.*—N. Queensland and the Pelew Islands.

NEPHILA FLETCHERI, *Rainbow.*

*Nephila fletcheri*, Rainbow, Proc. Linn. Soc. N. S. Wales, xx., 1895, p. 347, pl. xxii., figs. 1, 1a.

*Hab.*—New England District, New South Wales.

NEPHILA IMPERATRIX, *L. Koch.*

*Nephila imperatrix*, L. Koch, Die Arach. des Austr., i., 1871, p. 159, tab. xiii., figs. 3, 3a, 3b, 3c.

*Nephila imperatrix*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 155.

*Hab.*—Queensland, New South Wales (Sydney), and Percy Island (Barrier Reef); W. Australia.

NEPHILA MACULATA, *Fab.*

*Aranea maculata*, *Fab.*, *Entom. Syst.*, ii., 1793, p. 425.

*Nephila maculata*, *Leach*, *Zool. Misc.*, ii., 1815, p. 134, pl. cx.

*Nephila chrysogaster*, *Walek.*, *Hist. Nat. des Ins.*, Apt., ii., 1837, p. 92.

*Nephila fuscipes*, *C. Koch*, *Die Arach.*, vi., 1839, p. 136, tab. cxxii., fig. 528.

*Epeira chrysogaster*, *O. P. Cambr.*, *Proc. Zool. Soc.*, 1871, p. 620, pl. xlix., fig. 4.

*Nephila maculata*, *Thor.*, *Studi Ragni Mal. e Papuani*, iii., 1881, p. 146.

*Nephila maculata*, *Simon*, *Hist. Nat. des Araign.*, i., 1892, p. 750, figs. 832, 833.

*Hab.*—India, Malaysia, Papua, N. Queensland, and Polynesia.

NEPHILA MACULATA, *Fab.*, var. *PENICILLUM*, *Dol.*

*Epeira penicillum*, *Dol.*, *Bijdr.*, 1857, p. 412; *Tweede Bijdr.*, 1859, tab. ii., fig. 4.

*Nephila procera*, *L. Koch*, *Die Arach. des Austr.*, i., 1871, p. 162, tab. xiv., fig. 1.

*Nephila sulphurosa*, *L. Koch*, *loc. cit.*, p. 163, tab. xiv., fig. 2.

*Nephila tenuipes*, *L. Koch*, *loc. cit.*, p. 165, tab. xiii., figs. 5, 5a.

*Nephila maculata*, *Fab.*, var. *penicillum*, *Thor.*, *Studi Ragni Mal. e Papuani*, iii., 1881, p. 147.

*Hab.*—N. Queensland, Papua, and Malaysia.

NEPHILA MACULATA, *Fab.*, var. *WALCKENAERII*, *Dol.*

*Epeira walckenaerii*, *Dol.*, *Bijdr.*, 1857, p. 412; *Tweede Bijdr.*, 1859, tab. i., fig. 4.

*Nephila fuscipes*, *L. Koch*, *Die Arach. des Austr.*, i., 1871, p. 156, tab. xiii., figs. 1, 1a, 1b.

*Nephila maculata*, var. *walckenaerii*, *Thor.*, *Studi Ragni Mal. e Papuani*, iii., 1881, p. 146.

*Hab.*—Northern Queensland and Polynesia.

NEPHILA MERIDIONALIS, *Hogg.*

*Nephila meridionalis*, *Hogg*, *Trans. Roy. Soc. S. Austr.*, xxxiv., 1910, p. 59, pl. xviii., figs. 1, 1a, 1b, 1c.

*Hab.*—Kangaroo Island, S. Australia.

NEPHILA NIGRITARSIS, *L. Koch.*

*Nephila nigratarsis*, L. Koch, Die Arach. des Austr., i., 18  
p. 152, tab. xii., figs. 4, 4a, 4b.

*Hab.*—Rockhampton, Port Mackay, N. Queensland; Harvey  
Agricultural Area, W. Australia.

NEPHILA ORNATA, *Rainbow.*

*Nephila ornata*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxi.,  
1896, p. 320, pl. xviii., figs. 1, 1a, 1b.

*Hab.*—Sydney, New South Wales.

NEPHILA PICTA, *Rainbow.*

*Nephila picta*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxi., 1896,  
p. 321, pl. xix., fig. 1.

*Hab.*—Condobolin, New South Wales.

NEPHILA VENOSA, *L. Koch.*

*Nephila venosa*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien,  
xvii., 1867, p. 183; Die Arach. des Austr., i., 1871, p. 148.  
tab. xii., figs. 2, 2a.

*Nephila prolivax*, L. Koch, *op. cit.*, p. 149, tab. xii., figs. 2, 2a.

*Nephila venosa*, Thor., Studi Ragni Mal. e Papuan, iii., 1881,  
p. 153.

*Hab.*—Papua, Torres Straits, Queensland, New South Wales,  
Victoria, S. Australia, and Polynesia.

NEPHILA VENTRICOSA, *Rainbow.*

*Nephila ventricosa*, Rainbow, Proc. Linn. Soc. N. S. Wales, xx.,  
1895, p. 351, pl. xxiii., figs. 1, 1a, 2, 2a; Rec. Austr. Mus.,  
vi., 5, 1907, p. 336, fig. 53.

*Hab.*—Sydney, New South Wales.

NEPHILA VICTORIALIS, *L. Koch.*

*Nephila victorialis*, L. Koch, Die Arach. des Austr., i., 1871,  
p. 150, tab. xii., figs. 3, 3a, 3b.

*Hab.*—Rockhampton, N. Queensland, New South Wales,  
Victoria, and S. Australia.



*Genus Nephilengys, L. Koch.*

*Obs.*—*Nephilengys schmeltzii*, L. Koch, is the type of this genus.

## NEPHILENGYS RAINBOWI, Hogg.

*Nephilengys rainbowi*, Hogg, Proc. Roy. Soc. Vict., xi., 1899, p. 141, pl. xiii., figs. 1, 1a-1d.

*Hab.*—Upper Endeavour River, Queensland.

*Subfamily ARGIOPINÆ.**Genus Argiope, Aud. in Sav.*

(=*Pronous*, v. Hasselt, non Keys.).

*Obs.*—*Argiope lobata*, Pallas, is the type species of this genus.

## ARGIOPE ÆMULA, Walck.

*Epeira æmula*, Walck., Hist. Nat. des Ins., ii., 1857, p. 118.

*Epeira (Argiopos) striata*, Dol., Bijdr., 1857, p. 415; Tweede Bijdr., p. 30, tab. ix, figs. 2, 2a.

*Argiope magnifica*, L. Koch, Die Arach. des Austr., i., 1871, p. 27, tab. xi., figs. 6, 6a, 6b.

*Argiope æmula*, Thor., Studi Ragni Mal. e Papuani, 1877, p. 24; *op. cit.*, vii., 1878, p. 29; *op. cit.*, iii., 1881, p. 63; *op. cit.*, iv., 1, 1890, p. 94.

*Argiope æmula*, Workman, Malaysian Spiders, 1896, p. 27, pl. 27.

*Argiope æmula*, Rainbow, Rec. Austr. Mus., vii., 4, 1909, p. 213.

*Hab.*—Malaysia, Papua, Queensland, and New South Wales.

## ARGIOPE ÆTHEREA, Walck.

*Epeira ætherea*, Walck., Hist. Nat. des Ins., Apt., ii., 1837, p. 112.

*Argiope ætherea*, Keys., Verh. der K. K. zool.-bot. Ges. Wien, 1865, p. 803, tab. xix., figs. 1, 2.

*Argiope ætherea*, L. Koch, Die Arach. des Austr., i., 1871, p. 36, tab. iii., figs. 4, 4a; *op. cit.*, p. 43.

*Argiope ætherea*, Rainbow, Rec. Austr. Mus., vii., 4, p. 213.

*Argiope variabilis*, Bradley, Proc. Linn. Soc. N. S. Wales, i., 1876, p. 141, pl. i., fig. 3.

*Hab.*—New Guinea, Torres Straits, Queensland, New South Wales, and Victoria.

ARGIOPE BULLOCKI, *Rainbow*.

*Argiope bullocki*, Rainbow, Rec. Austr. Mus., vii., 5, p. 46, fig. 3.

*Hab.*—Parkville, near Scone, New South Wales.

ARGIOPE CARINATA, *L. Koch*.

*Argiope carinata*, L. Koch, Die Arach. des Austr., i., 1871, p. 29, tab. ii., figs. 7, 7a.

*Hab.*—Australia (Neuholland).

ARGIOPE CURVIPES, *Keys*.

*Argiope curvipes*, Keys., Die Arach. des Austr., Suppl., 1886, p. 135, tab. xi., figs. 1, 1a, 1b.

*Hab.*—Gayndah, Queensland.

ARGIOPE EXTENSA, *Rainbow*.

*Argiope extensa*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxiii., 1897, p. 519, pl. xvii., figs. 5, 5a, 5b, 5c.

*Hab.*—Guildford, near Sydney.

ARGIOPE GRACILIS, *Rainbow*.

*Argiope gracilis*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxiii., 1897, p. 522.

*Hab.*—Bungendore, New South Wales.

ARGIOPE LUGUBRIS, *L. Koch*.

*Argiope lugubris*, L. Koch, Die Arach. des Austr., i., 1871, p. 209, tab. xviii., figs. 6, 6a, 6b, 7, 7a, 7b.

*Hab.*—Queensland, New South Wales, and Victoria.

ARGIOPE LUNATA, *Bradley*.

*Argiope lunata*, Bradley, Proc. Linn. Soc. N. S. Wales, i., 1876, p. 143, pl. i., fig. 4,

*Hab.*—Sue and Coconut Islands, Torres Straits.

ARGIOPE PALLIDA, *Rainbow*.

*Argiope pallida*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxiii., 1897, p. 521, pl. xvii., figs. 6, 6a, 6b.

*Hab.*—Queanbeyan, New South Wales.

ARGIOPE PICTA, *L. Koch*.

*Argiope picta*, L. Koch, Die Arach. des Austr., i., 1871, p. 33, tab. iii., figs. 3, 3a.

*Argiope gorgonea*, L. Koch, *loc. cit.*, p. 35.

*Argiope picta*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 64.

*Hab.*—Queensland, New South Wales, and Victoria; New Guinea and ? Fiji.

ARGIOPE PRINCIPALIS, *L. Koch*.

*Argiope principalis*, L. Koch, Die Arach. des Austr., i., 1871, p. 207, tab. xviii., figs. 5, 5a.

*Hab.*—Bowen, N. Queensland.

ARGIOPE PROTENSA, *L. Koch*.

*Argiope protensa*, L. Koch, Die Arach. des Austr., i., 1871, p. 211, tab. xviii., figs. 8, 8a, 8b.

?*Arachnura longicauda*, Urquh., Trans. N. Z. Inst., xviii., 1885, p. 33, pl. ix., fig. 2.

*Hab.*—Australia generally; ? also New Zealand.

ARGIOPE SYRMATICA, *L. Koch*.

*Argiope syrmatica*, L. Koch, Die Arach. des Austr., i., 1871, p. 213, tab. xviii., figs. 9, 9a, 9b.

*Hab.*—Queensland, New South Wales, Victoria, and New Zealand.

ARGIOPE TRIFASCIATA, *Dol*.

*Epeira (Argiopes) trifasciata*, Dol., Bijdr., 1857, p. 416; Tweede Bijdr., 1859, pl. i., fig. 3.

*Epeira (Argiopes) reinwardtii*, Thor., Tweede Bijdr., 1859, p. 31, tab. xv., fig. 5.

*Argiope plana*, L. Koch, Verh. der K. K. zool.-bot. Ges. Wien, 1867, p. 9; Die Arach. des Austr., i., 1871, p. 31, tab. iii., figs. 1, 1a-1c, 2.

*Argiope doleschalli*, Thor., Rem. on Syn., 1873, p. 520; Studi Ragni Mal. e Papuani, i., 1881, p. 61; *op. cit.*, iii., 1878, p. 38.

*Argiope fasciata*, Keys., Die Arach. des Austr., Suppl., 1886, p. 133, tab. x., fig. 5.

*Hab.*—Australia generally; also Polynesia.

*Genus* *Gea*, C. Koch.

(=*Ebea*, L. Koch).

*Obs.*—*Gea spinipes*, C. Koch, is the type species of this genus.

*GEA PRÆCINCTA*, L. Koch.

*Ebea præcincta*, L. Koch, Die Arach. des Austr., i., 1871, p. 130, tab. x., figs. 2, 2a, 3, 3a.

*Ebea præcincta*, Bradley, Proc. Linn. Soc. N. S. Wales, i., 1876, p. 147.

*Hab.*—Palm Island, Great Barrier Reef, and Samoa.

*GEA THERIDIOIDES*, L. Koch.

*Ebea theridioides*, L. Koch, Die Arach. des Austr., i., 1871, p. 132, tab. x., figs. 4, 4a-4e.

*Hab.*—Australia generally.

*Genus* *Cyrtophora*, Simon.

(=*Euetria*, Thor.; *Heutzia*, McCook).

*Obs.*—*Cyrtophora citricola*, Forskål, is the type species of this genus.

*CYRTOPHORA HIRTA*, L. Koch.

*Cyrtophora hirta*, L. Koch, Die Arach. des Austr., i., 1871, p. 125, tab. ix., fig. 7, 7a.

*Hab.*—Bowen, N. Queensland.

CYRTOPHORA MOLUCCENSIS, *Dol.*

*Epeira moluccensis*, *Dol.*, *Bijdr.*, 1857, p. 418.

*Epeira margaritacea*, *Dol.*, *Tweede Bijdr.*, 1859, p. 29, tab. ix., figs. 3, 3a.

*Epeira moluccensis*, *Thor.*, *Studi Ragni Mal. e Papuani*, ii., 1878, p. 40; *op. cit.*, iii., 1881, p. 80; *op. cit.*, iv., 1, 1889, p. 111.

*Epeira maritima*, *Keys.*, *Verh. der K.K. zool.-bot. Ges. Wien*, 1865, p. 813, tab. xviii., figs. 22, 23.

*Epeira maritima*, *L. Koch*, *Die Arach. des Austr.*, i., 1871, p. 91.

*Epeira cupidinea*, *Thor.*, *Proc. Zool. Soc.*, 1875, p. 135, pl. xxv., fig. 3.

*Epeira hieroglyphica*, *L. Koch*, *Die Arach. des Austr.*, i., 1871, p. 89, tab. vii., figs. 8, 8a.

*Hab.*—New Guinea, Torres Strait, Queensland, New South Wales, and Polynesia.

CYRTOPHORA PARNASIA, *L. Koch.*

*Cyrtophora parnasia*, *L. Koch*, *Die Arach. des Austr.*, i., 1871, p. 126, tab. ix., figs. 8, 8a.

*Hab.*—Queensland, New South Wales, and Victoria.

CYRTOPHORA SCULPTILIS, *L. Koch.*

*Cyrtophora sculptilis*, *L. Koch*, *Die Arach. des Austr.*, i., 1871, p. 128, tab. ix., figs. 9, 9a.

*Hab.*—Bowen, N. Queensland.

*Genus Arachnura*, *Vins.*

(=*Hapalochrota*, *Keys.*).

*Obs.*—*Arachnura scorpionides*, *Vins.*, is the type species of this genus.

ARACHNURA CAUDATA, *Bradley.*

*Epeira caudata*, *Bradley*, *Proc. Linn. Soc. N. S. Wales*, i., 1876, p. 147.

*Hab.*—New Guinea and N. Queensland.

ARACHNURA HIGGINSII, *L. Koch.*

*Epeira higginsii*, *L. Koch*, *Die Arach. des Austr.*, i., 1871, p. 120, tab. xi., figs. 1, 1a, 1b.

*Arachnura higginsii*, Rainbow, Rec. Austr. Mus., vii., 4, 1909,  
p. 218.

*Hab.*—Australia and Tasmania.

ARACHNURA TRILOBATA, Urquh.

*Arachnura trilobata*, Urquh., Trans. N.Z. Inst., xvii., 1885, p. 37,  
pl. ix., fig. 3; Proc. Roy. Soc. Tasm., 1892 (1893), p. 119.

*Hab.*—New Zealand and Tasmania.

*Genus Cyclosa, Menge.*

*Obs.*—*Cyclosa conica*, Pallas, is the type species of this genus.

CYCLOSA BACILLIFORMIS, Simon.

*Cyclosa bacilliformis*, Simon, Die Fauna Süd-west Austr., i.,  
1908, p. 423.

*Hab.*—Lion Mill, W. Australia.

?CYCLOSA RHOMBOCEPHALA, Thor.

*Epeira rhombocephala*, Thor., Studi Ragni Mal. e Papuani, iii.  
p. 98.

*Hab.*—Cape York, N. Queensland.

CYCLOSA PALLIDA, Rainbow.

*Epeira pallida*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxiii.,  
1897, pp. 514 and 535, pl. xvii., fig. 1.

*Hab.*—Guildford, near Sydney.

?CYCLOSA VALLATA, Keys.

?*Epeira vallata*, Keys., Die Arach. des Austr., Suppl., 1886,  
p. 149, tab. xii., figs. 5, 5a, 5b.

*Hab.*—N. Queensland.

*Genus Larinia, Simon.*

(=*Lipocreu*, Thor.; *Drexelia*, McCook).

*Obs.*—*Larinia lineata*, Lucas, is the type species of this  
genus.

LARINIA EBURNEIVENTRIS, *Simon*.

*Larina eburneiventris*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 424.

*Hab.*—West Australia.

LARINIA PHTHISICA, *L. Koch*.

*Epeira phthistica*, L. Koch, Die Arach. des Austr., i., 1871, p. 103, tab. viii., figs. 5, 5a.

*Epeira phthistica*, Keys., *op. cit.*, Suppl., 1887, p. 171, tab. xiv., figs. 6, 6a.

*Hab.*—Queensland, New South Wales, and Victoria.

LARINIA TABIDA, *L. Koch*.

*Epeira tabida*, L. Koch, Die Arach. des Austr., i., 1871, p. 105, tab. viii., figs. 6, 6a.

*Meta soror*, Thor., Studi i., Ragni di Selebes, 1877, p. 433.

*Epeira tabida*, Keys., Die Arach. des Austr., Suppl., 1887, p. 170, tab. xiv., figs. 5, 5a.

*Lipocrea soror*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 689.

*Hab.*—Port Mackay, N. Queensland.

Genus *Aranus*, *Clerck*.

(=*Epeira*, Auct.; *Zygia*, *Zilla*, et *Singa*, C. Koch; *Heterognatha*, Nicolet; *Cerceis*, Menge; *Arcidia*, *Perilla*, et *Milonia*, Thor.; *Epeiroides*, Keys.; *Muhadiva*, *Alpuida* et *Amamra*, F. O. P. Cambr.; *Marxia*, *Ferrucosa* et *Wagneria*, McCook; *Cercidia*, Thor.; *Tricantha*, Tacz.; *Vivia*, O. P. Cambr.).

*Obs.*—The type species of this genus is *Aranus diadematus*, Clerck.

ARANEUS ACUMINATUS, *L. Koch*.

*Epeira acuminata*, L. Koch, Die Arach. des Austr., i., 1871, p. 109, tab. ix., figs. 2, 2a, 2b.

*Hab.*—Port Mackay, N. Queensland; ? Howla, Solomon Is.

ARANEUS ALBIDUS, *L. Koch*.

*Epeira albida*, L. Koch, Die Arach. des Austr., i., 1871, p. 83, tab. vii., figs. 2, 2a.

*Hab.*—Rockhampton, N. Queensland.

ARANEUS ALBOTRIANGULUS, *Keys.*

*Epeira albotriangula*, Keys., Die Arach. des Austr., Suppl., 1887,  
p. 187, tab. xvi., figs. 4, 4a, 5, 5a, 5b, 5c.

*Hab.*—Queensland and New South Wales.

ARANEUS AMBLYCYPHUS, *Simon.*

*Araneus amblycypus*, Simon, Die Fauna Süd-west Austr., i.,  
1908, p. 427.

*Hab.*—Busselton, W. Australia.

ARANEUS ANATIPES, *Keys.*

*Epeira anatipes*, Keys., Die Arach. des Austr., Suppl., 1887,  
p. 175, tab. xv., figs. 3, 3a, 4, 4a.

*Hab.*—Pelew Islands; Queensland.

ARANEUS ANSERIPES, *Walck.*

*Epeira anseripes*, Walck., Hist. Nat. des Ins., Apt., ii., 1837,  
p. 146.

*Epeira anseripes*, Thor., Studi Ragni Mal. e Papuani, i., 1877,  
p. 65; *op. cit.*, ii., 1878, pp. 80, 273, 297; *op. cit.*, iii., 1881,  
p. 124.

*Epeira anseripes*, Walck., Die Arach. des Austr., Suppl., 1887,  
p. 174, tab. xv., figs. 1, 1a, 2, 2a, 2b.

*Hab.*—Celebes, Philippines, New Guinea, New Ireland, Queens-  
land, New South Wales.

ARANEUS ARENACEUS, *Keys.*

*Epeira arenacea*, Keys., Die Arach. des Austr., Suppl., 1886,  
p. 145, tab. xii., figs. 2, 2a, 3, 3a, 3b.

*Hab.*—Queensland and New South Wales.

ARANEUS BIAPACTUS, *L. Koch.*

*Epeira biapacta*, L. Koch, Die Arach. des Austr., i., 1871, p. 54,  
tab. iv., fig. 4.

*Hab.*—Queensland, New South Wales, and Victoria.



ARANEUS BIAPICATIFERA, *Strand.*

*Aranus biapicatifera*, Strand, Wiesbaden Jahrb. Ver. Natk.,  
ix., 1907, p. 202.

*Hab.*—Australia.

ARANEUS BRADLEYI, *Keys.*

*Aranus bradleyi*, Keys., Die Arach. des Austr., Suppl., 1887,  
p. 165, tab. xiv., figs. 2, 2a.

*Hab.*—New South Wales, Victoria.

ARANEUS BRISBANE, *L. Koch.*

*Epeira brisbane*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien,  
1867, p. 176; Die Arach. des Austr., i., 1871, p. 111, tab.  
vi., figs. 4, 4a.

*Epeira brisbane*, Keys., *op. cit.*, Suppl., 1887, p. 161, tab. xiii.,  
figs. 6, 6a-6d, 7, 7a.

*Hab.*—Queensland, New South Wales, and New Zealand.

ARANEUS CAPITALIS, *L. Koch.*

*Epeira capitalis*, L. Koch, Die Arach. des Austr., i., 1871, p. 58,  
tab. v., figs. 1, 1a.

*Epeira capitalis*, Hogg, Proc. Roy. Soc. Vict., xi., 1899, p. 139,  
pl. xiii., figs. 3, 3a-3b.

*Hab.*—Upper Endeavor River, Queensland, and the Island of  
Ovalau.

ARANEUS CIRCUMSPARSUS, *Keys.*

*Epeira circumsparsa*, Keys, Die Arach. des Austr., Suppl., 1887,  
p. 190, tab. xvi., figs. 7, 7a.

*Hab.*—Sydney, New South Wales.

ARANEUS COLLINUS, *Keys.*

*Epeira collina*, Keys, Die Arach. des Austr., Suppl., 1886, p. 141,  
tab. xi., figs. 5, 5a.

*Hab.*—Peak Downs, Queensland.

ARANEUS CONCINUS, *Rainbow.*

*Epeira variabilis*, Rainbow (*nom. præocc.*), Proc. Linn. Soc. N.  
S. Wales, xxiii., 1897, p. 517, pl. xvii., figs. 3, 3a, 3b.

*Araneus concinnus*, Rainbow, *op. cit.*, xxv., 1900, p. 494.

*Hab.*—Guildford, near Sydney, New South Wales.

ARANEUS CORDIFORMIS, *L. Koch.*

*Epeira cordiformis*, L. Koch, Die Arach. des Austr., i., 1871, p. 82, tab. v., figs. 7, 7a.

*Hab.*—Port Mackay, N. Queensland.

ARANEUS CRASSIPES, *Rainbow.*

*Epeira crassipes*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxiii., 1897, p. 515, pl. xvii., figs. 2, 2a.

*Hab.*—Guildford, near Sydney, New South Wales.

ARANEUS CRINITUS, *Rainbow.*

*Anepsia crinita*, Rainbow, Proc. Linn. Soc., N. S. Wales, xviii., 1893, p. 23, pl. iii., figs. 5, 5a.

*Hab.*—Manly, near Sydney, New South Wales.

ARANEUS CYPHOXIS, *Simon.*

*Araneus cyphoxis*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 426.

*Hab.*—W. Australia.

ARANEUS CYRTARACHNOIDES, *Keys.*

*Epeira cyrtarachnoides*, Keys., Die Arach. des Austr., Suppl., 1887, p. 181, tab. xv., figs. 8, 8a, 9, 9a.

*Hab.*—Queensland and New South Wales.

ARANEUS DECOLOR, *L. Koch.*

*Epeira decolor*, L. Koch, Die Arach. des Austr., i., 1871, p. 71, tab. vi., figs. 8, 8a.

*Hab.*—New South Wales, Victoria; Viti, Fiji Islands.

ARANEUS DIMIDIATUS, *L. Koch.*

*Epeira dimidiata*, L. Koch., Die Arach. des Austr., i., 1871, p. 95, tab. viii., figs. 1, 1a.

*Hab.*—Queensland and Northern New South Wales.

ARANEUS DIOBRIS, *Walck.*

*Epeira diobris*, Walck., Hist. Nat. des Ins., Apt., ii, 1857, p. 131.

*Epeira diobris*, L. Koch, Die Arach. des Austr., i., 1871, p. 116.

*Hab.*—Sydney, New South Wales.

ARANEUS DIVERSICOLOR, *Rainbow.*

*Epeira diversicolor*, Rainbow, Proc. Linn. Soc. N. S. Wales, xviii., 1893, p. 16, pl. iii., figs. 1, 1a, 1b.

*Hab.*—Manly, near Sydney, New South Wales.

ARANEUS EBURNUS, *Keys.*

*Epeira eburna*, Keys., Die Arach. des Austr., Suppl., 1886, p. 148 tab. xii., figs. 4, 4a.

*Hab.*—Queensland and New South Wales.

ARANEUS EXANTHEMATICUS, *Dol.*

*Epeira exanthematica*, Dol., Tweede Bijdr., 1850, p. 38, tab. iii., fig. 3; tab. xi., fig. 4.

*Epeira speculabunda*, L. Koch, Die Arach. des Austr., i., 1871, p. 80, tab. v., figs. 6, 6a.

*Epeira exanthematica*, Thor., Studi Ragni Mal. e Papuani, ii., 1878, p. 58; *op. cit.*, iii., 1881, p. 98.

*Epeira exanthematica*, Keys., Die Arach. des Austr., Suppl., 1887, pp. 165, 185, tab. xvi., figs. 2, 2a.

*Hab.*—Amboina, Java, New Guinea, N. Queensland.

ARANEUS EXSERTUS, *Rainbow.*

*Araneus exsertus*, Rainbow, Rec. Austr. Mus., v., 2, 1904, p. 102, figs. 26, 27.

*Hab.*—Mornington Island, Wellesley Group, Gulf of Carpentaria.

ARANEUS EXTUBERATUS, *L. Koch.*

*Epeira extuberala*, L. Koch, Die Arach. des Austr., i., 1871, p. 61, tab. v., fig. 3.

*Epeira extuberala*, Hogg, Rep. Horn Expl. Exped., ii., Zoology, 1896, p. 311.

*Hab.*—New Zealand and Australia.

ARANEUS FASTIDIOSUS, *Keys.*

*Epeira fastidiosa*, Keys., Die Arach. des Austr., Suppl., 1887,  
p. 183, tab. xvi, figs. 1, 1a.

*Hab.*—Rockhampton, N. Queensland.

ARANEUS FELINUS, *Butler.*

*Epeira felina*, Butler, Cist. Ent., 1876, p. 351, pl. x., figs. 1, 2.

*Hab.*—Rockhampton, N. Queensland.

ARANEUS FICTUS, *Rainbow*

*Epeira ficta*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxii., 1896,  
p. 323, pl. viii., figs. 2, 2a.

*Hab.*—New England District, New South Wales.

ARANEUS FROSTI, *Hogg*

*Epeira frosti*, Hogg, Rep. Horn Expl. Exped., ii., Zoology, 1896,  
p. 315, pl. xxiv., fig. 1.

*Hab.*—Stevens River, Central Australia.

ARANEUS FULIGINATUS, *L. Koch.*

*Epeira fuliginata*, L. Koch, Die Arach. des Austr., i., 1871,  
p. 106, tab. viii., figs. 7, 7a, 7b.

*Hab.*—New South Wales and Victoria.

ARANEUS FURCIFERUS, *Keys.*

*Epeira furcifera*, Keys., Die Arach. des Austr., Suppl., 1886,  
p. 144, tab. xii., figs. 1, 1a.

*Hab.*—Rockhampton, N. Queensland.

ARANEUS GRACILIS, *Hogg.*

*Epeira (Singa) gracilis*, Hogg, Rep. Horn Expl. Exped., ii.,  
Zoology, 1896, p. 317, pl. xxiv., fig. 2.

*Hab.*—Valley of Stevens River, Central Australia.

ARANEUS HAMILTONI, *Rainbow.*

*Epeira hamiltoni*, Rainbow, Proc. Linn. Soc. N. S. Wales, xviii.,  
1893, p. 21, pl. iii., figs. 7, 7a.

*Hab.*—Guntawang, near Mudgee, New South Wales.

ARANEUS HEROINE, *L. Koch.*

*Epeira heroine*, L. Koch, Die Arach. des Austr., i., 1871, p. 51, tab. iv., figs. 2, 2a.

*Epeira heroine*, Keys., *op. cit.*, Suppl., 1886, p. 138, tab. xi., figs. 3, 3a.

*Araneus heroine*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxii., 1896, p. 334; *op. cit.*, xxiii., 1897, p. 531; Rec. Austr. Mus., vii., 4, pp. 221 and 223, pl. lxii.

*Hab.*—Queensland and New South Wales.

ARANEUS HUMILIS, *L. Koch.*

*Theridium humile*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien, 1867, p. 19.

*Epeira humilis*, L. Koch, Die Arach. des Austr., i., 1871, p. 107, tab. ix., figs. 1, 1a, 1b.

*Hab.*—Queensland.

ARANEUS IDONEUS, *Keys.*

*Epeira idonea*, Keys., Die Arach. des Austr., Suppl., 1887, p. 177, tab. xv., figs. 5, 5a.

*Hab.*—Peak Downs, Queensland.

ARANEUS INQUIETUS, *Keys.*

*Epeira inquieta*, Keys., Die Arach. des Austr., Suppl., 1887, p. 189, tab. xvi., figs. 6, 6a.

*Hab.*—Sydney, New South Wales.

ARANEUS INTERJECTUS, *L. Koch.*

*Epeira interjecta*, L. Koch, Die Arach. des Austr., i., 1871, p. 96, tab. vii., figs. 7, 7a, 7b.

*Hab.*—Port Mackay, N. Queensland

ARANEUS INUSTUS, *L. Koch.*

*Epeira inusta*, L. Koch, Die Arach. des Austr., i., 1871, p. 94, tab. vii., figs. 3, 3a, 3b.

*Hab.*—Bowen, N. Queensland.

ARANEUS LACRIMOSUS, *Walck.*

*Epeira lacrimosa*, Walck., Hist. Nat. des Ins., Apt., ii., 1837,  
p. 34.

*Epeira lacrimosa*, L. Koch, Die Arach. des Austr., i., 1871, p. 83.

*Hab.*—Sydney, New South Wales.

ARANEUS LANCEARIUS, *Keys.*

*Epeira lancearia*, Die Arach. des Austr., Suppl., 1887, p. 157,  
tab. xiii., figs. 3, 3a, 3b.

*Hab.*—Sydney, New South Wales.

ARANEUS LEAI, *Rainbow.*

*Epeira leai*, Rainbow, Proc. Linn. Soc. N. S. Wales, xviii., 1893,  
p. 287, pl. x., fig. 1.

*Hab.*—Bungendore, New South Wales.

ARANEUS LIBERALIS, *Rainbow.*

*Araneus liberalis*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxvii.,  
1902, p. 486, pl. xviii., figs. 2, 2a.

*Hab.*—Prospect, near Sydney, New South Wales.

ARANEUS LODICULUS, *Keys.*

*Epeira lodicula*, Keys., Die Arach. des Austr., Suppl., 1887,  
p. 159, tab. xiii., figs. 4, 4a.

*Hab.*—Sydney, New South Wales.

ARANEUS LUGUBRIS, *Walck.*

*Epeira lugubris*, Walck., Hist. Nat. des Ins., Apt., ii., 1837,  
p. 34.

*Epeira indugatrix*, L. Koch, Die Arach. des Austr., i., 1871,  
p. 66, tab. v., figs. 8, 8a, 9, 9a.

*Hab.*—N. Queensland.

ARANEUS LUTULENTUS, *Keys.*

*Epeira lutulenta*, Keys., Die Arach. des Austr., Suppl., 1886,  
p. 143, tab. xi., figs. 6, 6a.

*Hab.*—Peak Downs, Queensland.

ARANEUS MACLEAYI, *Bradley*.

*Epeira macleayi*, Bradley, Proc. Linn. Soc. N. S. Wales, i., 1877,  
p. 145, pl. i., fig. 5.

*Hab.*—Hall Sound, and Percy Island, N. Queensland.

ARANEUS MAMILLANUS, *Keys*.

*Epeira mamillana*, Keys., Die Arach. des Austr., Suppl., 1887,  
p. 154, tab. xii., figs. 8, 8a, 8b.

*Hab.*—Sydney, New South Wales.

ARANEUS MASTERSI, *Bradley*.

*Epeira mastersi*, Bradley, Proc. Linn. Soc. N. S. Wales, i., 1887,  
p. 146, pl. i., fig. 6.

*Hab.*—Percy, Cocoonut, and Sue Islands, Torres Straits; also  
Cape Granville.

ARANEUS MEMORII, *Hogg*.

*Araneus memorii*, Hogg, Proc. Roy. Soc. Vict., xiii., 1900, p. 99,  
pl. xv., fig. 1.

*Hab.*—Macedon, Victoria.

ARANEUS MUCRONATUS, *L. Koch*.

*Epeira mucronata*, L. Koch, Die Arach. des Austr., i., 1871,  
p. 74, tab. vi., figs. 2, 3, 3a.

*Epeira mucronata*, Butler, Cist. Ent., 1876, p. 352.

*Hab.*—Rockhampton, N. Queensland.

ARANEUS MULIERARIUS, *Keys*.

*Epeira mulieraria*, Keys., Die Arach. des Austr., Suppl., 1887,  
p. 200, tab. xviii., figs. 1, 1a.

*Hab.*—Cape York, N. Queensland.

ARANEUS NAVICULUS, *L. Koch*.

*Epeira navicula*, L. Koch, Die Arach. des Austr., i., 1871, p. 102,  
tab. viii., figs. 4, 4a, 4b.

*Hab.*—Sydney, New South Wales.

ARANEUS NECOPINUS, *Keys.*

*Epeira necopina*, Keys., Die Arach. des Austr., Suppl., 1887,  
p. 198, tab. xvii., figs. 7, 7a.

*Hab.*—W. Australia.

ARANEUS NIGROPUNCTATUS, *L. Koch.*

*Epeira nigropunctata*, L. Koch, Die Arach. des Austr., i., 1871,  
p. 65, tab. vi., figs. 7, 7a; Keys., *op. cit.*, Suppl., 1887,  
p. 204, tab. xviii., figs. 5, 5a.

*Hab.*—N. Queensland.

ARANEUS OBSTRUCTUS, *Urquh.*

*Epeira obstructa*, Urquh., Trans. Roy. Soc. Tasm., 1892 (1893),  
p. 116.

*Hab.*—Tasmania.

ARANEUS PARVULUS, *Rainbow.*

*Araneus parvulus*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxv.,  
1901, p. 489, pl. xxiv., figs. 3, 3a, 3b, 3c.

*Hab.*—Guildford, near Sydney, New South Wales.

ARANEUS PHALERATUS, *Urquh.*

*Epeira phalerata*, Urquh., Trans. Roy. Soc. Tasm., 1892 (1893),  
p. 114.

*Hab.*—Tasmania.

ARANEUS PRÆSIGNIS, *L. Koch.*

*Epeira præsignis*, L. Koch, Die Arach. des Austr., i., 1871,  
p. 110.

*Hab.*—Bowen, N. Queensland.

ARANEUS PRODUCTUS, *L. Koch.*

*Epeira producta*, L. Koch, Verh. der K. K. zool.-bot. Ges. Wien,  
1867, p. 178; Die Arach. des Austr., i., 1871, p. 55, tab. iv.,  
figs. 5, 5a, 6, 7, 7a.

*Epeira producta*, Bradley, Proc. Linn. Soc. N. S. Wales, i., 1877,  
p. 144.



*Epeira producta*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 90.

*Epeira producta*, Hogg, Proc. Roy. Soc. Vict., xi., 1899, p. 139, pl. xiii., figs. 4, 4*a*, 4*b*.

*Araneus productus*, Rainbow, Rec. Austr. Mus., vii., 4, 1909, p. 222.

*Hab.*—Hall Sound, New Guinea; Percy Island, Great Barrier Reef; Queensland, New South Wales, and Victoria.

ARANEUS PRONUBUS, *Rainbow*.

*Epeira pronuba*, Rainbow, Proc. Linn. Soc. N. S. Wales, xviii., 1893, p. 298, tab. x., figs. 2, 2*a*-2*c*.

*Hab.*—Bungendore, New South Wales.

ARANEUS PSITTACINUS, *L. Koch*.

*Epeira psittacina*, L. Koch, Keys., Die Arach. des Austr., Suppl., 1887, p. 173, tab. xiv., figs. 7, 7*a*, 7*b*.

*Hab.*—New South Wales and Victoria.

ARANEUS PUSTULOSUS, *Walck*.

*Epeira pustulosa*, Walck., Hist. Nat. des Ins., Apt., ii., 1837, p. 132.

*Epeira pustulosa*, L. Koch, Die Arach. des Austr. i., 1871, p. 116.

*Hab.*—Australia and Tasmania.

ARANEUS QUÆSITUS, *Keys*.

*Epeira quaesita*, Keys., Die Arach. des Austr., Suppl., 1887, p. 197, tab. xvii., figs. 6, 6*a*.

*Hab.*—Australia.

ARANEUS QUERIBUNDUS, *Keys*.

*Epeira queribundus*, Keys., Die Arach. des Austr., Suppl., 1887, p. 195, tab. xvii., figs. 4*a*, 4*b*, 5*a*, 5*b*.

*Hab.*—Australia.

ARANEUS QUIETUS, *Keys*.

*Epeira quieta*, Keys, Die Arach. des Austr., Suppl., 1887, p. 192, tab. xvii., figs. 1, 1*a*.

*Hab.*—Sydney, New South Wales.

ARANEUS RABIOSULUS, *Keys.*

*Epeira rabiosula*, Keys., Die Arach. des Austr., Suppl., 1887,  
p. 194, tab. xvii., figs. 3, 3a.

*Hab.*—Sydney, New South Wales.

ARANEUS RAMULOSUS, *Keys.*

*Epeira ramulosa*, Keys., Die Arach. des Austr., Suppl., 1887,  
p. 203, tab. xviii., figs. 4, 4a.

*Hab.*—Australia.

ARANEUS RARUS, *Keys.*

*Epeira rara*, Keys., Die Arach. des Austr., Suppl., 1887, p. 193,  
tab. xvii., figs. 2, 2a.

*Hab.*—Queensland and Victoria.

ARANEUS ROTUNDULUS, *Keys.*

*Epeira rotundula*, Keys., Die Arach. des Austr., Suppl., 1887,  
p. 178, tab. xv., figs. 6, 6a, 7, 7a.

*Hab.*—Queensland.

ARANEUS RUBICUNDULUS, *Keys.*

*Epeira rubicundula*, Keys., Die Arach. des Austr., i., 1887,  
p. 164, tab. xiv., figs. 1, 1a, 1b.

*Hab.*—Sydney, New South Wales.

ARANEUS SCUTIFERUS, *Keys.*

*Epeira scutifera*, Keys., Die Arach. des Austr., Suppl., 1886,  
p. 152, tab. xii., figs. 7, 7a.

*Hab.*—Sydney, New South Wales.

ARANEUS SCUTIGERENS, *Hogg.*

*Araneus scutigerens*, Hogg, Proc. Roy. Soc. Vict., xiii., 1900,  
p. 100, pl. xv., fig. 2.

*Hab.*—Macedon, Victoria.

ARANEUS SEMICAUDATUS, *Simon.*

*Araneus semicaudatus*, Simon, Die Fauna Süd-west Austr., i.,  
1908, p. 425.

*Hab.*—W. Australia.

ARANEUS SEMICAUDATUS, *var. simplex*, *Simon*.

*Araneus semicaudatus*, *var. simplex*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 426.

*Hab.*—W. Australia.

ARANEUS SIMILARIS, *Rainbow*.

*Epeira similaris*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxii., 1896, p. 324, pl. xviii., fig. 3.

*Hab.*—New England District, New South Wales.

ARANEUS SINGULARIS, *Rainbow*.

*Araneus singularis*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxv., 1900, p. 490, pl. xxiv., figs. 4, 4a, 4b.

*Hab.*—Bungendore, New South Wales.

ARANEUS SINUOSUS, *Rainbow*.

*Epeira sinuosa*, Rainbow, Proc. Linn. Soc. N. S. Wales, xviii., 1893, p. 20, pl. iii., fig. 6.

*Hab.*—Sydney, New South Wales.

ARANEUS SQUAMIFERUS, *Keys*.

*Epeira squamifera*, Keys., Die Arach. des Austr., Suppl., 1886, p. 151, tab. xii., figs. 6, 6a.

*Hab.*—Peak Downs, Queensland.

ARANEUS STOLIDUS, *Keys*.

*Epeira stolida*, Keys., Die Arach. des Austr., Suppl., 1887, p. 186, tab. xvi., figs. 3, 3a.

*Hab.*—Sydney, New South Wales.

ARANEUS SUB-FLAVIDUS, *Urquh.*

*Epeira sub-flavida*, Urquh., Trans. Roy. Soc. Tasm., 1892 (1893), p. 117.

*Hab.*—Tasmania.

ARANEUS SYDNEYICUS, *Keys*.

*Epeira sydneyica*, Keys., Die Arach. des Austr., Suppl., 1887, p. 155, tab. xiii., figs. 1, 1a, 2, 2a, 2b.

*Hab.*—Sydney, New South Wales, and Victoria.

ARANEUS SYLVICOLUS, *Rainbow*.

*Epeira sylvicola*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxiii., 1897, p. 518, pl. xvii., figs. 4, 4a.

*Araeus sylvicolus*, Rainbow, Rec. Austr. Mus., vii., 4, 1909, p. 222.

*Hab.*—Illawarra, Guildford, Fairfield, and Liverpool, New South Wales.

ARANEUS TALIPEDATUS, *Keys*.

*Epeira talipedata*, Keys., Die Arach. des Austr., Suppl., 1887, p. 169, tab. xiv., figs. 4, 4a.

*Hab.*—Australia.

ARANEUS TENELLUS, *L. Koch*.

*Epeira tenella*, L. Koch, Die Arach. des Austr., i., 1871, p. 76, tab. vi., figs. 5, 5a, 6, 6a.

*Epeira* (?) *tenella*, Butler, Cist. Ent., 1876, p. 352.

*Hab.*—Rockhampton, N. Queensland.

ARANEUS THEISII, *Walck*.

*Epeira theis*, Walck., Hist. Nat. des Ins., Apt., ii., 1837, p. 53, pl. xviii., fig. 4.

*Epeira theis*, Walck., Die Arach. des Austr., i., 1871, p. 88.

*Epeira mangareva*, Walck., Hist. Nat. des Ins., Apt., iv., 1847, p. 469.

*Epeira mangareva*, L. Koch, Die Arach. des Austr., i., 1871, p. 85, tab. vii., figs. 4, 4a, 5, 5a.

*Epeira thesii*, Thor., Studi. Ragni Mal. e Papuani, i., 1877, p. 51; *op. cit.*, iii., 1881, p. 114; *op. cit.*, iv., i., 1889, p. 150.

*Epeira mangareva*, L. Koch, Die Arach. des Austr., i., 1871, p. 85, tab. vii., figs. 4, 4a, 4b.

*Hab.*—New Guinea, Queensland, and Polynesia.

ARANEUS THYRIDOTUS, *Thor*.

*Epeira thyridota*, Thor., Oefv. af K. Vetensk.-Akad. Förh., 1870, p. 367.

*Epeira thyridota*, L. Koch, Die Arach. des Austr., i., 1871, p. 52, tab. iv., figs. 3, 3a; tab. vii., fig. 1

*Hab.*—Queensland, New South Wales, and Victoria.

ARANEUS TRANSMARINUS, *Keys.*

*Epeira transmariua*, Keys., Verh. der K.K. zool.-bot. Ges. Wien, 1865, p. 814, tab. xviii., figs. 15, 16.

*Epeira transmariua*, L. Koch, Die Arach. des Austr., i., 1871, p. 59, tab. v., figs. 2, 2a; *op. cit.*, Suppl., 1886, p. 139, tab. xi., figs. 4, 4a, 4b.

*Hab.*—Queensland, New South Wales, and Victoria.

ARANEUS TRIGONA, *L. Koch.*

*Epeira trigona*, L. Koch, Die Arach. des Austr., i., 1871, p. 50, tab. iv., figs. 1, 1a, 1b.

*Epeira trigona*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, pp. 15 and 19.

*Hab.*—Papua generally; Port Mackay, N. Queensland.

ARANEUS USUALIS, *Keys.*

*Epeira usualis*, Keys., Die Arach. des Austr., Suppl., 1887, p. 201, tab. xviii., figs. 2, 2a, 3, 3a.

*Hab.*—Queensland and New South Wales.

ARANEUS URBANUS, *Keys.*

*Epeira urbana*, Keys., Die Arach. des Austr., Suppl., 1887, p. 160, tab. xiii., figs. 5, 5a.

*Hab.*—Sydney, New South Wales.

ARANEUS VERRUCOSUS, *Walck.*

*Epeira verrucosa*, Walek., Hist. Nat. des Ins., Apt., ii., 1837, p. 135.

*Epeira verrucosa*, Keys., Sitz. der Isis zu Dresden, 1863, p. 139, tab. iv., figs. 20, 21.

*Epeira verrucosa*, L. Koch, Die Arach. des Austr., i., 1871, p. 112, tab. ix., figs. 4, 4a.

*Hab.*—Australia and New Zealand.

ARANEUS VIRIDIPES, *Dol.*

*Epeira viridipes*, Dol., Tweede Bijdr., 1859, p. 29, tab. i., figs. 7, 7a.

*Epeira nephilina*, L. Koch, Die Arach. des Austr., i., 1871, p. 90, tab. vii., figs. 6, 6a.

*Epeira viridipes*, Thor., Studi Ragni Mal. e Papuani, ii., 1878, p. 45; *op. cit.*, iii., 1881, p. 84.

*Epeira viridipes*, Keys., Die Arach. des Austr., Suppl., 1887, p. 167, tab. xiv., figs. 3, 3a.

*Hab.*—Amboina and Yule Islands, New Guinea; N. Australia.

ARANEUS WAGNERI, *Rainbow.*

*Epeira wagneri*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxii., 1896, p. 325, pl. xix., figs. 2, 2a-2d; Rec. Austr. Mus., vii., 4, 1909, p. 222.

*Hab.*—New South Wales.

*Genus* ÆREA, *Urquh.**Genus invisum et incertum.*ÆREA MAGNIFICA, *Urquh.*

*Ærea magnifica*, Urquh., Trans. Roy. Soc. Tasm., 1892 (1893), p. 119.

*Hab.*—Tasmania.

*Obs.*—This species is the type of the genus.

*Genus* HEURODES, *Keys.*HEURODES TURRITA, *Keys.*

*Heurodes turrita*, Keys., Die Arach. des Austr., Suppl., 1886, p. 116, tab. ix., figs. 3, 3a.

*Hab.*—Australia and Tasmania.

*Obs.*—This is the type species of the genus.

*Genus* CAREPALXIS, *L. Koch.*

*Obs.*—*Carepalxis montifera*, L. Koch., is the type of the genus.

## CAREPALXIS BEELZIBUB, von Has.

*Epeira beelzibub*, von Has., Tijds. Ent., viii., 2, 1873, p. 240,  
pl. xii., figs. a, b, c.

*Hab.*—Victoria.

## CAREPALXIS BILOBATA, Keys.

*Carepalxis bilobata*, Keys., Die Arach. des Austr., Suppl., 1886,  
p. 118, tab. ix., figs. 4, 4a.

*Hab.*—Queensland.

## CAREPALXIS CORONATA, Rainbow.

*Epeira coronata*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxii.,  
1896, p. 629, pl. xlix., fig. 1.

*Hab.*—New England District, New South Wales.

## CAREPALXIS FURCULA, Keys.

*Carepalxis furcula*, Keys., Die Arach. des Austr., Suppl., 1886,  
p. 121, tab. ix., figs. 6, 6a-6c.

*Hab.*—Queensland.

## CAREPALXIS MONTIFERA, L. Koch.

*Carepalxis montifera*, L. Koch, Die Arach. des Austr., i., 1871,  
p. 123, tab. x., figs. 1a-1f.

*Hab.*—Port Mackay, N. Queensland.

## CAREPALXIS TUBERCULATA, Keys.

*Carepalxis tuberculata*, Keys., Die Arach. des Austr., Suppl.,  
1886, p. 119, tab. ix., figs. 5, 5a-5b.

*Hab.*—Queensland and New South Wales.

*Genus* ACROASPIS, Karsch.

## ACROASPIS OLORINA, Karsch.

*Acroaspis olorina*, Karsch., Zeitschr. f. d. Ges. Naturw., li., 1878,  
p. 80.

*Hab.*—Melbourne, Victoria.

*Obs.*—This is the type species of this genus.

## ACROASPIS TUBERCULIFERA, Thor.

*Acroaspis tuberculifera*, Thor., Studi Ragni Mal. e Papuani, i., 1881, p. 52.

*Hab.*—Cape York, N. Queensland.

Genus *Gasteracantha* (*Sensu stricto*), Sundl.

(=*Plectana*, Walck.; *Angusta*, O. P. Cambr.; *Etrocantha*, Karsch.; *Isocya*, Simon; *Stanneoclatis*, Butler; also the subgenera: *Tetracantha*, *Collacantha*, *Atelacantha*, *Isacantha*, *Actinacantha*, and *Macrocantha*, Simon; *Anchacantha* and *Tutacantha*, Butl.; *Thelacantha*, von Has.).

*Obs.*—*Gasteracantha cancriformis*, Linn., is the type species of this genus.

## GASTERACANTHA MINAX, Thor.

*Gasteracantha minax*, Thor., Oefv. K. Vet.-Akad. Forh., xv. (1859), p. 301; Konl. Svenska Fregatten Engenies Resa Zool. Arach., i., 1865, p. 21.

*Gasteracantha flavomaculata*, Keys., Verh. der K.K. zool.-bot. Ges Wien., 1865, p. 801, tab. xix., figs. 8, 9.

*Gasteracantha minax*, Rainbow, Rec. Austr. Mus., vii., 4, 1909, p. 226, pl. lxiii., figs. 1, 2, 3.

*Hab.*—New South Wales, Victoria, S. and W. Australia.

## GASTERACANTHA MINAX, var. ASTRIGERA, L. Koch.

*Gasteracantha astrigera*, L. Koch, Die Arach. des Austr., i., 1871, p. 14, tab. i., figs. 9, 9a.

*Gasteracantha minax*, var. *astrigera*, Hogg, Proc. Roy. Soc. Viet., xiii., 1900, p. 79.

*Gasteracantha minax*, var. *astrigera*, Rainbow, Rec. Austr. Mus., vii., 4, 1909, p. 227.

*Hab.*—New South Wales and Victoria.

## GASTERACANTHA MINAX, var. LUGUBRIS, L. Koch.

*Gasteracantha lugubris*, L. Koch, Die Arach. des Austr., i., 1871, tab. i., fig. 8.

*Gasteracantha minax*, var. *lugubris*, Hogg, Proc. Roy. Soc. Viet., xiii., 1900, p. 79.



*Gasteracantha minax*, var. *lugubris*, Rainbow, Rec. Austr. Mus., vii., 4, 1909, p. 227.

*Hab.*—New South Wales and Victoria.

GASTERACANTHA OCELLATA, *Urquh.*

*Gasteracantha ocellata*, Urquh., Trans. N. Z. Inst., xx., 1888, p. 190, pl. xi.

*Hab.*—Norfolk Island.

GASTERACANTHA PENTAGONA, *Walck.*

*Plectana pentagona*, Walck., Hist. Nat. des Ins., Apt., ii., 1837, p. 168.

*Gasteracantha pentagona*, L. Koch, Die Arach. des Austr., i., 1871, p. 9.

*Hab.*—New Ireland; "Neuholland."

GASTERACANTHA QUADRISPINOSA, *O. P. Cambr.*

*Gasteracantha quadrispinosa*, O. P. Cambr., Proc. Zool. Soc., 1879, p. 281, pl. xxvi., fig. 1.

*Hab.*—Australia (Sydney).

GASTERACANTHA SACERDOTALIS, *L. Koch.*

*Gasteracantha sacerdotalis*, L. Koch., Die Arach. des Austr., i., 1871, p. 198, tab. xviii., fig. 1; *op. cit.*, Suppl., 1886, p. 94.

*Hab.*—N. Queensland and Pelew Islands.

GASTERACANTHA SIMONI, *O. P. Cambr.*

*Gasteracantha simoni*, O. P. Cambr., Proc. Zool. Soc., 1879, p. 289, pl. xxvii., fig. 18.

*Hab.*—Cape York, N. Queensland.

GASTERACANTHA SUMINATA, *L. Koch.*

*Gasteracantha suminata*, L. Koch, Die Arach. des Austr., i., 1871, p. 11, tab. i., figs. 7, 7a; Keys., *op. cit.*, Suppl., 1886, p. 97.

*Hab.*—N. Queensland, Pelew Islands, and New Caledonia.

GASTERACANTHA TAENIATA, *Walck.*

*Plectana taeniata*, Walck., Hist. Nat. des Ins., Apt., ii., 1837, p. 169.

*Gasteracantha taeniata*, L. Koch, Die Arach. des Austr., i., 1871, p. 10.

*Gasteracantha violenta*, L. Koch, *op. cit.*, p. 5, tab. i., fig. 3.

*Gasteracantha taeniata*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 8.

*Hab.*—Papua, Queensland, New South Wales, and the Falkland Isles.

GASTERACANTHA THEISII, *Guér.*

*Gasteracantha theisii*, Guér., Voy. Coquille, Zool., ii., 1830, p. 54

*Plectana prætectata*, Walck., Hist. Nat. des Ins., Apt., ii., 1837, p. 166.

*Gasteracantha prætectata*, L. Koch, Die Arach. des Austr., i., 1871, p. 8.

*Gasteracantha theisii*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 44

*Isacantha prætectata*, Keys., Die Arach. des Austr., Suppl., 1886, p. 94.

*Hab.*—Moreton Bay, Queensland; Papua.

GASTERACANTHA VARIEGATA, *Walck.*

*Plectana variegata*, Walk., Hist. Nat. des Ins., Apt., ii., 1837, p. 160.

*Gasteracantha variegata*, L. Koch, Die Arach. des Austr., i., 1871, p. 2; Keys., *op. cit.*, Suppl., 1886, p. 97.

*Gasteracantha variegata*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 27.

*Hab.*—Cape York, Bowen, and Palm Island, Great Barrier Reef, N. Queensland; Papua, Polynesia.

GASTERACANTHA WESTRINGII, *Keys.*

*Gasteracantha westringii*, Keys., Sitz. der Isis zu Dresden, 1863, p. 66.

*Gasteracantha westringii*, L. Koch, Die Arach. des Austr., i., 1871, p. 3, tab. i., fig. 2.

*Gasteracantha westringii*, Butl., Trans. Ent. Soc., 1873, p. 166.

*Hab.*—Australia.

*Genus* *Anepsia*, *L. Koch.*

*ANEPSIA RHOMBOIDES*, *L. Koch.*

*Epeira rhomboides*, Verh. der K.K. zool.-bot. Ges. Wien, 1867, p. 177.

*Anepsia rhomboides*, *L. Koch*, Die Arach. des Austr., i., 1871, p. 46, tab. iii., figs. 8, 8a-8e, 9, 9a.

*Hab.*—Rockhampton, N. Queensland, and the Island of Upolu.

*Obs.*—This is the type species of the genus.

*Genus* *Paraplectanoides*, *Keys.*

*Obs.*—*Paraplectanoides crassipes*, *Keys.*, is the type species of this genus.

*PARAPLECTANOIDES CERULA*, *Simon.*

*Paraplectanoides cerula*, *Simon*, Die Fauna Süd-west. Austr., i., 1908, p. 428.

*Hab.*—Dirk Hartog, Brown Station, W. Australia.

*PARAPLECTANOIDES CRASSIPES*, *Keys.*

*Paraplectanoides crassipes*, *Keys.*, Die Arach. des Austr., Suppl., 1886, p. 112, tab. ix., figs. 1, 1a-1c.

*Hab.*—Queensland and New South Wales.

? *PARAPLECTANOIDES KOCHII*, *O. P. Cambr.*

*Paraplectana kochii*, *O. P. Cambr.*, Ann. Mag. Nat. Hist., xix., 4, 1877, p. 35.

*Hab.*—Cape York, N. Queensland.

*Genus* *Cyrtarachne*, *Thor.*

(=*Cyrtogaster*, *Keys.* (*nom. praeocc.*); *Peltosoma*, *Sim.*; and *Dema*, *Karsch.*)

*Obs.*—*Cyrtarachne grubei*, *Keys.*, is the type species of this genus.

CYRTARACHNE LATIFRONS, *Hogg.*

*Cyrtarachne latifrons*, Hogg, Proc. Roy. Soc. Vict., xiii., 1900,  
p. 102, pl. xv., figs. 4, 5.

*Hab.*—Macedon, Victoria.

CYRTARACHNE LATIFRONS, *var. atuberculata*, *Hogg.*

*Cyrtarachne latifrons*, *var. atuberculata*, Hogg, Proc. Roy. Soc.  
Vict., xiii., 1900, p. 103.

*Hab.*—Macedon, Victoria.

CYRTARACHNE RUBICUNDA, *L. Koch.*

*Cyrtarachne rubicunda*, L. Koch, Die Arach. des Austr., i., 1871,  
p. 18.

*Hab.*—Sydney, New South Wales.

CYRTARACHNE SETOSA, *Keys.*

*Cyrtarachne setosa*, Keys., Die Arach. des Austr., Suppl., 1886,  
p. 98, tab. vii., fig. 5.

*Hab.*—Sydney, New South Wales.

CYRTARACHNE TRICOLOR, *Dol.*

*Plectana tricolor*, Dol., Tweede Bijdr., 1859, p. 44, tab. viii.,  
fig. 3.

*Cyrtarachne tricolor*, Thor., Studi Ragni Mal. e Papuani, iii.,  
1881, p. 57.

*Hab.*—Malaysia, Papua, and Somerset, Cape York, N. Queens-  
land.

*Genus* Pæcilopachys, *Simon.*PÆCILOPACHYS BISPINOSA, *Keys.*

*Cyrtarachne bispinosa*, Keys., Verh. der K.K. zool.-bot. Ges.  
Wien., 1865, p. 4; Keys., Die Arach. des Austr., Suppl.,  
1886, p. 98.

*Hab.*—New South Wales, Queensland, and the Island of  
Upolu.

*Obs.*—This is the type species of the genus.

PŒCILOPACHYS SPECIOSA, *L. Koch.*

*Cyrtarachne speciosa*, L. Koch, Die Arach. des Austr., i., 1871, p. 202, tab. xviii., figs. 3, 3a; Keys., *op. cit.*, Suppl., 1886, p. 98.

*Hab.*—Queensland.

PŒCILOPACHYS VERRUCOSA, *L. Koch.*

*Cyrtarachne verrucosa*, L. Koch, Die Arach. des Austr., i., 1871, p. 16, tab. ii. fig. 1; Keys., *op. cit.*, Suppl., 1886, p. 98.

*Cyrtarachne verrucosa*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 55.

*Hab.*—Gayndah, Queensland, and the Islands of Upolu and Aru.

*Genus Ordgarius, Keys.*

(=*Notocentria*, Thor.; *Eunesiotes*, Rainbow).

ORDGARIUS MONSTROSUS, *Keys.*

*Ordgarius monstrosus*, Keys., Die Arach. des Austr., Suppl., 1886, p. 114, tab. ix., figs. 2, 2a-2c.

*Hab.*—Peak Downs, Queensland.

*Obs.*—This is the type species of the genus.

*Genus Dicrostichus, Simon.*

*Obs.*—*Dicrostichus furcatus*, O. P. Cambr., is the type species of this genus.

DICROSTICHUS CALIGINOSUS, *Rainbow.*

*Cyrtarachne caliginosus*, Rainbow, Proc. Linn. Soc. N. S. Wales, xix., 1894, p. 155, pl. x., figs. 2, 2a, 2b.

*Dicrostichus caliginosus*, Simon, Hist. Nat. des Araign., i., 1892, p. 883, fig. 948.

*Hab.*—Sydney, New South Wales.

DICROSTICHUS FURCATUS, *O. P. Cambr.*

*Cyrtarachne furcata*, O. P. Cambr., Proc. Zool. Soc., 1877, p. 563, pl. lvi., fig. 2.

*Dicrostichus furcatus*, Rainbow, Rec. Austr. Mus., vii., 4, 1909, p. 229, pl. lxiv.

*Hab.*—New South Wales.

DICROSTICHUS FURCATUS, var. DISTINCTUS, *Rainbow*.

*Dicrostichus furcatus*, var. *distinctus*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxv., 1900, p. 492.

*Hab.*—N. Sydney, New South Wales.

DICROSTICHUS MAGNIFICUS, *Rainbow*.

*Dicrostichus magnificus*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxiii., 1897, pp. 523 and 539, text-figs. 2, 3, pl. xvii., figs. 8, 8a, 8b; Rec. Austr. Mus., vii., 4, 1909, p. 229.

*Hab.*—New South Wales.

Genus *Poltys*, C. Koch.

(= *Pleuromma*, Dol.; *Cyphogogus*, Günther; *Mastigosoma*, Auss.; *Rhyncharachne* et *Gerrosoma*, Bradley).

*Obs.*—*Poltys illepidus*, C. Koch, is the type species of this genus.

POLTYS BIMACULATUS, *Keys*.

*Poltys bimaculatus*, Keys., Die Arach. des Austr., Suppl., p. 131, tab. x., fig. 4.

*Poltys bimaculatus*, Rainbow, Rec. Austr. Mus., vii., 4, 1909, p. 231.

*Hab.*—Queensland and New South Wales.

POLTYS CORONATUS, *Keys*.

*Poltys coronatus*, Keys., Die Arach. des Austr., Suppl., 1886, p. 128, tab. x., figs. 2, 2a.

*Hab.*—Cape York, N. Queensland.

POLTYS FRENCH, *Hogg*.

*Poltys frenchi*, Hogg, Proc. Roy. Soc. Vict., xi., 1899, p. 143, pl. xiii., figs. 2, 2a-2g.

*Hab.*—Upper Endeavour River, Queensland.

POLTYS KEYSERLINGI, *Keys.*

*Poltys keyserlingi*, Keys., Die Arach. des Austr., Suppl., 1886,  
p. 129, tab. x., fig. 3.

*Hab.*—Gayndah, Queensland.

POLTYS LACINOSUS, *Keys.*

*Poltys lacinosus*, Keys., Die Arach. des Austr., Suppl., 1886,  
p. 123, tab. ix., figs. 7, 7a, 7b, 7c.

*Hab.*—Peak Downs, Queensland.

POLTYS MAMMEATUS, *Keys.*

*Poltys mammeatus*, Keys., Die Arach. des Austr., Suppl., 1886,  
p. 125, tab. x., figs. 1, 1a.

*Hab.*—Peak Downs, Queensland.

POLTYS MULTITUBERCULATUS, *Rainbow.*

*Poltys multituberculatus*, Rainbow, Rec. Austr. Mus., iii., 4,  
1898, p. 82, pl. xviii., figs. 2, 2a, 2b.

*Hab.*—Cooktown, N. Queensland.

POLTYS SALEBROSUS, *Rainbow.*

*Poltys salebrosus*, Rainbow, Rec. Austr. Mus., v., 2, 1904, p. 30,  
figs. 28, 29

*Hab.*—Fremantle, W. Australia.

Genus *Celænia*, *Thor.*

(=*Cyrtogaster*, L. Koch ; *Thlaosoma*, O. P. Cambr.).

*Obs.*—*Celænia kimbergi*, Thor., is the type species of this  
genus.

CELENIA CALOTOIDES, *Rainbow.*

*Celænia calotoides*, Rainbow, Rec. Austr. Mus., vii., 1, 1908,  
pp. 44, 46, figs. 2 and 4.

*Hab.*—Parkville, near Scone, New South Wales.

CELENIA DISTINCTA, *O. P. Cambr.*

*Celænia distincta*, O. P. Cambr., Journ. Linn. Soc., Zool., x.,  
1870, p. 274, pl. ix., figs. 36-38.

*Celœnia distincta*, L. Koch, Die Arach. des Austr., i., 1871, p. 238.

*Celœnia distincta*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxvii., 1902, p. 488, pl. xviii., figs. 4, 4a-4e; Rec. Austr. Mus., vii., 4, 1909, p. 231.

*Hab.*—New South Wales.

CELEŒNIA DUBIA, O. P. Cambr.

*Thlaosoma dubium*. O. P. Cambr., Journ. Linn. Soc., Zool., x., 1870, p. 272, pl. ix., figs. 25-35.

*Celœnia dubia*, L. Koch, Die Arach. des Austr., i., 1871, p. 236.

*Hab.*—New South Wales and Victoria.

CELEŒNIA EXCAVATA, L. Koch.

*Cyrtogaster excavata*, L. Koch, Verh. der K. K. zool.-bot. Ges. Wien, 1867, p. 175.

*Celœnia excavata*, L. Koch, Die Arach. des Austr., i., 1871, p. 234, tab. xx., figs. 1, 1a-1h.

*Celœnia excavata*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxii., 1896, p. 336; Rec. Austr. Mus., vii., 4, 1909, p. 231, pl. lxiii., fig. 4.

*Hab.*—Queensland, New South Wales, Victoria, S. Australia, and Tasmania.

CELEŒNIA KIMBERGII, Thor.

*Celœnia kimbergii*, Thor., Svenska Fregatten Eugenies Resa Zool. Arach. i., 1863, p. 1.

*Celœnia kimbergii*, L. Koch, Die Arach. des Austr., i., 1871, p. 25.

*Hab.*—Australia.

Genus Arcys, Walck.

*Obs.*—*Arcys lancearius* is the type species of this genus.

ARCYS ALATUS, Keys.

*Arcys alatus*, Keys., Die Arach. des Austr., Suppl., 1890, p. 257, tab. xxiii., figs. 8, 8a, 8b.

*Hab.*—Sydney, New South Wales.



ARCYS CLAVATUS, *Keys.*

*Arcys clavatus*, Keys, Die Arach. des Austr., Suppl., 1890, p. 259, tab. xxiv., figs. 1, 1a, 1b, 2, 2a.

*Hab.*—New South Wales and Victoria.

ARCYS CORNUTUS, *L. Koch.*

*Arcys cornutus*, L. Koch, Die Arach. des Austr., i, 1871, p. 218, tab. xix., figs. 2, 2a, 2b, 2c; *op. cit.*, Keys., Suppl., 1890, p. 256, tab. xxiii., fig. 7.

*Arcys cornutus*, Rainbow, Rec. Austr. Mus., vii., 4, 1909, p. 232.

*Hab.*—Queensland and New South Wales.

ARCYS LANCEARIUS, *Walck.*

*Arcys (Arkys) lancearius*, Walck., Hist. Nat. des Ins., Apt., i, 1837, pl. 497.

*Arcys lancearius*, L. Koch, Die Arach. des Austr., i, 1871, p. 216, tab. xix., figs. 1, 1a-1d; *op. cit.*, Keys., Suppl., 1890, p. 258, tab. xxiii., figs. 9, 9a, 9b.

*Arcys lancearius*, Rainbow, Rec. Austr. Mus., vii., 4, p. 232.

*Hab.*—Queensland, New South Wales, Victoria, and Tasmania.

ARCYS NITIDICEPS, *Simon.*

*Arcys nitidiceps*, Simon, Die Fauna Süd-west Austr., i, 1908, p. 429.

*Hab.*—Torbay, W. Australia.

*Genus Archemorus, Simon.*

*Obs.*—*Archemorus simonsi*, Simon, is the type species of this genus.

ARCHEMORUS CURTULUS, *Simon.*

*Archemorus curtulus*, Simon, Ann. Soc. Ent. Belg., xlvi., 1903, p. 27.

*Hab.*—Eastern Australia.

ARCHEMORUS SIMONI, *Simon.*

*Archemorus simoni*, Simon, Ann. Soc. Ent. France, 1893, p. 328; Hist. Nat. des Araign., i, 1892, p. 898, fig. 976.

*Hab.*—Tasmania and (?) Victoria.

*Genus Dolophones, Walck.*(=*Tholia*, L. Koch).

*Obs.*—*Dolophones notacantha*, Walck., is the type species of this genus.

DOLOPHONES CLYPEATA, *L. Koch.*

*Tholia clypeata*, L. Koch, Die Arach. des Austr., i., 1871, p. 23, tab. ii., figs. 4, 5, 5a.

*Tholia* (?) *clypeata*, Butler, Cist. Ent., 1876, p. 349.

*Hab.*—? Rockhampton, N. Queensland; Island of Ceram, Moluccas.

DOLOPHONES CONIFERA, *Keys.*

*Tholia conifera*, Keys., Die Arach. des Austr., Suppl., 1886, p. 109, tab. viii., figs. 6, 6a.

*Hab.*—Queensland, New South Wales, Victoria, W. Australia.

DOLOPHONES MACLEAYI, *Bradley.*

*Tholia macleayi*, Bradley, Proc. Linn. Soc. N. S. Wales, i., 1877, p. 140, pl. i., fig. 2.

*Hab.*—Palm Island and Cleveland Bay, N. Queensland.

DOLOPHONES MAMMEATA, *Keys.*

*Tholia mammeata*, Keys., Die Arach. des Austr., Suppl., 1886, p. 107, tab. viii., figs. 4, 4a, 4b, 5, 5a.

*Hab.*—Australia.

DOLOPHONES MAXIMUS, *Hogg.*

*Dolophones maximus*, Hogg, Proc. Roy. Soc. Vict., xiii., 1900, p. 104, pl. xv., fig. 5.

*Hab.*—Victoria.

DOLOPHONES NASALIS, *Butler.*

*Tholia nasalis*, Butler, Cist. Ent., 1876, p. 349, pl. x., figs. 4, 5.

*Hab.*—Queensland.

DOLOPHONES PELTATA, *Keys.*

*Tholia peltata*, Keys., Die Arach. des Austr., Suppl., 1886, p. 100, tab. vii., figs. 6, 6a.

*Hab.*—? Locality. Keyserling (*supra*) remarks: "In Bradley's Sammlung ein Exemplar ohne nähere Angabe des Vorkommens."

DOLOPHONES PILOSA, *L. Koch.*

*Tholia pilosa*, *L. Koch*, *Keys.*, *Die Arach. des Austr.*, Suppl., 1886, p. 105, tab. viii., figs. 2, 2*a*, 3, 3*a*, 3*b*.

*Dolophones pilosa*, *Rainbow*, *Rec. Austr. Mus.*, vii., 4, p. 233.

*Hab.*—Queensland, New South Wales, and Victoria.

DOLOPHONES SIMPLA, *Keys.*

*Tholia simpla*, *Keys.*, *Die Arach. des Austr.*, Suppl., 1886, p. 110, tab. viii., figs. 7, 7*a*, 7*b*.

*Hab.*—Sydney, New South Wales.

DOLOPHONES TESTUDINEA, *L. Koch.*

*Tholia testudinea*, *L. Koch*, *Die Arach. des Austr.*, i., 1871, p. 20, tab. ii., figs. 2, 2*a-2c*; *op. cit.*, p. 204, tab. xviii., figs. 4, 4*a*, 4*b*.

*Dolophones testudinea*, *Simon*, *Hist. Nat. des Araign.*, i., 1892, p. 903 (footnote).

*Dolophones testudinea*, *Rainbow*, *Rec. Austr. Mus.*, vii., 4, 1909, p. 233.

*Hab.*—N. Queensland, New South Wales, Victoria, and New Caledonia.

DOLOPHONES TUBERCULATA, *Keys.*

*Dolophones tuberculata*, *Keys.*, *Die Arach. des Austr.*, Suppl., 1886, p. 102, tab. vii., figs. 7, 7*a*; tab. viii., figs. 1, 1*a*, 1*b*.

*Dolophones tuberculata*, *Rainbow*, *Rec. Austr. Mus.*, vii., 4, 1909, p. 233.

*Hab.*—Bungendore, New South Wales.

DOLOPHONES TURRIGERA, *L. Koch.*

*Gasteracantha turrigera*, *L. Koch*, *Verh. der K.K. zool.-bot. Ges. Wien*, 1867, p. 173.

*Tholia turrigera*, *L. Koch*, *Die Arach. des Austr.*, i., 1871, p. 22, tab. ii., figs. 4, 5, 5*a*.

*Dolophones turrigera*, *Rainbow*, *Rec. Austr. Mus.*, vii., 4, 1909, p. 233.

*Hab.*—Queensland and New South Wales.

*Genus* Billima, Simon.

## BILLIMA ATTRITA, Simon.

*Billima attrita*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 430.

*Hab.*—Subiaco North, W. Australia.

*Obs.*—This is the type species of the genus.

*Genus* Chasmocephalon, O. P. Cambr.

## CHASMOCEPHALON NEGLECTUM, O. P. Cambr.

*Chasmocephalon neglectum*, O. P. Cambr., Proc. Zool. Soc. Lond., 1889, p. 45, pl. ii., fig. 6.

*Chasmocephalon neglectum*, Rainbow, Rec. Austr. Mus., vii., 4, p. 233.

*Hab.*—Swan River, W. Australia.

*Obs.*—This is the type species of the genus.

*Family* MIMETIDÆ.*Genus* Mimetus, Hentz.

(=*Ctenophora*, Blackw.).

*Obs.*—*Mimetus interjector*, Hentz, is the type species of this genus.

## MIMETUS MACULOSUS, Rainbow.

*Mimetus maculosus*, Rainbow, Rec. Austr. Mus., v., 5, 1904, p. 330, text-figs. 40, 41, 42, pl. xlvii., figs. 5, 6.

*Hab.*—Jenolan Caves District, New South Wales.

*Family* THOMISIDÆ.*Subfamily* MISUMENINÆ.*Genus* Amyciava, Simon.

(=*Amycle*, O. P. Cambr., *nom. præocc.*).

*Obs.*—*Amyciava forticeps*, O. P. Cambr., is the type species of this genus.

## AMYCLÆA ALBOMACULATA, O. P. Cambr.

*Amyclæa albomaculata*, O. P. Cambr., Ann. Mag. Nat. Hist.,  
xiv., 4, 1874, p. 178

*Hab.*—N. Australia.

*Genus Tmarus, Simon.*

( = *Monastes*, Lucas ; *Monæses*, Thor., *ad part.*).

*Obs.*—*Tmarus piger*, Walck., is the type species of this genus.

## TMARUS ALBIDUS, L. Koch.

*Monæses albidus*, L. Koch, Die Arach. des Austr., ii., 1876,  
p. 778, tab. lxxviii., figs. 3, 3a.

*Hab.*—Gayndah, Queensland.

## TMARUS ANGULATUS, L. Koch.

*Monæses angulatus*, L. Koch, Die Arach. des Austr., i., 1873,  
p. 523, tab. xl., fig. 1 ; *op. cit.*, ii., 1876, p. 781.

*Hab.*—Queensland and New South Wales.

## TMARUS CINERACEUS, L. Koch.

*Monæses cineraceus*, L. Koch, Die Arach. des Austr., i., p. 768,  
1876, tab. lxxii., figs. 5, 5a, 6, 6a.

*Hab.*—Peak Downs, Rockhampton, and Gayndah.

## TMARUS MACILENTUS, L. Koch.

*Monæses macilentus*, L. Koch, Die Arach. des Austr., ii., 1876,  
p. 773, tab. lxxvii., fig. 8.

*Hab.*—Peak Downs, Queensland.

## TMARUS MARMOREUS, L. Koch.

*Monæses marmoreus*, L. Koch, Die Arach. des Austr., i., 1876,  
tab. lxxvii., figs. 7, 7a.

*Hab.*—N. Queensland to Tweed River, New South Wales.

## TMARUS PROJECTUS, L. Koch.

*Monæses projectus*, L. Koch, Die Arach. des Austr., ii., 1876,  
p. 780, tab. lxxviii., figs. 4, 4a.

*Hab.*—Peak Downs, Queensland.

TMARUS TRUNCATUS, *L. Koch.*

*Monases truncatus*, L. Koch, Die Arach. des Austr., i., 1876, p. 765, tab. lxxvii., figs. 3, 3a, 4, 4b.

*Hab.*—Peak Downs, Queensland.

TMARUS VARIABILIS, *L. Koch.*

*Monases variabilis*, L. Koch, Die Arach. des Austr., ii., 1876, p. 775, tab. lxxviii., figs. 1, 1a, 2, 2a.

*Hab.*—Gayndah, Peak Downs, and Port Mackay, Queensland.

*Genus Monases, Thor.*

(= *Monastes*, Lucas, *nom. præocc.*; *Rhyncognatha*, Thor.).

*Obs.*—*Monases paradoxus*, Lucas, is the type species of this genus.

MONÆSES BREVICAUDATUS, *L. Koch.*

*Monases brevicaudatus*, L. Koch, Die Arach. des Austr., i., 1873, p. 526, tab. xl., fig. 3; *op. cit.*, ii., 1876, p. 775.

*Hab.*—Peak Downs and Rockhampton, Queensland.

MONÆSES XYPHOIDES, *L. Koch.*

*Monases xyphoïdes*, L. Koch, Die Arach. des Austr., i., 1873, p. 525, tab. xl., fig. 2; *op. cit.*, ii., 1876, p. 775.

*Hab.*—Peak Downs and Port Mackay, Queensland.

*Genus Porrhopis, L. Koch.*

*Obs.*—*Porrhopis flavifrons*, L. Koch, is the type of this genus.

PORRHOPIS CALLIPODA, *Thor.*

*Porrhopis callipoda*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 359.

*Hab.*—Somerset, Cape York, N. Queensland, and Yule Island.

PORRHOPIS FLAVIFRONS, *L. Koch.*

*Porrhopis flavifrons*, L. Koch, Die Arach. des Austr., ii., 1876, p. 807, tab. lxxix., figs. 9, 9a-9c.

*Hab.*—Peak Downs, Queensland.

PORRHOPIS NITIDULA, *Thor.*

*Porrhopis nitidula*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 362.

*Porrhopis nitidula*, Simon, Hist. Nat. des Araign., i., 1892, p. 1001, fig. 1067.

*Hab.*—Somerset, Cape York, N. Queensland.

PORRHOPIS TRISTICULA, *Thor.*

*Porrhopis tristicula*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 364.

*Hab.*—Somerset, Cape York, N. Queensland.

*Genus Bomis, L. Koch.*BOMIS LARVATA, *L. Koch.*

*Bomis larvata*, L. Koch, Die Arach. des Austr., i., 1873, p. 528, tab. xl., figs. 4, 4a-4d; *op. cit.*, ii., 1876, p. 798, tab. lxix., figs. 4, 4a.

*Bomis larvata*, Simon, Hist. Nat. des Araign., i., 1892, p. 1003, figs. 1068, 1069; Die Fauna Süd-west Austr., i., 1908, p. 430.

*Hab.*—Port Mackay and Rockhampton, N. Queensland, and Dirk Hartog, W. Australia.

*Obs.*—This is the type species of this genus.

*Genus Corynethrix, L. Koch.*CORYNETHRIX OBSCURUS, *L. Koch.*

*Corynethrix obscurus*, L. Koch, Die Arach. des Austr., ii., 1876, p. 805, tab. lxix., figs. 8, 8a-8d.

*Hab.*—Peak Downs, N. Queensland.

*Obs.*—This is the type species of this genus.

*Genus Cymbacha, L. Koch.*

*Obs.*—*Cymbacha festiva*, L. Koch, is the type species of this genus.

CYMBACHA CEREÆ, *L. Koch*

*Cymbacha cerea*, L. Koch, Die Arach. des Austr., ii., 1876, p. 789, tab. lxix., figs. 1, 1a-1d.

*Hab.*—Peak Downs, Queensland.

CYMBACHA FESTIVA, *L. Koch.*

*Cymbacha festiva*, L. Koch, Die Arach. des Austr., i., 1874, p. 539, tab. xli., figs. 3, 3a-3e; *op. cit.*, ii., 1876, p. 791.

*Cymbacha festiva*, Simon, Hist. Nat. des Araign., i., 1892, p. 1008, figs. 1072-1074.

*Cymbacha festiva*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxii., 1896, p. 337; *op. cit.*, xxiii., 1897, p. 550, pl. xviii., fig. 7.

*Hab.*—Queensland and New South Wales.

CYMBACHA OCELLATA, *L. Koch.*

*Cymbacha ocellata*, L. Koch, Die Arach. des Austr., i., 1874, p. 544, tab. xli., fig. 6.

*Hab.*—Queensland and New South Wales.

CYMBACHA SAUCIA, *L. Koch.*

*Cymbacha saucia*, L. Koch, Die Arach. des Austr., i., 1874, p. 542, tab. xli., figs. 5, 5a, 5b.

*Cymbacha saucia*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 358.

*Cymbacha saucia*, Simon, Hist. Nat. des Araign., i., p. 1008, fig. 1075.

*Cymbacha saucia*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxii., 1896, p. 337.

*Hab.*—Queensland and New South Wales.

CYMBACHA SETOSA, *L. Koch.*

*Cymbacha setosa*, L. Koch, Die Arach. des Austr., i., 1874, p. 546, tab. xlii., figs. 1, 1a.

*Hab.*—Rockhampton, N. Queensland.

CYMBACHA SIMILIS, *L. Koch.*

*Cymbacha similis*, L. Koch, Die Arach. des Austr., ii., 1874, p. 785, tab. lxviii., figs. 6, 6a.

*Hab.*—New South Wales, Victoria, and Tasmania.

CYMBACHA STRIATIPES, *L. Koch.*

*Cymbacha striatipes*, L. Koch, Die Arach. des Austr., ii., 1876, p. 783, tab. lxviii., fig. 5.

*Hab.*—Peak Downs, N. Queensland.



*Genus Tharpyua, L. Koch.*

*Obs*—*Tharpyua diademata*, L. Koch, is the type species of this genus.

THARPYUA ALBO-SIGNATA, *L. Koch.*

*Tharpyua albo-signata*, L. Koch, Die Arach. des Austr., ii., 1876, p. 791, tab. lxxviii., fig. 8, 8a, 9, 9a.

*Hab.*—Queensland and New South Wales.

THARPYUA CAMPESTRATA, *L. Koch.*

*Tharpyua campestrata*, L. Koch, Die Arach. des Austr., i., 1874, p. 551, tab. xlii., figs. 4, 4a, 5, 5a-5c.

*Hab.*—Cape York, N. Queensland, to W. Australia.

THARPYUA DIADEMATA, *L. Koch.*

*Tharpyua diademata*, L. Koch, Die Arach. des Austr., i., 1874, p. 548, tab. xlii., figs. 2, 2a-2d.

*Hab.*—Fitzroy Island, Gulf of Carpentaria, Queensland, Sydney, New South Wales, Victoria, and Lord Howe Island.

THARPYUA HIRSUTA, *L. Koch.*

*Tharpyua hirsuta*, L. Koch, Die Arach. des Austr., i., 1875, p. 602, figs. 4, 4a.

*Hab.*—Australia.

THARPYUA MUNDA, *L. Koch.*

*Tharpyua munda*, L. Koch, Die Arach. des Austr., i., 1875, p. 600, tab. xlvii., fig. 3.

*Hab.*—Australia.

THARPYUA VENUSTA, *L. Koch.*

*Dicæa venusta*, L. Koch, Die Arach. des Austr., i., 1874, p. 574, tab. xlv., figs. 4, 4a, 5, 5a; *op. cit.*, ii., 1876, p. 823.

*Hab.*—Sydney, New South Wales.

*Genus Pæcilothomismus, Simon.*PÆCILOTHOMISUS SPECIOSUS, *Thor.*

*Platythomismus speciosus*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 327.

*Hab.*—N. Australia.

*Obs.*—This is the type species of the genus.

*Genus Thomisus, Walck.*(=*Daralius*, Thor.).*Obs.*—*Thomisus albus*, Gmel., is the type species of this genus.THOMISUS PUSTULOSUS, *L. Koch.**Xysticus pustulosus*, *L. Koch*, Verh. der K.K. zool.-bot., Ges. Wien., 1867, p. 220.*Misumena pustulosa*, *L. Koch*, Die Arach. des Austr., i., 1874, p. 531, tab. xl., figs. 6, 6a, 7, 7a.*Pistius pustulosus*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 331.*Hab.*—Queensland, New Guinea, and New Britain.*Genus Runcinia, Simon.*(=*Runciniopsis*, Simon; *Machomenus*, Marx.).RUNCINIA ELONGATA, *L. Koch.**Misumena elongata*, *L. Koch*, Die Arach. des Austr., i., 1874, p. 529, tab. xl., fig. 5, 5a; *op. cit.*, ii., 1876, p. 803.*Pistius acuminatus*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 333.*Hab.*—Queensland.*Obs.*—This is the type species of the genus.*Genus Diaea, Thor.**Obs.*—*Diaea dorsata*, Fab., is the type species of this genus.DIEA ADUSTA, *L. Koch.**Xysticus adustus*, *L. Koch*, Verh. der K.K. zool.-bot. Ges. Wien, 1867, p. 214.*Diaea adusta*, *L. Koch*, Die Arach. des Austr., i., 1874, p. 576, xlv., figs. 6, 6a; *op. cit.*, ii., 1876, p. 824.*Hab.*—Queensland.DIEA ALBICERIS, *L. Koch.**Misumena albiceris*, *L. Koch*, Die Arach. des Austr., ii., 1876, p. 801, tab. lxxix., figs. 6, 6a.*Hab.*—Peak Downs, Queensland.

DLEA CÆCUTIENS, *L. Koch.*

*Dicæ cæcutiens*, L. Koch, Die Arach. des Austr., ii., 1876, p. 813, tab. lxx., figs. 3, 3a.

*Hab.*—Peak Downs, N. Queensland.

DLEA CIMICINA, *Thor.*

*Dicæ cimicina*, Thor., Studi Ragni Mal. e Papuanî, iii., 1881, p. 342.

*Hab.*—New Guinea and N. Queensland.

DLEA CIRCUMLITA, *L. Koch.*

*Dicæ circumlita*, L. Koch, Die Arach. des Austr., ii., 1876, p. 817, tab. lxx., figs. 5, 5a.

*Hab.*—Queensland and New South Wales.

DLEA DIMIDIATA, *L. Koch.*

*Xysticus dimidiatus*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien, 1867, p. 210.

*Dicæ dimidiata*, L. Koch, Die Arach. des Austr., i., 1875, p. 591, tab. xlvi., fig. 3.

*Hab.*—Brisbane, Queensland.

DLEA ELEGANS, *L. Koch.*

*Dicæ elegans*, L. Koch, Die Arach. des Austr., ii., 1876, p. 815, lxx., figs. 4, 4a-4c.

*Hab.*—Sydney, New South Wales.

DLEA EVANIDA, *L. Koch.*

*Xysticus evanidus*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien, 1867, p. 569.

*Dicæ evanida*, L. Koch, Die Arach. des Austr., i., 1874, p. 569, tab. xlv., figs. 1, 1a.

*Hab.*—Queensland.

DLEA HÆMATODACTYLA, *L. Koch*

*Dicæ hæmatodactyla*, L. Koch, Die Arach. des Austr., i., 1875, p. 584, tab. xlv., figs. 4, 4a.

*Hab.*—Port Mackay, N. Queensland.

DLEA INSECTA, *L. Koch.*

*Dicæ insecta*, L. Koch, Die Arach. des Austr., i., 1875, p. 579,  
tab. xlv., figs. 1, 1a.

*Hab.*—Rockhampton, N. Queensland.

DLEA JACUNDA, *Thor.*

*Dicæ jacunda*, Thor., Studi Ragni Mal. e Papuani, iii., 1881,  
p. 340.

*Hab.*—Cape York, N. Queensland.

DLEA LACTEA, *L. Koch.*

*Misumena lactea*, L. Koch, Die Arach. des Austr., ii., 1876,  
p. 799, tab. lxi., figs. 6, 6a.

*Hab.*—New South Wales and Victoria.

DLEA MOLLIS, *L. Koch.*

*Dicæ mollis*, L. Koch, Die Arach. des Austr., i., 1875, p. 587,  
tab. xlv., figs. 6, 6a.

*Hab.*—Rockhampton, N. Queensland.

DLEA MULTIMACULATA, *Rainbow.*

*Dicæ multimaculata*, Rainbow, Rec. Austr. Mus., v., 2, 1904,  
p. 106, figs. 30, 31.

*Hab.*—Perth, W. Australia.

DLEA MULTIPUNCTATA, *L. Koch.*

*Dicæ multipunctata*, L. Koch, Die Arach. des Austr., i., 1874,  
p. 565, tab. xliii., figs. 5, 5a.

*Hab.*—Queensland and New South Wales.

DLEA OLIVACEA, *L. Koch.*

*Dicæ olivacea*, L. Koch, Die Arach. des Austr., i., 1875, p. 589,  
tab. xlvi., figs. 2, 2a.

*Hab.*—King George Sound, W. Australia.

DLEA PLUMBEEA, *L. Koch.*

*Dicæ plumbea*, L. Koch, Die Arach. des Austr., i., 1875, p. 595,  
tab. xlvi., figs. 6, 6a.

*Hab.*—New South Wales.

DLEA PRASINA, *L. Koch.*

*Dicæa prasina*, L. Koch, Die Arach. des Austr., ii., 1876, p. 819, tab. lxx., figs. 6, 6a.

*Dicæa prasina*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 339.

*Hab.*—Queensland and New South Wales.

DLEA PUNCTATA, *L. Koch.*

*Dicæa punctata*, L. Koch, Die Arach. des Austr., i., 1875, p. 592, tab. xlvi., figs. 4, 4a.

*Hab.*—Queensland and New South Wales.

DLEA PUNCTIPES, *L. Koch.*

*Dicæa punctipes*, L. Koch, Die Arach. des Austr., i., 1875, p. 583, tab. xlv., figs. 3, 3a.

*Hab.*—Rockhampton, N. Queensland.

DLEA ROSEA, *L. Koch.*

*Dicæa rosea*, L. Koch, Die Arach. des Austr., i., 1875, p. 581, tab. xlv., figs. 2, 2a; *op. cit.*, ii., 1876, p. 821, tab. lxx., figs. 8, 8a.

*Hab.*—Sydney, New South Wales.

DLEA TENUIS, *L. Koch.*

*Dicæa tenuis*, L. Koch, Die Arach. des Austr., i., 1875, p. 586, tab. xlv., fig. 5; *op. cit.*, ii., 1876, p. 823.

*Hab.*—N. Queensland and New South Wales.

DLEA TRISTANIA, *Rainbow.*

*Misumena tristania*, Rainbow, Rec. Austr. Mus., iii., 7, 1900, p. 171, pl. xxx., figs. 1, 1a.

*Hab.*—Cobbity, New South Wales.

DLEA TUMEFACATA, *L. Koch.*

*Dicæa tumefacata*, L. Koch, Die Arach. des Austr., i., 1874, p. 572, tab. xlv., figs. 3, 3a, 3b; *op. cit.*, ii., 1876, p. 824.

*Hab.*—Port Mackay and Rockhampton, N. Queensland, and Sydney, New South Wales.

DIEA VARIABILIS, *L. Koch.*

*Diea variabilis*, L. Koch, Die Arach. des Austr., i., 1875, p. 578, tab. xlv., figs. 7, 7a.

*Hab.*—Queensland and New South Wales.

DIEA VELATA, *L. Koch.*

*Diea velata*, L. Koch, Die Arach. des Austr., ii., 1876, p. 820, tab. lxx., figs. 7, 7a.

*Hab.*—Queensland.

DIEA XANTHOGASTER, *L. Koch.*

*Misumena xanthogaster*, L. Koch, Die Arach. des Austr., i., 1875, p. 597, tab. xlvii., figs. 1, 1a.

*Hab.*—New South Wales.

Genus *Xysticus*, *C. Koch.*

(=*Psammitis*, *Spiracme*, et *Coriarachne*, Menge).

*Obs.*—*Xysticus cristatus*, C. Koch, is the type species of this genus.

XYSTICUS AUTUMNALIS, *L. Koch.*

*Xysticus autumnalis*, L. Koch, Die Arach. des Austr., i., 1875, p. 609, tab. xlviii., figs. 3, 3a.

*Hab.*—New South Wales.

XYSTICUS BILIMBATUS, *L. Koch.*

*Xysticus bilimbatus*, L. Koch, Die Arach. des Austr., i., 1875, p. 607, tab. xlviii., fig. 2.

*Hab.*—Sydney, New South Wales.

XYSTICUS BIMACULATUS, *L. Koch.*

*Xysticus bimaculatus*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien, 1867, p. 215; Die Arach. des Austr., i., 1874, p. 554, tab. xlii., figs. 6, 6a; *op. cit.*, ii., 1876, p. 809, tab. lxx., figs. 1, 1a, 1b.

*Hab.*—Queensland.

*Xysticus cruentatus*, *L. Koch.*

*Xysticus cruentatus*, L. Koch, Die Arach. des Austr., i, 1874, p. 558, tab. xliii., figs. 1, 1a; *op. cit.*, i, 1875, p. 607, tab. xlviii., figs. 1, 1a, 1b.

*Hab.*—Sydney, New South Wales, and Victoria.

*Xysticus demelii*, *L. Koch.*

*Xysticus demelii*, L. Koch, Die Arach. des Austr., i, 1874, p. 561, tab. xliii., figs. 3, 3a.

*Hab.*—New South Wales and Victoria.

*Xysticus geometres*, *L. Koch.*

*Xysticus geometres*, L. Koch, Die Arach. des Austr., i, 1874, p. 556, tab. xliii., figs. 7, 7a.

*Hab.*—Bowen, N. Queensland.

*Xysticus inornatus*, *L. Koch.*

*Xysticus inornatus*, L. Koch, Die Arach. des Austr., ii, 1876, p. 811, tab. lxx., figs. 2, 2a.

*Hab.*—Sydney, New South Wales.

*Xysticus periscelis*, *Simon.*

*Xysticus periscelis*, Simon, Die Fauna Süd-west Austr., i, 1908, p. 431.

*Hab.*—West Australia.

*Xysticus pilula*, *L. Koch.*

*Xysticus pilula*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien, 1867, p. 212; Die Arach. des Austr., i, 1874, p. 563, tab. xliii., figs. 4, 4a, 4b.

*Hab.*—Queensland and New South Wales.

*Xysticus walesianus*, *Karsch.*

*Xysticus walesianus*, Karsch, Z. Ges. Naturw., iii., 3, 1879, p. 881.

*Hab.*—New South Wales.

*Genus Saccodomus*, *Rainbow.**Saccodomus formivorus*, *Rainbow.*

*Saccodomus formivorus*, Rainbow, Rec. Austr. Mus., iii., 7, 1900, pp. 169, 174, pl. xxx., figs. 2, 2a-2e; see Proc. Linn. Soc. N. S. Wales, xviii., 1897, p. 549, pl. xviii., figs. 6, 6a (Misuminæ).

*Hab.*—Allalong, Williams River, and Tamworth, New South Wales.

*Obs.*—This is the type species of the genus.

Subfamily STEPHANOPSINÆ.

Genus *Tharrhalea*, L. Koch.

(=*Cerinius*, Thor.).

THARRHALEA ALBIPES, L. Koch.

*Tharrhalea albipes*, L. Koch, Die Arach. des Austr., i., 1875, p. 604, tab. xlvii, figs. 5, 5a, 6.

*Hab.*—Cape York, N. Australia.

*Obs.*—This is the type species of the genus.

THARRHALEA IRRORATA, Thor.

*Cerinius irroratus*, Thor., Studi Ragni Mal. e Papuan, iii., 1881, p. 355.

*Hab.*—Cape York, N. Queensland.

Genus *Hedana*, L. Koch.

(=*Cetuma*, Simon; *Erissus* et *Isaloides*, F. O. P. Cambr.).

*Obs.*—*Hedana gracilis*, L. Koch, is the type species of this genus.

HEDANA GRACILIS, L. Koch.

*Hedana gracilis*, L. Koch, Die Arach. des Austr., i., 1874, p. 534, tab. xli., figs. 1, 1a, 1b, 1c.

*Hab.*—Sydney, New South Wales.

HEDANA MACULOSA, Hogg.

*Hedana maculosa*, Hogg, Rep. Horn Expl. Exped., ii., Zoology, 1896, p. 335, pl. 24, fig. 11.

*Hab.*—Central Australia.

HEDANA VALIDA, L. Koch.

*Hedana valida*, L. Koch, Die Arach. des Austr., i., 1875, p. 599, tab. xlvii., figs. 2, 2a, 2b.

*Hab.*—Australia.



*Genus* *Stephanopsis*, *O. P. Cambr.*(=*Paratobias* et *Metatobias*, F. O. P. Cambr.).

*Obs.*—*Stephanopsis altifrons*, *O. P.*, Cambr., is the type species of this genus.

STEPHANOPSIS ALTIFRONS, *O. P. Cambr.*

*Stephanopsis altifrons*, *O. P. Cambr.*, Ann. Mag. Nat. Hist., iii., 4, 1869, p. 61, pl. v., figs. 33-39.

*Stephanopsis altifrons*, L. Koch, Die Arach. des Austr., i., 1874, p. 495, tab. xxxviii., fig. 1.

*Stephanopsis altifrons*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 316.

*Hab.*—Queensland, New South Wales, Victoria, South Australia,

STEPHANOPSIS ARMATA, *L. Koch.*

*Stephanopsis armata*, L. Koch, Die Arach. des Austr., i., 1874, p. 503, tab. xxxviii., fig. 4.

*Hab.*—Queensland.

STEPHANOPSIS ASPERA, *Rainbow.*

*Stephanopsis aspera*, Rainbow, Proc. Linn. Soc. N. S. Wales, xvii., 1902, p. 471, pl. xii., figs. 1-5.

*Hab.*—Bungendore, New South Wales.

STEPHANOPSIS BICORNIS, *L. Koch.*

*Stephanopsis bicornis*, L. Koch, Die Arach. des Austr., i., 1874, p. 501, tab. xxxviii., figs. 3, 3a.

*Hab.*—Sydney, New South Wales.

STEPHANOPSIS CAMBRIDGII, *Thor.*

*Stephanopsis cambridgii*, Thor., Ofv. Kongl. Vetens.-Akad. Forh., 4, 1870, p. 378.

*Stephanopsis cambridgii*, Bradley, Trans. Ent. Soc. N. S. Wales, ii., 1871, p. 231.

*Stephanopsis cambridgii*, L. Koch, Die Arach. des Austr., i., 1874, p. 510, tab. xxxviii., figs. 7, 7a, 7b; *op. cit.*, i., 1875, p. 744, tab. lxx., figs. 3, 3a.

*Hab.*—Queensland, New South Wales, and Victoria.

STEPHANOPSIS CLAVATA, *O. P. Cambr.*

*Stephanopsis clavata*, *O. P. Cambr.*, *Ann. Mag. Nat. Hist.*, iii., 4, 1869, p. 62.

*Stephanopsis clavata*, L. Koch, *Die Arach. des Austr.*, i., 1874, p. 498.

*Hab.*—? Australia.

*Obs.*—Cambridge (*supra*) says:—"A single ♀ in the Hope Coll. Oxford, without label, but supposed to be from Australia."

STEPHANOPSIS CORTICALIS, *L. Koch.*

*Stephanopsis corticalis*, L. Koch, *Die Arach. des Austr.*, i., 1875, p. 748, tab. lxx., figs. 5, 5a.

*Hab.*—Gayndah, Queensland.

STEPHANOPSIS DEPRESSA, *Bradley.*

*Stephanopsis depressa*, Bradley, *Trans. Ent. Soc. N. S. Wales*, ii., 1871, p. 236.

*Hab.*—Cape York, N. Queensland.

STEPHANOPSIS ELONGATA, *Bradley.*

*Stephanopsis elongata*, Bradley, *Trans. Ent. Soc. N. S. Wales*, ii., 1871, p. 236.

*Hab.*—Cape York, N. Queensland.

STEPHANOPSIS LATA, *O. P. Cambr.*

*Stephanopsis lata*, *O. P. Cambr.*, *Ann. Mag. Nat. Hist.*, iii., 4, 1869, p. 63.

*Stephanopsis lata*, *O. P. Cambr.*, *Die Arach. des Austr.*, i., 1874, p. 498, tab. xxxviii., figs. 2, 2a.

*Hab.*—New South Wales, Victoria, and Tasmania.

STEPHANOPSIS LONGIMANA, *Thor.*

*Stephanopsis longimana*, Thor., *Studi Ragni Mal. e Papuani*, iii., 1881, p. 322.

*Hab.*—Cape York, N. Queensland.

STEPHANOPSIS MACLEAYI, *Bradley.*

*Stephanopsis macleayi*, Bradley, *Trans. Ent. Soc. N. S. Wales*, ii., 1871, p. 238.

*Hab.*—Goulburn, New South Wales.

STEPHANOPSIS MALACOSTRACEA, *Walck.*

*Thomisus malacostracea*, Walck., Hist. Nat. des Ins., Apt., i., 1837, p. 513.

*Stephanopsis malacostracea*, L. Koch, Die Arach. des Austr., i., 1874, p. 523.

*Hab.*—Australia.

STEPHANOPSIS MINUTA, *L. Koch.*

*Stephanopsis minuta*, L. Koch, Die Arach. des Austr., i., 1875, p. 756, tab. lxvi., figs. 4, 4a.

*Hab.*—Peak Downs, Queensland.

STEPHANOPSIS MONTICOLA, *Bradley.*

*Stephanopsis monticola*, Bradley, Trans. Ent. Soc. N. S. Wales, ii., 1871, p. 234.

*Hab.*—New England District, New South Wales.

STEPHANOPSIS NIGRA, *O. P. Cambr.*

*Stephanopsis nigra*, O. P. Cambr., Ann. Mag. Nat. Hist., iii., 4, 1869, p. 62, pl. v., fig. 40.

*Stephanopsis nigra*, L. Koch, Die Arach. des Austr., i., 1874, p. 495.

*Hab.*—N. Australia.

STEPHANOPSIS OBTUSIFRONS, *Rainbow.*

*Stephanopsis obtusifrons*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxvii., 1902, p. 491, pl. xviii., figs. 3, 3a, 3b.

*Hab.*—Jervis Bay, New South Wales.

STEPHANOPSIS ORNATA, *L. Koch.*

*Stephanopsis ornata*, L. Koch, Die Arach. des Austr., i., 1875, p. 746, tab. lxv., fig. 4.

*Hab.*—Sydney.

STEPHANOPSIS PALLIOLATA, *Simon.*

*Stephanopsis palliolata*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 432.

*Hab.*—Wooroloo, W. Australia.

STEPHANOPSIS RUFIVENTRIS, *Bradley*.

*Stephanopsis rufiventris*, Bradley, Trans. Ent. Soc. N. S. Wales, ii., 1871, p. 237.

*Hab.*—New England District, New South Wales.

STEPHANOPSIS SCABRA, *L. Koch*.

*Stephanopsis scabra*, L. Koch, Die Arach. des Austr., i., 1874, p. 505, tab. xxxviii., figs. 5, 5a-5d, 6, 6a, 6b.

*Hab.*—Queensland and New South Wales.

STEPHANOPSIS THOMISOIDES, *Bradley*.

*Stephanopsis thomisoides*, Bradley, Trans. Ent. Soc. N. S. Wales, ii., 1871, p. 237.

*Hab.*—Cape York, N. Queensland.

STEPHANOPSIS TUBERCULATA, *Bradley*.

*Stephanopsis tuberculata*, Bradley, Trans. Ent. Soc. N. S. Wales, ii., 1871, p. 235.

*Hab.*—Nepean Towers, New South Wales.

STEPHANOPSIS VILOSA, *Rainbow*.

*Stephanopsis hirsuta*, Rainbow (*nom. præocc.*), Proc. Linn. Soc. N. S. Wales, xviii., 1893, p. 292, pl. x., figs. 4, 4a-4f.

*Hab.*—Clarence River, New South Wales.

*Genus Synalus, Simon.*SYNALUS ANGUSTA, *L. Koch*.

*Stephanopsis angusta*, L. Koch, Die Arach. des Austr., ii., 1876, p. 794, tab. lxi., figs. 2, 2a.

*Hab.*—Sydney, New South Wales.

*Obs.*—This is the type species of the genus.

SYNALUS TERROSUS, *Simon*.

*Synalus terrosus*, Simon, Ann. Soc. Ent. Belg., xxxix., 1895, p. 441.

*Hab.*—Tasmania.

*Genus Sidyma, Simon.*

*Obs.*—*Sidyma lucida*, Keys., is the type species of this genus.

SIDYMA BICUSPIDATA, *L. Koch.*

*Stephanopsis bicuspidata*, L. Koch, Die Arach. des Austr., i., 1873, p. 514, tab. xxxix., figs. 2, 2a; *op. cit.*, 1876, p. 753, tab. lxvi., figs. 2, 2a, 2b.

*Hab.*—Queensland.

SIDYMA HIRSUTA, *L. Koch.*

*Stephanopsis hirsuta*, L. Koch, Die Arach. des Austr., i., 1873, p. 520, tab. xxxix., figs. 5, 5a; *op. cit.*, 1876, p. 753, tab. lxvi., figs. 2, 2a, 2b.

*Hab.*—Queensland.

SIDYMA KOCHI, *Simon.*

*Sidyma kochi*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 435.

*Hab.*—North Fremantle, W. Australia.

SIDYMA LOBATA, *L. Koch.*

*Stephanopsis lobata*, L. Koch, Die Arach. des Austr., i., 1873, p. 516, tab. xxxix., fig. 3; *op. cit.*, 1876, p. 755, tab. xlvi., fig. 3.

*Hab.*—Queensland and New South Wales.

SIDYMA LONGIPES, *L. Koch.*

*Stephanopsis longipes*, L. Koch, Die Arach. des Austr., i., 1873, tab. xxxix., fig. 4.

*Hab.*—Queensland.

SIDYMA RUBROSIGNATA, *L. Koch.*

*Stephanopsis rubrosignata*, L. Koch, Die Arach. des Austr., i., 1873, p. 521, tab. xxxix., fig. 6; *op. cit.*, 1876, p. 762, tab. lxvii., figs. 1, 1a, 1b, 2, 2a.

*Hab.*—Sydney, New South Wales

SIDYMA TRAPEZIA, *L. Koch.*

*Stephanopsis trapezia*, L. Koch, Die Arach. des Austr., i., 1873, p. 512, tab. xxxix., figs. 1, 1a.

*Sidyra trapezia*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 433.

*Hab.*—East and West Australia.

*Genus* Isala, L. Koch.

ISALA PUNCTATA, L. Koch.

*Isala punctata*, L. Koch, Die Arach. des Austr., ii., 1876, p. 796, tab. lxix., fig. 3.

*Hab.*—Australia.

*Obs.*—This is the type species of the genus.

*Subfamily* PHILODROMINÆ.

*Genus* Gephyra, L. Koch

GEPHYRA LIMBATA, L. Koch.

*Gephyra limbata*, L. Koch, Die Arach. des Austr., i., 1875, p. 614, tab. xlviii., figs. 5, 5a-5d.

*Hab.*—Rockhampton, N. Queensland.

*Obs.*—This is the type species of the genus.

*Genus* Philodromus, Walck.

(= *Artamus*, C. Koch ; *Opitis*, L. Koch).

*Obs.*—*Philodromus aureolus*, Clerck., is the type species of the genus.

PHILODROMUS AUSTERUS, L. Koch.

*Opitis austera*, L. Koch, Die Arach. des Austr., ii., 1876, p. 824, tab. lxx., fig. 9.

*Hab.*—Peak Downs, Queensland.

PHILODROMUS LUTEO-VIRESCENS, Urquh.

*Philodromus luteo-virescens*, Urquh., Proc. Roy. Soc. Tas., 1892 (1893), p. 122.

*Hab.*—Tasmania.

PHILODROMUS PLANUS, L. Koch.

*Opitis plana*, L. Koch, Die Arach. des Austr., i., 1875, p. 611, tab. xlviii., figs. 4, 4a-4e.

*Hab.*—Cape York, N. Australia.

*Genus* *Tibellus*, Simon.

(= *Metastenus*, Bertk.)

*Obs.*—*Tibellus oblongus*, Walck., is the type species of this genus.

*TIBELLUS TENELLUS*, L. Koch.

*Thanatus tenellus*, L. Koch, Die Arach. des Austr., ii., 1876, p. 849, tab. lxxiii., figs. 2, 2*a*-2*e*.

*Hab.*—Peak Downs, Queensland.

*Family* CLUBIONIDÆ.

*Subfamily* SELENOPINÆ.

*Genus* *Selenops*, Latr.

(= *Hypoplatea*, Mael.).

*Obs.*—*Selenops radiatus*, Latr., is the type species of this genus.

*SELENOPS AUSTRALIENSIS*, L. Koch.

*Selenops australiensis*, L. Koch, Die Arach. des Austr., ii., 1876, p. 615, tab. lxxviii., fig. 6.

*Hab.*—East and West Australia.

*Subfamily* SPARASSINÆ.

*Genus* *Delena*, Walck.

(= *Damastes*, Simon).

*DELENA CANCERIDES*, Walck.

*Delena cancerides*, Walck., Hist. Nat. des Ins., Apt., i., 1837, p. 490.

*Delena impressa*, C. Koch, Die Arach., xii., 1845, p. 53, tab. cccix., figs. 988, 989.

*Delena cancerides*, L. Koch, Die Arach. des Austr., i., 1875, p. 656, tab. lii., figs. 2, 2*a*, 2*b*.

*Delena cancerides*, Hogg, Proc. Zool. Soc., 1902, p. 465.

*Hab.*—Australia and Tasmania.

*Obs.*—This is the type species of the genus.

DELENA CRABOIDES, *Walck.**(Species incerte sedis.)**Delena craboides*, Walck., Hist. Nat. des Ins., Apt., i, 1837, p. 492.*Delena craboides*, L. Koch, Die Arach. des Austr., ii., 1876, p. 856.*Hab.*—Australia.*Obs.*—Hogg (*supra*) observes that *D. cancerides*, Walck., is the only species of its genus occurring on the mainland. *D. craboides* is unknown to me, but as Walckenaer has recorded it from "New Holland," I include it in our fauna for the present.Genus *Isopoda*, *L. Koch.**(= Voconia (nom. præocc.) Holconia et Isopoda, Thor.)**Obs.*—*Isopoda vasta*, L. Koch, is the type species of this genus.ISOPEDA ARDROSSANA, *Hogg.**Isopeda ardrossana*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 446, fig. 95.*Hab.*—Ardrossan, S. Australia.ISOPEDA AUREA, *L. Koch.**Isopeda aurea*, L. Koch, Die Arach. des Austr., i., 1875, p. 696, tab. lix., fig. 3.*Isopeda aurea*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 453.*Hab.*—Port Mackay, N. Queensland.ISOPEDA CANA, *Simon.**Isopeda cana*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 440.*Hab.*—Cranbrook, W. Australia.ISOPEDA CERUSSATA, *Simon.**Isopeda cerussata*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 439.*Hab.*—Northampton, W. Australia.ISOPEDA CONSPERSA, *L. Koch.**Isopoda conspersa*, L. Koch, Die Arach. des Austr., i., 1875, p. 689, tab. lviii., figs. 1, 1a, 2, 2a.



*Isopoda conspersa*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 298.

*Hab.*—Cape York, N. Queensland.

ISOPEDA CORDATA, *L. Koch.*

(*Species dubius incerte sedis.*)

*Isopeda cordata*, L. Koch, Die Arach. des Austr., i., 1875, p. 694, tab. lix., fig. 2.

*Isopeda cordata*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 453.

*Hab.*—Sydney, New South Wales.

ISOPEDA DOLOSA, *L. Koch.*

*Voconia dolosa*, L. Koch, Die Arach. des Austr., i. 1875, p. 648, tab. lii., fig. 2.

*Isopeda dolosa*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 648.

*Hab.*—Australia.

*Obs.*—This form is doubtfully separable from *I. insignis*. See Hogg, *supra*.

ISOPEDA FLAVIBARBIS, *L. Koch.*

*Isopeda flavibarbis*, L. Koch, Die Arach. des Austr., i., 1875, p. 698, tab. lix., fig. 4.

*Isopeda flavibarbis*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 454.

*Hab.*—Sydney, New South Wales.

ISOPEDA FLAVIDA, *L. Koch.*

*Isopeda flavida*, L. Koch, Die Arach. des Austr., i., 1875, p. 686, tab. lvii., fig. 2.

*Isopeda flavida*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 443.

*Hab.*—Queensland, New South Wales, and Victoria.

ISOPEDA FRENCHI, *Hogg.*

*Isopeda frenchi*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 435, fig. 89.

*Hab.*—Victoria.

ISOPEDA HIRSUTA, *L. Koch.*

*Isopeda hirsuta*, L. Koch, Die Arach. des Austr., i., 1875, p. 693, tab. lix., figs. 1, 1a, 1b.

*Isopeda hirsuta*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 453.

*Hab.*—Bowen, Queensland.

ISOPEDA IMMANIS, L. Koch.

*Delena immanis*, L. Koch, Verh. zool.-bot. Ges. Wien, 1867, p. 208.

*Voconia immanis*, L. Koch, Die Arach. des Austr., i., 1875, p. 642, tab. li., figs. 4, 4a-4c.

*Isopeda immanis*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 433, fig. 88D.

*Hab.*—Queensland, New South Wales, and Victoria.

ISOPEDA INSIGNIS, Thor.

*Voconia insignis*, Thor., Ofv. Kongl. Vet. Akad. Förh., 4, 1870, p. 383.

*Voconia insignis*, L. Koch, Die Arach. des Austr., i., 1875, p. 645, tab. lii., figs. 1, 1a-1c.

*Isopeda insignis*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 432, fig. 88, A-C.

*Hab.*—New South Wales, Victoria, S. and W. Australia.

ISOPEDA LEAI, Hogg.

*Isopeda leai*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 445, fig. 94.

*Hab.*—Adelaide, S. Australia.

ISOPEDA LEISHMANNI, Hogg.

*Isopeda leishmanni*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 437, fig. 90.

*Isopeda leishmanni*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 438.

*Hab.*—W. Australia.

ISOPEDA LEISHMANNI var. HOGGI, Simon.

*Isopeda leishmani*, var. *hoggi*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 439.

*Hab.*—Midland, W. Australia.

ISOPEDA MACULIGASTRA, Strand.

*Isopeda maculigastri*, Strand, Wiesbaden Jahrb. Ver. Natk., lx., 1907, p. 208.

*Hab.*—Australia.

ISOPEDA MONTANA, *Hogg.*

*Isopeda montana*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 439, fig. 91.

*Hab.*—Macedon, Victoria.

ISOPEDA NIGRIGULARIS, *Simon.*

*Isopeda nigrigularis*, Simon, Die Fauna Süd-west Austr., i. 1908, p. 438.

*Hab.*—W. Australia.

ISOPEDA PENGELLYA, *Hogg.*

*Isopeda pengellya*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 447, fig. 96.

*Hab.*—Pengelly, W. Australia.

ISOPEDA PESSLERI, *Thor.*

*Heteropoda pessleri*, Thor., Ofv. Kongl. Vet. Akad. Förh., 41, 1870, p. 684.

*Isopeda pessleri*, L. Koch, Die Arach. des Austr., i., 1875, p. 684, tab. lvii., fig. 1.

*Isopeda pessleri*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 444.

*Hab.*—Queensland, New South Wales, Lord Howe Island.

ISOPEDA POCOCCI, *Hogg.*

*Isopeda pococki*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 440, fig. 92.

*Hab.*—Australia.

ISOPEDA ROBUSTA, *L. Koch.*

*Isopeda robusta*, L. Koch, Die Arach. des Austr., i., 1875, p. 691, tab. lviii., fig. 3.

*Isopeda robusta*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 452.

*Hab.*—Australia.

ISOPEDA SAUNDERSI, *Hogg.*

*Isopeda saundersi*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 448, fig. 97.

*Hab.*—Chapman River, W. Australia.

ISOPEDA SIMONI, *Rainbow*.

*Isopeda woodwardi*, Simon (*nom. praec.*), Die Fauna Süd-west Austr., i. 1908, p. 437.

*Hab.*—Kalgoorlie, W. Australia.

ISOPEDA SUBDOLA, *Thor*.

*Holconia subdola*, Thor., Ragni Mal. e Papuani, iii., 1881, p. 304.

*Isopeda subdola*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 435.

*Hab.*—Cape York, N. Queensland.

ISOPEDA TEPPERI, *Hogg*.

*Isopeda tepperi*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 442, fig. 93.

*Hab.*—Adelaide, ? Kangaroo Island, S. Australia.

ISOPEDA TIETZI, *Hogg*.

*Isopeda tietzi*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 450, fig. 98.

*Hab.*—S. Australia, Victoria.

ISOPEDA VASTA, *L. Koch*.

*Ocypete vasta*, L. Koch, Verh. der K.K. zool. bot. Ges. Wien, 1867, p. 207.

*Isopeda vasta*, L. Koch, Die Arach. des Austr., i., 1875, p. 681, tab. lvi., figs. 4, 4a-4c.

*Isopeda vasta*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 443.

*Hab.*—Queensland.

ISOPEDA VASTATA, *Strand*.

*Isopeda vastata*, Strand, Wiesbaden Jahrb. Ver. Natk., lx., 1907, p. 211.

*Hab.*—Australia.

ISOPEDA VILLOSA, *L. Koch*.

*Isopeda villosa*, L. Koch, Die Arach. des Austr., i., 1875, p. 687, tab. lvii., figs. 3, 4.

*Isopeda villosa*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 444.

*Hab.*—Queensland, New South Wales.

ISOPEDA WOODWARDI, *Hogg.*

*Isopeda woodwardi*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 451,  
fig. 99.

*Hab.*—S. Australia.

Genus *Typostola*, *Simon.*

*Obs.*—*Typostola barbata*, L. Koch, is the type species of this  
genus.

TYPOSTOLA BARBATA, *L. Koch.*

*Isopeda barbata*, L. Koch, Die Arach. des Austr., i., 1875, p. 680,  
tab. lvi., figs. 3, 3a, 3b, 3c.

*Typostola barbata*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 455.

*Hab.*—Queensland ; New South Wales.

TYPOSTOLA BROOMI, *Hogg.*

*Typostola broomi*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 455,  
fig. 100.

*Hab.*—Muldiva, N. Queensland.

TYPOSTOLA MAGNIFICA, *Hogg.*

*Typostola magnifica*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 457,  
fig. 101.

*Hab.*—Queensland.

TYPOSTOLA MAJOR, *Hogg.*

*Typostola major*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 459.

*Hab.*—Queensland.

Genus *Zachria*, *L. Koch.*

(= *Eodelena*, Hogg).

*Obs.*—*Zachria flavicoma*, L. Koch, is the type species of this  
genus.

ZACHRIA FLAVICOMA, *L. Koch.*

*Zachria flavicoma*, L. Koch, Die Arach. des Austr., i., 1875,  
p. 650, tab. lii., figs. 3, 3a.

*Hab.*—King George Sound, W. Australia.

ZACHRIA OBLONGA, *L. Koch.*

*Zachria oblonga*, L. Koch, Die Arach. des Austr., i., 1875, p. 651, tab. lii., figs. 4, 4a-4d.

*Zachria hemorrhoidalis*, L. Koch, *op. cit.*, p. 653, tab. lii., fig. 5.

*Zachria oblonga*, L. Koch, Hogg, Proc. Zool. Soc. Lond., p. 454.

*Zachria hemorrhoidalis*, Hogg, *op. cit.*, p. 454.

*Hab.*—Sydney, New South Wales.

ZACHRIA SPENCERI, *Hogg*

*Eodeleus spenceri*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 464, fig. 104.

*Hab.*—King's Island, Bass Strait.

Genus *Olios*, *Walck.*

(=*Sarotes*, Thor.; *Pelmopoda*, Karsch.; *Midamus*, *Sidala*, *Vindullus*, et *Macrinus*, Simon; *Neosparassus*, Hogg).

*Obs.*—*Olios spongitarsus* is the type species of this genus.

OLIOS CALLIGASTER, *Thor.*

*Heteropoda calligaster*, Thor., Ofv. Kongl. Vet. Akad. Förh., 4, 1870, p. 385.

*Heteropoda calligaster*, L. Koch, Die Arach. des Austr., i., 1875, p. 734, tab. lxiv., figs. 2, 2a, 2b, 3, 3a, 3b, 3c.

*Neosparassus calligaster*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 428.

*Hab.*—Queensland, New South Wales, Victoria, and S. Australia.

OLIOS CONSPICUUS, *L. Koch.*

*Heteropoda conspicua*, L. Koch, Die Arach. des Austr., i., 1875, p. 717, tab. lxii., figs. 1, 1a.

*Neosparassus conspicuus*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 429.

*Hab.*—Bowen, N. Queensland.

OLIOS DIANA, *L. Koch.*

*Heteropoda diana*, L. Koch, Die Arach. des Austr., i., 1875, p. 730, tab. lxiii., fig. 5, 5a, 5b, 5c.

*Neosparassus diana*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 428.

*Hab.*—Victoria, S. and W. Australia.

OLIOS FESTIVUS, *L. Koch.*

*Heteropoda festiva*, L. Koch, Die Arach. des Austr., i., 1875, p. 710, tab. lxi., fig. 2.

*Neosparassus festivus*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 428.

*Hab.*—Sydney, New South Wales.

OLIOS GRAPSUS, *Walck.*

*Olios grapsus*, Walck., Hist. Nat. des Ins., Apt., i., 1837, p. 564.

*Hab.*—Australia ("Neuholland").

OLIOS HÆMORRHOIDALIS, *L. Koch.*

*Heteropoda hæmorrhoidalis*, L. Koch, Die Arach. des Austr., i., 1875, p. 726, tab. lxiii., fig. 2.

*Neosparassus hæmorrhoidalis*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 428.

*Hab.*—Sydney, New South Wales.

OLIOS INCOMTUS, *L. Koch.*

*Heteropoda incomta*, L. Koch, Die Arach. des Austr., i., 1875, p. 727, tab. lxiii., fig. 3.

*Neosparassus incomtus*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 428.

*Hab.*—Sydney, New South Wales.

OLIOS INFRAMACULATUS, *Hogg.*

*Heteropoda inframaculata*, Hogg, Rep. Horn Expl. Exped., Zool., ii., 1896, p. 343.

*Neosparassus inframaculatus*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 428.

*Hab.*—Central Australia.

OLIOS MAGAREYI, *Hogg.*

*Neosparassus magareyi*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 425, fig. 86.

*Hab.*—Northern Territory of S. Australia; Port Stephens, New South Wales.

OLIOS MACILENTUS, *L. Koch.*

*Heteropoda macilenta*, L. Koch, Die Arach. des Austr., i. 1875, p. 711, tab. lxi., figs. 3, 3a.

*Neosparassus macilentus*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 427.

*Hab.*—Queensland, New South Wales, and Victoria.

OLIOS MORBILLOSUS, *W. S. Macleay*.

*Thomisus morbillosus*, W. S. Macleay, King's Survey of the Intertrop. and Western Coasts of Australia, 1828, p. 469.

*Olios morbillosus*, Walck., Hist. Nat. des Ins., Apt., ii., 1837, p. 473.

*Olios morbillosus*, L. Koch, Die Arach. des Austr., ii., 1876, p. 857.

*Hab.*—Australia.

OLIOS NITELLINUS, *L. Koch*.

*Heteropoda nitellina*, L. Koch, Die Arach. des Austr., i., 1875, p. 722, tab. lxii., figs. 4, 4a.

*Neosparassus nitellinus*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 429.

*Hab.*—Peak Downs, Queensland.

OLIOS PAGURUS, *Walck.*

*Olios pagurus*, Walck., Hist. Nat. des Ins., Apt., i. 1837, p. 564.

*Olios pagurus*, L. Koch, Die Arach. des Austr., ii., 1876, p. 857.

*Hab.*—Australia ("Neuholland").

OLIOS PALLIDUS, *L. Koch*.

*Heteropoda pallida*, L. Koch, Die Arach. des Austr., i., 1875, p. 713, tab. lxi., figs. 4, 4a.

*Neosparassus pallidus*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 427.

*Hab.*—Peak Downs, Queensland.

OLIOS PATELLATUS, *Karsch*.

*Heteropoda patellata*, Karsch, Zeit. ges. Naturw. Berlin, li., 1878, p. 809.

*Neosparassus patellatus*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 429.

*Hab.*—Tasmania.



OLIOS PICTUS, *L. Koch.*

*Heteropoda picta*, L. Koch, Die Arach. des Austr., i., 1875, p. 714, tab. lxi., figs. 5, 5a.

*Neosparassus pictus*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 428.  
*Hab.*—Australia.

OLIOS PRÆCLARUS, *L. Koch.*

*Heteropoda præclara*, L. Koch, Die Arach. des Austr., i., 1875, p. 723, tab. lxii., figs. 5, 5a; tab. lxiii., figs. 1, 1a.

*Neosparassus præclarus*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 428.  
*Hab.*—Queensland.

OLIOS PUNCTATUS, *L. Koch.*

*Sparassus punctatus*, L. Koch, Verh. K.K. zool.-bot. Ges. Wien, 1865, p. 872.

*Heteropoda punctata*, L. Koch, Die Arach. des Austr., i., 1875, p. 719, tab. lxii., figs. 2, 2a, 2b, 2c, 3, 3a, 3b.

*Sparassus punctatus*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 259.

*Neosparassus punctatus*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 429.  
*Hab.*—Queensland, New South Wales, Victoria, and Central Australia.

OLIOS RUTILUS, *L. Koch.*

*Heteropoda rutila*, L. Koch, Die Arach. des Austr., i., 1875, p. 729, tab. lxiii., figs. 4, 4a.

*Neosparassus rutilus*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 428.  
*Hab.*—Bowen, N. Queensland,

OLIOS SALACIUS, *L. Koch.*

*Heteropoda salacia*, L. Koch, Die Arach. des Austr., i., 1875, p. 737, tab. lxiv., figs. 4, 4a, 4b; tab. lxv., figs. 1, 1a.

*Neosparassus salacius*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 429.  
*Hab.*—Queensland and New South Wales.

OLIOS THORACICUS, *Hogg.*

*Neosparassus thoracicus*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 426, fig. 87.

*Hab.*—N. Australia.

Genus *Heteropoda*, Latr.

(=*Sarotes*, Sund.; *Ocypete*, C. Koch; *Ethilla*, Simon).

*Obs.*—*Heteropoda venatoria*, Linn., I regard as the type species of this genus. Simon in his "Histoire Naturelle des Araignées," vol. ii., 1897, p. 52, gives *H. regia*, Fab., as the type, and in a footnote on the same page remarks, although he gives no reason for saying so, that "nearly all authors since Latrielle (Gen. Crust., etc., i., p. 114) have erroneously applied to that species the name of *Aranea venatoria*, Linn." Pocock, in "Fauna of British India—Arachnida," in 1900, although he should have had ample opportunities of verifying Simon's statement, gives as the type of this genus *H. venatoria*, which would seem to show that much confusion still exists in respect of *H. venatoria* and *H. regia*. Until this is cleared up, I shall be content to regard *H. venatoria* as the type.

## HETEROPODA CERVINA, L. Koch.

*Sarotes cervinus*, L. Koch, Die Arach. des Austr., i., 1875, p. 673, tab. lx., figs. 4, 4a, 4b, 5, 5a.

*Heteropoda cervina*, Simon, Rev. Spar., 1880, p. 50.

*Hab.*—Queensland and New South Wales.

## HETEROPODA JUGULANS, L. Koch.

*Sarotes jugulans*, L. Koch, Die Arach. des Austr., ii., 1876, p. 852, tab. lxxiii., figs. 4, 4a.

*Heteropoda jugulans*, Simon, Rev. Spar., 1880, p. 49.

*Hab.*—Peak Downs, Queensland.

## HETEROPODA KEYSERLINGI, Hogg.

*Heteropoda keyserlingi*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 418, fig. 85.

*Hab.*—Peak Downs, Queensland.

## HETEROPODA LONGIPES, L. Koch.

*Sarotes longipes*, L. Koch, Die Arach. des Austr., i., 1875, p. 660, tab. liii., figs. 3, 3a, 3b.

*Heteropoda longipes*, Simon, Rev. Spar., 1880, p. 49.

*Sarotes longipes*, Hogg, Rep. Horn Expl. Exped., ii., Zool., 1896, p. 339.

*Hab.*—New South Wales, Victoria, and Central Australia.

HETEROPODA LYCODES, *Thor.*

*Heteropodes lycodes*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 282.

*Heteropoda lycodes*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 417.

*Hab.*—Cape York, N. Queensland.

HETEROPODA PROCERA, *L. Koch.*

*Ocypete procera*, L. Koch, Verh. zool.-bot. Ges. Wien, 1869, p. 205.

*Sarotes procerus*, L. Koch, Die Arach. des Austr., i., 1875, p. 667, tab. liv., figs. 4, 4a, 4b, 4c.

*Sarotes procerus*, Karsch, Zeitsch. ges. Natur., li., 1878, p. 792.

*Heteropoda procera*, Simon, Rev. Spar., 1880, p. 50.

*Hab.*—Queensland, New South Wales, Victoria, and S. Australia.

HETEROPODA SUSPICIOSA, *L. Koch.*

*Sarotes suspiciosus*, L. Koch, Die Arach. des Austr., i., 1875, p. 665, tab. liv., figs. 3, 3a.

*Heteropoda suspiciosa*, L. Koch, Simon, Rev. Spar., 1880, p. 50.

*Hab.*—New South Wales, Victoria, and the Island of Upolu.

HETEROPODA VENATORIA, *Linn.*

*Aranea venatoria*, Linn., Syst. Nat., Ed. xii., 1767, p. 1035.

*Aranea regia*, Fab., Ent. Syst., ii., 1792, p. 408.

*Thomisus leucosius*, Walck., Tabl. des Aran., 1805, p. 36, fig. 33.

*Olios leucosius*, Walck., Hist. Nat. des Ins., Apt., i., 1837, p. 566.

*Thomisus venatorius*, Latr., Gen. Crust. et Ins., i., 1806, p. 114.

*Ocypete draco*, C. Koch, Die Arach., xii., 1845, p. 44, fig. 983.

*Heteropoda venatoria*, Linn., Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 274.

*Heteropoda venatoria*, McCook, Amer. Spiders and their Spinning Work, ii., 1890, pp. 109, 153, 272, 273.

*Heteropoda venatoria*, Pocock, Fauna Brit. Ind., Arach., 1900, p. 260.

*Heteropoda regia*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 418.

*Hab.*—This species appears to have circumnavigated the globe, having been distributed by the process of "ballooning." It is found in all those regions influenced by the N.E. and S.E. trade winds. Originally it came from India, and is now very common on the Australian mainland.

*Genus Pandercertes, L. Koch.*(=? *Pedinopistha*, et *Zutapina*, Karsch).PANDERCERTES GRACILIS, *L. Koch.**Pandercertes gracilis*, L. Koch, Die Arach. des Austr., i., 1875, p. 740, tab. lxx., figs. 2, 2a, 2b.*Pandercertes gracilis*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 314.*Pandercertes gracilis*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 419.*Hab.*—Port Mackay, and ?Cape York, N. Queensland.*Obs.*—This is the type species of the genus.*Genus Pediana, Simon.*(=*Polydamna*, Thor.).*Obs.*—*Pediana regina*, L. Koch, is the type species of this genus.PEDIANA HORNI, *Hogg.**Isopeda horni*, Hogg, Rep. Horn Expl. Exped., ii., Zool., 1896, p. 340, pl. 24, fig. 12.*Pediana horni*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 462.*Hab.*—Oodnadatta, S. Australia.PEDIANA OCCIDENTALIS, *Hogg.**Pediana occidentalis*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 461, fig. 102.*Hab.*—Perth, W. Australia.PEDIANA REGINA, *L. Koch.**Heteropoda regina*, L. Koch, Die Arach. des Austr., i., 1875, p. 716, tab. lxi., figs. 6, 6a, 6b.*Pediana regina*, Simon, Rev. Spar., 1880, p. 39.*Polydamna regina*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 300.*Pediana regina*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 460.*Hab.*—Queensland and Yule Island, New Guinea.PEDIANA TENUIS, *Hogg.**Pediana tenuis*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 462, fig. 103.*Hab.*—W. Australia.

*Genus Anchognatha, Thor.*

ANCHOGNATHA AVIDA, *Thor.*

*Anchognatha avida*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 229.

*Hab.*—Cape York, N. Queensland.

*Obs.*—This is the type species of the genus.

*Genus Palystes, L. Koch.*

(=*Helicopis*, L. Koch (*nom. preocc.*); *Gnathopalystes*, Rainbow).

*Obs.*—*Palystes castaneus*, Latr. (*P. frenatus*, L. Koch), is the type species of this genus.

PALYSTES IGNICOMUS, *L. Koch.*

*Palystes ignicomus*, L. Koch, Die Arach. des Austr., i., 1875, p. 701, tab. lx., figs. 2, 2a.

*Palystes ignicomus*, Hogg, Proc. Zool. Soc. Lond., 1902, p. 420.

*Hab.*—Originally recorded from New Ireland; Brisbane, Queensland.

PALYSTES PINNOTHERUS, *Walck.*

*Olios pinnotherus*, Walck., Hist. Nat. des Ins., Apt., i., 1837, p. 565.

*Palystes pinnotherus*, L. Koch, Die Arach. des Austr., i., 1875, p. 703, tab. lx., figs. 3, 3a, 3b.

*Hab.*—Sydney, New South Wales.

*Subfamily CLUBIONINÆ.*

*Genus Clubiona, Latr.*

(=*Hirtia* et *Atalia*, Thor. ; *Elavor*, F. O. P. Cambr.).

*Obs.*—*Clubiona pallidula*, Clerck., is the type species of this genus.

CLUBIONA ACHILLES, *Hogg.*

*Clubiona achilles*, Hogg, Rep. Horn Expl. Exped., ii., Zool., 1896, p. 330, pl. 24, fig. 9.

*Hab.*—Finke River, Central Australia.

CLUBIONA APIATA, *Urquh.*

*Clubiona apiata*, Urquh., Proc. Roy. Soc. Tasm., 1892 [1893],  
p. 102.

*Hab.*—Tasmania.

CLUBIONA CYCLADATA, *Simon.*

*Clubiona cycladata*, Simon, Die Fauna Süd-west Austr., ii., 1909,  
p. 160.

*Hab.*—W. Australia.

CLUBIONA ELAPHINES, *Urquh.*

*Clubiona elaphines*, Urquh., Proc. Roy. Soc. Tasm., 1892 [1893].  
p. 100.

*Hab.*—Tasmania.

CLUBIONA LAUDABILIS, *Simon.*

*Clubiona laudabilis*, Simon, Die Fauna Süd-west Austr., ii., 1909,  
p. 161.

*Hab.*—Denham, W. Australia.

CLUBIONA MACULOSA, *L. Koch.*

*Clubiona maculosa*, L. Koch, Die Arach. des Austr., i., 1873,  
p. 423, tab. xxxiii., figs. 8, 8a.

*Hab.*—Port Mackay, N. Queensland.

CLUBIONA MODESTA, *L. Koch.*

*Clubiona modesta*, L. Koch, Die Arach. des Austr., i., 1873,  
p. 416, tab. xxxiii., figs. 1, 1a.

*Hab.*—Port Mackay, N. Queensland.

CLUBIONA MUNIS, *Simon.*

*Clubiona munis*, Simon, Die Fauna Süd-west Austr., ii., 1909,  
p. 160.

*Hab.*—Daydawn, W. Australia.

CLUBIONA NOTABILIS, *L. Koch.*

*Clubiona notabilis*, L. Koch, Die Arach. des Austr., i., 1873,  
p. 424, tab. xxxiii., figs. 9, 9a.

*Hab.*—Port Mackay, N. Queensland.

CLUBIONA ROBUSTA, *L. Koch.*

*Clubiona robusta*, L. Koch, Die Arach. des Austr., i., 1873, p. 417, tab. xxxiii., figs. 2, 2a, 2b, 3, 3a.

*Clubiona robusta*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 159.

*Hab.*—New South Wales, Victoria, S. and W. Australia.

CLUBIONA SUBNOTABILIS, *Strand.*

*Clubiona subnotabilis*, Strand, Wiesbaden Jahrb. Ver. Natk., lx., 1907, p. 214.

*Hab.*—Australia.

CLUBIONA VACUNA, *L. Koch.*

*Clubiona vacuna*, L. Koch, Die Arach. des Austr., i., 1873, p. 426, tab. xxxiii., figs. 10, 10a.

*Hab.*—Port Mackay, N. Queensland.

Genus *Chiracanthium*, *C. Koch.*

(= *Eutittha*, Thor.).

*Obs.*—*Chiracanthium punctorium*, Villers, is the type species of this genus.

CHIRACANTHIUM BREVICALCARATUM, *L. Koch.*

*Chiracanthium brevicalaratum*, L. Koch, Die Arach. des Austr., i., 1873, p. 405, tab. xxxi., figs. 6, 6a, 6b, 6c, 7, 7a, 7b.

*Hab.*—Swan River, W. Australia.

CHIRACANTHIUM GILVUM, *L. Koch.*

*Chiracanthium gilvum*, L. Koch, Die Arach. des Austr., i., 1873, p. 410, tab. xxxii., figs. 5, 5a, 5b, 5c, 6, 6a, 6b.

*Hab.*—Queensland and the Island of Upolu.

CHIRACANTHIUM GRACILE, *L. Koch.*

*Chiracanthium gracile*, L. Koch, Die Arach. des Austr., i., 1873, p. 402, tab. xxxi., figs. 4, 4a, 4b.

*Hab.*—Brisbane, Queensland.

CHIRACANTHIUM IMPRESSUM, *Thor.*

*Chiracanthium impressum*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 219.

*Hab.*—Cape York, N. Queensland.

CHIRACANTHIUM LONGIMANUM, *L. Koch.*

*Chiracanthium longimanum*, L. Koch, Die Arach. des Austr., i., 1873, p. 398, tab. xxxi., figs. 1, 1a, 1b, 1c, 2, 2a, 2b.

*Hab.*—Queensland, Samoa, Tonga, and Viti.

CHIRACANTHIUM NERVOSUM, *Simon.*

*Chiracanthium nervosum*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 161.

*Hab.*—N. Fremantle, W. Australia.

CHIRACANTHIUM PENNULIFERUM, *Simon.*

*Chiracanthium pennuliferum*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 162.

*Hab.*—W. Australia.

CHIRACANTHIUM SILACEUM, *Rainbow.*

*Chiracanthium silaceum*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxiii., 1907, p. 524, pl. xviii., figs. 1, 1a.

*Hab.*—Guildford, near Sydney, New South Wales.

CHIRACANTHIUM TENUE, *L. Koch.*

*Chiracanthium tenue*, L. Koch, Die Arach. des Austr., i., 1873, p. 407, tab. xxxii., figs. 1, 1a, 1b, 1c.

*Hab.*—Port Mackay, Queensland.

Genus *Uliodon*, *L. Koch.*

(=*Agræca*, Lenz (*non* Westr.); *Amawrobioides*, O. P. Cambr; *Uduba*, Simon).

*Obs.*—*Uliodon albopunctatus*, L. Koch, is the type species of this genus.

ULIODON ALBO-PUNCTATUM, *L. Koch.*

*Uliodon albo-punctatum*, L. Koch, Die Arach. des Austr., i., 1873, p. 432, tab. xxxiv., figs. 2, 2a-2e.

*Hab.*—Australia.

ULIODON AUSTRALIENSIS, *L. Koch.*

*Zora australiensis*, L. Koch, Die Arach. des Austr., i., 1873, p. 441, tab. xxxiv., fig. 7.

*Hab.*—Wollongong, New South Wales.



ULIODON CERVINUM, *L. Koch.*

*Uliodon cervinum*, L. Koch, Die Arach. des Austr., i., 1873, p. 433, tab. xxxiv., figs. 3, 3a.

*Hab.*—Australia.

ULIODON FERRUGINEA, *L. Koch.*

*Zora ferruginea*, L. Koch, Die Arach. des Austr., i., 1873, p. 443, tab. xxxiv., figs. 8, 8e.

*Hab.*—New South Wales, Victoria, and Central Australia.

ULIODON MARMOREA, *Hogg.*

*Zora marmorea*, Hogg, Rep. Horn Expl. Exped., ii., Zoology, 1896, p. 326.

*Hab.*—McDonnell Ranges, Central Australia.

ULIODON TARANTULINA, *L. Koch.*

*Zora tarantulina*, L. Koch, Die Arach. des Austr., i., 1873, p. 445, tab. xxxv., figs. 1, 1a.

*Hab.*—Port Mackay, N. Queensland.

ULIODON TORVA, *L. Koch.*

*Zora torva*, L. Koch., Die Arach. des Austr., i., 1873, p. 444, tab. xxxiv., fig. 9.

*Hab.*—Australia.

*Genus Odomasta, Simon.*ODOMASTA GUTTIPES, *Simon.*

*Odo guttipes*, Simon, Ann. Ent. Soc. Belg., xlvii., 1903, p. 29.

*Odomasta guttipes*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 167.

*Hab.*—Tasmania.

*Obs.*—This is the type species of the genus.

*Genus Thasyræa, L. Koch.*

*Obs.*—*Thasyræa ornata*, L. Koch, is the type species of this genus.

THASYRÆA LEPIDA, *L. Koch.*

*Thasyræa lepida*, L. Koch, Die Arach. des Austr., ii., 1878, p. 984, tab. lxxxvi., figs. 2, 2a.

*Hab.*—Sydney, New South Wales.

THASYRÆA ORNATA, *L. Koch.*

*Thasyræa ornata*, L. Koch, Die Arach. des Austr., ii., 1878, p. 983, tab. lxxxvi., fig. 1.

*Hab.*—Gayndah, Queensland.

## Subfamily LIOCRANINÆ.

Genus *Miturga*, *Thor.*

*Obs.*—*Miturga lineata*, Thor., is the type species of this genus.

MITURGA AGELININA, *Simon.*

*Miturga agelinina*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 172.

*Hab.*—Victoria, W. Australia, and Tasmania.

MITURGA CATOGRAPTA, *Simon.*

*Miturga catographa*, Simon, Die Fauna Süd-west Austr., ii. 1909, p. 170.

*Hab.*—W. Australia.

MITURGA FERINA, *Simon.*

*Miturga ferina*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 170.

*Hab.*—Broome Hill, W. Australia.

MITURGA GILVA, *L. Koch.*

*Miturga gilva*, L. Koch, Die Arach. des Austr., i., 1872, p. 354, tab. xxvii., figs. 8, 8a.

*Hab.*—Queensland, New South Wales, and Victoria.

MITURGA IMPEDITA, *Simon.*

*Miturga impedita*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 171.

*Hab.*—Pickering Brook, W. Australia.

MITURGA LINEATA, *Thor.*

*Miturga lineata*, Thor., Oef. Kongl. Vet.-Akad. Förh., 4, 1870, p. 376.

*Miturga lineata*, L. Koch, Die Arach. des Austr., i., 1872, p. 351, tab. xxvii., figs. 6, 6a, 7, 7a-7c.

*Hab.*—New South Wales, Victoria, and Central Australia.

MITURGA MACULATA, *Hogg.*

*Miturga maculata*, Hogg, Proc. Roy. Soc. Vict., xiii., 1900,  
p. 109, pl. xvi., fig. 3.

*Hab.*—Victoria.

? MITURGA NECATOR, *Walck.*

*Clubiona necator*, Walck., Hist. Nat. des Ins., Apt., i., 1837,  
p. 597.

*Hab.*—Tasmania.

MITURGA OCCIDENTALIS, *Simon.*

*Miturga occidentalis*, Simon, Die Fauna Süd-west Austr., ii.,  
1909, p. 169.

*Hab.*—W. Australia.

MITURGA SEVERA, *Simon.*

*Miturga severa*, Simon, Die Fauna Süd-west Austr., ii., 1909,  
p. 174.

*Hab.*—Victoria.

MITURGA THORELLI, *Simon.*

*Miturga thorelli*, Simon, Die Fauna Süd-west Austr., ii., 1909,  
p. 173.

*Hab.*—Cooktown, N. Australia.

MITURGA WHISTLERI, *Simon.*

*Miturga whistleri*, Simon, Die Fauna Süd-west Austr., ii., 1909,  
p. 171.

*Hab.*—W. Australia.

*Genus* Diaprograpta, *Simon.*DIAPROGRAPTA STRIOLA, *Simon.*

*Diaprograpta striola*, Simon, Die Fauna Süd-west Austr., ii.,  
1909, p. 175.

*Hab.*—Boorabbin, W. Australia.

*Obs.*—This is the type species of the genus.

*Genus Syspira, Simon.*

*Obs.*—*Syspira tigrina*, Simon, is the type species of this genus.

## SYSPIRA RUBICUNDA, Hogg.

*Syspira rubicunda*, Hogg, Proc. Roy. Soc. Vict., xiii, 1900,  
p. 108, pl. xvi., fig. 2.

*Hab.*—Victoria.

*Genus Argoctenus, L. Koch.*

(=*Miturgina*, Simon).

*Obs.*—*Argoctenus igneus*, L. Koch, is the type species of this genus.

## ARGOCTENUS HYSTRICULUS, Simon,

*Argoctenus hystriculus*, Simon, Die Fauna Süd-west Austr., ii,  
1909, p. 164.

*Hab.*—Comnington, W. Australia.

## ARGOCTENUS IGNEUS, L. Koch.

*Argoctenus igneus*, L. Koch, Die Arach. des Austr., ii, 1897,  
p. 990, tab. lxxxvi., figs. 4, 4a.

*Hab.*—W. Australia.

## ARGOCTENUS NEBULOSUS, Simon.

*Argoctenus nebulosus*, Simon, Die Fauna Süd-west Austr., ii,  
1909, p. 163.

*Hab.*—Cranbrook, W. Australia.

## ARGOCTENUS PECTINATUS, Hogg.

*Argoctenus pectinatus*, Hogg, Proc. Roy. Soc. Vict., xiii, 1900,  
p. 106, pl. xvi., fig. 1.

*Hab.*—Victoria.

## ARGOCTENUS PICTUS, L. Koch.

*Argoctenus pictus*, L. Koch, Die Arach. des Austr., ii, 1897,  
p. 992, tab. lxxxvi., figs. 5, 5a, 5c, 5d.

*Hab.*—New South Wales, Victoria, S. and W. Australia.

*Genus* Ellassoctenus, *Simon*.

*Ellassoctenus harpar*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 165.

*Hab.*—W. Australia.

*Obs.*—This is the type species of this genus.

*Genus* Hestimodema, *Simon*.HESTIMODEMA AMBIGUA, *Simon*.

*Hestimodema ambigua*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 166.

*Hab.*—W. Australia.

*Obs.*—This is the type species of this genus.

HESTIMODEMA LATEVITTATA, *Simon*.

*Hestimodema latevittata*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 167.

*Hab.*—W. Australia.

*Genus* Utenomma, *Thor*.

(=*Ctenophthalmus*, Simon, *nom. præocc.*).

CTENOMMA LINEATUM, *Simon*.

*Ctenophthalmus lineatum*, Simon, Ann. Soc. Ent. Belg., xxiii., 1880, p. clxxiv.

*Ctenomma lineatum*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 168.

*Hab.*—W. Australia and New Caledonia.

*Obs.*—This is the type species of the genus.

*Subfamily* MICARIINÆ.*Genus* Myandra, *Simon*.

*Obs.*—*Myandra cambridgei*, Simon, is the type species of this genus.

MYANDRA BICINCTA, *Simon*.

*Myandra bicincta*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 442.

*Hab.*—Boyanup, W. Australia.

MYANDRA CAMBRIDGEI, *Simon*.

*Myandra cambridgei*, Simon, Ann. Soc. Ent. France, 1887, Bull., p. clix.; Hist. Nat. des Araign., ii. (2nd ed.), 1897, p. 155, fig. 158.

*Hab.*—Victoria.

*Genus* *Molycria*, *Simon*.

(=*Mutusca*, O. P. Cambr.).

*Obs.*—*Molycria mammosa*, O. P. Cambr., is the type species of this genus.

MOLYCRIA ALBOPLAGIATA, *Simon*.

*Molycria alboplagiata*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 445.

*Hab.*—Lion Mill, W. Australia.

MOLYCRIA MAMMOSA, *O. P. Cambr.*

*Mutusca mammosa*, O. P. Cambr., Ann. Mag. Nat. Hist., xiv., 4, 1874, p. 173.

*Hab.*—Vicinity of Sydney, New South Wales.

MOLYCRIA FLAVIPES, *Simon*.

*Molycria flavipes*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 444.

*Hab.*—E. Fremantle, W. Australia.

MOLYCRIA SPLENDIDA, *Simon*.

*Molycria splendida*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 444.

*Hab.*—Northampton, W. Australia.

*Genus* *Honunius*, *Simon*.

HONUNIUS QUADRIKAUDA, *Simon*.

*Honunius quadricauda*, Simon, Die Fauna Süd-west Austr., i., 1908, p. 445.

*Hab.*—Harvey, W. Australia.

*Obs.*—This is the type species of this genus.

*Genus Ceryerda, Simon.*CERYERDA CURSITANS, *Simon.*

*Ceryerda cursitans*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 158.

*Hab.*—Day Dawn, W. Australia.

*Obs.*—This is the type species of the genus.

*Genus Methesis, Simon.*

*Obs.*—*Methesis semirufa*, Simon, is the type species of this genus.

METHESIS BIMACULATA, *Simon.*

*Methesis bimaculata*, Simon, Ann. Soc. Ent. Belg., xl., 1896, p. 411.

*Hab.*—Cooktown, N. Queensland.

*Genus Supunna, Simon.*

(=*Agræca*, L. Koch, non Westr.).

*Obs.*—*Supunna insularis*, L. Koch, is the type species of this genus.

SUPUNNA ALBOPUNCTATUM, *Hogg.*

*Liocranum albopunctatum*, Hogg, Horn Expl. Exped., ii., Zool., p. 328, pl. 24, fig. 8.

*Hab.*—Central Australia.

SUPUNNA FUNEREA, *Simon.*

*Supunna funerea*, Simon, Ann. Soc. Ent. Belg., xl., 1896, p. 407

*Hab.*—Tasmania.

SUPUNNA MICHAELSENI, *Simon.*

*Supunna michaelсени*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 175.

*Hab.*—Harvey, W. Australia.

SUPUNNA PICTA, *L. Koch.*

*Agræca picta*, L. Koch, Die Arach. des Austr., i., 1873, p. 438, tab. xxxiv., figs. 5, 5a.

*Hab.*—Brisbane, Queensland.

SUPUNNA SMARAGDINEA, *Simon*.

*Supunna smaragdinea*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 176.

*Hab.*—Wooroloo, W. Australia.

SUPUNNA VERSICOLOR, *Simon*.

*Supunna versicolor*, Simon, Ann. Soc. Ent. Belg., xl., 1896, p. 407.

*Hab.*—Victoria.

*Genus* PÆCILIPTA, *Simon*.PÆCILIPTA JANTHINA, *Simon*.

*Pæcilipta janthina*, Simon, Ann. Soc. Ent. Belg., xl., 1896, p. 408.

*Hab.*—Cooktown, N. Queensland.

*Obs.*—This is the type species of the genus.

PÆCILIPTA VENUSTA, *Rainbow*.

*Pæcilipta venusta*, Rainbow, Rec. Austr. Mus., v., 5, 1904, p. 333, pl. xlvi., figs. 7, 8, 9.

*Hab.*—Enfield, near Sydney, New South Wales.

*Genus* CORINNOMMA, *Karsch*.

(*Corinna*, Thor., non C. Koch).

*Obs.*—*Corinnomma severum*, Thor., is the type species of this genus.

CORINNOMMA FORMICIFORME, *Rainbow*.

*Corinnomma formiciforme*, Rainbow, Rec. Austr. Mus., v., 5, p. 335, pl. xlvi., figs. 10, 11, 12.

*Hab.*—Enfield, near Sydney, New South Wales.

CORINNOMMA SUAVERUBENS, *Simon*.

*Corinnomma suaverubens*, Simon, Ann. Soc. Ent. Belg., xl., 1896, p. 403.

*Hab.*—Cooktown, N. Queensland.



*Genus Micaria, Westr.*(=*Macaria*, C. Koch, *nom. præocc.*.)*Obs.*—*Micaria fulgens*, Walek., is the type species of this genus.MICARIA CRÆSIA, *L. Koch.**Micaria cræsia*, L. Koch, Die Arach. des Austr., i., 1873, p. 380, tab. xxix., fig. 8.*Hab.*—Sydney, New South Wales.MICARIA INORNATA, *L. Koch.**Micaria inornata*, L. Koch, Die Arach. des Austr., i., 1873, p. 381, tab. xxix., fig. 9.*Hab.*—Australia.*Genus Liparochrysis, Simon.*LIPAROCRYSIS RESPLENDENS, *Simon.**Liparochrysis resplendens*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 177.*Hab.*—Lunenburg, W. Australia.*Obs.*—This is the type species of the genus.*Subfamily CORINNINÆ.**Genus Asadipus, Simon.**Obs.*—*Asadipus insolens*, Simon, is the type species of this genus.ASADIPUS INSOLENS, *Simon.**Asadipus insolens*, Simon, Ann. Ent. Soc. Belg., xl., 1896, p. 413.*Hab.*—Cooktown, N. Queensland.ASADIPUS NITIDICEPS, *Simon.**Asadipus nitidiceps*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 178.*Hab.*—W. Australia.

*Genus Aristerus, Simon.*ARISTERUS PHALERATUS, *Simon.*

*Aristerus phaleratus*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 179.

*Hab.*—W. Australia.

*Obs.*—This is the type species of the genus.

*Genus Stratius, Simon.*STRATIUS MUTICUS, *Simon.*

*Asadipus muticus*, Simon, Ann. Ent. Soc. Belg., xli., 1897, p. 15.

*Hab.*—New South Wales.

*Obs.*—This is the type species of the genus.

*Genus Centrothele, L. Koch.*CENTROTHELE LORATA, *L. Koch.*

*Centrothele lorata*, L. Koch, Die Arach. des Austr., i., 1873, p. 414.

*Hab.*—Port Mackay, N. Queensland.

*Obs.*—This is the type species of the genus.

*Genus Medmassa, Simon.*

(= *Megera*, Simon, *nom. prevoc.*; *Astratea*, Thor.).

*Obs.*—*Medmassa frenata*, Simon, is the type species of this genus.

? MEDMASSA ALBOPUNCTATUM, *Hogg.*

*Liocranum albopunctatum*, Hogg, Horn Expl. Exped., ii., Zool., 1896, p. 328, pl. 24, fig. 8; also, Proc. Roy. Soc. Vict., xiii., 1900, p. 111.

*Hab.*—Illamurta, Central Australia.

? MEDMASSA AUSTRALIENSE, *L. Koch.*

*Liocranum australiense*, L. Koch, Die Arach. des Austr., i., 1873, p. 429.

*Hab.*—Sydney, New South Wales.

MEDMASSA BICOLOR, *Hogg.*

*Medmassa bicolor*, Hogg, Proc. Roy. Soc. Viet., xiii., 1900, p. 112 pl. xvi., fig. 4.

*Hab.*—Victoria.

## MEDMASSA FUSCA, Hogg.

*Medmassa fusca*, Hogg, Proc. Roy. Soc. Vict., xiii., 1900, p. 113,  
pl. xvii., fig. 1.

*Hab.*—Victoria.

## ? MEDMASSA PALLIPES, L. Koch.

*Liocranum pallipes*, L. Koch, Die Arach. des Austr., i., 1873,  
p. 430, tab. xxxiv., fig. 1.

*Hab.*—New South Wales and Victoria.

## MEDMASSA SEMIFLAVA, Simon.

*Medmassa semiflava*, Simon, Ann. Ent. Soc. Belg., xl., 1896,  
p. 414.

*Hab.*—Cooktown, N. Queensland.

## Family AGELENIDÆ.

## Subfamily NICODAMINÆ.

Genus *Nicodamus*, Simon.

(=*Centropelma*, L. Koch, *nom. præocc.*; *Ozaleus*, Thor.).

*Obs.*—*Nicodamus bicolor*, L. Koch, is the type species of this  
genus.

## NICODAMUS BICOLOR, L. Koch.

*Centropelma bicolor*, L. Koch, Die Arach. des Austr., i., 1872,  
p. 246, tab. xx., figs. 5, 5a, 5b, 5c, 6, 6a-6g.

*Nicodamus bicolor*, Simon, Hist. Nat. des Araign., ii. (2nd ed.),  
1897, p. 222, figs. 209 and 214.

*Hab.*—S. New Guinea, Australia generally, and Tasmania.

## NICODAMUS DIMIDIATUS, Simon.

*Nicodamus dimidiatus*, Simon, Ann. Soc. Ent. France, 1897,  
p. 15.

*Hab.*—E. Australia.

## NICODAMUS PERIGRINUS, Walck.

*Theridion perigrinum*, Walck., Hist. Nat. des Ins., Apt., ii.,  
1837, p. 297.

*Nicodamus perigrinus*, Simon, Hist. Nat. des Araign., ii. (2nd ed.), 1897, p. 222, figs. 210, 211.

*Hab.*—Australia. Erroneously recorded by Walckenaer (*supra*) as coming from Brazil.

NICODAMUS SEMIFLAVUM, *L. Koch.*

*Theridium semiflavum*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien, 1865, p. 858; Die Arach. des Austr., i., 1872, p. 259, tab. xxi., figs. 6, 6a, 7.

*Hab.*—Queensland, New South Wales, Victoria, and Tasmania.

NICODAMUS TARANDUS, *Thor.*

*Ozalens tarandus*, Thor., Studi Ragni Mal. e Papuani, i., iv., 1889, p. 294.

*Hab.*—N. Australia.

Subfamily CYBÆINÆ.

Genus *Desis*, *Walck.*

(= *Robsonia*, Walck.; *Dandridgea*, White; *Paradesis*, Pocock).

*Obs.*—*Desis maxillosa*, Fabr., is the type species of this genus.

DESIS HARTMEYERI, *Simon.*

*Desis hartmeyeri*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 180.

*Hab.*—Albany, W. Australia.

DESIS KENYONÆ, *Pocock.*

*Desis kenyonæ*, Pocock, Proc. Zool. Soc. Lond., 1902, p. 102, fig. 21.

*Hab.*—Victoria.

DESIS MARINA, *Hector.*

*Argyroneta marina*, Hector, Trans. N.Z. Inst., x., 1877, p. 300.

*Desis robsoni*, Powell, Trans. N.Z. Inst., xi., 1878, p. 263, pl. xii.

*Robsonia marina*, O. P. Cambr., Proc. Zool. Soc. Lond., 1879, p. 686.

*Desis marina*, Pocock, Ann. Mag. Nat. Hist., xvi., 6, 1895, p. 143; Proc. Zool. Soc. Lond., 1902, p. 101.

*Hab.*—E. Australia, New Zealand, and New Caledonia.

*Genus Rubrius, Simon.*

(= *Mythos*, Simon).

*Obs.*—*Rubrius subfuscatus*, Simon, is the type species of this genus.

RUBRIUS MILVINUS, *Simon.*

*Rubrius milvinus*, Simon, Ann. Soc. Ent. Belg., xlvii., 1903, p. 34.

*Hab.*—Tasmania.

RUBRIUS PAROCULUS, *Simon.*

*Rubrius paroculus*, Simon, Ann. Soc. Ent. Belg., xlvii., 1903, p. 35.

*Hab.*—Tasmania.

RUBRIUS PERISCELIS, *Simon.*

*Rubrius periscelis*, Simon, Ann. Soc. Ent. Belg., xlvii., 1903, p. 35.

*Hab.*—Tasmania.

*Genus Myro, O. P. Cambr.*

*Obs.*—*Myro kerguelensis*, O. P. Cambr., is the type species of this genus.

MYRO MACULATUS, *Simon.*

*Myro maculatus*, Simon, Ann. Soc. Ent. Belg., xlvii., 1903, p. 34.

*Hab.*—Tasmania.

*Genus Ommatauxesis, Simon.*OMMATAUXESIS MACROPS, *Simon.*

*Ommatauxesis macrops*, Simon, Ann. Soc. Ent. Belg., xlvii., 1903, p. 38.

*Hab.*—Tasmania.

*Obs.*—This is the type species of this genus.

## Subfamily AGELENINÆ

Genus *Tegenaria*, Latr.(=*Histopona*, Thor.).

## TEGENARIA DOMESTICA, Clerck.

*Araneus domesticus*, Clerck (*ad part*), Svenska Spind., 1757, pl. ii., tab. ix., fig. 2.*Araneus domestica*, Linn., Syst. Nat., 1758, ed. x., i., p. 620.*Aranea derhami*, Scop., Entom. Carn., 1763, p. 400.*Aranea civilis*, Walck., Faune parisienne, ii., 1802, p. 216.*Tegenaria domestica*, C. Koch, Deutschl. Ins., 1834, p. 125.*Tegenaria civilis*, Walck., Hist. Nat. des Ins., Apt., ii., 1837, p. 7.*Agelena familiaris*, Walck., *op. cit.*, p. 25.*Tegenaria civilis*, C. Koch, Die Arach., viii., 1841, p. 37, figs. 618, 619.*Tegenaria civilis*, Blackw., Spiders of Gt. Britain, i., 1861, p. 166, pl. xii., fig. 107.*Tegenaria derhami*, L. Koch, Die Arach. des Austr., i., 1872, p. 358.*Tegenaria domestica*, Simon, Arach. de France, ii., 1875, p. 75.*Tegenaria derhami*, O. P. Cambr., Spiders of Dorset., i., 1879, p. 63.*Hab.*—World-wide. Australia (introduced).*Obs.*—This is the type species of the genus.Genus *Nyssus*, Walck.

## NYSSUS COLORIPES, Walck.

*Nyssus coloripes*, Walck., Tab. des Aran., 1805, p. 52.*Nyssus coloripes*, Simon, Hist. Nat. des Araign., ii., 1897, p. 259 (footnote).*Hab.*—Australia.*Obs.*—This is the type species of the genus. It is not possible to identify either genus or species with certainty.Genus *Cicirra*, Simon.

## CICIRRA DECEMMACULATA, Simon.

*Cicirra decemmaculata*, Simon, Ann. Soc. Ent. Belg., 1886, p. lxi.*Hab.*—Tasmania.*Obs.*—This is the type species of the genus.

## Subfamily HAHNINÆ.

Genus *Scotopsilus*, Simon.

## SCOTOPSILUS BICOLOR, Simon.

*Scotopsilus bicolor*, Simon, Ann. Soc. Ent. Belg., 1886, p. lxi.

*Hab.*—Tasmania.

*Obs.*—This is the type species of this genus.

## SCOTOPSILUS, sp.

*Scotopsilus* sp., Simon, Die Fauna Süd-west Austr., ii, 1909, p. 181.

*Hab.*—Torbay, W. Australia.

Genus *Tetragonophthalma*, Karsch.

(= *Perenthis*, L. Koch).

*Obs.*—*Tetragonophthalma phylla*, Karsch, is the type species of this genus.

## TETRAGONOPHTHALMA UNIFASCIATA, Dol.

*Dolomedes unifasciatus*, Dol., Tweede Bijdr., 1859, p. 10, tab. vi., figs. 6, 6a.

*Ocyale* (?) *unifasciatus*, Thor., Studi Ragni Mal. e Papuani, ii., 1878, p. 307.

*Perenthis venusta*, L. Koch, Die Arach. des Austr., ii., 1878, p. 980, tab. lxxx., figs. 7, 7a.

*Perenthis venusta*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 372.

*Hab.*—The Island of Amboina and Queensland.

## Family PISAURIDÆ.

Genus *Dendrolycosa*, Dol.

(= *Therimachus*, Thor.).

*Obs.*—*Dendrolycosa fusca*, Dol., is the type species of this genus.

## DENDROLYCOSA KOCHI, Simon, MS.

*Dendrolycosa kochi*, Simon, MS., Hist. Nat. des Araign., ii., 1898 pp. 285 and 289.

*Obs.*—In a letter dated Paris, 6th July, 1910, M. Simon informs me he has not yet described this species, but that he included it in his work under manuscript name in order to define the range of the genus.

*Hab.*—N. Australia (Cooktown) and E. Australia.

DENDROLYCOSA LINEATA, *Thor.*

*Dendrolycosa lineata*, *Thor.*, *Studi Ragni Mal. e Papuani*, iii., 1881, p. 366.

*Hab.*—Cape York, N. Queensland.

*Genus Nilus*, *O. P. Cambr.*

(=*Sphedanus* et *Charminus*, *Thor.*; ? *Enigma*, *Karsch*; *Tallonia*, *Simon*).

*Obs.*—*Nilus curtus*, *O. P. Cambr.*, is the type species of this genus.

? *NILUS AUSTRALIANUS*, *Karsch.*

?*Enigma australiana*, *Karsch*, *Zeitsch. f. d. g. Naturw.*, li., 1878, p. 825.

*Hab.*—Australia.

*NILUS ELEGANS*, *L. Koch.*

*Dolomedes elegans*, *L. Koch*, *Die Arach. des Austr.*, ii., 1876, p. 861, tab. lxxiii., figs. 6, 6a, 6b.

*Hab.*—Port Mackay, N. Queensland.

*NILUS ICADIUS*, *L. Koch.*

*Nilus icadius*, *L. Koch*, *Die Arach. des Austr.*, ii., 1876, p. 859, tab. lxxiii., figs. 5, 5a.

*Hab.*—Queensland.

*Genus Pycnotenus*, *L. Koch.*

*PYCNOTENUS ROBUSTUS*, *L. Koch.*

*Pycnotenus robustus*, *L. Koch*, *Die Arach. des Austr.*, ii., 1878, p. 996, tab. lxxxvii., figs. 2, 2a, 2b.

*Hab.*—Sydney, New South Wales.

*Obs.*—This is the type species of the genus.



*Genus Dolomedes, Latr.*

*Obs.*—*Dolomedes fimbriatus*, Clerck, is the type species of this genus.

DOLOMEDES ALBICOMUS, *L. Koch.*

*Dolomedes albicomus*, L. Koch., Verh. der K.K. zool.-bot. Ges. Wien, 1867, p. 199; Die Arach. des Austr., ii., 1876, p. 875, tab. lxxv., figs. 3, 3a.

*Hab.*—Brisbane, Queensland.

DOLOMEDES AUSTRALIANUS, *L. Koch.*

*Dolomedes australianus*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien, 1865, p. 863; Die Arach. des Austr., ii., 1876, p. 873, tab. lxxv., figs. 2, 2a.

*Hab.*—New South Wales and Victoria.

DOLOMEDES CERVINUS, *L. Koch.*

*Dolomedes cervinus*, L. Koch, Die Arach. des Austr., ii., 1876, p. 872, tab. lxxv., fig. 1.

*Hab.*—Nepean River, New South Wales.

DOLOMEDES FACETUS, *L. Koch.*

*Dolomedes facetus*, L. Koch, Die Arach. des Austr., ii., 1876, p. 869, figs. 5, 5a, 5b.

*Dolomedes facetus*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxxiv., 1909, p. 274.

*Hab.*—Australia generally, New Zealand, and the Island of Upolu.

DOLOMEDES FLAMINIUS, *L. Koch.*

*Dolomedes flaminius*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien, 1867, p. 197; Die Arach. des Austr., ii., 1876, p. 877, tab. lxxv., figs. 4, 4a, 4b.

*Hab.*—Brisbane, Queensland.

DOLOMEDES INSTABILIS, *L. Koch.*

*Dolomedes instabilis*, L. Koch, Die Arach. des Austr., ii., 1876, p. 863, tab. lxxiv., figs. 1, 1a.

*Hab.*—New South Wales and Victoria.

DOLOMEDES MIRIFICUS, *Walck.*

*Dolomedes mirificus*, Walck., Hist. Nat. des Ins, Apt., i., 1837,  
p. 355.

*Dolomedes mirificus*, Walck., Die Arach. des Austr., ii., 1876,  
p. 879.

*Hab.*—Australia and New Zealand.

DOLOMEDES STILATUS, *Karsch.*

*Dolomedes stilatus*, Karsch, Zeitsch. f. g. Naturw., li., 1878,  
p. 814.

*Hab.*—W. Australia.

Genus *Anoteropis*, *L. Koch.*

*Obs.*—*Anoteropis flavescens*, L. Koch, is the type species of this  
genus.

ANOTEROPUS LONGIPES, *L. Koch.*

*Anoteropus longipes*, L. Koch, Die Arach. des Austr., ii., 1878,  
p. 973, tab. lxxxv., figs. 2, 2a.

*Hab.*—? Australia. Koch (*supra*, p. 974) says simply :—"Mr.  
Bradley's Sammlung."

Genus *Voraptus*, *Simon*

*Obs.*—The type species of this genus is *Voraptus tenellus*,  
Simon.

## VORAPTUS, SPP.

*Voraptus*, spp., Simon, two undescribed forms, Hist. Nat. des  
Araign., ii., 1897, p. 341.

*Hab.*—Australia.

## Family LYCOSIDÆ.

Genus *Anomalomma*, *Simon.*

(=? *Lysania*, Simon).

*Obs.*—*Anomalomma lycosinum*, Simon, is the type species of  
this genus.

ANOMALOMMA CINCTIPES, *Simon.*

*Anomalomma cinctipes*, Simon, Ann. Soc. Ent. Belg., xlii., 1898,  
p. 24.

*Hab.*—Cooktown, N. Queensland.

ANOMALOMMA KOCHI, *Simon*.

*Anomalomma kochi*, Simon, Ann. Soc. Ent. Belg., xlii., 1898, p. 23.

*Hab.*—Cooktown, N. Queensland.

*Genus Lycosa, Latr.*

(=*Tarentula* et *Pirata*, Sund.; *Arctosa*, *Trochosa* et *Potamia*, C. Koch; *Diapontia*, Keys.; *Tricca*, Simon).

*Obs.*—*Lycosa tarentula*, Rossi, is the type species of this genus.

LYCOSA AUREA, *Hogg*.

*Lycosa aurea*, Hogg, Rep. Horn Expl. Exped., ii., Zool., 1896, p. 345, pl. 24, fig. 13.

*Hab.*—Ellery Creek, Central Australia.

LYCOSA ARENARIS, *Hogg*.

*Lycosa arenaris*, Hogg, Proc. Zool. Soc. Lond., 1905, p. 586, fig. 88.

*Hab.*—McDonnell Ranges, Central Australia.

LYCOSA ALBO-GUTTATA, *L. Koch*.

*Lycosa albo-guttata*, L. Koch, Die Arach. des Austr., ii., 1878, p. 975, tab. lxxxv., figs. 3, 3a.

*Hab.*—Queensland, New South Wales, and Victoria.

LYCOSA ALBO-PILATA, *Urquh.*

*Lycosa albo-pilata*, Urquh., Trans. Roy. Soc. Tasm., 1892 [1893], p. 123.

*Hab.*—Tasmania.

LYCOSA ALBO-SPARSA, *L. Koch*.

*Lycosa albo-sparsa*, L. Koch, Die Arach. des Austr., ii., 1877, p. 886, tab. lxxvi., fig. 4.

*Hab.*—Rockhampton, N. Queensland, and Central Australia.

LYCOSA BERENICE, *L. Koch*.

*Lycosa berenice*, L. Koch, Die Arach. des Austr., ii., 1877, p. 937, tab. lxxxii., figs. 3, 3a.

*Hab.*—New South Wales and Victoria.

LYCOSA BICOLOR, *Hogg.*

*Lycosa bicolor*, Hogg, Proc. Zool. Soc. Lond., 1905, p. 580, fig. 85.  
*Hab.*—Australia.

LYCOSA BRISBANÆ, *L. Koch.*

*Lycosa brisbanæ*, L. Koch, Die Arach. des Austr., ii., 1878,  
 p. 976, tab. lxxxv., figs. 4, 4a, 4b.  
*Hab.*—Brisbane, Queensland.

LYCOSA CANDICANS, *L. Koch.*

*Lycosa candicans*, L. Koch, Die Arach. des Austr., ii., 1877,  
 p. 888, tab. lxxvi., figs. 5, 5a, 6, 6a, 6b.  
*Hab.*—New South Wales.

LYCOSA CASTANEA, *Hogg.*

*Lycosa castanea*, Hogg, Proc. Zool. Soc. Lond., 1909, p. 577,  
 fig. 83.  
*Hab.*—Adelaide, S. Australia.

LYCOSA CHRISTOPHERI, *Simon.*

*Lycosa christopheri*, Simon, Die Fauna Süd-west Austr., ii., 1909,  
 p. 182.  
*Hab.*—Fremantle, W. Australia.

LYCOSA CLARA, *L. Koch.*

*Lycosa clara*, L. Koch, Die Arach. des Austr., ii., 1877, p. 912,  
 tab. lxxix., figs. 1, 1a, 1b.  
*Hab.*—Queensland, New South Wales, Victoria, and S.  
 Australia.

LYCOSA COWLEI, *Hogg.*

*Lycosa cowlei*, Hogg, Rep. Horn Expl. Exped., ii., Zool., 1896,  
 p. 349, pl. 24, fig. 15.  
*Hab.*—Ayer's Rock, Central Australia.

LYCOSA CRISPIPES, *L. Koch.*

*Lycosa crispipes*, L. Koch, Die Arach. des Austr., ii., 1877,  
 p. 923, tab. lxxix., figs. 8, 8a; tab. lxxx., figs. 1, 1a.  
*Lycosa crispipes*, Hogg, Proc. Zool. Soc. Lond., 1905, p. 588.  
*Hab.*—N. Queensland and Central Australia.

LYCOSA DIMOTA, *Simon*.

*Lycosa dimota*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 184.

*Hab.*—Day Dawn, W. Australia.

LYCOSA EGENA, *L. Koch*.

*Lycosa egena*, L. Koch, Die Arach. des Austr., ii., 1877, p. 935, tab. lxxxi., figs. 2, 2a.

*Hab.*—Cape York, N. Queensland.

LYCOSA ERRANS, *Hogg*.

*Lycosa errans*, Hogg, Proc. Zool. Soc. Lond., 1905, p. 579, fig. 84.

*Hab.*—Australia.

LYCOSA EXCULTA, *L. Koch*.

*Lycosa exculta*, L. Koch, Die Arach. des Austr., ii., 1877, p. 881, tab. lxxvi., figs. 1, 1a, 1b, 1c.

*Hab.*—Gayndah, Queensland.

LYCOSA EXPOLITA, *L. Koch*.

*Lycosa expolita*, L. Koch, Die Arach. des Austr., ii., 1877, p. 917, tab. lxxix., figs. 4, 4a, 5, 5a.

*Hab.*—Brisbane, Queensland.

LYCOSA FALLAX, *L. Koch*.

*Lycosa fallax*, L. Koch, Die Arach. des Austr., ii., 1877, p. 934, tab. lxxx., figs. 8, 8a.

*Hab.*—Bowen, N. Queensland.

LYCOSA FESTINA, *L. Koch*.

*Lycosa festina*, L. Koch, Die Arach. des Austr., ii., 1877, p. 927, tab. lxxx., figs. 3, 3a, 4, 4a.

*Hab.*—N. Queensland.

LYCOSA FESTIVA, *Urquh.*

*Lycosa festiva*, Urquh., Trans. Roy. Soc. Tasm., 1892 [1893], p. 126.

*Hab.*—Tasmania.

LYCOSA FLAVISTERNIS, *L. Koch.*

*Lycosa flavisternis*, L. Koch, Die Arach. des Austr., ii., 1877, p. 950, tab. lxxxii., figs. 4, 4a, 5, 5a.

*Hab.*—Queensland and New South Wales.

LYCOSA FURCILLATA, *L. Koch.*

*Lycosa furcillata*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien, 1867, p. 201; Die Arach. des Austr., ii., 1877, p. 903, tab. lxxviii., figs. 1, 1a, 1b, 2, 2a, 2b.

*Hab.*—Queensland and New South Wales.

LYCOSA GILBERTA, *Hogg.*

*Lycosa gilberta*, Hogg, Proc. Zool. Soc. Lond., 1905, p. 582, fig. 86.

*Hab.*—Australia.

LYCOSA GODEFFROYI, *L. Koch.*

*Lycosa godeffroyi*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien, 1865, p. 867; Die Arach. des Austr., ii., 1877, p. 957, tab. lxxxiii., figs. 3, 3a, 4, 4a.

*Lycosa bellatrix*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien, 1865, p. 866.

*Hab.*—Queensland, New South Wales, and Victoria.

LYCOSA HABILIS, *Hogg.*

*Lycosa habilis*, Hogg, Proc. Zool. Soc. Lond., 1905, p. 588, fig. 89.

*Hab.*—Gilbert River, Riverina, New South Wales.

LYCOSA HASSELTII, *L. Koch.*

*Lycosa hasseltii*, L. Koch, Die Arach. des Austr., ii., 1867, p. 690, tab. lxxxiii., figs. 5, 5a.

*Hab.*—Peak Downs, Queensland.

LYCOSA IMMANSEUTA, *Simon.*

*Lycosa immanseuta*, Simon, Die Fauna Sud-west Austr., ii., 1909, p. 183, fig. 1.

*Hab.*—W. Australia.

LYCOSA IMPEDITA, *Simon*.

*Lycosa impedita*, Simon, Die Fauna Süd-west Austr., ii, 1909, p. 187, fig. 6.

*Hab.*—Gooseberry Hill, W. Australia.

LYCOSA INFENSA, *L. Koch*.

*Lycosa infensa*, L. Koch, Die Arach. des Austr., ii, 1877, p. 932, tab. lxxx., fig. 7.

*Hab.*—Queensland and New South Wales.

LYCOSA INORNATA, *L. Koch*.

*Lycosa inornata*, L. Koch, Die Arach. des Austr., ii, 1877, p. 938, tab. lxxxii., figs. 4, 4a.

*Hab.*—The island of Upolu and (?) Victoria.

LYCOSA LACERTOSA, *L. Koch*.

*Lycosa lacertosa*, L. Koch, Die Arach. des Austr., ii, 1877, p. 952, tab. lxxxii., figs. 6, 6a.

*Hab.*—Adelaide, S. Australia.

LYCOSA LETA, *L. Koch*.

*Lycosa leta*, L. Koch, Die Arach. des Austr., ii, 1877, p. 944, tab. lxxxii., figs. 7, 7a, 7b; tab. lxxxii., figs. 1, 1a.

*Tarentula leta*, Thor., Studi Ragni Mal. e Papuani, iii, 1881, p. 382.

*Hab.*—N. Queensland and Central Australia.

LYCOSA LEUCKARTII, *Thor*.

*Tarentula leuckartii*, Thor., Oef. af Kongl. Vet.-Akad. Förh., 4, 1870, p. 388.

*Lycosa leuckartii*, L. Koch, Die Arach. des Austr., ii, 1877, p. 896, tab. lxxvii., figs. 3, 3a; tab. lxxxii., figs. 1, 1a.

*Hab.*—Peak Downs, Queensland.

LYCOSA LEUCOPHAEA, *L. Koch*.

*Lycosa leucophara*, L. Koch, Die Arach. des Austr., ii, 1877, p. 948, tab. lxxxii., figs. 3, 3a.

*Hab.*—Queensland, New South Wales, Victoria, and Central Australia.

LYCOSA MERACULA, *Simon*.

*Lycosa meracula*, Simon, Die Fauna Süd-west Austr., ii., 1909  
p. 190.

*Hab.*—W. Australia.

LYCOSA MERCENTIOR, *Simon*.

*Lycosa mercentior*, Simon, Die Fauna Süd-west Austr., ii., 1909,  
p. 185, fig. 3.

*Hab.*—W. Australia.

LYCOSA MOLYNEUXI, *Hogg*.

*Lycosa molyneuxi*, Hogg, Proc. Zool. Soc. Lond., 1905, p. 575,  
fig. 82.

*Hab.*—Gilbert River, Riverina, New South Wales.

LYCOSA NÆVIA, *L. Koch*.

*Lycosa nævia*, L. Koch, Die Arach. des Austr., ii., 1878, p. 978,  
tab. lxxxv., figs. 5, 5a.

*Hab.*—Sydney, New South Wales.

LYCOSA NEPTUNUS, *Rainbow*.

*Dolomedes neptunus*, Rainbow, Proc. Linn. Soc. N. S. Wales,  
xxii., 1896, p. 326, pl. xviii., figs. 4, 4a.

*Hab.*—Shores of Port Jackson, New South Wales.

LYCOSA OBSCURA, *L. Koch*.

*Lycosa obscura*, L. Koch, Die Arach. des Austr., ii., 1877, p. 954,  
tab. lxxxiii., figs. 1, 1a, 2, 2a.

*Hab.*—Queensland, New South Wales, Victoria, and S.  
Australia.

LYCOSA ORARIA, *L. Koch*.

*Lycosa oraria*, L. Koch, Die Arach. des Austr., ii., 1877, p. 883,  
tab. lxxvi., figs. 2, 2a, 3, 3a.

*Hab.*—W. Australia.

LYCOSA ORNATULA, *L. Koch*.

*Lycosa ornatula*, L. Koch, Die Arach. des Austr., ii., 1877, p. 902,  
tab. lxxvii., figs. 6, 6a, 6b.

*Hab.*—Queensland, New South Wales, and Victoria.



LYCOSA PALABUNDA, *L. Koch.*

*Lycosa palabunda*, L. Koch, Die Arach. des Austr., ii., 1877,  
p. 906, tab. lxxviii., figs. 3, 3a, 3b, 4, 4a.

*Hab.*—Queensland, New South Wales, and South Sea Islands.

LYCOSA PERCAUTA, *Simon.*

*Lycosa percauta*, Simon, Die Fauna Süd-west Austr., ii., 1909,  
p. 187.

*Hab.*—Rottneet, W. Australia.

LYCOSA PHEGEIA, *Simon.*

*Lycosa phegeia*, Simon, Die Fauna Süd-west Austr., ii., 1909,  
p. 189, fig. 8.

*Hab.*—Cannington, W. Australia.

LYCOSA PHYLLIS, *Hogg.*

*Lycosa phyllis*, Hogg, Proc. Zool Soc. Lond., 1905, p. 573, fig. 81.

*Hab.*—Gilbert River, Riverina, New South Wales, and Kangaroo Island, S. Australia.

LYCOSA PICTIVENTRIS, *L. Koch.*

*Lycosa pictiventris*, L. Koch, Die Arach. des Austr., ii., 1877,  
p. 899, tab. lxxvii., figs. 4, 4a, 4b, 5.

*Hab.*—Queensland and New South Wales.

LYCOSA PROPERIPES, *Simon.*

*Lycosa properipes*, Simon, Die Fauna Süd-west Austr., ii., 1909,  
p. 189.

*Hab.*—W. Australia.

LYCOSA PROPITIA, *Simon.*

*Lycosa propitia*, Simon, Die Fauna Süd-west Austr., ii., 1909,  
p. 186, fig. 5.

*Hab.*—Cannington, W. Australia.

LYCOSA PRUINOSA, *L. Koch.*

*Lycosa pruinosa*, L. Koch, Die Arach. des Austr., ii., 1877,  
p. 925, tab. lxxx, figs. 2, 2a.

*Hab.*—Sydney, New South Wales.

LYCOSA PULLASTRA, *Simon*.

*Lycosa pullastra*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 184, fig. 2.

*Hab.*—W. Australia.

LYCOSA PULVERE-SPARSA, *L. Koch*.

*Lycosa pulvere-sparsa*, L. Koch, Die Arach. des Austr., ii., 1877, p. 941, tab. lxxxii., figs. 6, 6a.

*Hab.*—Rockhampton, N. Queensland, and Central Australia.

LYCOSA RAMOSA, *L. Koch*.

*Lycosa ramosa*, L. Koch, Die Arach. des Austr., ii., 1877, p. 910, tab. lxxviii., figs. 6, 6a.

*Hab.*—Queensland, New South Wales, and Victoria.

LYCOSA SEGREGIS, *Simon*.

*Lycosa segregis*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 186, fig. 4.

*Hab.*—Fremantle, W. Australia.

LYCOSA SENILIS, *L. Koch*.

*Lycosa senilis*, L. Koch, Die Arach. des Austr., ii., 1877, p. 946, tab. lxxxii., figs. 2, 2a.

*Hab.*—Sydney, New South Wales.

LYCOSA SEMI-CINCTA, *L. Koch*.

*Lycosa semi-cincta*, L. Koch, Die Arach. des Austr., ii., 1877, p. 908, tab. lxxviii., figs. 5, 5a, 5b.

*Hab.*—Queensland.

LYCOSA SERRATA, *L. Koch*.

*Lycosa serrata*, L. Koch, Die Arach. des Austr., ii., 1877, p. 930, tab. lxxx., figs. 5, 5a, 6, 6a.

*Hab.*—Sydney, New South Wales.

LYCOSA SIBYLLINA, *Simon*.

*Lycosa sibyllina*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 188, fig. 7.

*Hab.*—Albany, W. Australia.

LYCOSA SIMSONI, *Simon*.

*Lycosa simsoni*, Simon, Ann. Soc. Ent. Belg., xlii., 1898, p. 29.

*Hab.*—Tasmania.

LYCOSA SPECIOSA, *L. Koch*.

*Lycosa speciosa*, L. Koch, Die Arach. des Austr., ii., 1877, p. 890, tab. lxxvii., figs. 1, 1a, 1b.

*Hab.*—New South Wales.

LYCOSA SPINIPES, *Rainbow*.

*Dolomedes spinipes*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxii., 1896, p. 327, pl. xviii., fig. 5.

*Hab.*—Shores of Port Jackson, New South Wales.

LYCOSA STERLINGÆ, *Hogg*.

*Lycosa sterlingæ*, Hogg, Proc. Zool. Soc. Lond., 1905, p. 584, fig. 87.

*Hab.*—Gilbert River, Riverina, New South Wales.

LYCOSA SUBLIGATUS, *L. Koch*.

*Pirata subligatus*, L. Koch, Die Arach. des Austr., ii., 1877, p. 963, tab. lxxxiv., figs. 2, 2a, 2b, 2c.

*Hab.*—Bowen, N. Queensland.

LYCOSA TASMANICA, *Hogg*.

*Lycosa tasmanica*, Hogg, Proc. Zool. Soc. Lond., 1905, p. 571, fig. 80.

*Hab.*—Table Top, Tasmania.

LYCOSA TOPAZIOPSIS, *Hogg*.

*Lycosa topaziopsis*, Hogg, Rep. Horn Expl. Exped., ii., Zool., 1906, p. 347, pl. 24, fig. 14.

*Hab.*—Stevenson River, Central Australia.

LYCOSA TRISTICULA, *L. Koch*.

*Lycosa tristicula*, L. Koch, Die Arach. des Austr., ii., 1877, p. 892, tab. lxxvii., figs. 2, 2a.

*Hab.*—Sydney, New South Wales.

LYCOSA WOODWARDI, *Simon*.

*Lycosa woodwardi*, Simon, Die Fauna Süd-west Austr., ii., 1908,  
p. 182.

*Hab.*—W. Australia.

L. ZUALELLA, *Strand*.

*Tarentula zualella*, Strand, Weisbaden Jahr. Ver. Natk., 1907,  
pp. 177, 219.

*Hab.*—Australia.

*Genus Venator, Hogg.*

*Obs.*—*Venator spenceri*, Hogg, is the type species of this genus.

VENATOR FUSCUS, *Hogg*.

*Venator fuscus*, Hogg, Proc. Roy. Soc. Vict., xiii., 1900, p. 118,  
pl. xvii., fig. 3.

*Hab.*—Victoria.

VENATOR MARGINATUS, *Hogg*.

*Venator marginatus*, Hogg, Proc. Roy. Soc. Vict., xiii., 1900,  
p. 120, pl. xvii., fig. 4.

*Hab.*—Victoria.

VENATOR SPENCERI, *Hogg*.

*Venator spenceri*, Hogg, Proc. Roy. Soc. Vict., xiii., 1900, p. 116,  
pl. xvii., fig. 2.

*Hab.*—Victoria.

*Genus Trabæa, Simon.*

(=*Aulonia*, Emert.).

*Obs.*—*Trabæa paratova*, Simon, is the type species of this  
genus.

TRABÆA AUSTRALIENSIS, *L. Koch*.

*Trabæa australiensis*, L. Koch, Die Arach. des Austr., ii., 1877,  
p. 968, tab. lxxxiv., figs. 6, 6a, 6b.

*Hab.*—Shelly's Flats, N. S. Wales.

TRABEA LINEATA, *L. Koch.*

*Trabea lineata*, L. Koch, Die Arach. des Austr., ii., 1878, p. 970, tab. lxxxiv., figs. 7, 7a, 7b.

*Hab.*—Sydney, New South Wales.

*Genus Artoria, Thor.*

*Obs.*—*Artoria parvula*, Thor., is the type species of this genus.

ARTORIA CINGULIPES, *Simon.*

*Artoria cingulipes*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 193, fig. 10.

*Hab.*—Collie, W. Australia.

ARTORIA FLAVIMANUS, *Simon.*

*Artoria flavimanus*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 193, fig. 9.

*Hab.*—Mandering Wier, W. Australia.

ARTORIA TÆNIIFERA, *Simon.*

*Artoria tæniifera*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 193, fig. 11.

*Hab.*—Bunbury, W. Australia.

*Genus Lycosella, Thor.*

*Obs.*—*Lycosella tenera*, Thor., is the type species of this genus. No Australian *Lycosella* appear to have been described, although Simon (Hist. Nat. des Araign., ii., 1897, p. 344) states that he knows of two forms from the north of Queensland.

*Genus Venonia, Thor.*

*Obs.*—*Venonia coruscans*, Thor., is the type species of this genus.

VENONIA MICARIOIDES, *L. Koch.*

*Aulonia micarioides*, L. Koch, Die Arach. des Austr., ii., 1877, p. 961, tab. lxxxiii., figs. 6, 6a; tab. lxxxiv., figs. 1, 1a.

*Hab.*—N. Queensland.

*Genus Cycloctenus, L. Koch.*

*Obs.*—*Cycloctenus flaviceps*, L. Koch, is the type species of this genus.

CYCLOCTENUS ABYSSINUS, *Urquh.*

*Cycloctenus abyssinus*, Urquh., Trans. N.Z. Inst., xxii., 1889, p. 237, pl. xvi.

*Cycloctenus abyssinus*, Rainbow, Proc. Linn. Soc. N. S. Wales, xvii., 1892, p. 473, pl. xii., figs. 6-12.

*Hab.*—Jenolan Caves, New South Wales.

CYCLOCTENUS FLAVICEPS, *L. Koch.*

*Cycloctenus flaviceps*, L. Koch, Die Arach. des Austr., ii., 1878, p. 988, tab. lxxxvi., figs. 3, 3a-3d.

*Cycloctenus lepidus*, Urquh., Trans. N.Z. Inst., xxii., 1889, p. 261, pl. xvii., fig. 1.

*Hab.*—Australia and New Zealand.

*Genus Pardosa*, *C. Koch.*

(=*Leimonia*, C. Koch, *nom. præocc.*; *Passiena*, Thor.).

*Obs.*—*Pardosa striatipes*, C. Koch, is the type species of this genus.

PARDOSA PRÆVELOX, *Simon.*

*Pardosa prævelox*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 191.

*Hab.*—N. Fremantle, W. Australia.

PARDOSA VERSICOLOR, *L. Koch.*

*Pardosa versicolor*, L. Koch, Die Arach. des Austr., ii., 1876, p. 977, tab. lxxxiv., figs. 4, 4a, 5, 5a.

*Hab.*—Sydney, New South Wales.

## Family OXYOPIDÆ.

*Genus Peucetia*, *Thor.*

(=*Pasithea*, Blackw., *nom. præocc.*).

*Obs.*—*Peucetia viridis*, Blackw., is the type species of this genus.

PEUCETIA ALBESCENS, *L. Koch.*

*Peucetia albescens*, L. Koch, Die Arach. des Austr., ii., 1878, p. 998, tab. lxxxvii., figs. 3, 3a.

*Hab.*—N. Queensland.

*Genus Oxyopes, Latr.*(=*Sphasus*, Walek.).

*Obs.*—*Oxyopes heterophthalmus*, Latr., is the type species of this genus.

OXYOPES AMGENUS, *L. Koch.*

*Oxyopes amgenus*, L. Koch, Die Arach. des Austr., ii., 1878, p. 1017, tab. lxxxix., figs. 4, 4a, 5, 5a.

*Hab.*—Queensland.

OXYOPES ATTENUATUS, *L. Koch.*

*Oxyopes attenuatus*, L. Koch, Die Arach. des Austr., ii., 1878, p. 1002, tab. lxxxvii., figs. 6, 6a.

*Hab.*—Peak Downs, Queensland, and Central Australia.

OXYOPES ELEGANS, *L. Koch.*

*Oxyopes elegans*, L. Koch, Die Arach. des Austr., ii., 1878, p. 1008, tab. lxxxviii., figs. 5, 5a, 6, 6a, 6b.

*Hab.*—Queensland and New South Wales.

OXYOPES GRATUS, *L. Koch.*

*Oxyopes gratus*, L. Koch, Die Arach. des Austr., ii., 1878, p. 1006, tab. lxxxviii., figs. 3, 3a, 4, 4a, 4b.

*Hab.*—Queensland and Central Australia.

OXYOPES LAUTUS, *L. Koch.*

*Oxyopes lautus*, L. Koch, Die Arach. des Austr., ii., 1878, p. 1015, tab. lxxxix., figs. 3, 3a.

*Hab.*—Port Mackay, N. Queensland.

OXYOPES MACILENTUS, *L. Koch.*

*Oxyopes macilentus*, L. Koch, Die Arach. des Austr., ii., 1878, p. 1000, tab. lxxxvii., figs. 4, 4a, 5, 5a, 5b.

*Oxyopes macilentus*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 393.

*Hab.*—Cape York, N. Queensland, and New Guinea.

OXYOPES MOLARIUS, *L. Koch.*

*Oxyopes molaris*, L. Koch, Die Arach. des Austr., ii., 1878, p. 1004, tab. lxxxviii., figs. 1, 1a, 2, 2a.

*Hab.*—Queensland.

OXYOPES MUNDULUS, *L. Koch.*

*Oxyopes mundulus*, L. Koch, Die Arach. des Austr., ii., 1878,  
p. 1025, tab. xc., figs. 3, 3a.

*Hab.*—Sydney, New South Wales.

OXYOPES PAPUANUS, *Thor.*

*Oxyopes papuanus*, Thor., Studi Ragni Mal. e Papuani, iii.,  
1881, p. 395.

*Hab.*—New Guinea, and Cape York, N. Queensland.

OXYOPES PUNCTATUS, *L. Koch.*

*Oxyopes punctatus*, L. Koch, Die Arach. des Austr., ii., 1878,  
p. 1011, tab. lxxxviii., figs. 7, 7a, 8, 8a.

*Hab.*—Queensland.

OXYOPES QUADRIFASCIATUS, *L. Koch.*

*Oxyopes quadrifasciatus*, L. Koch, Die Arach. des Austr., ii.,  
1878, p. 1020, tab. lxxxix., figs. 6, 6a.

*Hab.*—Peak Downs, Queensland.

OXYOPES RUBICUNDUS, *L. Koch.*

*Oxyopes rubicundus*, L. Koch, Die Arach. des Austr., ii., 1878,  
p. 1013, tab. lxxxix., figs. 1, 1a, 2, 2a, 2b.

*Hab.*—New South Wales.

OXYOPES VARIABILIS, *L. Koch.*

*Oxyopes variabilis*, L. Koch, Die Arach. des Austr., ii., tab. xc.,  
figs. 1, 1a, 2, 2a, 2b.

*Hab.*—Queensland and Central Australia.

## Family SALTICIDÆ.

(= *Attidæ*, Auct.).

Section 1 :—SALTICIDÆ PLURIDENTATI.

Genus *Linus*, *G. W.* and *E. G. Peckh.*

(= *Sinis*, Thor., *nom. præocc.*).

*LINUS FIMBRIATUS*, *Dol.*

*Salticus fimbriatus*, Dol., Tweede Bijdr., 1859, p. 22, tab. v.,  
figs. 8, 8a, 8b.



*Sinis fimbriatus*, Thor., Studi Ragni di Amboina, 1878, pp. 270, 310.

*Sinis fimbriatus*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 499.

*Hab.*—Cape York, N. Queensland.

*Obs.*—This is the type species of the genus.

*Genus Lagnus, L. Koch.*

*Obs.*—*Lagnus longimanus*, L. Koch, is the type species of this genus.

LAGNUS KOCHI, *Simon.*

*Lagnus kochi*, Simon, Ann. Soc. Ent. Belg., xliv., 1900, p. 381; Hist. Nat. des Araign., ii., 1897, p. 434, figs. A, B, C, D.

*Hab.*—Cooktown, N. Queensland.

*Genus Astia, L. Koch.*

(= *Vindima*, Thor.).

*Obs.*—*Astia hariola*, L. Koch, is the type species of this genus.

ASTIA AUREA, *L. Koch.*

*Astia aurea*, L. Koch, Die Arach. des Austr., ii., 1880, p. 1167, tab. ci., figs. 4, 4a-4d, 5, 5a, 5b, 5c.

*Hab.*—Sydney, New South Wales.

ASTIA HARIOLA, *L. Koch.*

*Astia hariola*, L. Koch, Die Arach. des Austr., ii., 1879, p. 1153, tab. c., figs. 3, 3a, 3b, 3c, 4, 4a.

*Hab.*—Queensland and New South Wales.

ASTIA NODOSA, *L. Koch.*

*Astia nodosa*, L. Koch, Die Arach. des Austr., ii., 1880, p. 1156, tab. c., fig. 5, 5a-5d.

*Hab.*—Gayndah, Queensland.

ASTIA TRISTICULA, *Simon.*

*Astia tristicula*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 194.

*Hab.*—W. Australia.

*Genus Helpis, Simon.*

*Obs.*—*Helpis minitabunda*, L. Koch, is the type species of this genus.

HELPIIS MINITABUNDA, *L. Koch.*

*Astia minitabunda*, L. Koch, Die Arach. des Austr., ii., 1880, p. 1160, tab. ci., figs. 1, 1a, 1b, 1c.

*Helpis minitabunda*, Simon, Hist. Nat. des Araign., ii., 1897, p. 431, figs. F, G.

*Hab.*—New South Wales.

HELPIIS OCCIDENTALIS, *Simon.*

*Helpis occidentalis*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 195.

*Hab.*—W. Australia.

HELPIIS RESPERSA, *L. Koch.*

*Astia respersa*, L. Koch, Die Arach. des Austr., ii., 1880, p. 1163, tab. ci., figs. 2, 2a-2d, 3, 3a-3d.

*Hab.*—Queensland, New South Wales, and Victoria.

*Genus Arasia, Simon.*ARASIA MOLLICOMA, *L. Koch.*

*Astia mollicoma*, L. Koch, Die Arach. des Austr., ii., 1880, p. 1158, tab. c., figs. 6, 6a, 6b, 7, 7a-7d.

*Arasia mollicoma*, Simon, Hist. Nat. des Araign., ii., 1897, p. 431, fig. E.

*Hab.*—Queensland and New South Wales.

*Obs.*—This is the type species of the genus.

*Genus Adoxotoma, Simon.*

*Obs.*—*Adoxotoma nigro-olivacea*, Simon, is the type species of this genus.

ADOXOTOMA CHIONOPOGON, *Simon.*

*Adoxotoma chionopogon*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 196.

*Hab.*—W. Australia.

ADOXOTOMA NIGRO-OLIVACEA, *Simon*.

*Adoxotoma nigro-olivacea*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 196.

*Hab.*—Collie, W. Australia.

*Genus Bavia, Simon.*

*Obs.*—*Bavia ariceps*, Simon, is the type species of this genus.

BAVIA LUDICRA, *Keys*.

*Acompsa ludicrus*, Keys, in L. Koch, Die Arach. des Austr., ii., 1882, p. 1326, tab. cxiii., figs. 1, 1a, 1b, 1c, 2, 2a, 2b, 2c.

*Hab.*—Rockhampton, N. Queensland.

BAVIA MODESTA, *Keys*.

*Acompsa modesta*, Keys, in L. Koch, Die Arach. des Austr., ii., 1883, p. 1455, tab. cxxii., figs. 8, 8a, 8b, 8c.

*Hab.*—Cape York, N. Queensland.

*Genus Copocrossa, Simon.*

(=*Stenodina*, Simon, *nom. preocc.*.)

*Obs.*—*Copocrossa tenuilineata*, Simon, is the type species of this genus.

? COPOCROSSA TENERRIMA, *L. Koch*.

*Marptusa tenerrima*, L. Koch, Die Arach. des Austr., ii., 1879, p. 1115, tab. xcvi., figs. 5, 5a, 5b.

*Hab.*—Peak Downs, Queensland.

COPOCROSSA TENUILINEATA, *Simon*.

*Stenodina tenuilineata*, Simon, Ann. Soc. Ent. Belg., xlv., 1900, p. 388; Hist. Nat. des Araign., ii., 1875, p. 474, figs. E and I.

*Hab.*—Cooktown, N. Queensland.

*Genus Diolenius, Thor.*

*Obs.*—*Diolenius phrynoides*, Walck., is the type species of this genus. No Australian forms of this genus appear to have been described, but Simon (Hist. Nat. des Araign., ii., 1897, p. 479) says he has one unnamed from Eastern Australia.

*Genus Discoenemius, Thor.*

## DISCOENEMIUS LACERTOSUS, Thor.

*Discoenemius lacertosus*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 429.

*Hab.*—Cape York, N. Queensland.

*Obs.*—This is the type species of this genus.

*Genus Haterius, Simon.*

## HATERIUS SEMITECTUS, Simon.

*Haterius semitectus*, Simon, Ann. Soc. Ent. Belg., xliv., 1900, p. 403.

*Hab.*—Cooktown, N. Queensland.

*Obs.*—This is the type species of this genus.

*Genus Ligonipes, Karsch.*

(—*Rhombonotus*, L. Koch; *Rhomochirus*, Thor.).

## LIGONIPES ILLUSTRIS, Karsch.

*Ligonipes illustris*, Karsch, MT. d. Munch. Ent. Vers., 1878, p. 26.

†*Rhombonotus gracilis*, L. Koch, Die Arach. des Austr., ii., 1879, p. 1067, tab. xciii., figs. 8, *Sa*, *Sb*, *Sc*; tab. xciv., figs. 1, *1a*, *1b*, *1c*.

*Hab.*—Queensland and New South Wales.

*Obs.*—This is the type species of the genus.

*Genus Myrmarachne, Macleay.*

(—*Pyrophorus* (*nom. praec.*) et *Toxens*, C. Koch; *Pyroderes* et *Pyrophorus*, Simon; *Janigera*, Karsch; *Hermosa* et *Iola*, Peckh.; *Ascalus* et *Pergasus*, Thor.

*Obs.*—*Myrmarachne melanocephalus*, Macleay, is the type species of this genus.

## MYRMARACHNE BICOLOR, L. Koch.

*Salticus bicolor*, L. Koch, Die Arach. des Austr., ii., 1879, p. 1055, tab. xciii., figs. 2, *2a*, *2b*, *2c*.

*Hab.*—Peak Downs, Queensland.

MYRMARACHNE COGNATUS, *L. Koch.*

*Leptorchestes cognatus*, L. Koch, Die Arach. des Austr., ii., 1880, p. 1063, tab. xciii., figs. 6, 6a, 6b.

*Hab.*—New South Wales and Victoria.

? MYRMARACHNE CUPREUS, *Hogg.*

? *Leptorchestes cupreus*, Hogg, Rep. Horn Expl. Exped., ii., Zoology, 1896, p. 352, pl. 24, figs. 16 and 17.

*Hab.*—Stevenson River, Central Australia.

MYRMARACHNE ERYTHROCEPHALUS, *L. Koch.*

*Leptorchestes erythrocephalus*, L. Koch, Die Arach. des Austr., ii., 1880, p. 1057, tab. xciii., figs. 3, 3a, 3b, 3c.

*Hab.*—Peak Downs, Queensland.

MYRMARACHNE LUCTUOSUS, *L. Koch.*

*Leptorchestes luctuosus*, L. Koch, Die Arach. des Austr., ii., 1880, p. 1065, tab. xciii., figs. 7, 7a, 7b, 7c.

*Hab.*—New South Wales.

MYRMARACHNE LUPATA, *L. Koch.*

*Syemosyna lupata*, L. Koch, Die Arach. des Austr., ii., 1879, p. 1052, tab. xciii., figs. 1, 1a, 1b.

*Hab.*—Queensland.

? MYRMARACHNE MACLEAYANUS, *Bradley.*

*Salticus macleayanus*, Bradley, Proc. Linn. Soc. N. S. Wales, i., 1876, p. 220, pl. ii., figs. 1, 1a, 1b.

*Hab.*—Endeavour River, N. Queensland.

MYRMARACHNE SIMONI, *L. Koch.*

*Leptorchestes simoni*, L. Koch, Die Arach. des Austr., ii., 1880, p. 1061, tab. xciii., figs. 5, 5a, 5b, 5c.

*Hab.*—North Queensland.

## ? MYRMARACHNE, SP.

? *Leptorchestes*, sp., Hogg, Proc. Roy. Soc. Vict., xiii., 1900, p. 77.

*Hab.*—Victoria.

MYRMARACHNE STRIATIPES, *L. Koch.*

*Leptorchestes striatipes*, L. Koch, Die Arach. des Austr., ii., 1880, p. 1059, tab. xciii., figs. 4, 4a, 4b, 4c.

*Hab.*—Queensland and New South Wales.

## Section 2: SALTICIDÆ UNIDENTI.

*Genus* *Damctas*, *G. W. and E. G. Peckh.*

(=*Scirtetes*, L. Koch, *nom. præocc.*.)

DAMCTAS NITIDUS, *L. Koch.*

*Scirtetes nitidus*, L. Koch, Die Arach. des Austr., ii., 1880, p. 1070, tab. xciv., figs. 2, 2a, 2b, 2c, 3, 3a, 3b.

*Hab.*—Queensland and New South Wales.

*Obs.*—This is the type species of the genus.

## DAMCTAS, SP.

? *Scirtetes*, *sp.*, Hogg, Proc. Roy. Soc. Vict., xiii., 1900, p. 77.

*Hab.*—Victoria.

*Genus* *Chrysilla*, *Thor.*

*Obs.*—*Chrysilla delicata*, Thor., is the type species of this genus.

? *CHRYSILLA PILOSA*, *Karsch.*

*Epiblennum pilosum*, Karsch, MT. d. Münch. ent. Ver., ii., 1878, p. 27.

? *Chrysilla pilosa*, Simon, Hist. Nat. des Araign., ii., 1897, p. 601, footnote (*Chrysilla*).

*Hab.*—New South Wales.

*Genus* *Cosmophasis*, *Simon.*

(=*Sobara*, *nom. præocc.*, et *Selaophora*, *Keys.*.)

*Obs.*—*Cosmophasis thalassina*, C. Koch, is the type species of this genus.

COSMOPHISIS BITÆNIATUS, *Keys.*

*Sobara biteniata*, Keys. in L. Koch, Die Arach. des Austr., ii., 1882, p. 1365, tab. cxv., figs. 8, 8a-8d, 9.

*Hab.*—Sydney. New South Wales, and Opossum Creek, Central Australia.

COSMOPHYSIS MICANS, *L. Koch.*

*Amycus micans*, L. Koch, Die Arach. des Austr., ii., 1880,  
p. 1173, tab. cii., figs. 1, 1a, 1b, 1c.

*Hab.*—Cape York, N. Queensland.

COSMOPHYSIS MICARIOIDES, *L. Koch.*

*Amycus micarioides*, L. Koch, Die Arach. des Austr., 1880,  
p. 1178, tab. cii., figs. 3, 3a, 3b, 3c.

*Hab.*—Cape York, N. Queensland, and New Guinea.

COSMOPHYSIS MODESTUS, *L. Koch.*

*Amycus modestus*, L. Koch, Die Arach. des Austr., ii., 1880,  
p. 1176, tab. cii., figs. 2, 2a-2d.

*Hab.*—Cape York, N. Queensland.

COSMOPHYSIS OBSCURUS, *Keys.*

*Selaophora obscura*, Keys. in L. Koch, Die Arach. des Austr.,  
ii., 1883, p. 1376, tab. cxvii., figs. 1, 1a, 1b.

*Hab.*—Cape York.

COSMOPHYSIS RUBRA, *Keys.*

*Selaophora rubra*, Keys. in L. Koch, Die Arach. des Austr., ii.,  
1883, p. 1374, tab. cxvi., figs. 5, 5a-5d.

*Hab.*—N. Queensland and Opossum Creek, Central Australia.

? COSMOPHYSIS THALASSINUS, *C. Koch.*

*Plexippus thalassinus*, C. Koch, Die Arach., xiii., 1846, p. 124,  
tab. cccliii., fig. 1184.

*Amycus splendidus*, L. Koch, Die Arach. des Austr., ii. 1880,  
p. 1171, tab. ci., fig. 6, 6a-6d.

*Amycus tristriatus*, L. Koch, *op. cit.*, p. 1181, tab. cii., figs. 4,  
4a-4e.

*Mævia thalassina*, Thor., Studi Ragni Mal. e Papuani, iii., 1881,  
p. 468.

*Hab.*—Malaysia, New Guinea, N. Queensland, and Pelew  
Island.

Genus *Heliophanus*, *C. Koch.*

*Obs.*—*Heliophanus æneus*, Hahn (*truncorum*, C. Koch), is the  
type species of this genus.

? HELIOPHANUS MACULATUS, *Karsch.*

? *Heliophanus maculatus*, Karsch, MT. d. Münch. ent. Ver., ii., 1878, p. 23.

*Hab.*—New South Wales.

*Genus Saitis, Simon.*

(= *Prostheclina* et *Therosa*, Keys.; ? *Maratus*, Karsch).

*Obs.*—*Saitis barbipes*, Simon, is the type species of this genus

SAITIS HETEROPOGON, *Simon.*

*Saitis heteropogon*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 198.

*Hab.*—Busselton, W. Australia.

SAITIS INSECTA, *Hogg.*

*Prostheclina insecta*, Hogg, Rep. Horn Expl. Exped., ii., Zool., 1896, p. 354, pl. 24, fig. 18.

*Hab.*—Rudall's Creek, Central Australia.

SAITIS MAGNICEPS, *Keys.*

*Therosa magniceps*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, p. 1414, tab. cxix., figs. 7, 7a, 7b.

*Hab.*—Cape York, N. Queensland.

SAITIS MICHAELSENI, *Simon.*

*Saitis michaelseni*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 197.

*Hab.*—Boyanup, W. Australia.

SAITIS MICHAELSENI, *var. obscurior, Simon.*

*Saitis michaelseni*, var. *obscurior*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 198.

*Hab.*—W. Australia.

SAITIS NIGRICEPS, *Keys.*

*Thorellia nigriceps*, Keys. in L. Koch, Die Arach. des Austr., ii., 1882, p. 1359, tab. cxv., figs. 5, 5a, 5b, 5c, 6, 6a, 6b.

*Hab.*—Queensland and New South Wales.



SAITIS PALLIDA, *Keys.*

*Prostheclina pallida*, Keys. in L. Koch, Die Arach. des Austr., ii., 1882, p. 1368, tab. cxvi., figs. 1, 1a-1d, 2, 2a, 2b.

*Hab.*—Queensland, New South Wales, and Victoria.

SAITIS PISCULA, *Keys.*

*Attus pisculus*, L. Koch., Verh. der K.K. zool.-bot. Ges. Wien, 1867, p. 224.

*Thorellia piscula*, Keys. in L. Koch, Die Arach. des Austr., ii., 1882, p. 1356, tab. cxv., figs. 3, 3a, 3b, 3c, 4, 4a, 4b.

*Hab.*—Sydney, New South Wales.

SAITIS SPECIOSUS, *O. P. Cambr.*

*Salticus speciosus*, O. P. Cambr., Ann. Mag. Nat. Hist., xiv., 4, 1874, p. 180, pl. xvii., fig. 5.

*Habrocestum speciosum*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, p. 1468, tab. cxxiii., figs. 8, 8a, 8b, 8c.

*Hab.*—Sydney, New South Wales.

SAITIS SPLENDENS, *Rainbow.*

*Attus splendens*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxii., 1896, p. 632, pl. xlix., figs. 3, 3a.

*Hab.*—Sydney, New South Wales.

SAITIS TÆNIATA, *Keys.*

*Saitis tæniata*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, p. 1434, tab. cxxi., figs. 4, 4a, 4b, 4c.

*Hab.*—Australia.

SAITIS VERSPITILIS, *Simon.*

*Saitis verspitolis*, Simon, Ann. Soc. Ent. France, lxx., 1901, p. 68.

*Hab.*—E. Australia.

SAITIS VOLANS, *O. P. Cambr.*

*Attus volans*, O. P. Cambr., Ann. Mag. Nat. Hist., xiv., 4, 1874, p. 178, pl. xvii., figs. 4, 4a-4d.

?*Maratus amabilis*, Karsch, MT. d. Münch. ent. Ver., 1878, p. 27.

*Saitis volans*, Simon, Hist. Nat. des Araign., ii., 1897, p. 559, figs. c, d, e.

*Hab.*—Queensland and New South Wales.

*Genus* Lycidas, Karsch.

LYCIDAS ANOMALUS, Karsch.

(*Genus et species incertae sedis.*)

*Lycidas anomalus*, Karsch, MT. d. Münch. ent. Ver., ii., 1878 p. 26.

*Hab.*—New South Wales.

*Obs.*—This is the type species of the genus. *L. anomalus* is unknown to me. Simon considers it may prove to be a synonym of *Habrocestum nigriceps*, Keys. (*vide* Simon, Hist. Nat. des Araign., ii. (2nd ed.), 1903, p. 868).

*Genus* Jotus, L. Koch.

*Obs.*—*Jotus auripes*, L. Koch, is the type species of this genus.

JOTUS AURIPES, L. Koch.

*Jotus auripes*, L. Koch, Die Arach. des Austr., ii., 1881, p. 1243, tab. cvii., figs. 1, 1a-1d.

*Jotus auripes*, Simon, Hist. Nat. des Araign., ii., 1897, p. 561, fig. 683.

*Hab.*—Sydney, New South Wales.

JOTUS BRACCATUS, L. Koch.

*Jotus braccatus*, L. Koch, Die Arach. des Austr., ii., 1881, p. 1254, tab. cvii., figs. 6, 6a, 6b, 6c, 7, 7a-7e.

*Hab.*—Gayndah, Queensland.

JOTUS DEBILIS, L. Koch.

*Jotus debilis*, L. Koch, Die Arach. des Austr., ii., 1881, p. 1252, tab. cvii., figs. 5, 5a, 5b, 5c.

*Hab.*—Sydney, New South Wales.

JOTUS FROSTI, G. W. and E. G. Peckh.

*Jotus frosti*, G. W. and E. G. Peckh., Trans. Wisconsin Acad., xiii., 1901, p. 332, pl. xxv., fig. 12; pl. xxvi., figs. 9, 9a.

*Hab.*—Victoria.

*JOTUS MINUTUS*, L. Koch.

*Jotus minutus*, L. Koch, Die Arach. des Austr., ii., 1881, p. 1257, tab. cviii., figs. 1, 1a, 1b.

*Hab.*—Peak Downs, Queensland.

*Genus Salpesia*, Simon.

*Obs.*—*Salpesia soricina*, Simon, is the type species of this genus.

*SALPESIA BICOLOR*, Keys.

*Cyrra bicolor*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, p. 1441, tab. cxxi., figs. 1, 1a-1d.

*Hab.*—Rockhampton, N. Queensland.

*SALPESIA BIMACULATA*, Keys.

*Cyrra bimaculata*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, p. 1439, tab. cxxi., figs. 7, 7a, 7b, 7c.

*Hab.*—Sydney, New South Wales.

*SALPESIA SQUALIDA*, Keys.

*Cyrra squalida*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, p. 1436, tab. cxxi., figs. 5, 5a, 5b, 5c, 6, 6a.

*Hab.*—Queensland and New South Wales.

*SALPESIA VILLOSA*, Keys.

*Cyrra villosa*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, p. 1444, tab. cxxii., figs. 3, 3a, 3b.

*Hab.*—Australia.

*Genus Lauharulla*, Keys.*LAUHARULLA PRETIOSA*, Keys.

*Lauharulla pretiosa*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, p. 1432, tab. cxxi., figs. 3, 3a, 3b, 3c.

*Hab.*—Sydney, New South Wales.

*Obs.*—This is the type species of this genus.

*LAUHARULLA*, SP.

*Lauharulla*, sp., Hogg, Proc. Roy. Soc. Vict., xiii, 1900, p. 78.

*Hab.*—Victoria.

*Genus Salticus, Latr.*

(=*Epiblemmum*, Karsch).

*Obs.*—*Salticus scenicus*, Clerck., is the type species of this genus.

SALTICUS FLAVICRURIS, *Rainbow.*

*Attus flavicruris*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxiii., 1897, p. 526, pl xviii., fig. 2.

*Hab.*—Guildford, near Sydney, New South Wales.

SALTICUS JUGULARIS, *Simon.*

*Salticus jugularis*, Simon, Ann. Soc. Ent. Belg., xlv., 1900, p. 404.

*Hab.*—Cooktown, N. Queensland.

*Genus Breda, G. W. and E. G. Peckh.*

*Obs.*—*Breda milvina*, C. Koch, is the type species of this genus.

BREDA JOVIALIS, *L. Koch.*

*Marptusa jovialis*, L. Koch, Die Arach. des Austr., ii., 1879, p. 1109, tab. xvii., figs. 1, 1a-1e, 2, 2a, 2b, 2c.

*Hab.*—Australia generally.

*Genus Holoplatys, Simon.*

*Obs.*—*Holoplatys planissima*, L. Koch, is the type species of this genus.

HOLOPLATYS BICOLOR, *Simon.*

*Holoplatys bicolor*, Simon, Ann. Soc. Ent. Belg., xlv., 1901, p. 159.

*Hab.*—Cooktown, N. Queensland.

HOLOPLATYS FRACTIVITTATA, *Simon.*

*Holoplatys fractivittata*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 199, fig. 13.

*Hab.*—W. Australia.

HOLOPLATYS PLANISSIMA, *L. Koch.*

*Marptusa planissima*, L. Koch, Die Arach. des Austr., ii., 1879, p. 1100, tab. xcvi., figs. 4, 4a-4d, 5, 5a, 5b, 5c.

*Hab.*—Port Darwin to Cape York, and from thence to W. Australia.

HOLOPLATYS QUINQUECINGULATA, *Simon.*

*Holoplatys quinquecingulata*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 199, fig. 12.

*Hab.*—Day Dawn, W. Australia.

*Genus Ocrisiona, Simon.*

*Obs.*—*Ocrisiona leucocnis*, L. Koch, is the type species of this genus.

OCRISIONA AERATA, *L. Koch.*

*Marptusa aerata*, L. Koch, Die Arach. des Austr., ii., 1879, p. 1117, tab. xcvi., figs. 6, 6a, 6b.

*Hab.*—Port Mackay, N. Queensland.

OCRISIONA COMPLANATA, *L. Koch.*

*Marptusa complanata*, L. Koch, Die Arach. des Austr., ii., 1879, p. 1093, tab. cxv., figs. 7, 7a, 7b, 7c, 8, 8a, 8b, 8c

*Marptusa complanata*, Rainbow, Proc. Linn. Soc. N. S. Wales, xxvi., 1901, p. 531.

*Hab.*—Queensland, New South Wales, Mast Head Island, Great Barrier Reef, and Noumea.

OCRISIONA ELEGANS, *L. Koch.*

*Marptusa elegans*, L. Koch, Die Arach. des Austr., ii., 1879, p. 1119, tab. xcvi., figs. 7, 7a, 7b, 7c.

*Hab.*—Queensland and New South Wales.

?OCRISIONA FUSCA, *Karsch.*

*Marpissa fusca*, Karsch, M.T. d. Münch. ent. Ver., ii., 1878, p. 28.

*Hab.*—New South Wales.

OCRISIONA INVENUSTA, *L. Koch.*

*Marptusa invenusta*, L. Koch, Die Arach. des Austr., ii., 1879,  
p. 1099, tab. xcvi., figs. 3, 3a, 3b, 3c.

*Hab.*—Cape York, N. Queensland, to Sydney, New South  
Wales.

OCRISIONA LEUCOCOMIS, *L. Koch.*

*Marptusa leucomomis*, L. Koch, Die Arach. des Austr., ii., 1879,  
p. 1096, tab. xcvi., figs. 1, 1a, 1b, 1c, 2, 2a, 2b.

*Hab.*—N., E., and W. Australia, and New Zealand.

OCRISIONA LITURATA, *L. Koch.*

*Marptusa liturata*, L. Koch., Die Arach. des Austr., ii., 1879,  
p. 1103, tab. xcvi., figs. 6, 6a, 6b.

*Hab.*—Gayndah, Queensland.

OCRISIONA MELANCHOLIA, *L. Koch.*

*Marptusa melancholia*, L. Koch, Die Arach. des Austr., ii., 1879,  
p. 1113, tab. xcvi., figs. 4, 4a, 4b, 4c.

*Hab.*—Sydney, New South Wales.

OCRISIONA MELANOPYGA, *Simon.*

*Ocrisiona melanopyga*, Simon, Ann. Soc. Ent. Belg., xlv., 1901,  
p. 160.

*Hab.*—Tasmania.

OCRISIONA PARALLEL-STRIATA, *L. Koch.*

*Marptusa parallel-striata*, L. Koch, Die Arach. des Austr., ii.,  
1879, p. 1121, tab. xcvi., figs. 8, 8a-8d.

*Hab.*—Peak Downs, Queensland.

*Genus Muziris, Simon.*

*Obs.*—*Muziris doleschalli*, Thor., is the type species of this  
genus.

MUZIRIS CARINATUS, *Simon.*

*Muziris carinatus*, Simon, Die Fauna Süd-west Austr., ii., 1909,  
p. 200.

*Hab.*—Wooroloo, W. Australia.

*Genus* Clynotis, Simon.

*Obs.*—*Clynotis viduus*, Simon, is the type species of this genus.

CLYNOTIS ALBO-BARBATUS, *L. Koch.*

*Icius albo-barbatus*, *L. Koch*, *Die Arach. des Austr.*, ii., 1882, p. 1138, tab. xcix., figs. 2, 2*a*-2*d*, 3, 3*a*, 3*b*, 3*c*.

*Hab.*—Sydney, New South Wales.

CLYNOTIS PARVULUS, *L. Koch.*

*Icius parvulus*, *L. Koch*, *Die Arach. des Austr.*, ii., 1883, p. 1449, tab. xxii., figs. 5, 5*a*-5*e*.

*Hab.*—Sydney, New South Wales.

CLYNOTIS SEMIATER, *L. Koch.*

*Icius semiatur*, *L. Koch*, *Die Arach. des Austr.*, ii., 1882, p. 1133, figs. 6, 6*a*-6*d*.

*Hab.*—Rockhampton and Peak Downs, Queensland.

CLYNOTIS SEMIFERRUGINEUS, *L. Koch.*

*Icius semiferrugineus*, *L. Koch*, *Die Arach. des Austr.*, ii., 1882, p. 1135, tab. xcix., figs. 1, 1*a*-1*e*.

*Hab.*—Gayndah, Queensland.

CLYNOTIS SEVERUS, *L. Koch.*

*Icius severus*, *L. Koch*, *Die Arach. des Austr.*, ii. 1882, p. 1128, tab. xxviii., figs. 3, 3*a*-3*d*.

*Hab.*—Australia.

CLYNOTIS VIDUUS, *L. Koch.*

*Icius viduus*, *L. Koch*, *Die Arach. des Austr.*, ii., 1882, p. 1129, tab. xxviii., figs. 4, 4*a*-4*d*, 5, 5*a*-5*d*.

*Hab.*—Queensland and New South Wales.

*Genus* Alcmena, *C. Koch.*

*Obs.*—*Alcmena psittacina*, *C. Koch*, is the type species of this genus. The occurrence of *Alcmena* in Australia is certainly doubtful. It is a Brazilian genus, and as *A. superba* is unknown to me it is here recorded tentatively.

? *ALCMENA SUPERBA*, Karsch.

? *Alcmena superba*, Karsch, MT. d. Münch. ent. Ver., ii., 1878, p. 29.

*Hab.*—N. Australia.

*Genus* *Bianor*, G. W. and E. G. Peckh.

(= *Beatu et Eris*, G. W. and E. G. Peckh.; *Edipus*, Menge, *nom. præocc.*; *Ericulus*, Simon, *nom. præocc.*; *Scythropa*, Keys., *nom. præocc.*).

*Obs.*—*Bianor maculatus*, Keys., is the type species of this genus.

? *BIANOR BELLA*, Karsch.

*Eris bella*, Karsch, MT. d. Münch. ent. Ver., ii., 1878, p. 22

*Hab.*—New South Wales.

*BIANOR CONCOLOR*, Keys.

*Ballus concolor*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, p. 1335, tab. cxiv., figs. 1, 1a-1d.

*Hab.*—Sydney, New South Wales.

*BIANOR MACULATUS*, Keys.

*Scythropa maculata*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, p. 1447, tab. cxxii., figs. 4, 4a-4e.

*Hab.*—Queensland and New South Wales.

*Genus* *Rhene*, Thor.

(= *Rhanis*, C. Koch, *nom. præocc.*; *Anamosa*, G. W. and E. G. Peckh.).

*Obs.*—*Rhene flavigera*, C. Koch, is the type species of this genus.

*RHENE AURATA*, L. Koch.

*Homalattus auratus*, L. Koch, Die Arach. des Austr., ii., 1879, p. 1087, tab. xcvi., figs. 4, 4a, 4b, 4c, 5, 5a, 5b, 5c.

*Hab.*—Queensland.



RHENE OPULENTA, *L. Koch.*

*Homalattus opulentus*, L. Koch, Die Arach. des Austr., ii., 1179,  
p. 1083, tab. xcv., figs. 1, 1a, 1b, 1c.

*Hab.*—Queensland.

*Genus Pystira, Simon.*

(=*Bootes*, G. W. and E. G. Peckh.).

*Obs.*—*Pystira ephippigera*, Simon, is the type species of this genus.

PYSTIRA ORBICULATA, *L. Koch.*

*Hasarius orbiculatus*, L. Koch, Die Arach. des Austr., ii., 1881,  
p. 1285, tab. cx., figs. 1, 1a, 1b, 2, 2a, 2b, 2c.

*Hab.*—Queensland and New South Wales.

PYSTIRA OBSCUROFEMORATA, *L. Koch.*

*Euophrys obscurifemoratus*, Keys. in L. Koch, Die Arach. des  
Austr., ii., 1883, p. 1430, tab. cxxi., figs. 2, 2a-2d.

*Hab.*—Sydney, New South Wales.

*Genus Zenoderus, G. W. and E. G. Peckh.*

(=*Ephippus*, Thor.).

ZENODERUS D'URVILLEI, *Walck.*

*Attus d'urvillei*, Walck., Hist. Nat. des Ins., Apt., i., 1837,  
p. 459.

*Ephippus d'urvillei*, Thor., Studi Ragni Mal. e Papuani, iii.,  
1881, p. 653.

*Ephippus d'urvillei*, Keys. in L. Koch, Die Arach. des Austr., ii.,  
1883, p. 1422, tab. cxx., figs. 4, 4a-4d, 5, 5a.

*Hab.*—Malaysia, New Guinea, and W. Australia.

*Obs.*—This is the type species of this genus.

*Genus Mollica, G. W. and E. G. Peckh.*MOLLIKA METALLESCENS, *L. Koch.*

*Phileus metallescens*, L. Koch, Die Arach. des Austr., ii., 1879,  
p. 1080, tab. xciv., figs. 7, 7a, 8, 8a, 8b, 8c.

*Hab.*—N. Queensland.

*Obs.*—This is the type species of the genus.

*Genus* *Margaromma*, *Keys*.

(=*Tauypus* et *Hadrosoma*, *Thor.*).

*Obs.*—*Margaromma funesta*, *Keys*, is the type species of this genus.

MARGAROMMA FUNESTA, *Keys*.

*Margaromma funesta*, *Keys*, in *L. Koch*, *Die Arach. des Austr.*, ii., 1882, p. 1347, tab. cxiv., figs. 5, 5a, 5b, 6, 6a-6d.

*Hab.*—Queensland and New South Wales.

MARGAROMMA MARGINATUM, *Simon*.

*Margaromma marginatum*, *Simon*, *Ann. Soc. Ent. Belg.*, xlvii., 1902, p. 35.

*Hab.*—Cooktown, N. Queensland.

MARGAROMMA OBSCURA, *Keys*.

*Hadrosoma obscura*, *Keys*, in *L. Koch*, *Die Arach. des Austr.*, ii., 1883, p. 1418, tab. cxx., figs. 2, 2a-2d.

*Hab.*—Cape York, N. Queensland.

MARGAROMMA SEMIRASUS, *Keys*.

*Tauypus semirasus*, *Keys*, in *L. Koch*, *Die Arach. des Austr.*, ii., 1883, p. 1416, tab. cxx., figs. 1, 1a-1d.

*Hab.*—Cape York, N. Queensland.

*Genus* *Habrocestum*, *Simon*.

*Obs.*—*Habrocestum pullatum*, *Simon*, is the type species of this genus.

HABROCESTUM BITAENIATUM, *Keys*.

*Habrocestum bitaeniatum*, *Keys*, in *L. Koch*, *Die Arach. des Austr.*, ii., 1883, p. 1405, tab. cxix., figs. 2, 2a.

*Hab.*—Peak Downs, Queensland.

HABROCESTUM CHRYSOMELAS, *Simon*.

*Habrocestum chrysomelas*, *Simon*, *Die Fauna Süd-west Austr.*, ii., 1909, p. 201.

*Hab.*—Lion Mill, W. Australia.

HABROCESTUM FLAVIPES, *Keys.*

*Habrocestum flavipes*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, p. 1403, tab. cxix., figs. 1, 1a, 1b, 1c.

*Hab.*—Peak Downs, Queensland.

HABROCESTUM NIGRICEPS, *Keys.*

*Habrocestum nigriceps*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, p. 1409, tab. cxix., figs. 4, 4a, 4b, 5, 5a, 5b, 5c.

*Hab.*—Queensland and New South Wales.

HABROCESTUM OPALESCENS, *Hogg.*

*Habrocestum opalescens*, Hogg (*nom. nud.*), Proc. Roy. Soc. Vict., xiii., 1900, p. 77.

*Hab.*—Victoria.

HABROCESTUM PILOSUM, *Keys.*

*Habrocestum pilosum*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, p. 1401, tab. cxviii., figs. 8, 8a, 8b, 8c.

*Hab.*—Bowen, N. Queensland.

HABROCESTUM PUNCTIVENTRIS, *Keys.*

*Habrocestum punctiventris*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, p. 1412, tab. cxix., figs. 6, 6a, 6b.

*Hab.*—Sydney, New South Wales.

HABROCESTUM SPECULIFERUM, *Simon.*

*Habrocestum speculiferum*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 202.

*Hab.*—N. Fremantle, W. Australia.

*Genus Mopsus, Karsch.*

(= *Asclytus*, Keys., non *Asclytus*, Karsch).

*Obs.*—*Mopsus mormon*, Karsch, is the type species of this genus.

MOPSUS MORMON, *Karsch.*

*Mopsus mormon*, Karsch, MT. d. Münch. ent. Ver., 1878, p. 31.

*Mopsus mormon*, Thor., Studi Ragni Mal. e Papuan, iii., 1881, p. 462.

*Hab.*—New Guinea and N. Australia.

MOPUS PENICILLATUS, *Karsch.*

*Ascyltus penicillatus*, Karsch, MT. d. Münch. ent. Ver., 1878, p. 30.

*Hab.*—Queensland and New South Wales.

*Genus Sandalodes, Keys.*

*Obs.*—*Sandalodes bipenicillatus*, Keys., is the type species of this genus.

SANDALODES ALBOBARBATUS, *Keys.*

*Mopsus albobarbatus*, Keys. in L. Koch, Die Arach. des Austr., ii, 1881, p. 1333, tab. cxiii., figs. 4, 4a-4d, 5, 5a.

*Hab.*—Peak Downs, Queensland, and Central Australia.

SANDALODES ALBOVITTATUS, *Keys.*

*Icius albovittatus*, Keys. in L. Koch, Die Arach. des Austr., ii, 1883, p. 1451, tab. cxxii., figs. 6, 6a, 6b, 6c.

*Hab.*—Peak Downs, Queensland.

SANDALODES BIPENICILLATUS, *Keys.*

*Mopsus bipenicillatus*, Keys. in L. Koch, Die Arach. des Austr., ii, 1881, p. 1330, tab. cxiii., figs. 3, 3a-3d.

*Hab.*—Gympie, Queensland.

SANDALODES CALVUS, *Simon.*

*Sandalodes calvus*, Simon, Ann. Soc. Ent. France, 1902, p. 389.

*Hab.*—Cooktown, N. Queensland.

*Genus Gangus, Simon.*

*Obs.*—*Gangus concinnus*, Keys., is the type species of this genus.

GANGUS CONCINNUS, *Keys.*

*Acompse concinnus*, Keys. in L. Koch, Die Arach. des Austr., ii, 1881, p. 1322, tab. cxii., figs. 6, 6a, 6b, 6c, 7, 7a.

*Hab.*—Queensland.

GANGUS DECORUS, *Simon.*

*Gangus decorus*, Simon, Ann. Soc. Ent. France, 1902, p. 390.

*Hab.*—Cooktown, N. Queensland.

GANGUS LONGULUS, *Simon*.

*Gangus longulus*, Simon, Ann. Soc. Ent. France, 1902, p. 390.

*Hab.*—Cooktown, N. Queensland.

?GANGUS SEXMACULATUS, *C. Koch*.

*Plexippus sexmaculatus*, C. Koch, Die Arach., xiii., 1846, p. 119,  
tab. cccclii., fig. 1179.

*Hab.*—W. Australia.

*Genus Ligurinus, Karsch.*LIGURINUS SCOPIFER, *Karsch.*

*Ligurinus scopifer*, Karsch, MT. d. Münch. ent. Ver., ii., 1878,  
p. 27.

*Hab.*—New South Wales.

*Obs.*—This is the type species of this genus.

*Genus Eugasmia, Simon.*

*Obs.*—*Eugasmia sannis*, Thor., is the type species of this  
genus.

EUGASMIA CHLOROPHTHALMA, *Simon*.

*Eugasmia chlorophthalma*, Simon, Die Fauna Süd-west Austr.,  
ii., 1909, p. 203.

*Hab.*—York, W. Australia.

*Genus Hypoblemum, G. W. and E. G. Peckh.*

(=*Acmea* et *Drepanophora*, Keys., *nom. præocc.*).

*Obs.*—*Hypoblemum villosum*, Keys., is the type species of this  
genus.

HYPOBLEMUM ALBOVITTATUM, *Keys.*

*Habrocestum albovittatum*, Keys. in L. Koch, Die Arach. des  
Austr., ii., 1883, p. 1407, tab. cxix., figs. 3, 3a-3d.

*Hab.*—Peak Downs, Queensland.

HYPOBLEMUM VILLOSUM, *Keys.*

*Acmea villosa*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883,  
p. 1421, tab. cxx., figs. 3, 3a-3d.

*Hab.*—Sydney, New South Wales.

*Genus Sigytes, Simon.*

*Obs.*—*Sigytes paradisiaca*, Simon, is the type species of this genus.

SIGYTES ALBOCINCTUS, *Keys.*

*Hasarius albocinctus*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1277, tab. cix., figs. 4, 4a, 4b, 4c.

*Hab.*—Cape York, N. Queensland.

SIGYTES DIALEUCA, *Keys.*

*Ergane dialeuca*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1263, tab. cviii., figs. 4, 4a-4e.

*Hasarius lineatus*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1275, tab. cix., figs. 3, 3a, 3b, 3c.

*Hab.*—Queensland and New South Wales.

?SIGYTES DILORIS, *Keys.*

*Hasarius diloris*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1302, tab. cxi., figs. 3, 3a-3e.

*Hab.*—N. Queensland, Fiji, and Solomon Islands.

SIGYTES SCUTULATA, *Keys.*

*Ergane scutulata*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1268, tab. cviii., figs. 6, 6a-6d, 7, 7a-7d.

*Hab.*—Queensland and New South Wales.

*Genus Plexippus, C. Koch.*

*Obs.*—*Plexippus paykulli*, Aud. (*P. ligo*, C. Koch), is the type species of this genus.

PLEXIPPUS BLEEKERI, *Dol.*

*Salticus bleekeri*, Dol., Tweede Bijdr., 1859, p. 17, tab. iii., fig. 6.

*Plexippus bleekeri*, Thor., Studi Ragni di Amboina, ii., 1878, pp. 260, 310; Studi Ragni Mal. e Papuani, iii., 1881, p. 631.

*Hab.*—Malaysia, New Guinea, and N. Queensland.

PLEXIPPUS EXPECTANS, *Thor.*

*Plexippus expectans*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 589.

*Hab.*—Malaysia, New Guinea, and N. Queensland.

PLEXIPPUS FRONTILIGER, *Thor.*

*Plexippus frontiliger*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 607.

*Hab.*—Cape York, N. Queensland.

PLEXIPPUS INCAVUS, *Karsch.*

*Plexippus incavus*, Karsch, MT. d. Münch. ent. Ver., ii., 1878, p. 25.

*Hab.*—New South Wales.

PLEXIPPUS PHYLLUS, *Karsch.*

*Plexippus phyllus*, Karsch, MT. d. Münch. ent. Ver., ii., 1878, p. 25.

*Hab.*—New South Wales.

PLEXIPPUS PUPULUS, *Thor.*

*Plexippus pupulus*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 622.

*Hab.*—Cape York, N. Queensland.

PLEXIPPUS SEVERUS, *Thor.*

*Plexippus severus*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 596.

*Hab.*—Cape York, N. Queensland.

PLEXIPPUS SINUATUS, *Dol.*

*Salticus sinuatus*, Dol., Tweede Bijdr., 1859, p. 18.

*Attus sinuatus*, Dol., *op. cit.*, 1859, tab. iii., fig. 2.

*Salticus floricola*, Dol., *op. cit.*, 1859, p. 20, tab. v., fig. 1.

*Plexippus sinuatus*, Thor., Studi Ragni di Amboina, ii., 1878, pp. 240, 309; Studi Ragni Mal. e Papuani, iii., 1881, p. 603.

*Hab.*—Malaysia, New Guinea, and N. Queensland.

PLEXIPPUS VALIDUS, *Urquh.*

*Plexippus validus*, Urquh., Proc. Roy. Soc. Tasm., 1892 [1893], p. 127.

*Hab.*—Tasmania.

PLEXIPPUS WALLACEI, *Thor.*

*Plexippus wallacei*, Thor., Ragni Mal. e Papuani, iii., 1881, p. 628.

*Hab.*—Cape York, N. Queensland.

*Genus* Palpelius, *Simon.*

*Obs.*—*Palpelius beccarii*, Thor., is the type species of this genus.

PALPELIUS DEARMATUS, *Thor.*

*Plexippus dearmatus*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 588.

*Hab.*—Cape York, N. Queensland, Yule, Wokan, and Aru Islands.

*Genus* Bathippus, *Thor.*

*Obs.*—*Bathippus macrognathus*, Thor., is the type species of this genus.

BATHIPPUS MONTROUZIERI, *Lucas.*

*Plexippus montrouzieri*, Lucas, Revue et Mag. de Zool., 1869, p. 12, pl. ii., figs. 8-12.

*Plexippus montrouzieri*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 527.

*Hab.*—New Guinea, N. Queensland, and New Caledonia.

Section 3: SALTICIDÆ FISSIDENTATI.

*Genus* Thorellia, *Keys.*

*Obs.*—*Thorellia ensifera*, Thor., is the type species of this genus.

THORELLIA NIGROMACULATA, *Keys.*

*Ergane nigromaculata*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, p. 1463, tab. cxxiii., figs. 5, 5a-5d.

*Hab.*—Rockhampton, N. Queensland.

*Genus* Hasarius, *Simon.*

*Obs.*—*Hasarius adansonii*, Aud., is the type species of this genus.



? *HASARIUS ALBERTISII*, *Thor.*

*Attus albertisii*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 517.

*Hab.*—Cape York, N. Queensland.

*HASARIUS INHONESTUS*, *Keys.*

*Hasarius inhoneustus*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1312, tab. cxi., figs. 8, 8a, 8b, 8c.

*Hab.*—Sydney, New South Wales.

*HASARIUS MULCIBER*, *Keys.*

*Hasarius mulciber*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1310, tab. cxi., figs. 7, 7a, 7b, 7c.

*Hab.*—Port Mackay, N. Queensland.

*HASARIUS OBSCURUS*, *Keys.*

*Hasarius obscurus*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1315, tab. cxii., figs. 2, 2a, 2b, 2c.

*Hab.*—Sydney, New South Wales.

*HASARIUS PAUPERATUS*, *Keys.*

*Hasarius pauperatus*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1300, tab. cxi., figs. 2, 2a, 2b, 2c.

*Hab.*—Port Mackay, N. Queensland.

*HASARIUS PUMILIS*, *Keys.*

*Hasarius pumilis*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1317, tab. cxii., figs. 3, 3a-3d.

*Hab.*—Peak Downs, Queensland.

? *HASARIUS VARICANS*, *Thor.*

*Attus varicans*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 514.

*Hab.*—Cape York, N. Queensland.

*HASARIUS VILLOSUS*, *Keys.*

*Hasarius villosus*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1281, tab. cix., figs. 6, 6a, 6b, 6c.

*Hab.*—Peak Downs, N. Queensland.

HASARIUS VITTATUS, *Keys.*

*Hasarius vittatus*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1304 tab. cxi., figs. 4, 4a, 4b, 4c, 5, 5a, 5b, 5c.

*Hab.*—Peak Downs, N. Queensland.

*Genus Viroqua*, G. W. and E. G. Peckh.

VIROQUA ULTIMA, *Keys.*

*Jotus ultimus*, Keys. in L. Koch, Die Arach. des Austr., ii., 1882, p. 1259, tab. cviii., figs. 2, 2a-2d.

*Hab.*—E. Australia.

*Obs.*—This is the type species of the genus.

*Genus Chalcotropis*, *Simon.*

*Obs.*—*Chalcotropis acutefrenata*, Simon, is the type species of this genus.

CHALCOTROPIS BARBIPALPIS, *Keys.*

*Hyllus barbipalpis*, Keys. in L. Koch, Die Arach. des Austr., ii., 1882, p. 1344, tab. cxiv., figs. 4, 4a, 4b, 4c.

*Hab.*—Gayndah, Queensland.

*Genus Ptocasius*, *Simon.*

*Obs.*—*Ptocasius weyseri*, Simon, is the type species of this genus.

PTOCASIUS PLUMBEIVENTRIS, *Keys.*

*Hasarius plumbeiventris*, Keys. in L. Koch, die Arach. des Austr., ii., 1881, p. 1295, tab. cx., figs. 7, 7a, 7b.

*Hab.*—Rockhampton, N. Queensland.

*Genus Cytæa*, *Keys.*

*Obs.*—*Cytæa alburna*, Keys., is the type species of this genus.

CYTÆA ALBIVENTRIS, *Keys.*

*Hasarius albiventris*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1291, tab. cx., figs. 5, 5a, 5b, 5c.

*Hab.*—Sydney, New South Wales.

CYTÆA ALBURNA, *Keys.*

*Cytaa alburna*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, p. 1383, tab. cxvii., figs. 3, 3a-3d, 4, 4a.

*Hab.*—Queensland.

CYTÆA CLAROVITTATUS, *Keys.*

*Hasarius clarovittatus*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1313, tab. cxii., figs. 1, 1a, 1b.

*Hab.*—Sydney, New South Wales.

?CYTÆA GRISEA, *Keys.*

?*Cytaa grisea*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, tab. cxvii., figs. 5, 5a-5d.

*Hab.*—Gayndah, Queensland.

CYTÆA INFRASTRIATUS, *Keys.*

*Hasarius infrastratus*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1279, tab. cix., figs. 5, 5a, 5b, 5c.

*Hab.*—Rockhampton, N. Queensland.

?CYTÆA PILIGERA, *Keys.*

?*Cytaa piligera*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, tab. cxvii., figs. 2, 2a-2d.

*Hab.*—Gayndah, Queensland.

## CYTÆA, SP.

*Cytaa*, sp., Hogg, Proc. Roy. Soc. Vict., xiii., 1900, p. 77.

*Hab.*—Victoria.

*Genus* Ascylltus, *Karsch.*

*Obs.*—*Ascylltus pterygodes*, L. Koch., is the type species of this genus.

ASCYLLTUS SIMPLEX, *Karsch.*

*Ascylltus simplex*, Karsch, MT. d. Münch. ent. Ver. ii., 1878, p. 31.

*Hab.*—Queensland.

*Genus Canama, Simon.*

*Obs.*—*Canama forceps*, Dol., is the type species of this genus.

CANAMA HINNULEUS, *Thor.*

*Plexippus hinnuleus*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 539.

*Hab.*—Cape York, N. Queensland.

CANAMA XANTHOPUS, *Keys.*

*Hasarius xanthopus*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1297, tab. cx., figs. 8, 8a, 8b, 8c.

*Hab.*—Queensland.

*Genus Euryattus, Thor.*

*Obs.*—*Euryattus porcellus*, Thor., is the type species of this genus.

EURYATTUS ALBESCENS, *Keys.*

*Hasarius albescens*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1299, tab. cxi., figs. 1, 1a, 1b.

*Hab.*—Rockhampton, N. Queensland.

EURYATTUS NIGRIVENTRIS, *Keys.*

*Euryattus nigriventris*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1293, tab. cx., figs. 6, 6a, 6b, 6c.

*Hab.*—Rockhampton, N. Queensland.

*Genus Plotius, Simon.*

*Obs.*—*Plotius curtus*, Simon, is the type species of this genus.

PLOTIUS CHRYSOSTOMUS, *Keys.*

*Hasarius chrysostomus*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1307, tab. cxi., figs. 6, 6a-6f.

*Hab.*—N. Queensland.

*Genus Servæa, Simon.*

(=*Sceea*, L. Koch, *nom. præocc.*).

*Obs.*—*Servæa vestita*, L. Koch, is the type species of this genus.

SERVÆA BARBATISSIMUS, *Keys.*

*Hasarius barbatissimus*, Keys. in L. Koch, *Die Arach. des Austr.*, ii., 1881, p. 1272, tab. cix., figs. 1, 1a, 1b, 2, 2a.

*Hab.*—Queensland and New South Wales.

SERVÆA VESTITA, *L. Koch.*

*Sceea vestita*, L. Koch, *Die Arach. des Austr.*, ii., 1879, p. 1142, tab. xcix., figs. 4, 4a-4e, 5, 5a-5e.

*Hab.*—E. Australia and Tasmania.

*Genus Trite, Simon.*

*Obs.*—*Trite pennata*, Simon, is the type species of this genus.

TRITE ALBIPILOSA, *Keys.*

*Plexippus albipilosus*, Keys. in L. Koch, *Die Arach. des Austr.*, ii., 1883, p. 1426, tab. cxx., figs. 6, 6a-6d.

*Hab.*—New South Wales and Victoria.

TRITE DAEMELII, *Keys.*

*Plexippus daemeli*, Keys. in L. Koch, *Die Arach. des Austr.*, ii., 1883, p. 1427, tab. cxxi., figs. 1, 1a-1e.

*Hab.*—Sydney, New South Wales.

TRITE LONGULA *Thor.*

*Marptusa longula*, Thor., *Studi Ragni Mal. e Papuani*, iii., 1881, p. 454.

*Hab.*—Cape York, N. Australia.

TRITE RUBRICEPS, *Thor.*

*Marptusa rubriceps*, Thor., *Studi Ragni Mal. e Papuani*, iii., 1881, p. 437.

*Hab.*—Cape York, N. Australia.

TRITE VULPECULA, *Thor.*

*Marptusa vulpecula*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 452.

*Hab.*—Cape York, N. Queensland.

*Genus* *Opisthonus*, *L. Koch.*

*Obs.*—*Opisthonus polyphemus*, *L. Koch.*, is the type species of the genus.

OPISTHONCUS ABNORMIS, *Keys.*

*Opisthonus abnormis*, *Keys.* in *L. Koch*, Die Arach. des Austr., ii., 1881, p. 1221, tab. cv., figs. 1, 1a, 1b, 1c, 2, 2a-2d.

*Hab.*—Queensland and New South Wales.

OPISTHONCUS ALBIVENTRIS, *Keys.*

*Opisthonus albiventris*, *Keys.* in *L. Koch*, Die Arach. des Austr., ii., 1881, p. 1228, tab. cv., figs. 4, 4a, 4b, 4c, 5, 5a, 5b, 5c.

*Hab.*—Sydney, New South Wales.

OPISTHONCUS ALBORUFESCENS, *L. Koch.*

*Opisthonus alborufescens*, *L. Koch*, Die Arach. des Austr., ii., 1880, p. 1197, tab. ciii., figs. 4, 4a-4d, 5, 5a-5d.

*Hab.*—Queensland and New South Wales.

OPISTHONCUS BITENIATUS, *L. Koch.*

*Opisthonus mordax*, *L. Koch*, Die Arach. des Austr., ii., 1880, p. 1195, tab. ciii., figs. 3, 3a-3d.

*Hab.*—Queensland and New South Wales.

OPISTHONCUS CLARUS, *Keys.*

*Opisthonus clarus*, *Keys.* in *L. Koch*, Die Arach. des Austr., ii., 1883, p. 1460, tab. cxxiii., figs. 3, 3a, 3b, 3c.

*Hab.*—Peak Downs, Queensland.

OPISTHONCUS CONFINIS, *Keys.*

*Opisthonus confinis*, *Keys.* in *L. Koch*, Die Arach. des Austr., ii., 1881, p. 1225, tab. cv., figs. 3, 3a-3d.

*Hab.*—Peak Downs, Queensland.

OPISTHONCUS DEVEXUS, *Simon*.

*Opisthoncus devevus*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 205.

*Hab.*—W. Australia.

OPISTHONCUS GRASSALOR, *Keys*.

*Opisthoncus grassalor*, Keys, in L. Koch, Die Arach. des Austr., ii., 1883, p. 1457, tab. cxxiii., figs. 1, 1a, 1b, 1c, 2, 2a, 2b, 2c.

*Hab.*—Queensland.

OPISTHONCUS LINEATIVENTRIS, *L. Koch*.

*Opisthoncus lineativentris*, L. Koch, Die Arach. des Austr., ii., 1880, p. 1185, tab. cii., figs. 5, 5a, 5b, 5c, 6, 6a-6d.

*Hab.*—Queensland and New South Wales.

OPISTHONCUS MACHAERODUS, *Simon*.

*Opisthoncus machaerodus*, Simon, Die Fauna Süd-west Austr., ii., 1909, p. 206, fig. 14.

*Hab.*—Midland, W. Australia.

OPISTHONCUS MAGNIDENS, *L. Koch*.

*Opisthoncus magnidens*, L. Koch, Die Arach. des Austr., ii., 1880, p. 1209, tab. civ., figs. 3, 3a-3d, 4, 4a-4d.

*Hab.*—Queensland and New South Wales.

OPISTHONCUS MANDIBULARIS, *L. Koch*.

*Opisthoncus mandibularis*, L. Koch, Die Arach. des Austr., ii., 1880, p. 1202, tab. ciii., figs. 6, 6a-6d.

*Hab.*—Sydney, New South Wales.

OPISTHONCUS MORDAX, *L. Koch*.

*Opisthoncus mordax*, L. Koch, Die Arach. des Austr., ii., 1880, p. 1192, tab. ciii., figs. 2, 2a-2e.

*Hab.*—Sydney, New South Wales.

OPISTHONCUS NECATOR, *Keys*.

*Opisthoncus necator*, Keys, in L. Koch, Die Arach. des Austr., ii., 1881, p. 1237, tab. cvi., figs. 3, 3a, 3b, 3c.

*Hab.*—New South Wales, Queensland, and New Guinea.

OPISTHONCUS PALLIDULUS, *L. Koch.*

*Opisthonus pallidulus*, L. Koch, Die Arach. des Austr., ii., 1880, p. 1190, tab. ciii., figs. 1, 1a, 1b.

*Hab.*—Sydney, New South Wales.

OPISTHONCUS PARCEDENTATUS, *L. Koch,*

*Opisthonus parcedentatus*, L. Koch, Die Arach. des Austr., ii., 1880, p. 1205, tab. civ., figs. 1, 1a, 1b, 1c, 2, 2a-2e.

*Hab.*—Queensland and New South Wales.

OPISTHONCUS POLYPHEMUS, *L. Koch.*

*Opisthonus polyphemus*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien, 1867, p. 222.

*Opisthonus polyphemus*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1215, tab. civ., figs. 5, 5a-5d, 6, 6a-6e.

*Hab.*—New South Wales, Queensland, and New Guinea.

OPISTHONCUS QUADRATARIUS, *L. Koch.*

*Attus quadratarius*, L. Koch, Verh. der K.K. zool.-bot. Ges. Wien, 1867, p. 227.

*Opisthonus quadratarius*, Keys. in L. Koch, Die Arach. des Austr., ii., 1882, p. 1337, tab. cxiv., figs. 2, 2a, 2b, 2c.

*Hab.*—Brisbane, Queensland.

OPISTHONCUS SERRATO-FASCIATUS, *Keys.*

*Opisthonus serrato-fasciatus*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1233, tab. cvi., figs. 1, 1a, 1b, 1c.

*Hab.*—Sydney, New South Wales.

OPISTHONCUS TENUIPES, *Keys.*

*Hyllus tenuipes*, Keys. in L. Koch, Die Arach. des Austr., ii., 1882, p. 1342, tab. cxiv., figs. 3, 3a, 3b, 3c.

*Hab.*—Peak Downs, Queensland.

OPISTHONCUS UNICOLOR, *Keys.*

*Opisthonus unicolor*, Keys. in L. Koch, Die Arach. des Austr., ii., 1881, p. 1235, tab. cvi., figs. 2, 2a, 2b, 2c.

*Hab.*—Peak Downs, Queensland.



## OPISTHONCUS VERISIMILIS, G. W. and E. G. Peckh.

*Opisthonus verisimilis*, G. W. and E. G. Peckh., Trans. Wisc. Acad., xiii., 1901, p. 346.

*Hab.*—Victoria.

*Genus Simætha*, Thor.

(=*Eulabes*, nom. præocc., et *Pirithous*, Keys.).

*Obs.*—*Simætha thoracica*, Thor., is the type species of this genus.

## SIMÆTHA FISSIDENS, Keys.

*Eulabes fissidens*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, p. 1391, tab. cxviii., figs. 1, 1a-1e, 2, 2a, 2b, 2c.

*Hab.*—Cape York, N. Queensland.

## SIMÆTHA PÆTULA, Keys.

*Eulabes pætulus*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, p. 1388, tab. cxvii., figs. 6, 6a, 6b, 6c, 7, 7a.

*Hab.*—Queensland.

## SIMÆTHA ROBUSTIOR, Keys.

*Eulabes robustior*, Keys. in L. Koch, Die Arach. des Austr., ii., 1883, p. 1396, tab. cxviii., figs. 5, 5a, 5b, 5c.

*Hab.*—(?) Northern Australia (Pulbakay, sic.).

## SIMÆTHA TENUIDEUS, Keys.

*Eulabes tenuideus*, Keys. in L. Koch, Die Arach. des Austr., 1883, p. 1393, tab. cxviii., figs. 3, 3a, 3b, 3c, 4, 4a.

*Hab.*—Queensland.

## SIMÆTHA THORACICA, Thor.

*Simætha thoracica*, Thor., Studi Ragni Mal. e Papuani, iii., 1881, p. 521.

*Hab.*—Cape York, N. Queensland.

*Genus Simæthula*, Simon.

*Obs.*—*Simæthula janthina*, Simon, is the type species of this genus.

SIMÆTHULA AURONITENS, *L. Koch.*

*Homalattus auronitens*, L. Koch., Die Arach. des Austr., ii., 1879,  
p. 1085, tab. xcv., figs. 2, 2a, 2b, 2c, 3, 3a, 3b, 3c.

*Hab.*—Queensland and New South Wales.

SIMÆTHULA CHALCOPS, *Simon.*

*Simæthula chalcops*, Simon, Die Fauna Süd-west Austr., ii., 1909,  
p. 207.

*Hab.*—Sibiaco N., W. Australia.

SIMÆTHULA JANTHINA, *Simon.*

*Simæthula janthina*, Simon, Ann. Soc. Ent. Belg., xlv., 1902,  
p. 399.

*Hab.*—Cooktown, N. Queensland.

SIMÆTHULA TENUIOR, *Keys.*

*Eulabes tenuior*, Keys. in L. Koch, Die Arach. des Austr., ii.,  
1883, p. 1399, tab. cxviii., figs. 6, 6a, 7.

*Hab.*—Peak Downs, Queensland.

SIMÆTHULA VIOLACEA, *L. Koch.*

*Homalattus violaceus*, L. Koch, Die Arach. des Austr., ii., 1879,  
p. 1090, tab. xcv., figs. 6, 6a, 6b, 6c.

*Hab.*—Peak Downs, Queensland.

*Genus* Tara, *G. W. and E. G. Peckh.*

(=*Atrytone*, Keys., *nom. præocc.*).

TARA ANOMALA, *Keys.*

*Atrytone anomala*, Keys. in L. Koch, Die Arach. des Austr., ii.,  
1883, p. 1378, tab. cxvi., figs. 6, 6a, 6b, 6c.

*Hab.*—Sydney, New South Wales.

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*Note.*—Names of Families are printed in Capital Letters, Subfamilies in Small Capitals, Genera in Roman, and Synonyms in Italics.

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STUDIES IN AUSTRALIAN CRUSTACEA.

No. 3.\*

By ALLAN R. McCULLOCH, Zoologist, Australian Museum.

(Plates x.-xi., and Figs. 42-53).

Family OCYPODIDÆ.

EUPLAX TRIDENTATA, A. Milne Edwards.

*Cleistostoma tridentatum*, A. Milne Edwards, Journ. Mus. Godeff., i., iv., 1873, p. 82.

*Chænostoma tridentatum*, de Man, Jahrb. Hamburgischen Wiss. Anstalten, xiii., 1896, pp. 93-95, pl. iii., fig. 5, 5a, 5b (not fig. 4).

*Metaplex hirsutimana*, Grant and McCulloch, Proc. Linn. Soc. N. S. Wales, xxxi., 1906, p. 21, pl. i., fig. 3, 3a, 3b.

Miss M. J. Rathbun has kindly examined specimens of our *M. hirsutimana* and writes as follows:—"It is quite a puzzling case and belongs to the Family Ocypodidæ, Subfamily Macroplthalmineæ.

"In 1873 A. Milne Edwards described *Cleistostoma tridentatum* from Upolu and gave as its collection number 3666a. In 1896, de Man described and figured, as he supposed, the remnants of the type specimen (♂) of *C. tridentatum*, A. M. Edw.; he figured the front, maxillipeds and claw, and described the abdomen also. He says that on the bottle there is a label No. 2429, Australia, and inside is the number 3666a, and therefore it is doubtful whether it came from Australia or Upolu. The specimen described and figured by de Man is, I think, the same species as your *hirsutimana*, and probably came from Australia. If de Man really handled the type specimen, then A. Milne Edwards' description is quite inadequate.

"De Man further says that the species manifestly does not belong to the genus *Cleistostoma*, in which the maxillipeds fit close together, but perhaps to the genus *Chænostoma*, Stimpson. I agree with him that it is not a *Cleistostoma*, but would call it

\* For No. 2 see Vol. vii., p. 305.

*Euplax*, H. M. Edw. (= *Chenostoma*, Stimpson). I have compared it with *E. boscii*, Audouin. If, then, we accept de Man's identification, your species would be known as *Euplax tridentata*, A. Milne Edwards, with the type locality probably Australia."

The types of *M. hirsutimana* were taken on the mud-flats at the mouth of Auckland Creek, Port Curtis, Queensland, where it was common. I have since collected it at Ryde and Parramatta, Parramatta River, New South Wales, where it burrows in the mud among the mangroves just below the high water mark. Its colour when alive is brownish grey, with darker marblings on the carapace and legs; the external maxillipeds and pterygostomian regions are white with a broad brown longitudinal bar on either side of the buccal cavern. The abdomen and hands of the males are violet, and the fingers orange. Length of carapace, 10.5 mm.

#### Family GRAPSIDÆ.

##### SESARMA SMITHII, *Milne Edwards*.

*Sesarma smithii*, Milne Edwards, Arch. Mus. Paris, vii., 1855, p. 149, pl. ix., fig. 2. *Id.*, Ortmanu, Zool. Jahrb., vii., 1894, p. 722—references.

The Australian Museum collection includes two Queensland examples of this species; one from Yeppoon, near Rockhampton, and another from the Annan River, Cooktown (Coll. Hedley and McCulloch, Aug., 1906). It has not been previously recognised from Australia.

##### SESARMA MEINERTI, *de Man*.

*Sesarma meinerti* (de Man), Alcock, Journ. Asiat. Soc. Bengal, lxi., 1900, p. 417.

Three fine specimens are in the collection from Cooktown, which were received from Mr. E. A. C. Olive. They are apparently the first of this species recorded from Australia.

Of the nine species of *Sesarma* recorded from Australia, only five are in the Australian Museum; they may be distinguished as follows:—

- a. Upper surface of the hand of the male with oblique comb-like ridges.
- b.* Sides of the carapace without teeth...*erythro-lactyla*.
- bb.* Sides of the carapace with one tooth behind the orbital angle .....*bidens*.

- aa. No oblique comb-like ridges on the hand.
- c. Breadth between the outer orbital angles greater than the length ..... *meinerti*.
- cc. Breadth less than the length.
- d. Two teeth behind the orbital angle; greatest breadth between the posterior teeth. .... *smithii*.
- dd. One tooth behind the orbital angle; carapace expanded behind ..... *atorubens*.

The type specimen of *S. atorubens*, Hess,<sup>1</sup> was said to come from Sydney, together with many other tropical species which do not occur here. The species probably extends to Northern Australia, however, since it has been recorded from several localities in the East Indian Archipelago, New Guinea, and Fiji. Specimens are in the Australian Museum from the two latter localities and the Solomon Islands.

Hess also gave Sydney as the locality for his *S. rotundata*, *S. similis* (= *S. impressa*, M. Edw.),<sup>2</sup> and *S. schutteii* (= *S. gracilipes*, M. Edw.),<sup>2</sup> but they have not since been taken here, though they are recorded from various tropical localities.

#### Family GONOPLACIDÆ.

##### LITOCHEIRA BISPINOSA, *Kinahan*.

(Fig. 42).

*Litocheira bispinosa*, Kinahan, Journ. Roy. Dublin Soc., i., 1858, p. 121, pl. iii., fig. 1. *Id.*, Miers, Zool. "Alert," 1884, p. 243; *Id.*, Miers, "Challenger" Rept., Zool., xvii., 1886, p. 232. *Id.*, Grant in Sayce, Vict. Nat., xviii., 1902, p. 154. *Id.*, Fulton and Grant, Proc. Roy. Soc. Vict., xix. (n.s.), 1906, pp. 9, 18.

*Melia* ? *brevipes*, Haswell, Proc. Linn. Soc. N.S. Wales, vi., 1881, p. 545, and Cat. Austr. Crust., 1882, p. 72, pl. i., fig. 7.

? *Brachygrapsus laevis*, Kingsley, Proc. Acad. Nat. Sci. Philad., 1880, p. 203.

A fine series of specimens has been presented to the Australian Museum by Mr. C. T. Harrison, who collected them at Hobart,

<sup>1</sup> Hess—Arch. Nat., xxxi., 1865, p. 23, pl. vi., fig. 12.

<sup>2</sup> *Fûte de Man*—Zool. Jahrb., 1887, ii., pp. 645 and 653.

Tasmania. Others are in the collection from Griffith Point (type of *M. brevipes*) and Port Phillip, Victoria; St. Vincent Gulf, South Australia; and near Albany, West Australia. Miers ("Alert") has noted that there are specimens in the British Museum from Port Curtis, Queensland, while in the "Challenger" Report he has added Bass Strait and King George Sound

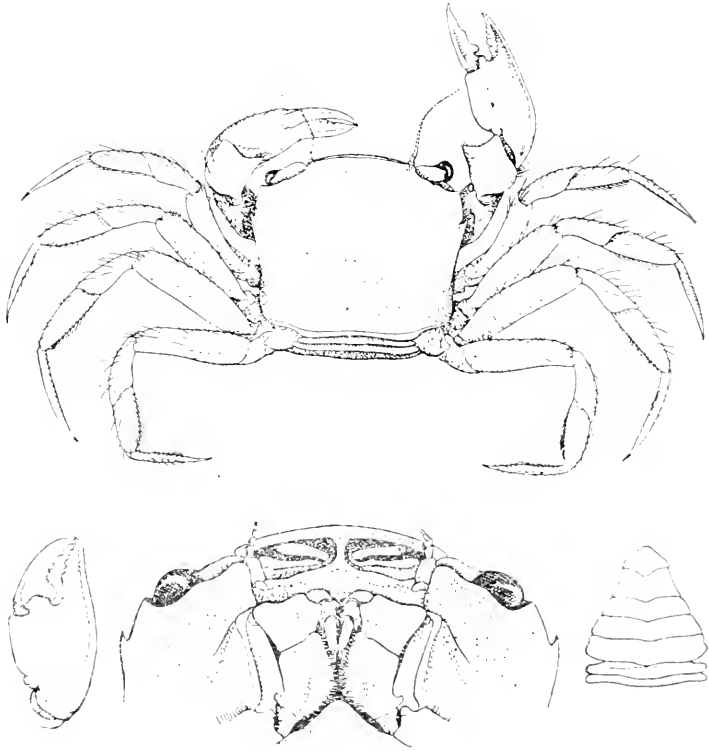


Fig. 42.

to the list of localities. Kinalhan's type was dredged in 15 fathoms, Port Phillip, while he also referred to others in the British Museum which were said to be collected by Macgillivray in Torres Strait. These last are not noticed by Miers unless they be the Bass Strait specimens he mentions. At any rate, I think the Port Curtis and Torres Strait localities need verification.



If *Brachygrapsus lewis*, Kingsley, is identical with this species, as seems probable, then its range must be extended to New Zealand.

Family XANTHIDÆ.

*PILUMNUS SEMILANATUS*, Miers.

(Fig. 43).

*Pilumnus semilanatus*, Miers, Zool. "Alert," 1884, p. 222, pl. xxii., fig. 13, and "Challenger" Rept., Zool., xvii., 1886, p. 149. *Id.*, Grant and McCulloch, Proc. Linn. Soc. N. S. Wales, xxxi., 1906, p. 17.

Miers' figure apparently represents the young of this species. In large specimens the hairs on the carapace and legs are much



Fig. 43.

longer and more shaggy than he shows them, though their distribution appears to be the same. I therefore give a figure of a full-grown specimen measuring 18 mm. across the carapace.

Examples are in the Australian Museum from Port Curtis and Port Denison, Queensland, while I have also examined one from Port Hedland, North-Western Australia.

Genus MEGAMETOPE, *Filhol*.

*Megametope*, Filhol, Miss. file Campbell, Crust., 1886, p. 373  
(*Xantho rotundifrons*, Milne Edwards).

*Gabrielia*, McCulloch, Rec. Austr. Mus., vii., 1908, p. 54 (*Cyclo-  
xanthus haswelli*, Fulton and Grant).

*Megametope* was published by Filhol only as a MS. name which was attached to the type of *Xantho rotundifrons*<sup>3</sup> in the Paris Museum, but the fact that it was definitely associated with a species entitles it to stand as a generic name. *Gabrielia*, mihi, is synonymous with it, while judging from Filhol's figure (pl. xlv., fig. 3), *G. haswelli*,<sup>4</sup> Fulton and Grant, is very probably identical with *M. rotundifrons*.

## Family MAIIDÆ.

## Subfamily INACHINÆ.

Genus NAXIA, *Latreille*.

*Naxia*, Leach in Latreille, Encycl. Meth., Entom., x., 1825, p. 140—type *Pisa aurita*, Latreille (not *Naxia*, M. Edwards = *Naxioides*).

*Naxia*, Rathbun, Proc. Biol. Soc. Wash., xi., 1897, pp. 157-8.

*Halimus*, Latreille, Encycl. Meth., Entom., x., 1825, p. 700  
(no type mentioned).

*Halimus*, Latreille, Fam. nat., p. 272 (*vide* Milne Edwards).

*Halimus*, Latreille, Cuv. Règne Anim., 2 ed., iv., 1829, p. 60  
(type *H. aries*, Latreille).

*Halimus*, Milne Edwards, Hist. Nat. Crust., i., 1834, p. 340.

*Kalimus*, Griffiths, Cuv. Anim. Kingdom, xiii., 1833, p. 168,  
(misprint).

From the fact that Latreille definitely fixed *Pisa aurita* as the type of *Naxia*, and as that species is congeneric with *Halimus aries*, there seems to be no doubt that *Naxia* must be used instead of the generally accepted *Halimus*.

<sup>3</sup> Milne Edwards—Hist. Nat. Crust., i., 1834, p. 397.

<sup>4</sup> Fulton and Grant—Proc. Roy. Soc. Vict., xix. (n.s.), 1906, p. 6, pl. iii.; McCulloch—Rec. Austr. Mus., vii., 1908, p. 54, pl. xii., fig. 5, 5a.

## NAXIA AURITA, Latreille.

*Pisa aurita*, Latreille, Encycl. Meth., Entom., x., 1825, p. 140.

*Halimus auritus*, Milne Edwards, Hist. Nat. Crust., i., 1834, p. 341, and Atlas, Cuv. Règne Anim., 1849, pl. xxviii., fig. 3, 3 a-b. *Id.*, Kinahan, Journ. Roy. Dublin Soc., i., 1858, p. 1. *Id.*, Ortmann, Zool. Jahrb., vii., 1893, p. 39.

*Halimus lævis*, Haswell, Proc. Linn. Soc. N. S. Wales, iv., 1880, p. 435, and Cat. Austr. Crust., 1882, p. 6. *Id.*, Baker, Trans. Roy. Soc. S. Austr., xxix., 1905, p. 119, pl. xxi., fig. 1-1a. *Id.*, McCulloch, Rec. Austr. Mus., vii., 1908, p. 54.

The third edition of Cuvier's "Règne Animal" not being available to me, I am indebted to Dr. W. T. Calman for a photograph of the plate on which this species is figured. I have compared specimens of *Halimus lævis* with it and am convinced that that species is synonymous with *H. auritus*. As in other species of the genus there is some variation in the breadth of the carapace and the length of the legs, though I have not seen any examples in which the rostral horns are formed exactly as in the figure, they being generally slightly longer and more divergent. Haswell considered that his species differed from *H. auritus* in the size of the chelipeds, but I have specimens of *H. lævis* with these limbs similar to those figured by Milne Edwards.

*N. aurita* was originally described from D'Entrecasteaux Channel, Tasmania, but Milne Edwards gave its habitat as the Indian Ocean. It has been recognised by both Kinahan and Ortmann from Victoria, and as *H. lævis* it has also been recorded from South and South Western Australia.

## NAXIA ARIES, Guerin.

*Halimus aries*, Latreille in Guerin, Icon. Règne Anim., iii., 1829-1844, Crust., pl. ix., figs. 2, 2a-c (*sine descr.*).

*Halimus aries*, Milne Edwards, Hist. Nat. Crust., i., 1834, p. 341, and Atlas, Cuv. Règne Anim., Crust., 1849, pl. xxviii., figs. 2, 2a-c.

*Halimus gracilis*, Baker, Trans. Roy. Soc. S. Austr., xxix., 1905, p. 124, pl. xxiii., fig. 4, 4a.

*Halimus gracilis* is apparently identical with *H. aries*; the only difference shown in Baker's and Guerin's figures is in the

length of the legs, but as this character is known to be variable in *N. tumida*, Dana, and other species, it cannot be used as a specific character.

*HYASTENUS ARIES*, Latreille.

(Fig. 44).

*Pisa aries*, Latreille, Encycl. Meth., Entom., x., 1825, p. 140.

*Chorinus aries*, Milne Edwards, Hist. Nat. Crust., i., 1834, p. 315.

*Hyastenus aries*, Alcock, Journ. Asiatic Soc. Bengal, lxiv. (n. ser.), 1895, p. 211.

Some confusion having arisen between this and the preceding species, I wrote to the authorities of the Indian Museum asking for their assistance to make the matter clear. The

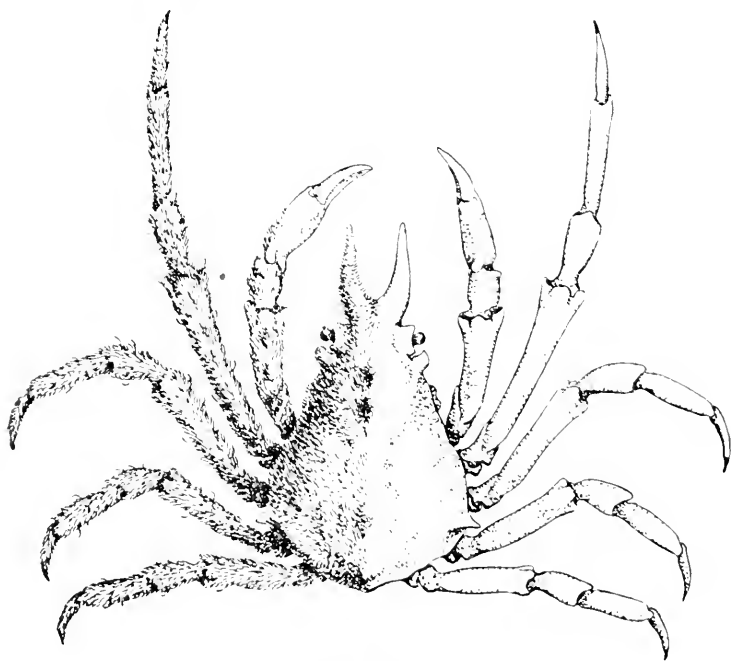


Fig. 44.

Director, Dr. N. Amundale, very generously forwarded me for examination one of the specimens determined by Alcock as *Hyastenus aries*, which I have here figured for comparison with Guerin's illustration of the other species. It was taken in the Gulf of Martaban, 20 fathoms.

Genus NAXIA, Latreille.

Subgenus MICROHALIMUS, Haswell.

*Microhalimus*, Haswell, Proc. Linn. Soc. N. S. Wales, iv., 1880, p. 435 (*M. deflexifrons*, Haswell); *Id.*, Cat. Austr. Crust., 1882, p. 7.

The relationship of *Microhalimus* and *Pseudomicippe*, Heller,<sup>5</sup> has been the subject of considerable discussion. Miers<sup>6</sup> placed the latter in the Majidae, but Ortmann<sup>7</sup> has shown that it really belongs to the *Inachide* and is allied to *Halimus* (= *Naxia*). Haswell considered *Microhalimus* to be a subgenus of *Halimus*, and, having examined his six specimens, I agree with his opinion. Miers<sup>8</sup> also suggested that *Microhalimus* was identical with *Pseudomicippe*, but it differs in lacking the broad antero-superior orbital lobe, in having a long spiniform process projecting forwards from the basal antennal joint, in having the hepatic region armed with strong spines, and in the penultimate joints of the ambulatory legs being slightly expanded instead of cylindrical. Its general form is much more like that of *Naxia* than of *Pseudomicippe*.

I regard *Microhalimus* as only a subgenus of *Naxia* because there are some species of the latter genus possessing characters which are almost intermediate between the two. Haswell considered that it differed in having the rostrum deflexed and in lacking prominent spines on the carapace, but *N. tumida* Dana<sup>9</sup> and *N. spinosa*, Hess<sup>10</sup> often have the rostrum as much deflexed as *M. deflexifrons* while the armature of the carapace is very similar to that of *N. tumida*. In the structure of the

<sup>5</sup> Heller—Sitzb. Akad. Wiss. Wien., xliii., i. 1861, p. 301, pl. i., fig. 3.

<sup>6</sup> Miers—Journ. Linn. Soc., Zool., xiv., 1879, p. 661.

<sup>7</sup> Ortmann—Zool. Forsch. Austr., v., 1894, p. 39.

<sup>8</sup> Miers—Zool. "Alert," 1884, p. 198, and "Chall." Rept., Zool., xvii. 1886, p. 68.

<sup>9</sup> Dana—Wilkes U.S. Explor. Exped., Crust., i., 1852, p. 165, pl. iv., figs. 2a-d.

<sup>10</sup> Hess—Arch. Nat., xxxi., 1865, p. 129, pl. vi., fig. 1.

orbit and the postorbital spine *N. tumida* is intermediate between *Naxia* and *Microhalimus*, and as regards the legs, the penultimate joint is often as little dilated in *N. aurita* Latreille<sup>11</sup> as in *M. deflexifrons*.

*Naxia*, *Microhalimus*, and an allied new genus *Zewa*, may be distinguished as follows:—

- a. Eye-stalks of medium length, not or barely reaching the anterior hepatic spine when laid back. Penultimate joints of ambulatory legs more or less dilated.
- b A post-ocular spine separated from the orbit by a more or less distinct interspace; postero-superior orbital spine present or absent. Penultimate joints of legs usually much compressed and dilated distally.....*Naxia*.
- bb. No post-ocular spine, only a postero-superior orbital spine. Penultimate joints of legs very little dilated .....*Microhalimus*.
- aa. Eye-stalks long and slender, reaching to or beyond the anterior hepatic spine when laid back. Penultimate joints of legs cylindrical, not dilated ... ..*Zewa*.

NAXIA (MICROHALIMUS) DEFLEXIFRONS, *Haswell*.

(Plate x, figs. 1—4).

*Microhalimus deflexifrons*, Haswell, Proc. Linn. Soc. N. S. Wales, iv., 1880, p. 435, pl. xxv., fig. 2, and Cat. Austr. Crust., 1882, p. 7. *Id.*, Whitelegge, Proc. Roy. Soc. N. S. Wales, xxiii., 1889, p. 225. *Id.*, Fulton and Grant, Proc. Roy. Soc. Vict., xix, (n.s.), 1906, p. 16.

Carapace subpyriform, the regions well defined and the surface uneven but smooth; together with the legs, it is more or less densely covered with hooked hairs, among which are groups of stronger, curled ones. Branchial regions with two short but strong lateral spines followed by a tubercle; a second smaller tubercle may be present anteriorly, above the first spine. A rounded tubercle on the hinder margin of the carapace on the median line, and another just in front of it. A low swelling is present on either side near the groove between the branchial and gastric regions, and the cardiac region may tend to form two

<sup>11</sup> Latreille—see *ante*.

low tubercles. Gastric region greatly swollen, almost or quite smooth. Two prominent tubercles between the eyes. Rostrum more or less obliquely deflexed, more so in females than males, and formed of two rather thick, widely diverging spines, which are about as long as the distance from their base to the hinder orbital margin. Orbits without an anterior spine; posterior spine present and sometimes preceded by a very small notch. No post-orbital spine.<sup>12</sup> Eyes of moderate length, and with a small, distal tubercle. Hepatic region with two diverging spines of which the anterior is much the larger and usually has a small tubercle on its front margin; latero-inferior surface with a small tubercle. Basal joint of the antenna much longer than broad with a long denticulate spine at its antero-exterior angle projecting obliquely forward, and visible from above; flagellum stout, nearly twice as long as the rostral horns and wholly visible from above. Merus of external maxilliped with its antero-exterior angle forming a rounded lobe, its front border slightly emarginate; flagellum articulated at the antero-internal angle. Pterygostomial regions each with a prominent tubercle, and there is a smaller one before each anterior angle of the buccal cavern.

Arm of cheliped with obscure tubercles of which the most prominent are two or three on the median line above; a large compressed distal spine or lobe. Wrist with an obtuse crest on the outer surface in the male, rounded in the female. Palm compressed, smooth, much longer than broad, its edges rounded; fingers rather long and slender though shorter than the palm, curved, finely denticulated and acutely pointed. Ambulatory legs of moderate size, decreasing in length backwards. The penultimate joints only very slightly dilated and provided with long, coarse, curved setae on their lower surfaces; dactyli rather long, curved, with a double row of spinules on their inner margins.

Abdomen of the male consisting of seven segments, of the female, five.

Described from six specimens, one male 12 mm. long being the specimen figured, and five females 14-18 mm. long.

This species is allied to *Naxia tumida*, Dana, from which it may be readily recognised by having the penultimate joints of the ambulatory legs much less dilated and the gastric region smooth, not tubercular.

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<sup>12</sup> I consider that the second posterior orbital spine mentioned by Haswell belongs to the hepatic region.

*Hab.*—Haswell's original specimens were collected in Port Jackson and are the only ones I have seen. Fulton and Grant recorded the species from Port Phillip, Western Port, and Wilson Promontory, but the only specimens labelled *M. deflexifrons* in Mr. Grant's collection, which was purchased by the Trustees, are really *N. tumida*, so that those records possibly refer to that species.

Genus ZEWA,<sup>13</sup> *gen. nov.*

Carapace subpyriform, convex, either tuberculate or smooth, without long spines. Rostrum formed of two diverging spines. Eye-stalks long, partially retractile towards the sides of the carapace. No true orbit: supraocular eave with a spine at its hinder angle; no true postocular spine, but a flattened one projects forwards from the hepatic region which is not cupped and affords little shelter to the eye when retracted. Basal antennal joint of moderate breadth, its antero-external angle a little produced outwards; flagellum visible from above. Merus of external maxillipeds a little broader than the ischium, expanded at the antero-external angle, and bearing the palp at the antero-internal angle. Chelipeds of adult male enlarged. The first pair of ambulatory legs the longest. Penultimate joints of all the legs cylindrical, not expanded distally. Abdomen of the male composed of seven distinct segments.

*Type.*—*Z. banfieldi*, sp. nov. Also includes *Pseudomicippe varians*, Miers.

This genus is allied to *Pseudomicippe*, Heller, from which it differs in the formation of the orbits, there being no large antero-superior lobe as in that genus, while the hinder angle is produced as a sharp spine. It differs from *Naxia*, Latreille (*Halimus*, Auct.) in having no large spines on the carapace and in the penultimate joints of the legs being cylindrical instead of dilated distally.

*ZEWA BANFIELDI*, sp. nov.

(Plate x., figs. 5-6).

Carapace elongate-triangular, the regions fairly well defined, the surface uneven and rough with large tubercles. A very

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<sup>13</sup> "Zewa," a name for a crab in the Miriam language, Torres Strait.



prominent tubercle above each orbit. Gastric region with four strong ones on the median line and two others on either side. Cardiac region surmounted by two pairs of small tubercles, between which and a sharp intestinal one is a still smaller pair. A large tubercle in the hollow between the gastric and branchial regions, while many others are present on the hepatic, branchial, and hinder regions of the carapace. Rostral horns a little deflexed, cylindrical, their length equal to rather more than one-third the rest of the carapace. Anterior hepatic (post-orbital) spine directed obliquely forwards, broad distally, followed by a small tubercle; a large infero-lateral and one or two postero-lateral hepatic tubercles.

Antennal flagella stout, a little longer than the rostral horns and wholly visible from above. Antero-external angle of the merus of the maxillipeds forming a broadly rounded lobe. Pterygostomial regions each with a large external tubercle, and there is another in front of each anterior angle of the buccal cavern.

Anterior segment of the sternum of the male with two raised ridges diverging backwards, ending in small tubercles, and parallel with the margins; each of the three following segments bears several tubercles. Abdomen with a large median tubercle on each segment, the fifth joint narrowest, the last broadly triangular.

Arm of the chelipeds with two or three tubercles on the median line above and a compressed distal lobe. Wrist with an obtuse crest on its outer surface. Palm a little swollen, longer than broad, and smooth; fingers pointed, finely denticulated, slightly gaping posteriorly. All the joints with long, coarse scattered setae. Walking legs long and slender, decreasing in length backwards; all the joints except the dactyli, are cylindrical and are provided with stiff setae, among which are groups of curled setae on their upper surfaces. The penultimate joints have also numerous long and strong setae on their lower surfaces. Dactyli long and curved, with a double row of spinules on their inner margins.

*Hab.*—Described from a single male specimen, 29 mm. long including the rostrum, from Dunk Island, near Cairns, Queensland. It is named after its collector, Mr. E. J. Banfield, to whom the Trustees are indebted for many rarities of both Crustacea and fish.

## ZEWA VARIANS, Miers.

*Pseudomicippe*? *varians*, Miers, Ann. Mag. Nat. Hist., (5), iv., 1879, p. 12, pl. iv., fig. 8, also Zool. "Alert," 1884, p. 197, and "Challenger" Rept., Zool., xvii., 1886, p. 68. *Id.*, Ortmann, Zool. Forsch. Austr., v., 1894, p. 40. *Id.*, Calman, Trans. Linn. Soc., (2), viii., 1900, p. 39, pl. ii., figs. 25-26.

Both Miers and Calman have expressed doubts as to this species being correctly referred to *Pseudomicippe*, though their opinion was not shared by Ortmann. I consider that it belongs to the same genus as my *Zewa banfieldi*, differing from *Pseudomicippe* in the general form of the anterior portion of the carapace and particularly in the structure of the orbits.

I have examined two specimens, the first a female with a carapace, including the rostral horns, 18 mm. long, from Thursday Island; the second is a small male, 10 mm. long, collected at Dunk Island by Mr. E. J. Banfield. The species is also recorded from Port Denison, Queensland; Torres Strait; and Shark Bay, Western Australia. Miss Rathbun has kindly re-examined the Port Jackson specimen received from this Museum as *P. varians*,<sup>14</sup> and informs me that it is really *Micippoides longimanus*, Haswell, so that *Z. varians* is probably confined to the tropics.

TUMULOSTERNUM, *gen. nov.*

(Fig. 45).

Carapace triangular, with tubercles and short tubercular spines; the regions fairly well delimited. Rostrum formed of two short broad spines, which are a little oblique in the male, and more so in the female. Eyestalks short, each retractile against a stout, angular post-ocular spine, which is somewhat excavated to receive it; no preocular spine, hinder angle of supraocular cave produced outwards. Basal antennal joint broad, bilobed anteriorly and deeply grooved on the lower surface. External maxillipeds deeply sculptured, the merus as wide as the ischium, with a broad external lobe; palp articulated at antero-internal angle. Pterygostomian and hepatic regions with large upstanding flat-topped tubercles, of which the two largest are on the side of the hepatic regions, and are visible from above.

<sup>14</sup> Rathbun—Proc. U.S. Nat. Mus., xvi., 1893, pp. 67 and 92.

Legs rather short and thick; chelipeds very large in the male with broad, flattened palms.

Abdomen consisting of seven segments in both sexes.

*Type.* — *Micippoides longimanus*, Haswell (fig. 45).

When describing *M. longimanus*, Haswell recognised that it was probably distinct from *Micippoides*, A. Milne Edwards, while Miss Rathbun has recently informed me that she also thinks that it does not belong to that genus. It differs in the form of the basal antennal joint



Fig. 45.

and the structure of the orbit, while *Micippoides* also lacks the flattened tubercles which are so characteristic of *longimanus*.

GONATORHYNCHUS TUMIDUS, *Haswell*.

(Fig. 46).

*Gonatorhynchus tumidus*, Haswell, Proc. Linn. Soc. N. S. Wales, iv., 1880, p. 437, pl. xxv., fig. 4, and Ann. Mag. Nat. Hist. (5), v., 1880, p. 145; *Id.*, Haswell, Cat. Austr. Crust., 1882, p. 10. *Id.*, Miers, "Challenger" Rept., Zool., xvii., 1886, p. 25. *Id.*, Fulton and Grant, Proc. Roy. Soc. Vict., xix. (n.s.), 1906, p. 16.

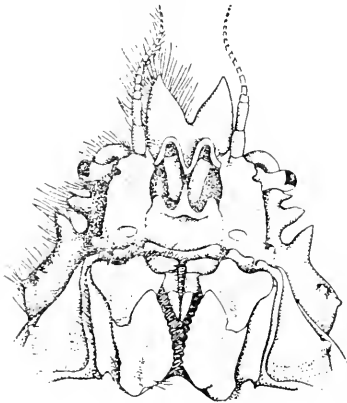


Fig. 46.

A large female specimen, 33 mm. long, is in the Museum from South-western Australia, which was collected by Mr. A. Abjornssen. The species is known from Port Jackson and Port Phillip.

ERUMA, *gen. nov.*

(Fig. 47).

Carapace triangular, smooth, the regions well defined. Rostrum formed of two rather short spines, obliquely deflexed.

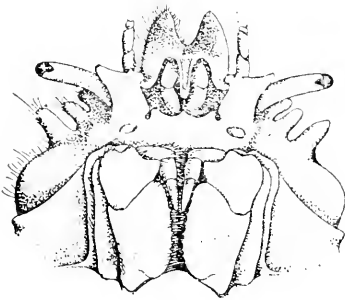


Fig. 47.

Eyestalks long, retractile against the sides of the carapace when they are partly hidden from above by the two postocular spines; no preocular spine, hinder angle of the supraocular eave produced outwards. Basal antennal joint broad with the antero-external angle greatly produced, visible from above; a very small spine near the antero-internal angle. Merus of external maxillipeds as wide as the ischium, the antero-external angle scarcely expanded; palp

articulated at the antero-internal angle.

Legs rather short and thick, the propodus and dactylus of each with a small raised buttress fitting against the overlapping lobes of the preceding joint. Chelipeds not much enlarged in the male.

Abdomen consisting of seven segments in both sexes.

*Type.*—*Paramicippa hispida*, Baker.

ERUMA HISPIDUM, *Baker.*

(Fig. 48).

*Paramicippa hispida*, Baker, Trans. Roy. Soc. S. Austr., xxix., 1905, p. 126, pl. xxiv., fig. 6, 6a.

Two specimens, a male and female, are in the Museum which were received from Mr. W. Baker as his *P. hispida* from South Australia. They differ so much in some important details from his figures that I have re-figured them here.

Mr. Baker compared his species with *P. tuberculosa*, Milne Edwards, which is the type of the genus *Paramicippa* and belongs to the subfamily Maininae, but it appears to me to belong

to the Inachinæ and is closely allied to *Gonatorhynchus*, Haswell. I have therefore proposed the new genus *Eruma* for it as above.

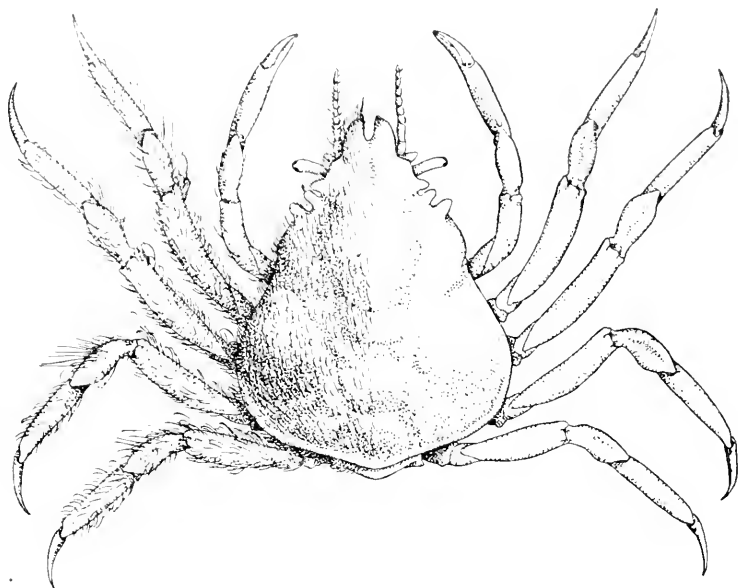


Fig. 48.

#### Subfamily MAIINÆ.

##### PARAMICIPPA TUBERCULOSA, *Milne Edwards.*

*Paramicippa tuberculosa*, Milne Edwards, Hist. Nat. Crust., i., 1834, p. 333. *Id.*, Baker, Trans. Roy. Soc. S. Austr., xxix., 1905, p. 125. *Id.*, Fulton and Grant, Proc. Roy. Soc. Vict. (n.s.), xix., 1906, p. 17.

*Micippa parvirostris*, Miers, Ann. Mag. Nat. Hist. (5), iv., 1879, p. 13, pl. iv., fig. 9. *Id.*, Haswell, Cat. Austr. Crust., 1882, p. 23.

Acting on information written on the label of the type specimen of *Micippa parvirostris* in the British Museum, Fulton and Grant referred to that species as *P. tuberculosa* in their Census of the Victorian Decapod Crustacea, though they did not give their reasons for doing so. Baker also did the same without

explanation. I therefore forwarded a specimen of *M. parvirostris* to the Paris Museum for comparison with the type of *P. tuberculosa*, and Professor L. E. Bouvier has very kindly informed me that it is undoubtedly identical with that species.

### Family PARTHENOPIDÆ.

#### CERATOCARCINUS DILATATUS, *A. Milne Edwards.*

*Ceratocarcinus dilatatus*, A. Milne Edwards, Nouv. Arch. Mus. Paris, viii., 1872, p. 256, pl. xiv., fig. 2.

A fine female example, dredged near Murray Island, Torres Strait, agrees very well with the figure quoted. Neither the genus nor the species appear to have been previously recognised from Australia.

### Family PAGURIDÆ.

#### PAGURISTES SQUAMOSUS, *sp. nov.*

(Fig. 49).

*Paguristes barbatus*, Whitelegge, Proc. Roy. Soc. N. S. Wales, xxiii., 1889, p. 232. *Id.*, Stead, Zoologist, 1898, p. 208 (? not *Clibanarius barbatus*, Heller).

Carapace smooth only towards the centre, otherwise rough with irregular pits and furrows; frontal region hollowed out above with some larger and smaller elevations. Sides of the carapace hairy, while scattered tufts are present on the rougher parts above. Rostrum triangular, projecting well beyond the antero-lateral angles, each of which bears a minute spine; the interspaces between them and the rostrum are excavated and have thick raised edges. Eye-stalks rather slender, their length equal to about two-thirds the width of the anterior portion of the carapace, a trifle longer than the antennular peduncle. Ophthalmic scales large, bi- or trifid at the tip. Basal portion of antennal acicle broad, densely setose, with 3-4 external, and 1 internal spine; anterior portion styliform, hairy, with 2-3 strong spines on its inner and outer borders, reaching almost to the end of the peduncle. Flagellum extending to the tips of the chelipeds.

Chelipeds subequal, densely covered with hair, especially on the edges where it is long and felted, and completely hides the characters beneath it. Arms with some spines along their lower edges, and two or more above. Inner border of wrist with about four strong black-tipped spines; remaining portions of upper surface densely spiny, the spines changing to

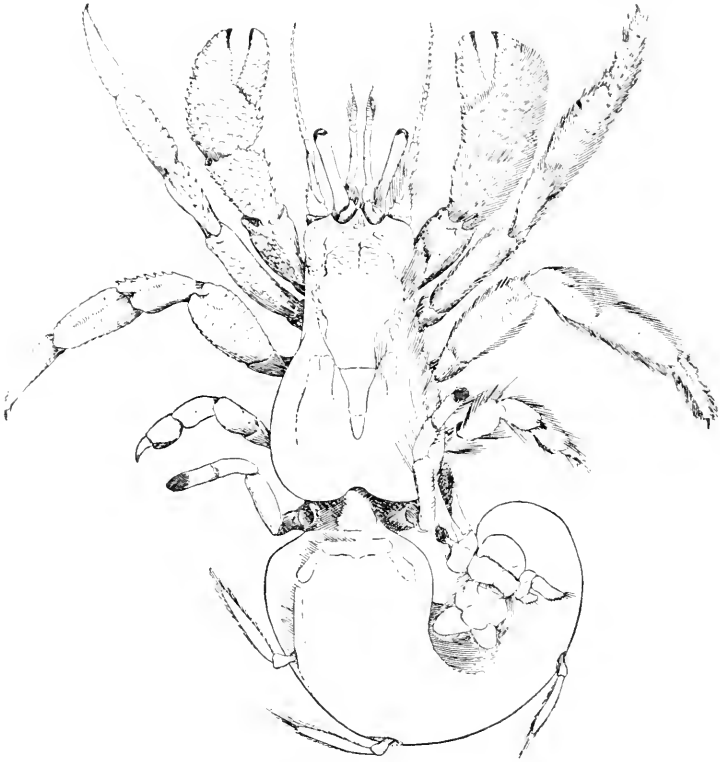


Fig. 49.

more or less squamiform tubercles anteriorly; lower and inner surfaces smooth, a small spine at the lower articulation with the hand. Hand with three strong black-tipped spines in a line with those of the carpus; outer surface with irregular rows of spines, upper surface with squamiform tubercles which have crenulated edges and are fringed with hairs. Fingers with similar tubercles, the upper also with spines; their cutting

edges are crenulate and have broad black horny tips, and meet along their whole length. Inner surfaces of hands a little rough, with tufts of setæ.

Second and third legs reaching beyond the chelipeds, with long felted hairs along their upper and lower borders. All the legs are similar. Upper border of the merus with a few weak spines which are most distinct on the third pair. Carpus with strong spines above, and a very distinct groove on the hinder surface which also extends on to the propodus and dactylus. Anterior faces of the last two joints with broad squamiform tubercles which have crenulate and hairy margins like those of the chelipeds. Dactylus broad and longer than the penultimate joint, with a black terminal spine, and some smaller ones on the upper and lower edges near it.

*Colour*.—Whitish in spirits. In life, pink with pale brownish hairs; the rougher parts more or less tinted with green. Spines on chelipeds madder brown. Eye-stalks green. Antennules, antennæ, and third maxillipeds with alternating brown and white rings. Abdomen translucent grey and white, caudal appendages white.

I have examined the specimens which Whitelegge doubtfully identified as *Paguristes barbatus*, Heller, and find them to be identical with those described above. I consider that they differ from that species in having the upper surface of the hand covered with squamiform tubercles. Neither Heller nor Ortman mention any such tubercles in their description of *P. barbatus*, whereas they are so distinct in all that I have seen that it is not likely that they would have been overlooked. Mr. Stead has enabled me to examine the specimens which he recorded as *P. barbatus*, but I regard them also as distinct from that species.

*Type*.—A male, with a carapace 19 mm. long, from Maroubra, near Sydney. Others are in the Australian Museum from the same locality which are somewhat larger; Whitelegge's specimens were from several localities in Port Jackson and on the coast near Sydney.

#### PAGURISTES BARBATUS, Heller.

*Glibanarius barbatus*, Heller, Verh. zool. bot. Ges. Wien., 1862, p. 524, and Reise "Novara", Crust., 1865, p. 90, pl. vii., fig. 5. *Id.*, Miers, Cat. Crust. N. Zealand, 1876, p. 67. *Id.*, Filhol, Miss. File Campbell, iii., 1886, Crust., p. 424. *Id.*, Thomson, Trans. N. Z. Inst., xxxi., 1898, p. 172.



*Paguristes barbatus*, Henderson, "Challenger" Rept., Zool. xxvii., 1886, p. 78. *Id.*, Ortmann, Zool. Jahrb., vi., 1892, p. 279, pl. xii., fig. 7.

Henderson was the first to indicate that *Ulibanarius barbatus*, Heller, was really a *Paguristes* when he compared it with his *P. subpilosus*, but Ortmann has since described Japanese specimens, which he identifies as Heller's species, and gives his reasons for placing it in *Paguristes*.

Heller's type was said to have been taken at Auckland, New Zealand, while Miers identified specimens in the British Museum as *C. barbatus* from the same locality. Thomson, however, states that these are the only records of its occurrence in New Zealand, and that it has not been again collected there; as many of the "Novara" localities were incorrect, and as but little reliance can be placed on Miers' identification, it may be that *P. barbatus* is not a New Zealand species.

I have shown (*ante*) that the specimens from New South Wales, which were identified by Whitelegge and Stead as *P. barbatus*, are not that species, but *P. squamosus*. Lucas<sup>15</sup> recorded a specimen of Heller's species from Port Phillip, Victoria, but the late Mr. F. E. Grant, according to his notes, believed that it was really *P. sulcatus*, Baker. If this is correct, as I think probable, the true *P. barbatus* has not yet been recognised from Australia.

#### PAGURISTES PUGIL, *sp. nov.*

(Fig. 50).

*Paguristes*, *sp.*, Whitelegge, Proc. Roy. Soc. N. S. Wales, xxiii., 1889, p. 232, sp. 361.

Frontal region hollowed out as in *P. squamosus*. Sides of carapace hairy, upper parts with scattered tufts. Rostrum elongate triangular, projecting well beyond the antero-lateral angles, each of which forms a minute spinule; the interspaces between them and the rostrum are excavated and have thick raised edges. Eye-stalks slender, their length equal to the width of the carapace, a trifle longer than the antennular peduncles. Ophthalmic scales large, bi- or trifid at tip. Basal portion of antennal acicle with 2-3 external and 1-2 internal spinules; anterior portion styliform, tomentose, with several strong spines on their inner and outer borders, reaching to the anterior third

<sup>15</sup> Lucas—Proc. Roy. Soc. Vict., xxii., 1886, p. 62.

of the peduncle. Flagellum not nearly reaching the tips of the chelipeds.

Chelipeds sub-equal, densely covered with felted hair which is longest on the outer edges and largely hides the characters beneath it. Arms with a row of spiniform tubercles along each lower edge, those of the inner the most prominent; two spinules

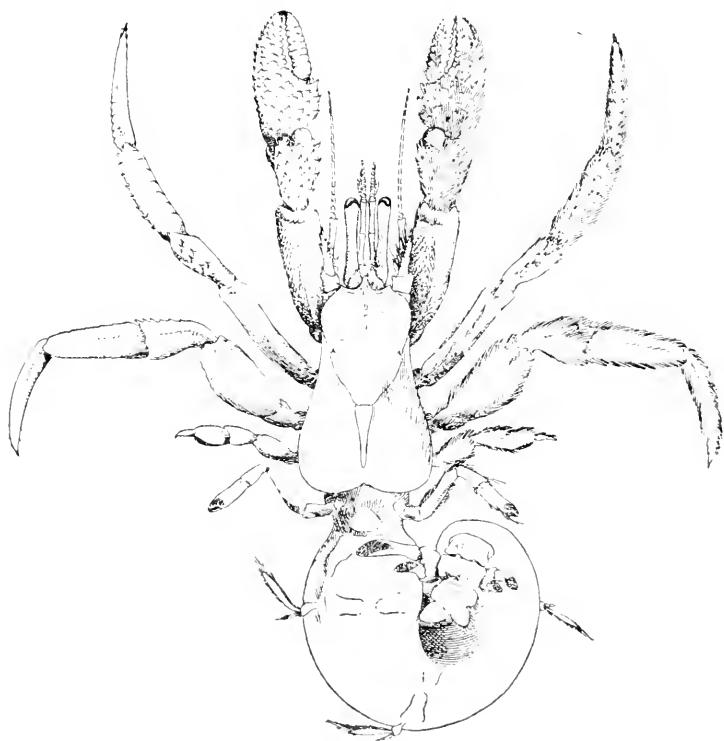


Fig. 50.

are present on the upper anterior margin, and some smaller ones on the ridge behind the distal constriction. Inner border of wrist with four strong black-tipped spines, while other smaller ones cover the upper surface; a very large rounded boss over the upper articulation with the hand. Lower and inner surfaces smooth, only a small spinule at the lower anterior articulation. Hand with three strong black-tipped spines in a line with those of the wrist; outer surface thickly set with

spiniform tubercles, which become squamiform with crenulate and hairy edges on the upper face. Fingers similar to the hand; they have black tips, and leave a narrow gap between them when closed. Inner face of the hand swollen, with tufts of bristles.

Second and third legs reaching well beyond the chelipeds, with long felted hairs along their upper and lower borders. All the legs are alike, but the armature of the hinder pairs is weaker than that of the front. Upper and lower borders of the merus with some very indistinct tubercles, which are largest in the third pair. Carpus with large spines above, and a very deep sulcus behind which also extends on to the propodus and dactylus. Anterior faces of the last two joints with broad squamiform tubercles which have crenulate, hairy edges, like those of the chelipeds; both are rather longer than in *P. squamosus*, and the dactylus is a little longer than the propodus. It terminates in a black spine and there are some small ones on the edges near the tip.

*Colour*.—Whitish in spirits, the hairs pale brown.

This species is very similar to *P. squamosus* but is characterised by the large rounded bosses on each wrist. It has also more slender legs and chelipeds than that species, and the eye-stalks are longer.

*Type and Localities*.—A male, with a carapace 11 mm. long, from Watson Bay, Port Jackson. Another smaller specimen from the same locality is also in the museum collection, while Mr. J. Gabriel has also sent me three others which he dredged in Port Phillip, Victoria.

#### PAGURISTES TUBERCULATUS, *Whitelegge*.

(Fig. 51).

*Clibanarius*, sp., Whitelegge, Proc. Roy. Soc. N. S. Wales, xxiii, 1890, p. 232, No. 359.

*Paguristes tuberculatus*, Whitelegge, Mem. Austr. Mus., iv., 1900, p. 169, figs. 11, 11a.

The Trustees have received from Mr. C. T. Harrison a fine large male of this species which he collected in the estuary of the Derwent River, Tasmania. It is more than twice the size of Whitelegge's specimens, the carapace being 11·5 mm. long, which in the type is scarcely 5 mm. It differs from the type

only in having the dactylus of the third left leg more distinctly hollowed out behind, and the posterior margin prominent and provided with tubercles like that of the propodus. As Whitelegge's figures only show portions of the animal I take this opportunity of giving a complete figure of the Tasmanian specimen.

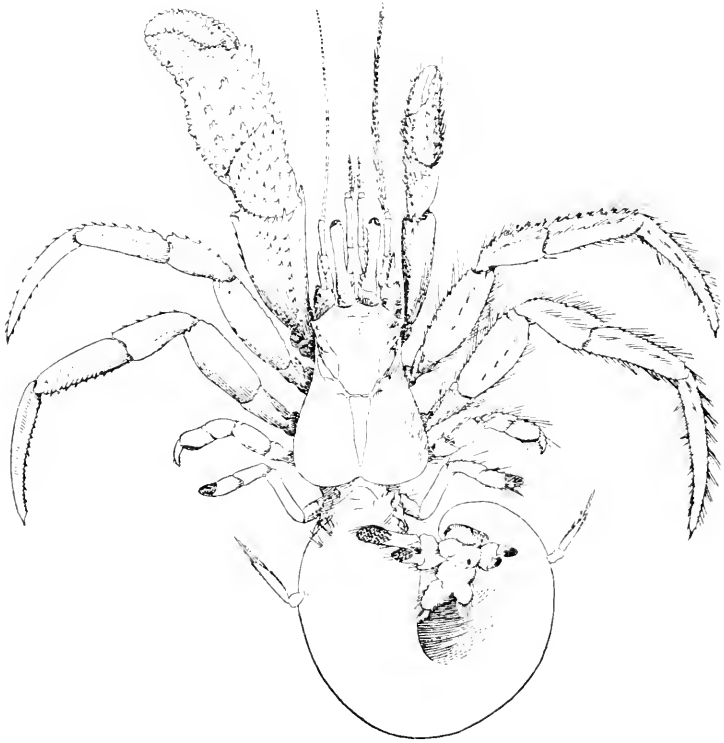


Fig. 51.

The specimen from off Port Jackson which Whitelegge identified as *Clibanarius*, sp., in a shell of *Turritella gunni*, is still in the Museum collection, and is really *Paguristes tuberculatus*. Four others from near Albany, West Australia, are in the Australian Museum (Coll. A. Abjornssen).

While withdrawing a number of the "Thetis" specimens from their shells for their better preservation, I noticed that

almost every shell had a colony of Polyzoa growing around its mouth. It is possibly a species of *Cellepora*, and the fact that it is the same on all leaves little doubt that the association of the two animals is not accidental. Similar growths occurred on the shells of specimens from Wreck Bay, New South Wales, 20 fathoms (Coll. C. Hedley).

PAGURISTES ACICULUS, Grant.

*Paguristes aciculus*, Grant, Proc. Linn. Soc. N. S. Wales, xxx., 1905, p. 319, pl. xi, figs. 3, 3a.

Having re-examined the type of *P. aciculus* I find that several important characters have not been quite correctly described by Grant. He also makes no mention of a row of minute spinules on the raised margin behind the anterior constriction on the arms of the chelipeds. The merus joints of the anterior ambulatory legs have spines along their lower margins; they are described as being without spines. The dactyli also have a row of very fine spinules along their supero-internal angles, which, however, are not easily distinguished among the long hairs. The armature of the second ambulatory legs is not nearly so strong as that of the first.

In the figure the legs are drawn as viewed obliquely from above, so that the joints appear more slender than they really are. The antennal peduncles are too long, they being slightly shorter instead of longer than the eye-stalks.

The following is a key to the Australian species of *Paguristes* represented in the Australian Museum:—

- a. Left cheliped much larger than the right.
  - b. Hands and fingers with rows of large compound tubercles, interspaces smooth .....*tuberculatus*.
  - bb. Hands and fingers closely covered with very small granules .....*frontalis*.
- aa. Chelipeds sub-equal.
  - c. Dactyli of legs stout, their anterior faces and those of the propodi with squamiform tubercles having hairy edges.
  - d. Chelipeds and legs with long felted hair which hides the characters beneath it; upper face of hand with squamiform tubercles.

- e. Wrist with a large anterior rounded boss...*pugil*.  
 ee. Wrist without such a boss.....*squamosus*.  
 dd. Hair on chelipeds and legs, though thick and long, not hiding the characters beneath it; upper surface of hand with spines.....*sulcatus*.  
 cc. Dactyli slender; propodi and dactyli without squamiform tubercles on their anterior faces.  
 f. Spines on hand numerous and evenly distributed over the whole upper surface .....*aciculus*.  
 ff. Spines on hand fewer, upper surface with broad smooth interspaces.....*hians*.

PAGURUS LACERTOSUS, *Henderson*.

*Eupagurus lacertosus*, Henderson, "Challenger" Rept., Zool., xxvii., 1888, p. 63, pl. vi., fig. 7. *Id.*, Grant in Sayce, Vict. Nat., xviii., 1902, p. 155.

The only record of this species in Australian waters is that of the late Mr. F. E. Grant, who dredged it off Queenscliff, in Port Phillip, together with its variety *nana*, Henderson. As the typical form is a deep-water species, having been taken in 275 fathoms off New Zealand, Grant's identification needs confirmation. Seven specimens, received from Professor J. Thomson Flynn, were dredged in 40-60 fathoms outside Schouten Island, Tasmania, and others are in the Museum collection from 100 fathoms, five miles east of Cape Pillar, Tasmania. The latter were dredged by Messrs. Hedley and May in 1907, together with many other invertebrates on a firm bottom of sand, pebbles and shells.

CLIBANARIUS VIRESCENS, *Krauss*.

(Plate xi., fig. 2).

*Pagurus virescens*, Krauss, Südafrik. Crust., 1843, p. 56, pl. iv., fig. 3.

*Clibanarius virescens*?, Dana, Wilkes U.S. Explor. Exped., Crust., i., 1852, p. 466, pl. xxix., figs. 6a,b.

*Clibanarius virescens*, de Man, Journ. Linn. Soc., Zool., xxii., 1888, p. 247. *Id.*, Whitelegge, Mem. Austr. Mus., iii., 1897, p. 143. *Id.*, Grant and McCulloch, Proc. Linn. Soc. N. S. Wales, xxxi., 1906, p. 34.

*Clibanarius*, sp., Whitelegge, Proc. Roy. Soc. N. S. Wales, xxiii., 1890, p. 232, No. 358.

Anterior portion of carapace much longer than broad, almost smooth, but with more or less numerous minute pits; a few tufts of long setae on the sides and behind the cervical groove. Rostrum triangular, acute, projecting a little beyond the antennal angles, which are broad and without terminal spines. Eye-stalks slender, as long as or longer than the width of the anterior portion of the carapace, and a trifle longer than the antennular peduncles. Ophthalmic scales close together, their outer margins rounded and finely denticulated. Antennal scales with long setae; their bases each with a single external spine, and five or six on the anterior portions, which reach to or slightly beyond the penultimate joints of the peduncles. Flagellum reaching well beyond the chelipeds.

Chelipeds equal and similar, with very long setae. No spines on the arm above, but one or two at their infero-external extremities; lower internal margin with a row of spiniform tubercles, the inner and outer surfaces with slightly raised white prominences of varying size, which are largest anteriorly. Wrist with three spines on its upper margin increasing in size forwards; outer surface with or without one or two pointed tubercles and a more or less striking white spot. Hands and fingers with large upstanding spines, white in colour, some with darker tips. Fingers slightly gaping, with large black horny tips.

Legs of the left side shorter than, but otherwise almost similar to, those of the right. The meropodites have one or two spinules at the infero-external extremities. The carpopodites have each a strong distal spine, and the propodites are only armed with some small denticulations on their lower extremities; that of the hinder left leg is shorter and thicker than the others, and has a distinct, somewhat tubercular ridge separating the upper and outer surfaces. The dactylopodites are usually considerably shorter than the preceding joints, and are tipped with a strong black, curved spine; there are six or seven rather strong spinules in a row along the lower surface.

*Colour*.—Legs, chelipeds and other appendages greenish or olive-brown, the dactyli white or yellowish. Carapace lighter, only the anterior angles brownish. Eyes with a white ring just before the cornea. Antennal flagellum blue. All the spines and roughnesses of the chelipeds are white or yellowish, as is the greater part of the fingers. The propodites of the legs have a

broad dark terminal band following a small white distal spot; the dactyli may have a median darker band, but this is often entirely wanting.

*Hab.*—The specimen figured is a male from Cairns Reef, off Cooktown, Queensland, with a carapace 12 mm. long. Many other specimens are in the Australian Museum from the following localities: Funafuti, Ellice Group; New Caledonia; Lord Howe Island, South Pacific; Queensland, various localities from Murray Island, Torres Strait to Port Curtis; Port Jackson; Western Australia.

I am indebted to Miss M. J. Rathbun for a copy of Krauss' description and figures of this species, while she has also examined Australian specimens for me and agrees that they are *C. virescens*.

CLIBANARIUS STRIGIMANUS, *White*.

*Pagurus strigimanus*, White, Proc. Zool. Soc., 1847, p. 121.

*Pagurus aculeatus*, Milne Edwards, Ann. Sci. Nat., Zool. (3), x., 1848, p. 62.

*Clibanarius strigimanus*, Miers, Zool. "Erebus" and "Terror," Crust., 1874, p. 3, pl. ii., fig. 4.

On the supposition that *Pagurus strigimanus* and *P. aculeatus* were identical, I forwarded a specimen of the former from Western Port, Victoria, to Professor L. E. Bouvier for comparison with Milne Edwards' type, which came from the same locality. He has kindly looked into the matter, and informs me that the type no longer exists in the Paris Museum, it being probably lost in the confusion caused by the war in 1870. He agrees with me, however, that the description of *P. aculeatus* fits the specimen very well, and that the name should be considered a synonym of *P. strigimanus*.

CLIBANARIUS STRIOLATUS, *Dana* (?).

*Clibanarius striolatus*, Dana, Wilkes U. S. Explor. Exped., Crust., i., 1852, p. 463, pl. xxix., figs. 3-3a. *Id.*, Haswell, Cat. Austr. Crust., 1882, p. 159. *Id.*, Alcock, Cat. Ind. Dec. Crust., pt. ii., 1905, p. 46, pl. iv., fig. 7.

A single damaged specimen from Western Australia in the Australian Museum is either *C. striolatus*, Dana, or *C. padacensis*, de Man. The former has already been recorded from



Australia by Haswell, while there are Australian specimens of *C. pudarensis* in the Australian Museum from Murray Island, Torres Strait (Coll. Hedley and McCulloch, Aug., 1907); Cooktown, Queensland (Coll. Hedley and McCulloch, Aug., 1906); Hood Bay, New Guinea; and New Caledonia.

CLIBANARIUS TENIATUS, *Milne Edwards*.

(Plate xi., fig. 1).

*Pagurus clibanarius*, Quoy and Gaimard, Voy. "Uranie and Physicienne," 1825, p. 529, pl. lxxviii., fig. 1 (not Herbst).

*Pagurus teniatus*, Milne Edwards, Ann. Sci. Nat., Zool. (3), x., 1848, p. 63.

*Clibanarius teniatus*, Stimpson, Proc. Acad. Nat. Sci. Philad., 1858, p. 235. *Id.*, Miers, Zool. "Alert," 1884, p. 265. *Id.*, de Man, Notes Leyd. Mus., xii., 1890, p. 113. *Id.*, Grant and McCulloch, Proc. Linn. Soc. N. S. Wales, xxxi., 1906, p. 34.

Although the original figure of this species shows the characteristic colour marking, it is very imperfect in other details, so I take this opportunity of figuring a specimen from Cooktown.

*Hab.*—The specimen described by Quoy and Gaimard was collected in Shark Bay, Western Australia. Others are in the Australian Museum from North Australia; Mapoon, Gulf of Carpentaria (Coll. C. Hedley, 1903); Cooktown, Queensland (Coll. Hedley and McCulloch, 1906); Holborn Is., near Pt. Denison (Coll. W. A. Haswell); Rat Is., Pt. Curtis (Coll. McCulloch, 1909); Masthead Is., off Pt. Curtis (Coll. F. E. Grant, 1905); Port Hacking, New South Wales. The specimen recorded by Whitelegge<sup>1 6</sup> from Pleasant Island, Central Pacific, is not this species, but *C. eurysternus*, Hilgendorf.

CLIBANARIUS EURYSTERNUS, *Hilgendorf*.

*Pagurus (Clibanarius) eurysternus*, Hilgendorf, Monatsber. Akad. Wiss. Berlin, 1878, p. 822, pl. iii., figs. 9-10.

*Hab.*—I collected six specimens of this species at Murray Island, Torres Strait, in shells of *Strombus luhuanus*, Linne; it has not been previously recognised from Australia. The characteristic dark lines on the carapace and legs are much more striking than in Hilgendorf's figure.

<sup>1 6</sup> Whitelegge—Rec. Austr. Mus., v., 1903, p. 11.

CLIBANARIUS CORALLINUS, *Milne Edwards.*

*Pagurus corallinus*, Milne Edwards, Ann. Sci. Nat., Zool., (3), x., 1848, p. 63.

*Clibanarius corallinus*, Borradaile, Proc. Zool. Soc., 1898, p. 463. *Id.*, Alcock, Cat. Ind. Crust., pt. ii., 1905, p. 48, pl. v., fig. i.

*Clibanarius cruentatus*, Whitelegge, Mem. Austr. Mus., iii., 1897, p. 143. *Id.*, Grant and McCulloch, Proc. Linn. Soc. N. S. Wales, xxxi., 1906, p. 33 (not *C. cruentatus*, M. Edw.).

Having examined Whitelegge's Funafuti specimens, and those determined by Grant and myself as *C. cruentatus*, I find they are not that species, but are *C. corallinus*. The differences between the two are clearly shown in Alcock's splendid paper. Other specimens of *P. corallinus* are in the Museum collection from Murray Island, Torres Strait (Coll. Hedley and McCulloch, Aug. 1906) and from the Solomon Islands.

Ours being the only record of *P. cruentatus* from Australia, that species must be struck off the Australian list.

CLIBANARIUS INFRASPINATUS, *Hilgendorf.*

(Fig. 52).

*Clibanarius infraspinatus* (Hilgendorf), de Man, Journ. Linn. Soc., xxii., 1888, p. 237. *Id.*, Ortmann, Zool. Jahrb. Syst., vi., 1892, p. 290. *Id.*, Alcock, Cat. Ind. Crust., pt. ii., 1905, p. 44.

A fine series of this species was collected by Mr. C. Hedley, at Mapoon, in the Gulf of Carpentaria, which I have compared with specimens from Tavoy, India, received from the Indian Museum. Ortmann has recorded a specimen from Sydney, but it is a tropical species, and this locality is almost certainly incorrect; it has not been taken here by any Australian collectors.

As no figure of this species appears to have been published, I take this opportunity of illustrating my largest specimen from Mapoon. Its carapace is 37 mm. long.

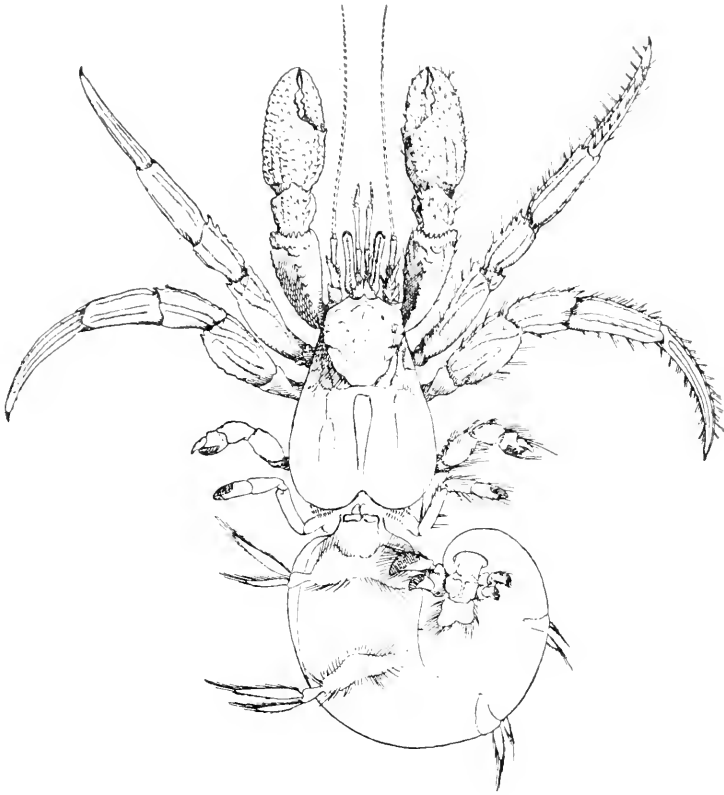


Fig. 52.

Key to Australian species of *Clibanarius*.

- a.* Dactylus of third leg as long as, or shorter than the propodus.
- b.* General colour dark red, legs spotted with yellow. Chelipeds and legs thickly hirsute, especially the propodus of third left leg .....*corallinus*.
- bb.* General colour greenish, fingers and dactyli whitish. Chelipeds and legs normal, not thickly hirsute .....*virescens*.

- aa. Dactylus of third leg longer than the propodus.
- c. Inner faces of hands with raised, file-like stridulating surfaces. Reddish, legs with yellow spots  
*...strigimanus.*
- cc. Inner faces of hands without stridulating surfaces. Legs longitudinally banded.
- d. Carapace remarkably flattened. Carapace and all its appendages with conspicuous, dark, longitudinal bands ..... *eurysternus.*
- dd. Carapace normal, not remarkably flattened.
- e. Eye-stalks shorter than the antennular peduncles. Arms of chelipeds with a prominent tubercle or obtuse spine below..... *infraspinatus.*
- ee. Eye-stalks as long as or longer than antennular peduncles.
- f. Spines on chelipeds very large, wrist with several strong spines. Carapace as well as legs with striking colour bands ..... *teniatus.*
- ff. Spines on chelipeds smaller, wrist with only 1-2 spines. Markings on the carapace indefinite or absent.
- g. Hands about twice as long as broad. Rostrum but little more prominent than antennal angles. Eye-stalks as long as front of carapace  
*...striolatus.*
- gg. Hands more than twice as long as broad. Rostrum more prominent than antennal angles. Eye-stalks longer than front of carapace  
*...padarensis.*

PETROLISTHES ELONGATUS, *Milne Edwards.*

*Petrolisthes elongatus* (Milne Edwards), Miers, Cat. Crust. N. Zealand, 1876, p. 60. *Id.*, Haswell, Cat. Austr. Crust., 1882, p. 146 (after Miers).

*Hab.*—According to Miers, this common New Zealand species occurs rarely on the Australian coast. As there does not appear to be any other reference in which a definite Australian locality is assigned to it, I take this opportunity of recording specimens received from Professor J. Thomson Flynn, who collected them in the estuary of the Derwent River, Tasmania, where the species is very common.

PETROLISTHES BOSCHII, *Audouin*

(Fig. 53).

*Porcellana boschii* (Audouin), de Man, Journ. Linn. Soc., Zool., xxii., 1888, p. 217.

*Petrolisthes rugosus* (Milne Edwards), Miers, Zool. "Alert," 1884, p. 270.

*Petrolisthes boschii*, Henderson, Trans. Linn. Soc. (2), v. 1893, p. 427. *Id.*, Ortumann, Zool. Jahrb., x., 1897, p. 284.

*Hab.*—As *P. rugosus*, Miers has already recorded this species from North Australia. The specimen figured is from Port Hedland, North Western Australia.

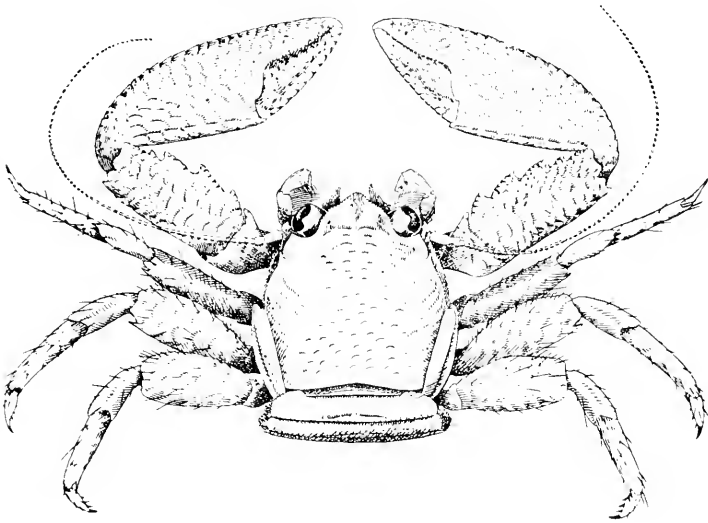


Fig. 53.

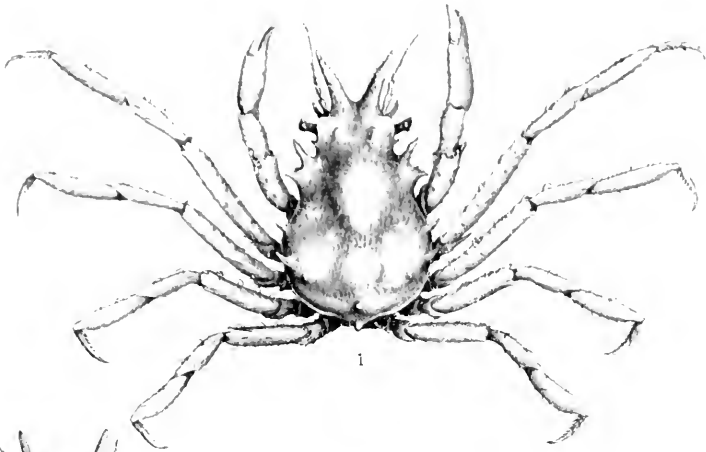




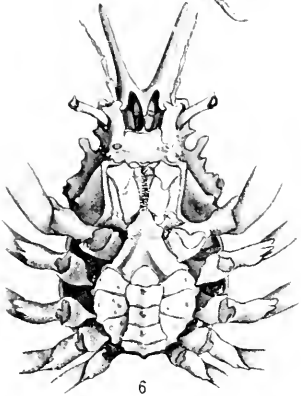
EXPLANATION OF PLATE X.

- Fig. 1. *Naxia (Microhalimus) deflexifrons*, Haswell,  
,, 2. *Naxia (Microhalimus) deflexifrons*, Haswell. Lower surface of  
cephalothorax.  
,, 3. *Naxia (Microhalimus) deflexifrons*, Haswell. Side view of cara-  
pace of female.  
,, 4. *Naxia (Microhalimus) deflexifrons*, Haswell. Side view of cara-  
pace of male.  
,, 5. *Zewa banfieldi*, McCulloch.  
,, 6. *Zewa banfieldi*, McCulloch. Lower surface.





1



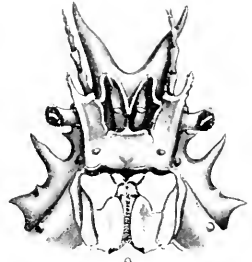
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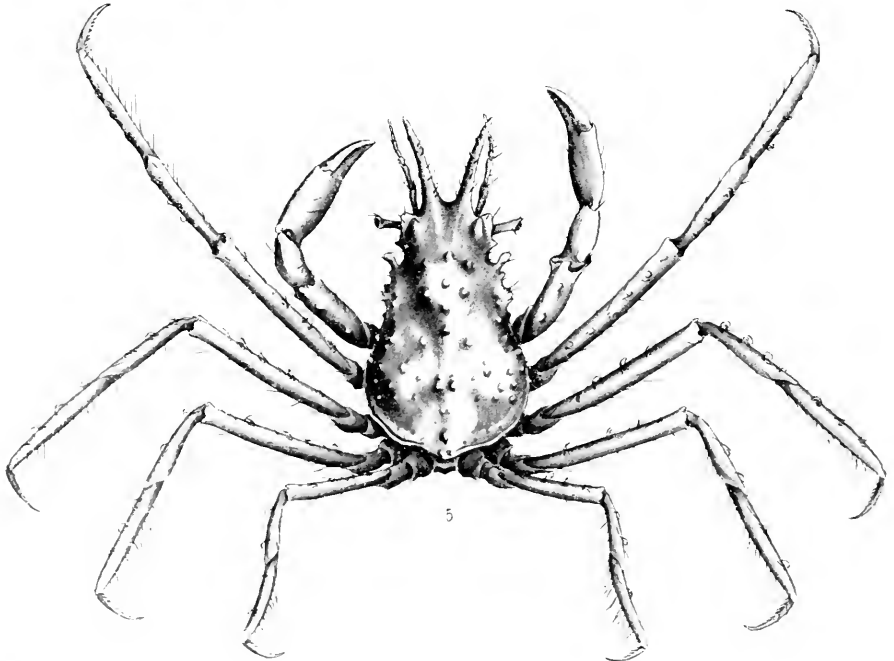
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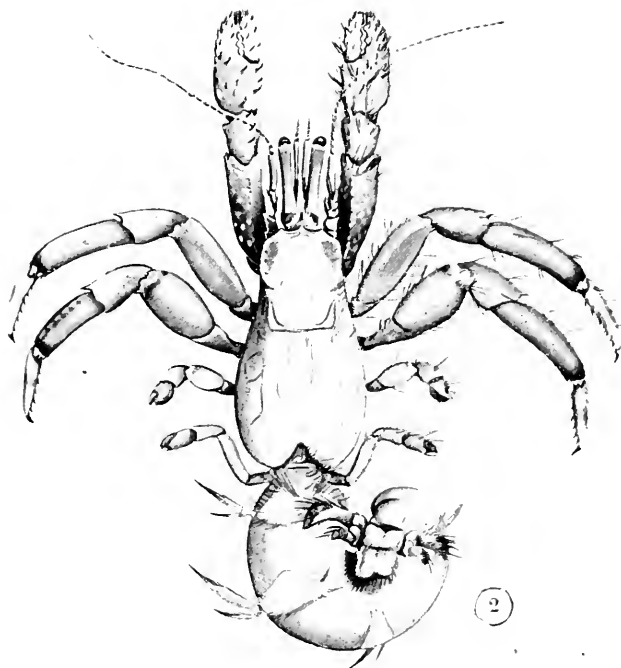
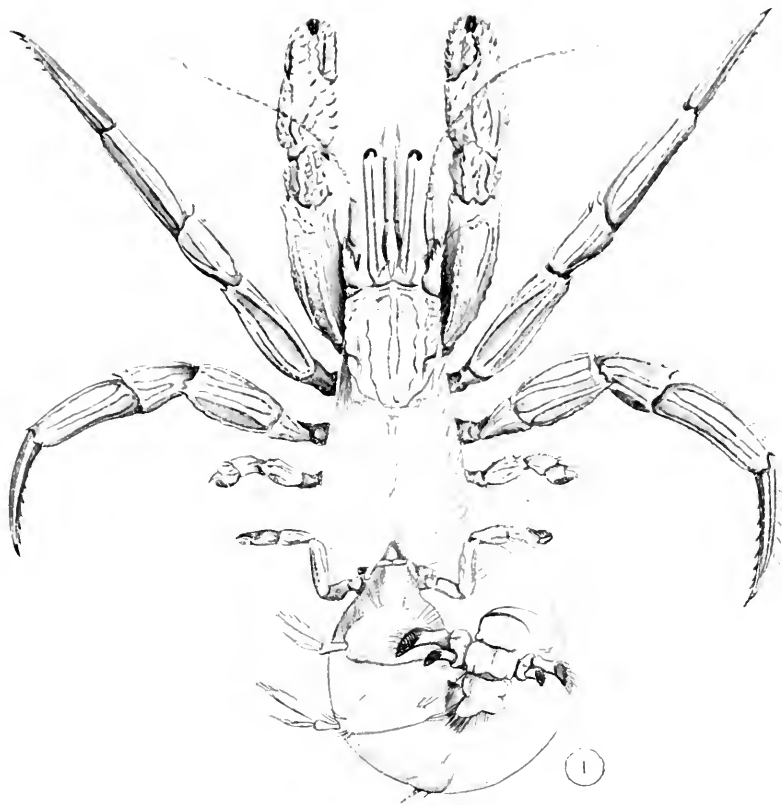
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EXPLANATION OF PLATE XI.

- Fig. 1. *Clibanarius tenuatus*, Milne Edwards.  
,, 2. *Clibanarius virescens*, Krauss.





STUDIES IN AUSTRALIAN FISHES,

No. 3,\*

By ALLAN R. McCULLOCH, Zoologist.

(Plates xii.-xx. and figs. 54-55).

Family CLUPEIDÆ.

SARDINELLA KUNZEL. *Bleeker.*

(Plate xii. and figs. 54-55).

*Harengula kunzei*, Bleeker, Nat. Tyd. Ned. Ind., xii., 1856-7,  
p. 209.

*Clupea moluccensis*, Günther, Brit. Mus. Cat. Fish, vii., 1868  
p. 427 (part).

*Clupea kunzei*, Day, Fish. Ind., 1878, p. 636, pl. clxiii. fig. 1,

*Clupea (Harengula) kunzei*, Bleeker, Atl. Ichth., vi., 1870-2,  
p. 107, pl. cclxiii., fig. 1.

*Harengula stereolepis*, Ogilby, Proc. Linn. Soc. N. S. Wales,  
xxii., 1898, p. 759.

This species is very common at Murray Island, Torres Strait, where it swims in dense shoals in the lagoon. The natives obtain large numbers by simply throwing a three, or four-pronged spear into a mass of them (Pl. xii., fig. 1), generally securing several at each throw. They are also captured with small cast-nets which are simply thrown over them as they pass (Pl. xii., fig. 3), while a peculiar method of taking them, known as "Werir" (Pl. xii. fig. 2), was also commonly practised by small parties of natives. In this class of fishing the principal performer carries a cone-shaped basket, called "Weres" (fig. 54), which is formed of split-bamboo ribs held in position by lashings of bamboo bark or fibre. At the open end the ribs are few and widely spaced, but towards the head of the cone they are more

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\* For No. 2, see Vol. VII., p. 315.

numerous and very close together. Two attendants each carry a bamboo pole, ten or twelve feet long, and with a mop of twisted cocoa-nut fibre at one end.

The party walk along the beach until they see a shoal within reach, when the two polemen suddenly beat the water with their mops and so frighten the fish into a denser mass. At the same moment the man with the basket dives head-foremost into

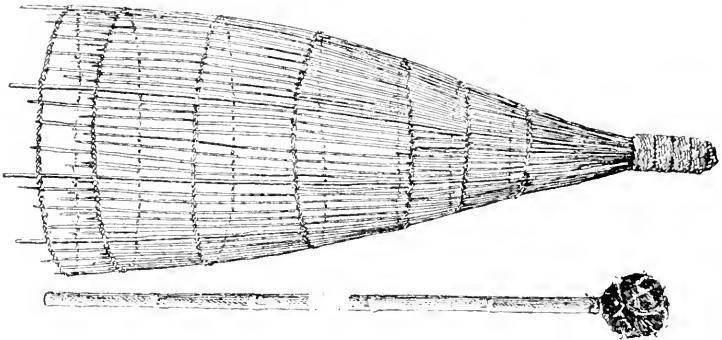


Fig: 54

their midst and scoops up as many as he can, often securing several pounds weight of fish at a time. These are emptied into other baskets carried by the girls of the party, and all then move on to repeat the process a little further along the beach.

[Since the above was set up I have seen the fourth volume of the "Reports of the Cambridge Anthropological Expedition to Torres Strait," in which Professor A. C. Haddon describes this method of fishing very fully on p. 155, fig. 170].

Sharks (*Carcharias melanopterus*, Quoy & Gaimard), four or five feet in length, also prey upon the unfortunate herrings, and on several occasions we saw them strand themselves as they rushed through a shoal which was too close to the edge of the water.

I have compared one of the types of *Harengula stereolepis*, Ogilby, with a co-type of *H. kunzei*, Blecker, and consider that they are the same species. I have failed, however, to find the palatine teeth mentioned by both Blecker and Day, and they are wanting in Blecker's co-type. The Torres Strait fish as a whole are more slender than the figures of *S. kunzei*, but they vary



considerably, and some are quite as deep as the typical form. The position of the ventrals is also variable, being sometimes before the middle of the dorsal, and sometimes behind that point. The accompanying figure represents a Murray Island specimen.

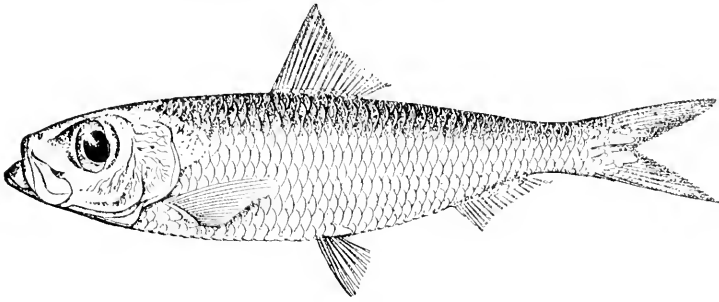


Fig. 55.

Ogilby has pointed out that his types of *Harengula stereolepis* are the specimens which Alleyne and Macleay<sup>1</sup> identified as *Spratelloides delicatulus*, Bennett. The latter species is recorded from Australia by Günther,<sup>2</sup> who examined specimens which were collected by Macgillivray, possibly in the neighbourhood of Torres Strait. I also have some very young examples from Murray Island which are probably *S. delicatulus*, so that although the specimens of *Harengula* (= *Sardinella*)<sup>3</sup> are the only herrings now in the Macleay Museum bearing Alleyne and Macleay's label, it is probable that those authors had specimens of both *Harengula* and *Spratelloides*, and their remarks really refer to the latter.

#### Family ATHERINIDÆ.

##### CRATEROCEPHALUS STERCUS MUSCARUM, Günther

*Atherina stercus muscarum*, Günther, Ann. Mag. Nat. Hist., (3), xx., 1867, p. 64.

*Craterocephalus maculatus* (Macleay), McCulloch, Proc. Roy. Soc. Q'land, xxiv., 1912, p. 52, pl. i., fig. 2.

Mr. Ogilby having suggested the identity of *C. maculatus* and *Atherina stercus muscarum*, I forwarded a specimen of the

<sup>1</sup> Alleyne and Macleay—Proc. Linn. Soc. N. S. Wales, i., 1877, p. 350.

<sup>2</sup> Günther—Brit. Mus. Cat. Fish., vii., 1868, p. 464.

<sup>3</sup> *Fide* Jordan and Richardson—Check-list Fish. Phillipine Is. (Manila Bur. Sci., No. 1, 1910, p. 6).

former to the British Museum for comparison with Günther's type. Mr. Tate Regan has very kindly looked into the matter and informs me they are the same species.

Family BERYCIDÆ.

TRACHICHTHODES, *Gilchrist*.

*Trachichthodes*, Gilchrist, Marine Invest. S. Afr. ii., 1903, p. 203 (*T. spinosus*, Gilchrist).

*Austroberyx*, McCulloch, Zool. Res. "Endeavour," i., 1911, p. 39 (*Beryx affinis*, Günther).

My genus *Austroberyx* is evidently identical with *Trachichthodes*. Gilchrist does not mention the trenchant abdomen with a row of slightly enlarged, keeled scales, though he notes that it is without scutes. He states that the only head-scales are on the cheeks, but his figure also shows them on the operculum as in *Austroberyx*. In all other details his definition agrees with mine.

Family MACROURIDÆ.

MACRURONUS NOVÆ-ZELANDIÆ, *Hector*.

*Coryphænoides novæ-zelandiæ*, Hector, Trans. N. Zeal. Inst., iii., 1871, p. 136, pl. xviii., fig. 1, and Cat. Fish. N. Zeal., 1872, p. 49, pl. viii., fig. 79.

*Macruronus novæ-zelandiæ*, Günther, Challenger Rept., Zool. i., 1880, p. 22, and xxii., 1887, p. 157; *Id.*, Goode and Bean, Oceanic Ichth., Sp. Bull. U.S. Nat. Mus., ii., 1895, p. 390, pl. ci., fig. 150; *Id.*, Waite, Rec. Camb. Mus., i., 1911, p. 181, pl. xxx., fig. 1.

*Coryphænoides Tasmania*, Johnston, Proc. Roy. Soc. Tasm., 1882 (1883), p. 143.

Through the kindness of Mr. Robert Hall, Curator of the Tasmanian Museum, the Australian Museum has recently received a specimen of *Coryphænoides tasmania*, Johnston. It was one of several in the old collection of the museum, which, though labelled as being that species, were without other data. I think they were very probably identified and presented by Mr. Johnston. Others are in the Australian Museum from the northern coast of Tasmania, and they agree perfectly with Waite's figure of *Macruronus novæ-zelandiæ*, which species has already been recorded from Tasmania by Günther.

*Family* SERRANIDÆ.HYPOPLECTRODES JAMESONI, *Ogilby*.

(Plate xiii., fig. 1).

*Hypoplectrodes jamesoni* Ogilby, Proc. Roy. Soc. Q'land, xxi., 1908, p. 16.

I collected an example of this species, 110 mm. long, at Cowan Creek, a salt-water branch of the Hawkesbury River, which is figured on Pl. xiii. It differs from a Moreton Bay specimen received from Mr. J. D. Ogilby, only in having the maxillary bone larger and reaching to below the hinder margin of the eye instead of only to its centre. Another smaller specimen has been presented by Dr. R. Palleine who dredged it at Port Curtis, Queensland.

*Family* THERAPONIDÆ.THERAPON BIDYANA, *Mitchell*.*Acerina* (*Cerana*) *Bidyana*, Mitchell, Three Exped. Int. Eastern Austr., i., 1838, p. 95, pl. viii.*Datunia elliptica*, Richardson, Voy. Erebus and Terror, Fish., 1848, p. 118, pl. lii., fig. 4-8.*Therapon ellipticus*, Ogilby, Ed. Fish. N. S. Wales, 1893, p. 28, pl. xxviii.*Therapon ellipticus*, Stead, Ed. Fish. N. S. Wales, 1908, p. 73, pl. xlii.

Mitchell's figure of *Cerana bidyana* from the Karoola River<sup>4</sup> New South Wales, leaves little doubt that it represents the *Therapon ellipticus* of later writers, though the fin formula given by him—D. xi./2, A. iii./6, V. i./6, is very different to what is found in that species. I know of nothing, however, having any such number of spines and rays, while it must be noted that the figure shows them to be more in accordance with *T. ellipticus*. The few notes given relating to colour and the sound-producing habit also agree with what is known of the Silver Perch or Grunter, though they might also apply to related species; and finally, *T. ellipticus* is apparently a common form in all the western rivers of New South Wales.

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<sup>4</sup> The Macintyre River of later maps.

Mitchell's name does not appear to have been again noted in literature since he first used it, but as it is ten years earlier than that of Richardson's *Datnia elliptica* it must take precedence.

Family CHÆTODONTIDÆ.

HOLACANTHUS DUBOULAYI, Günther.

(Plate xiv).

*Holacanthus duboulayi*, Günther, Ann. Mag. Nat. Hist. (3), xx., 1867, p. 67; *Id.* Macleay, Proc. Linn. Soc. N. S. Wales, ii., 1878, p. 352; *Id.* Klunzinger, Sitzb. Akad. Wiss. Wien, lxxx. i., 1879, p. 361.

A fine specimen has been presented to the Australian Museum by Mr. F. B. Richmond. It was caught near Rat Island in Port Curtis, Queensland, and is figured on Pl. xiv. Other specimens are in the collection from Port Darwin and Cape York.

Klunzinger and Macleay have noted considerable variation in the arrangement of the lighter markings on the broad brown body band. These may form either a network with the lines descending from the back to the belly, or be longitudinal and nearly straight. In others, again, as in that figured, they may be absent and represented only by a few irregular spots near the edges of the otherwise uniform brown surface. The lines on the fins are characteristic, but appear dark violet in some specimens and pale blue in others; the margins of the fins are similarly either light or dark.

Family POMACENTRIDÆ.

DASYLLUS ARCANUS, Linnaeus.

*Dasyllus arcuus*, Günther, Journ. Mus. Godeff., v., 1877, p. 235, pl. cxxiv., fig. B.

*Dasyllus arcuus* vel *blochii*, Castelnau, Res. Fish. Austr. (Viet. Offic. Rec. Philad. Exhib.), 1875, p. 33.

This species was recorded from Queensland by Castelnau but does not appear to have since been recognised from there. His specimen was young and had a rounded instead of a bifid tail, and thinking that it might prove to be a distinct species, he proposed the alternative name *blochii* for it. I have examined

young specimens of *D. aruanus* in the Museum collection and find that in worn specimens the lobes of the tail are often rounded off, though in all cases their ragged edges are easily detected. As Castelnau did not properly describe his specimen, I think it better to regard *blochii* as a synonym of *D. aruanus*, especially as I have collected fifteen typical examples of the latter at Murray Island, Torres Strait.

As *Tetradrachmann aruanum*, Fowler<sup>5</sup> has included this species in a collection said to have been made in Victoria, but there can be little doubt that several species from the South Pacific Islands have been mixed with the Victorian fishes, of which *D. aruanum* is one.

### Family LABRIDÆ.

For the preparation of these notes on the Australian species of *Pseudolabrus* and allied genera I have examined a much larger collection of both species and specimens than has been previously brought together. For this advantage I am indebted to the following gentlemen who have lent me material under their charge. Mr. J. A. Kershaw, Curator, National Museum, Melbourne; Dr. R. Hamlyn-Harris, Director Queensland Museum; Professor W. A. Haswell and Professor T. W. E. David, Committee of the Macleay Museum; Mr. Bernard H. Woodward, Director Western Australian Museum. Of the specimens in the Australian Museum a considerable number have been collected for the Trustees by Mr. A. Abjornssen, Inspector of Fisheries, Western Australia, while Mr. J. H. Wright has contributed a valuable series of our local species. My thanks are also due to Mr. E. La T. Armstrong, Chief Librarian and Secretary of the Public Library of Melbourne for a copy of Bleeker's description of *Pseudolabrus guntheri*.

*Characters which are variable.*—In describing various species of *Labrichthys* (= *Pseudolabrus*) Count Castelnau, Sir William Macleay and Mr. C. W. de Vis relied largely upon their colour and colour-markings to distinguish them, and often regarded important structural details as being of only secondary value. But if a series of fresh specimens of any one species of this genus be examined it will be found that the actual colouration of different individuals differs considerably, and that even the

<sup>5</sup> Fowler—Proc. Acad. Nat. Sci. Philad., lix, 1907 (1908), p. 433.

colour-marking varies greatly in degree of development, according to the age of the specimens. Again, as I have found in *P. tetricus*, the young may bear no resemblance whatever, either in form or colour to the adults, and I have good reason to suppose that similar changes occur in *P. gymnotogenis* and *P. parilus*.

The colour variation has already been noted by Johnston<sup>6</sup> as follows:—"I consider the classification of the genus *Labrichthys* to be far from satisfactory. I have good reason to believe that dependence upon colour-markings, however peculiar and brilliant, is to a great extent delusive. Like the genus *Mouocanthus*, many of them change colour with age."

One of the most striking changes in form with growth is the alteration of the form of the head. In the young it is more or less conical, the snout being pointed, whereas in adults the upper and lower profiles become convex, so that the head is larger and broader: the eye, also, is proportionately much smaller in adults. In some species in which the fins are not covered with scales the small body scales near the bases of the dorsal and anal may be so crowded in young specimens that they overlap the extreme bases of those fins: as the body increases in size they have more room and are then confined to their proper place. In the young the tubules of the lateral line are much less branched than in older specimens. Finally, the forms of the pectoral and caudal fins vary considerably, the latter being often rounded in the young, and truncate or even emarginate in adults: the upper rays of the pectoral sometimes grow out beyond the margin of the rest of the fin.

With all this extraordinary variation it is difficult to find characters by which the various species may be distinguished, but in the following key and diagnoses I have selected such as seemed to be constant in the specimens available to me.

A.—D. ix. / 12, A. iii. / 10-11. Body elongate. Pectoral fin rounded. EULABRICHTHYS.

AA.—D. ix. / 11, A. iii. / 10. Body not elongate.

B.—Pectoral fin rounded. Membrane of dorsal and anal fins not produced beyond the spines as free pencils. ... PICHLABRICHTHYS.

BB.—Pectoral fin not rounded, the upper rays at least as long as the middle ones.

<sup>6</sup> Johnston—Proc. Roy. Soc. Tasm., 1881 (1882), p. 124.

*C*.—Membrane of dorsal and anal fins not produced beyond the spines as free pencils; the basal halves of both fins covered with large scales. ...

AUSTROLABRUS.

*CC*'.—Membrane of dorsal and anal fins produced beyond the spines as free pencils; the fins partly covered with scales or naked ..... PSEUDOLABRUS.

Key to the Australian species of *Pseudolabrus*.

*a* Four or more rows of scales on the cheeks extending forward to below middle of eye.

*b* Dorsal and anal fins with large scales covering their bases.

*c* Broad, dark bands from snout and interorbital space passing through the eye and on to the body. A black blotch usually present between the anterior dorsal spines. Young with more or less distinct cross-bands and 4-6 pairs of brown spots between the lateral line and the dorsal fin.....*guntheri*.

*c'* Only narrow, dark lines, radiating from the eye which are sometimes wanting. Interorbital space without markings. Anterior dorsal spot usually wanting 3-4 large, dark blotches, with white interspaces, at base of soft dorsal, sometimes wanting .. *lucentus*.

*bb* Dorsal and anal without scaly bases.

*P. couceus* appears to belong to this section.

*d* Caudal usually with one or both lobes produced. Pink or yellow, with or without a dark blotch at end of dorsal fin; no dark bar on base of pectoral ..... *miles*.

*dd* Caudal lobes not, or rarely slightly produced.

*e* Body darker, without distinct dark spots or blotches. Pectoral fin with a dark basal band.

- f* Back without light spots: scales with or without script-like markings. Membrane between anterior dorsal spines dark. Young light coloured with brown mottlings.....*inscriptus*.
- ff* Purple, with four more or less distinct yellow spots on the back; humeral region yellowish  
*fuicola*.
- ee* Body light green or reddish, with darker spots and blotches. Pectoral with or without a dark basal band. Young with ill-defined bands .....*celidotus*.
- uu* Cheek scales in 1-3, rarely 4 rows, usually confined to postorbital portion of head.
- g* Bases of dorsal and anal fins scaly .....*bostockii*.
- gg* Bases of dorsal and anal not scaly, except in young specimens.
- h* Cheek scales large, one row behind and two below the eye, extending well forwards on the cheeks ... *elegans*.
- hh* Cheek scales smaller, in one row above and usually three below, confined to posterior portions of cheeks.  
*tetricus*
- P. richardsonii*, *bleckeri* and *cucieri* also appear to belong here.
- hhh* Cheek scales smaller, in one or two rows, confined to posterior portions of cheeks.
- i* Caudal usually truncate, the lobes often somewhat produced in adults. Cheek scales in one row .....  
*gymnocephalis*.
- ii* Caudal more or less rounded. Cheek scales usually in one row above and two below.
- j* Body with small brown spots, sometimes forming cross-bands. Brown marks radiating from the eye  
*parilus*.
- jj* Body closely dotted with small blue ocelli...*punctulatus*.
- uuu* No cheek scales .....*unicolor*.



Genus *EUPETRICHTHYS*, Ramsay and Ogilby.

*Eupetrichthys*, Ramsay & Ogilby, Proc. Linn. Soc. N. S. Wales, (2), ii., 1888, p. 631; *Id.*, Gill, Proc. U.S. Nat. Mus., xiv., 1892, p. 404 (*E. angustipes*, Rams. and Ogil.).

D. ix./12; A. iii./10-11. Pectoral fin rounded; ventrals clougate in adults. Membrane of dorsal and anal fins produced beyond, but not behind the spines. Scales not extending on to the bases of the dorsal and anal fins. Tubes of lateral line ramose.

*EUPETRICHTHYS ANGUSTIPES*, Ramsay & Ogilby.

(Plate xv.).

*Eupetrichthys angustipes*, Ramsay & Ogilby, Proc. Linn. Soc. N. S. Wales, ii., 1888, p. 631; *Id.*, Gill, *loc. cit.*; *Id.*, Waite, Mem. Nat. Club N. S. Wales, 1904, p. 39; *Id.*, Hedley, Rec. Austr. Mus., vii., 1908, p. 134.

Check scales in one row above and two below, extending to below the centre of the eye. Colour dark green above, yellow below, with six transverse bands extending obliquely forward below where they are broadest. Head and throat with many dark bars and spots. Dorsal, anal, and caudal fins each with a broad, dark, inframarginal band, composed of wavy lines; an anterior dorsal spot.

Three specimens examined, 80-150 mm. long, including the type which is figured.

*Hab.*—Near Sydney, New South Wales.

Genus *PICTILABRUS*, Gill.

*Pictilabrus*, Gill, Proc. U.S. Nat. Mus., xiv., 1892, p. 403 (*Labrus laticlavius*, Richardson).

This name was proposed to distinguish *P. laticlavius* from *Pseudolabrus* in its restricted form on account of the membrane of the dorsal and anal fins not being produced as free pencils beyond the spines; also the head is proportionately smaller. A more definite character is afforded by the pectoral fins which

are broadly rounded, the median rays being longer than the upper ones. The body scales slightly overlap the bases of the dorsal and anal, but do not extend on to the fins as in *Austrolabrus*.

*PICTILABRUS LATICLAIVUS*, *Richardson*.

*Labrus laticlavius*, Richardson, Proc. Zool. Soc., 1839, p. 99, and Trans. Zool. Soc., iii., 1849, p. 139.

*Labrus* vel *Tautoga laticlavia*, Richardson, Zool. "Erebus" and "Terror," 1848, p. 128, pl. lvi., figs. 3-6.

*Labrichthys laticlavius*, Günther, Brit. Mus. Cat. Fish., iv., 1862, pp. 115 and 507, and Ann. Mag. Nat. Hist. (3), xx., 1867, p. 66; *Id.*, Castelnau, Proc. Linn. Soc. N. S. Wales, iii., 1879, p. 354; *Id.*, Klunzinger, Sitzb., Akad. Wiss. Wien, lxxx, i., 1879, p. 402; *Id.*, Macleay, Proc. Linn. Soc. N. S. Wales, vi., 1881, p. 89; *Id.*, Johnston, Proc. Roy. Soc. Tasm., 1882 (1883), p. 124, and 1890 (1891), p. 55; *Id.*, Hector, Trans. N. Z. Inst. xvi., 1884, p. 323; *Id.*, Ogilby, Cat. Fish. N. S. Wales, 1886, p. 44; *Id.*, McCoy, Prodr. Zool. Viet., xvii., 1888, pl. clxiii.; *Id.*, Lucas, Proc. Roy. Soc. Vic. (2), ii, p. 32.

*Labrichthys labiosa*, Macleay, Proc. Linn. Soc. N. S. Wales, vi., 1881, p. 88, pl. i., fig. 2; *Id.*, Ogilby, Cat. Fish. N. S. Wales, 1886, p. 45.

*Pseudolabrus laticlavius*, Waite, Mem. Nat. Club N. S. Wales, 1904, p. 39, and Rec. Cantb. Mus., i., 1907, p. 22; *Id.*, Stead, Ed. Fish. N. S. Wales, 1908, p. 84.

*Pictilabrus laticlavius*, Gill, Proc. U.S. Nat. Mus., xiv., 1892, p. 403; *Id.*, Hutton, Index Faun. N. Zeal., 1904, p. 48.

Check scales in one row above, and two, rarely one or three rows below. Body green with two broad longitudinal purple bands, the upper following the lateral line and joining the lower on its downward curve: often a third band is present on the lower surface of the body and tail. A triangular dark blotch descends from the second bar above the origin of the anal, and there may be two other indefinite ones behind it. Both bands and spots vary in degree of development and may be almost absent. Scales of lower parts with blue lines. Dorsal, anal and caudal fins each with a broad submarginal dark band spotted with blue. A large anterior dorsal spot.

*Hab.*—South and South-eastern Australia, from Port Jackson to Tasmania and King George Sound. I have examined four specimens from near Sydney, eight from Victoria, one from Tasmania, and one from South Australia.

Genus *AUSTROLABRUS*, *Steindachner*.

*Austrolabrus*, Steindachner, Sitzb. Akad. Wiss. Wien, lxxxviii, i., 1883 (1884), p. 1102; *Id.*, Gill, Proc. U.S. Nat. Mus., xiv., 1892, p. 404 (*Labrichthys maculatus*, Macleay).

Steindachner relied upon the large scales covering the dorsal, anal and caudal fins to separate *maculatus* from the other species of *Pseudolabrus*: this character is, however, shared by *P. guntheri* and *P. luculentus*, which appear to me to be true *Pseudolabri*, while *P. bostockii* is intermediate between the species with scaly fins and those without. One may, perhaps, use the absence of free pencils projecting from the spines of the dorsal and anal fins as a distinguishing character, but it must be noted that in Steindachner's figures of *A. maculatus* they are shown as present in the female though not in the male. They are wanting in the only two I have examined, in which the fins are formed exactly as shown on Plate v. of Steindachner's paper. If this character is not reliable I can find no other to separate *Austrolabrus* from *Pseudolabrus*. The shape of the pectorals and the scaly fins distinguishes it from *Pictilabrus*, and the latter character and the different fin formula from *Eupetrichthys*; Steindachner describes and figures twelve rays in the dorsal fin but in my two specimens the last ray, though widely branched from the base, must be counted as a single split ray.

*AUSTROLABRUS MACULATUS*, *Macleay*.

(Plate xvi.).

*Labrichthys maculata*, Macleay, Proc. Linn. Soc. N. S. Wales, vi., 1881, p. 89.

*Labrichthys (Austrolabrus) maculata*, Steindachner, Sitzb. Akad. Wiss. Wien, lxxxviii, i., 1883 (1884), p. 1100, pl. v., and pl. vi., fig. 1.

*Austrolabrus maculatus*, Gill, Proc. U. S. Nat. Mus., xiv. 1892, p. 404.

Check scales in one or two rows above and three or four below. Upper pectoral rays longest. Basal halves of dorsal and anal fins covered with large scales, the membrane not produced beyond the spines as free pencils (see above). Caudal rounded. Tubes of lateral line ramose. Greenish, most of the scales of the upper half with large black spots, which are smaller below and on the head; on the caudal peduncle they may unite to form a large blotch. Dorsal, anal and caudal usually with fine dusky wavy lines.

*Hab.*—King George Sound and St. Vincent Gulf, West and South Australia. I have examined the type which is 103 mm. long and a second larger example 140 mm. long which is figured. It was collected for the Trustees by Mr. Abjornssen at Albany.

PSEUDOLABRUS GUNTHERI, *Bleeker*,

(Pl. xvii.).

*Pseudolabrus guntheri*, Bleeker, Versl. Akad. Amsterdam, xiv., 1862, p. 130; *Id.*, Waite, Rec. Austr. Mus., vi., 1905, p. 70.

*Labrichthys guntheri*, Günther, Brit. Mus. Cat. Fish., iv., 1862, p. 507; *Id.*, Macleay, Proc. Linn. Soc. N. S. Wales, vi., 1881, p. 82; *Id.*, de Vis, Proc. Linn. Soc. N. S. Wales, ix., 1885, p. 879.

*Pseudolabrus luculentus* vel *richardsonii*, Steindachner, Sitzb., Akad. Wiss. Wien, lvi, i., 1867, p. 330.

*Labrichthys dorsalis*, Macleay, *Loc. cit.*, vi., 1881, p. 87.

.. *melanura*, Macleay, *Loc. cit.*, vi., 1881, p. 89.

.. *dux*, de Vis, *Loc. cit.*, viii., 1883, p. 287; *Id.*, Macleay, *Loc. cit.*, ix., 1884, p. 47.

.. *cruciatatus*, de Vis, *Loc. cit.*, ix., 1885, p. 879.

.. *seplineatus*, de Vis, *Loc. cit.*, ix., 1885, p. 880.

? .. *rex*, de Vis, *Loc. cit.*, ix., 1885, p. 880.

? .. *maculatus*, de Vis, *Loc. cit.*, ix., 1885, p. 881 (*nou L. maculatus*, Macleay).

D. ix., 11; A. iii., 10; P. 12; V. i., 5; C. 13-14; L. lat. 26-27; L. tr. 3-4 -- 9.

Height  $3-3\frac{1}{4}$  in the length to the hypural and equal to or a little more than the length of the head including the opercular flap. Eye 2 in the snout in adults and 6 in the head, much larger in the young. Breadth of caudal peduncle  $1\frac{1}{2}$  in the head.

Body moderately elongate, compressed, covered with rather large scales which extend on to the bases of the dorsal, anal and caudal fins. Checks with 4-5 rows of scales below the eye and 2 behind it; operculum covered with large irregular scales, head otherwise naked. Preorbital much broader than the eye, almost equal to the interorbital space. A pair of strong, widely separated canines in front of the upper jaw, and two pairs in the lower; sides with a single series of smaller canine-like teeth which decrease in size backwards, and a second inner series anteriorly. Posterior canine present or absent. Nostrils close together, near the supero-anterior angle of the eye; the anterior tubular, posterior rounded. Lateral line slightly arched anteriorly, then following the curve of the back to the end of the dorsal, where it bends down to the middle of the caudal peduncle.

Dorsal fin commencing above the hinder half of the operculum; the spines increasing in length backwards, the last about three in the head, and each topped by a prolongation of the membrane. Soft portion of the fin angular behind, the anterior rays a little longer than the posterior, about  $2\frac{1}{3}$  in the head. Anal similar to, and terminating almost evenly with the dorsal. Pectoral  $1\frac{1}{2}$  in the head, the upper rays longest, the margin rounded. Ventrals pointed, either the first or second rays the longest and reaching almost to the vent or some distance short of that point. Caudal truncate, the outer rays either rounded off or slightly produced.

*Colour*.—Adult specimens greenish or reddish, with or without about six indistinct darker cross-bands. Seven broad bars extend across the head and on to the anterior half of the body which are arranged as follows: two from the occiput to above the lateral line; one from the snout passing through the eye to below the lateral line, and a short one between it and the pectoral fin; two from the angle of the mouth, the upper one passing through the eye, and the lower across the angle of the preoperculum; an intermediate one from the preoperculum to the base of the pectoral. Two similar bars connect the eyes across the interorbital space. A large black spot is present

between the second and third dorsal spines; remainder of the fin with indefinite lighter and darker bands and a whitish edge. Anal marked similarly to the dorsal. Caudal with the central portion dusky and two more or less distinct blotches at the base. A black spot or bar at the base of the pectoral. When fresh, the colouration consists largely of scarlet bars on a rich green ground colour.

Young specimens have the same markings as adults but the vertical bars on the body are much more pronounced, and there are four to six pairs of dark brown spots between the back and the lateral line, and one on the caudal peduncle. These are sometimes persistent in the full-grown fish.

Having examined all de Vis' specimens, with the exception of *P. rex* and *P. maculatus*, which are lost, I am certain they all belong to one species; though they have lost all traces of colour, they still retain more or less of their markings which are similar to those described above. The descriptions of *P. rex* and *P. maculatus* indicate that they also are identical with the others; this view is strengthened by the fact that they were obtained with his *P. exaentatus*.

The only difference between the type specimens of *P. dorsalis* and *P. melanurus* is that in the latter the markings on the head are darker than the ground-colour, whereas they are whitish in the former. There is no room for doubt however that this is merely the result of indifferent preservation, *P. dorsalis* being little more than a skin from which the interior parts have decayed.

Steindachner described a Port Jackson specimen as *P. leuculentus*, Richardson, but thinking that it might prove distinct from that species, he proposed the alternative name *richardsonii* for it. The description agrees well with my specimens of *P. guntheri*.

*Hab.*—This species is apparently rare in New South Wales but is common in Queensland. The Australian Museum collection includes five adults and twenty-six young specimens ranging from 33-180 mm. in length, from the following localities:—Moreton Bay, and Masthead Island off Port Curtis, Queensland; Lord Howe Island; Cape Solander, Botany Bay. All the specimens described by de Vis were taken in Moreton

Bay, with the exception of *P. sedlineatus*, which came from the "Barrier Reef." *P. dorsalis* and *P. neblanurus*, Macleay, were described from Port Jackson. The type specimen of *P. guntheri* was simply said to have come from Australia, but the species has been recognised under that name by de Vis from Moreton Bay, and by Waite from Fremantle, Western Australia. The specimen figured was caught at Cape Solander by Mr. J. H. Wright, who presented it to the Trustees.

*PSEUDOLABRUS LUCULENTUS*, *Richardson*.

*Labrus* vel *Tautoga luculentus*, Richardson, Zool. Erebus and Terror, Fishes, 1848, p. 130.

*Labrichthys luculenta*, Günther, Brit. Mus. Cat. Fish., iv, 1862, p. 116; *Id.*, Castelnau, Proc. Linn. Soc. N. S. Wales, iii., 1879, p. 354; *Id.*, Macleay, Proc. Linn. Soc. N. S. Wales, vi., 1881, p. 82; *Id.*, Ogilby, Cat. Fish., N. S. Wales, 1886, p. 45, and Mem. Austr. Mus., ii., 1889, p. 67.

*Pseudolabrus luculentus*, Waite, Rec., Austr. Mus., v., p. 29, pl. iv., fig. 1, and Mem. N. S. Wales Nat. Club, 1904, p. 38, and Trans. N. Z. Inst., xlii., 1910, p. 378.

Cheek scales in about five rows. Bases of the dorsal and anal fins scaly. Caudal truncate or slightly rounded. Upper rays of pectoral longest, the margin of the fin rounded. Greenish, the scales with brownish centres. Two or three narrow brown bands extend from the snout through the eye to the back of the head, of which the upper ones are less distinct than the lower, or all may be absent. Throat and lower part of head sometimes with many brown spots. A broad black bar across the base of the pectorals. Three large black blotches beneath the soft dorsal, in front of each of which is a similar white blotch: both light and dark blotches may be wanting. A dark spot is sometimes present on the anterior part of the dorsal fin, which in life is also tipped with scarlet. The soft dorsal is pale orange on the upper half, with narrow, irregular, blue lines through it; lower portion green. Anal green with three bands of pale orange. Caudal, pectorals, and ventrals greenish.

*Hab.*—This species is known from Norfolk and Lord Howe Islands the Kermadec Islands, Port Jackson and Western Australia. There are forty-one specimens, 47-185 mm. long, in the Australian Museum from Lord Howe Island, and one from Cape Solander, Botany Bay, which was presented by Mr. J. H. Wright.

PSEUDOLABRUS CONVEXUS, *Castelnau*.

*Labrichthys convexus*, Castelnau, Res. Fish. Anstr. (Viet. Offic. Rec. Philad. Exhib.), 1875, p. 38; *Id.*, Macleay, Proc. Linn. Soc. N. S. Wales, vi., 1881, p. 86.

*Pseudolabrus convexus*, Gill, Proc. U.S. Nat. Mus., xiv., 1892, p. 402.

Checks with four series of very large scales. Purplish, lighter below. Length less than seven inches without the tail. The original and only known specimen of this species was almost as imperfect as its description.

*Hab.*—Swan River, Western Australia.

## PSEUDOLABRUS MILES, Bloch and Schneider.

*Labrus miles*, Bloch and Schneider, Syst. Ichth., 1801, p. 264, and *L. corvaceus* Forster (M.S.).

*Labrus psittaculus*, Richardson, Proc. Zool. Soc., 1840, p. 26; Trans. Zool. Soc., iii., 1849, p. 141, and Zool. Erebus and Terror. Fishes, 1848, p. 129, pl. liv., figs 7-10.

*Labrichthys psittaculus*, Günther, Brit. Mus. Cat. Fish., iv., 1862, p. 114; *Id.*, Hutton, Cat. Fish. N.Z., 1872, p. 43, and Trans. N.Z. Inst., v., 1873, p. 165, pl. x., fig. 69, and *Loc. cit.*, ix., 1877, p. 354; *Id.*, Castelnau, Proc. Zool. Soc. Vict., ii., 1873, p. 52; *Id.*, Macleay, Proc. Linn. Soc. N. S. Wales, vi., 1881, p. 79; *Id.*, Johnston, Proc. Roy. Soc. Tasm., 1882 (1883), p. 124, and *Loc. cit.*, 1890 (1891), p. 35; *Id.*, Lucas, Proc. Roy. Soc. Vict. (2), ii., 1890, p. 32.

*Labrichthys cubioides*, Macleay, Proc. Linn. Soc. N. S. Wales, vi., 1881, p. 89.

*Labrichthys murtoni*, Johnston, Proc. Roy. Soc. Tasm., 1884 (1885), p. 256.

*Pseudolabrus miles*, Gill, Mem. Nat. Acad. Sci. Washington, vi., 1893, pp. 98, 117.

*Pseudolabrus coccineus*, Waite, Rec. Cantb. Mus., i., 1907, p. 22.

*Pseudolabrus psittaculus*, McCulloch, Zool. Res. Endeavour, i., 1911, p. 77, fig. 19.



Cheeks with four rows of scales extending forward to below the eyes. Bases of dorsal and anal fins not scaly. Upper pectoral rays longest. Caudal truncate with the lobes more or less produced. Colour pink with a yellow spot in the centre of each scale on the sides. A black spot on the back at the bases of the last dorsal rays may be present or absent, and may be followed by a second less distinct one on the caudal peduncle. Rows of lighter spots are present on the dorsal and anal fins, which also have lighter margins.

*Hab.*—This species is recorded from Tasmania, Victoria and New Zealand. I have examined eleven specimens from Tasmania and Bass Strait down to 60 fathoms, and three from Hobson's Bay and Westernport, Victoria; also four from the Great Australian Bight, west of the meridian of Eucla, 70-120 fathoms (Coll. F. I. S. "Endeavour.")

PSEUDOLABRUS INSCRIPTUS, *Richardson.*

*Labrus* vel *Tautoga inscriptus*, Richardson, Zool. Erebus and Terror, Fishes, 1848, p. 134, pl. lvi., fig. 1-2.

*Labrichthys inscripta*, Günther, Brit. Mus. Cat. Fish., iv., 1862, p. 115; *Id.*, Macleay, Proc. Linn. Soc. N. S. Wales, vi., 1881, p. 80; *Id.*, Ogilby, Mem. Austr. Mus., ii., 1889, p. 66.

*Pseudolabrus inscriptus*, Waite, Rec. Austr. Mus., v., 1904, p. 212, and Trans. N. Z. Inst., xlii., 1910, pp. 378 and 381.

Cheek scales in about five rows. Bases of dorsal and anal fins not scaly. Caudal more or less rounded. Upper pectoral rays longest, the margin rounded. Dark green or brownish, the scales with more or less distinct script-like markings which are often wanting in preserved specimens; the scales sometimes bear rows of dark spots. Cheek and operculum with small darker spots and lines. A blackish bar across the base of the pectorals. The membrane between the anterior dorsal spines darker. Young light green, with striking olive green or brown mottlings.

*Hab.*—This species is recorded from Norfolk and Lord Howe Islands and the Kermadec Islands. There are thirty-three specimens from the two first-named localities in the Australian Museum, ranging from 40 to 40.5 mm. in length,

PSEUDOLABRUS FUCICOLA, *Richardson*.

(Plate xviii.).

*Labrus fucicola*, Richardson, Proc. Zool. Soc., 1840, p. 26; Trans. Zool. Soc., iii., 1849, p. 137, and Zool. Erebus and Terror, 1848, p. 127, pl. liv., figs. 1-2.

*Labrichthys fucicola*, Günther, Brit. Mus. Cat. Fish., iv., 1862, p. 112 footnote: *Id.*, Hutton, Trans. N.Z. Inst., v., 1873, p. 265; *Id.*, Macleay, Proc. Linn. Soc. N.S.Wales, vi., 1881, p. 87; *Id.*, Johnston, Proc. Roy. Soc. Tasm., 1882 (1883), p. 124.

*Labrichthys bothryocosmus*, Hutton, Cat. Fish. N. Zealand, 1872, pl. vii., fig. 68 (non *P. bothryocosmus*, Richardson, *vide* Hutton).

*Pseudolabrus fucicola*, Gill, Mem. Nat. Acad. Sci. Washington, vi., 1893, p. 116.

*Pseudolabrus fucicola*, Waite, Rec. Cantb. Mus., i., 1907, p. 22

A single specimen of this species is in a collection received from the National Museum, Melbourne. It is smaller than Richardson's specimen, being only eleven-and-a-half inches long, and has a more pointed head which is characteristic of the younger fish. The pectoral fin, also, is somewhat pointed above instead of being rounded, but otherwise it agrees very well with Richardson's figure.

The life-colours have been described by both Hutton and Johnston as purple with some irregular yellow spots on the back and humeral region. This specimen has become greenish in spirits with only traces of purple on the head and fins, but the yellow markings are still traceable, as is a dark bar across the base of the pectoral fin, and some others on the cheeks and operculum. There are five rows of scales on the cheeks, the bases of the dorsal and anal fins are not scaly, and the caudal fin is slightly rounded.

*Hab.*—The specimen was obtained off the east coast of Flinders Island, Bass Strait. The species is known from New Zealand and Tasmania, and possibly the southern coasts of Australia.

## PSEUDOLABRUS CELIDOTUS, Forster.

- Labrus celidotus*, Forster in Bloch and Schneider, Syst. Ichth., 1801, p. 133, and Descr. Anim., Ed. Licht., 1844, p. 133: *Id.*, Richardson, Zool. Erebus and Terror, Fishes, 1848, p. 53, pl. xxxi., figs. 1-5.
- Labrus parvilopentus*, Cuvier and Valenciennes, Hist. Nat. Poiss., xiii., 1839, p. 95.
- Julis ? notatus*, Richardson, Ann. Mag. Nat. Hist., xi., 1843, p. 425 (*Sparus notatus*, Solander, M.S.).
- Labrus bothryocosmus*, Richardson, Zool. Erebus and Terror, Fishes, 1848, p. 53, pl. xxxi., figs. 6-10.
- Labrichthys celidota*, Gunther, Brit. Mus. Cat. Fish., iv., 1862, p. 113: *Id.*, Hutton, Cat. Fish. N. Z., 1872, p. 42: *Id.*, Macleay, Proc. Linn. Soc. N.S. Wales, vi., 1881, p. 78: *Id.*, Ogilby, Cat. Fish. N. S. Wales, 1886, p. 44.
- Labrichthys bothryocosmus*, Gunther, Brit. Mus. Cat. Fish. iv., 1862, p. 114: *Id.*, Hutton, Cat. Fish. N.Z., 1872, p. 43, and Tr. N. Z. Inst., v., 1873, p. 265, pl. x., fig. 68: *Id.*, Macleay, Proc. Linn. Soc. N. S. Wales, vi., 1881, p. 79: *Id.*, Johnston, Proc. Roy. Soc. Tasm., 1882 (1883), p. 123, and 1890 (1891), p. 35.
- Pseudolabrus celidotus*, Gill, Mem. Nat. Acad. Sci., Washington, vi., 1893, pp. 98, 117: *Id.*, Waite, Mem. N. S. Wales Nat. Club, 1904, p. 38, and Rec. Camb. Mus., i., 1911, p. 224.

Check scales in about five rows. Bases of the dorsal and anal fins not scaly. Caudal truncate or slightly rounded. Upper pectoral rays longest, the margin rounded. Light green or reddish olive, with some smaller spots on the upper half of the body; some specimens with a large black blotch on the lateral line. Some dark postorbital markings present or absent. Sometimes there is a dusky longitudinal band on the dorsal and anal fins. Pectoral with or without a dark basal band.

According to Waite, *P. celidotus* and *P. bothryocosmus* are merely colour varieties of one species. I have only examined one of his New Zealand specimens, 320 mm. long, which has the colour marking of the typical *celidotus*: there is no dark bar across the base of the pectoral, but Mr. Waite informs me that this may be present or absent. He also tells me the young are marked with ill-defined bands.

*Hab.*—This species is common in New Zealand and Tasmania, and is also recorded from South Australia and Botany Bay, New South Wales. The specimen referred to by Günther from Port Essington, North Australia, is doubtless some other species.

PSEUDOLABRUS BOSTOCKII, *Castelnau*.

*Labrichthys tetrica*, Günther, Brit. Mus. Cat. Fish., iv., 1862, p. 116 (part.): *Id.*, Macleay, Proc. Linn. Soc. N. S. Wales, vi., 1881, p. 81 (copied from Günther).

*Labrichthys bostockii*, Castelnau, Proc. Zool. Soc. Vict., ii., 1873, p. 137: *Id.*, Macleay, *Loc. cit.*, p. 85.

*Labrichthys biserialis*, Klunzinger, Sitzb. Akad. Wiss. Wien. lxxx, i., 1879, p. 402.

*Pseudolabrus bostockii*, Gill, Proc. U.S. Nat. Mus., xiv., 1892, p. 402: *Id.*, McCulloch, Rec. W. Austr. Mus., i., 1912, p. 91, pl. xi., fig. 1.

*Pseudolabrus biserialis*, Gill, *Loc. cit.*, p. 402.

*Pseudolabrus tetricus*, Waite, Rec. Austr. Mus., vi., 1905, p. 70 (*nee* Richardson).

Cheek scales in two rows. Bases of dorsal and anal fins scaly. Upper pectoral rays much the longest. Caudal truncate, the tips usually a little produced. Red or green, each scale with a large central darker spot; a yellow band from above the pectoral base to the middle of the caudal peduncle. Dorsal black basally, then orange and margined with a dark violet line. Anal red, margined with violet and with or without a darker median band. Caudal orange with dark edges. Pectorals and ventrals pink, the former with a black basal band.

*Hab.*—South-western Australia. I have examined one from near Albany, Another from Mandurah, and four from Fremantle. Length, 160-200 mm.

PSEUDOLABRUS ELEGANS, *Steindachner*.

*Labrichthys elegans*, Steindachner, Sitzb. Akad. Wiss. Wien, lxxxviii, i., 1883 (1884), p. 1102, pl. vi., figs. 2-3.

*Pseudolabrus elegans*, Gill, Proc. U.S. Nat. Mus., xiv., 1892, p. 403.

Cheek scales large, in one row behind the eye and two below, extending well forward on to the anterior portions of the cheeks. Bases of dorsal and anal fins not scaly. Caudal more or less rounded. Colour marking different in the two sexes. Male with a series of dark blotches in a row above the lateral line; sides of head spotted with brown. Dorsal and anal fins each with two broad dark bands, one at the outer border of the fins and the other near their bases. Hinder, upper and lower borders of caudal dark violet, as are the outer halves of the ventrals.

Female with dark cross bands on the body, head with brown spots. Dorsal with large dark spots near the bases of the rays and one on the anal. Outer half of ventrals greyish violet.

*Hab.*—St. Vincent Gulf, South Australia (Steindachner). I have not seen any specimens of this species.

PSEUDOLABRUS TETRICUS, Richardson.

(Pl. xix.).

*Labrus tetricus*, Richardson, Proc. Zool. Soc., 1840, p. 25, and Trans. Zool. Soc., iii., 1849, p. 136.

*Labrus* vel *Tantoya tetricus*, Richardson, Zool. Erebus and Terror, Fishes, 1848, p. 126, pl. lv., figs. 1-4.

*Labrichthys ephippium*, Gunther, Ann. Mag. Nat. Hist., xi. (3) 1863, p. 116; *Id.*, Macleay, Proc. Linn. Soc. N.S. Wales, vi., 1881, p. 84 (*non Labrus ephippium*, Cuv. and Val.)

*Labrichthys tetrica*, Klunzinger, Arch. für Naturg., xxxviii. i., 1872, p. 37 (with vars. *tigripinnis* and *fuscipinnis*); *Id.*, Klunzinger, Sitzb. Akad. Wiss. Wien., lxxx. i., 1879, p. 401, (with var. *ocellata*); *Id.*, Johnston, Proc. Roy. Soc. Tasm., 1882 (1883), p. 124, and 1890 (1891), p. 35.

*Labrichthys vestita*, Castelnau, Proc. Zool. Soc. Vict., i., 1872, p. 151.

*Labrichthys cyanogenys*, Ramsay and Ogilby, Proc. Linn. Soc. N. S. Wales (2), ii., 1887, p. 242; *Id.*, McCulloch, Zool. Res. Endeavour, i., 1911, p. 76, pl. xiii.

[Not *Labrichthys tetrica*, Gunther, Brit. Mus. Cat. Fish., iv., 1862, p. 116; *Id.*, Macleay, Proc. Linn. Soc. N. S. Wales, vi., 1881, p. 81; *Id.*, Waite, Rec. Austr. Mus., vi., 1905, p. 70 (= *Pseudolabrus bostockii*, Castelnau.)].

? *Lobrichthys cucieri*, Castelnau, *L. bleekeri*, Castelman, and *L. richardsonii*, Castelnau (see below).

A well graduated series of twenty-six specimens, 180-420 mm. long, shows that the colour-markings of this species vary remarkably, the variations apparently depending on both age and sex.

In small examples, 180-200 mm. long (Pl. xix.) there is a dark brown cross-bar, with rather indefinite edges, extending from the spinous dorsal to behind the pectoral; two or three darker patches occur below the soft dorsal, and one or two oblique bands are present on the hinder part of the body. Some brown bands radiate from the eye, while the lower parts of the head bear several large light spots. Scales of the ventral surface more or less silvery. Pectoral and ventral fins bright yellow, the former with a dark basal bar; the other fins are also yellowish with rows of more or less numerous darker spots. This form corresponds to the var. *tigripinnis*, Klunzinger.

In a later stage, 240-370 mm. long, the posterior body-markings become indefinite or are lost, leaving only the anterior band. The vertical fins are still spotted as in the first form (the spots are sometimes almost wanting), but the soft dorsal and anal show signs of darkening as in the next form.

In the largest specimens, up to 420 mm. long, two broad darker bands cross the body, which are separated by a lighter one. The chin and throat are dark blue. The anterior dorsal, ventral and pectoral fins are yellow, the pectoral with a striking blackish base. The soft dorsal and anal fins are very dark, the former with two light oblique bands through it. The caudal is dark basally, yellowish posteriorly. I have recently figured this form as *P. cyanogenys*, Ramsay and Ogilby; it also appears to correspond to the variety *fuscipinnis*, Klunzinger and the larger specimen described by Castelnau as *P. vestita*.

In all the specimens I have examined there is one row of cheek scales above, and usually three, rarely two or four below. The caudal is slightly rounded or truncate. The upper pectoral rays are longest and sometimes produced beyond the rounded margin in old specimens. The bases of the dorsal and anal fins are not sealy.

*Hab.*—*P. letricus* is common in Tasmania and Victoria, and extends northwards to about Port Jackson, but is rather rare in New South Wales.

PSEUDOLABRUS CUVIERI, *Castelnau*

*Labrichthys cucieri*, Castelnau, Proc. Zool. Soc. Viet., ii., 1873, p. 53; *Id.*, Macleay, Proc. Linn. Soc. N. S. Wales, vi., 1881, p. 84; *Id.*, Johnston, Proc. Roy. Soc. Tasm., 1881 (1882), p. 124, and 1890 (1891), p. 35; *Id.*, Lucas, Proc. Roy. Soc. Vict. (2), ii., 1890, p. 33.

*Pseudolabrus cucieri*, Gill, Proc. U.S. Nat. Mus., xiv., 1892, p. 402.

Cheek scales in two series. Dorsal and anal fins not scaly. Body greenish or purple with two broad red or crimson transverse bands, the second covering nearly the posterior half of the body. Pectorals orange. Spinous dorsal orange, the soft dorsal almost black. Caudal olive (Castelnau).

As already suggested<sup>†</sup> I have little doubt that this species is identical with *P. cyanogreus* which is the adult form of *P. letricus*. It was not known to Johnston when he included it in his catalogue of the Fishes of Tasmania.

*Hab.*—Hobart, Tasmania, and Phillip Island, Bass Strait.

PSEUDOLABRUS RICHARDSONI, *Castelnau*.

*Labrichthys richardsoni*, Castelnau, Proc. Zool. Soc. Viet., i., 1872, p. 150; *Id.*, Macleay, Proc. Linn. Soc. N. S. Wales, vi., 1881, p. 83; *Id.*, Lucas, Proc. Roy. Soc. Vict. (2), ii., 1890, p. 33 (non *P. richardsonii*, Steindachner, = *P. guntheri*, Bleeker.)

*Pseudolabrus richardsoni*, Gill, Proc. U.S. Nat. Mus., xiv., 1892, p. 403

Very much like *P. bleekeri*. Check scales in three rows. Bases of dorsal and anal fins not scaly. Bluish-green with a dark spot on the end of the operculum. One to three broad dark transverse bands on the body, the first covering the space between the third or fourth dorsal spine and the first ray; the others are further back, but may be absent. Fins either bluish-green with a few dark spots between the dorsal spines, or yellow with purple spots (Castelnau).

<sup>†</sup> McCulloch—"Endeavour" Zool. Results. i., 1911, p. 76.

The types were obtained in the Melbourne markets. Length 14 inches.

This appears to me to be almost certainly a form of *P. tetricus*.

PSEUDOLABRUS BLEEKERI, *Castelman*.

*Labrichthys bleekeri*, Castelman, Proc. Zool. Soc. Vict., i., 1872, p. 148; *Id.*, Macleay, Proc. Linn. Soc. N. S. Wales, vi., 1881, p. 83; *Id.*, McCoy, Prodr. Zool. Vict., xiv., 1887, pl. cxxxiv.; *Id.*, Lucas, Proc. Roy. Soc. Vict. (2), ii., 1890, p. 33.

*Pseudolabrus bleekeri*, Gill, Proc. U.S. Nat. Mus., xiv., 1892, p. 402.

Cheek scales in two series. Dorsal fin not scaly. Green above, dark blue below, the scales bordered with carmine; no trace of spots or bands. A broad black band from the eye to the end of the operculum. Cheek with small white spots, throat purple spotted with white. Vertical fins green, spotted with purple or carmine; caudal orange with carmine spots; pectorals yellow; ventrals pink (Castelman).

I have examined the specimen which is the original of McCoy's figure, and though it has lost almost all traces of colour-marking I have no doubt it is the same as what I have figured as the young *P. tetricus* (Pl. xix.). McCoy describes and figures colour bands which are differently arranged to what I can see in his specimen, and which according to Castelman should not be present in *P. bleekeri*. The anal fin also is drawn too far forward. Waite suggested that the figure represented *P. ruber*, Castelman, but it is at once distinguished from that species by having three instead of only one row of cheek scales. According to Castelman, *P. bleekeri* has two rows, which is what I have found in some specimens of *P. tetricus*. I think that *P. bleekeri* will prove to be identical with the young of *P. tetricus*.

*Types*.—Obtained in the Melbourne fish markets. Length ten to twelve inches.



## PSEUDOLABRUS GYMNŌGENIS, Günther.

(Plate xx.)

*Labrichthys gymnogenis*, Günther, Brit. Mus. Cat. Fish., iv., 1862, pp. 117, 507, and Ann. Mag. Nat. Hist. (3), xx., 1867, p. 66: *Id.*, Castelman, Proc. Linn. Soc. N.S. Wales, iii., 1879, p. 389; *Id.*, Kluuzinger, Sitzb. Akad. Wiss. Wien, lxxx. i., 1879, p. 403; *Id.*, Macleay, Proc. Linn. Soc., N.S. Wales, vi., 1881, p. 82; *Id.*, Ogilby, Cat. Fish. N.S. Wales, 1886, p. 45.

*Pseudolabrus gymnogenis*, Gill, Proc. U.S. Nat. Mus., xiv., 1892, p. 401; *Id.*, Ogilby, Ed. Fish. N.S. Wales, 1893, p. 139; *Id.*, Waite, Mem. Nat. Club, N.S. Wales, 1904, p. 38; *Id.*, Ogilby, Proc. Roy. Soc. Q'land, xxi., 1908, p. 25; *Id.*, Stead, Ed. Fish. N.S. Wales, 1908, p. 84, pl. liii.

*Labrichthys parila*, Castelman, Proc. Linn. Soc. N.S. Wales, iii., 1879, p. 389; *Id.*, Macleay, *Loc. cit.*, vi., 1881, p. 81 (part); *Id.*, Ogilby, Cat. Fish. N.S. Wales, 1886, p. 45 (part); *Id.*, Waite, Mem. N.S. Wales Nat. Club, 1904, p. 38 (not *P. parilus*, Richardson).

*Labrichthys nigromarginatus*, Macleay, Proc. Linn. Soc. N.S. Wales, iii., 1878, p. 35, pl. iii., fig. 3 and vi., 1881, p. 87; *Id.*, Castelman, Proc. Linn. Soc. N.S. Wales, iii., 1879, p. 354; *Id.*, Ogilby, Cat. Fish. N.S. Wales, 1886, p. 45.

*Pseudolabrus nigromarginatus*, Gill, Proc. U.S. Nat. Mus., xiv., 1892, p. 402; *Id.*, Ogilby, Ed. Fish. N.S. Wales, 1893, p. 140; *Id.*, Waite, Rec. Austr. Mus. v., 1903, p. 29, and Mem. Nat. Club N.S. Wales, 1904, p. 38; *Id.*, Ogilby, Proc. Roy. Soc. Q'land, xxi., 1908, p. 25; *Id.*, Stead, Ed. Fish. N.S. Wales, 1908, p. 84.

Stead (Ed. Fish. N.S. Wales) has expressed the opinion that *P. nigromarginatus* is merely the male form of *P. gymnogenis* which attains a larger size than the female. In support of this it must be noted that the distribution of the two is the same and that both are obtained from the same localities, which are usually in the vicinity of rocky reefs, etc. The more robust form of *P. nigromarginatus* as compared with *P. gymnogenis* is only what is found in all large specimens of *Pseudolabrus*, while the colour differences between the two are not more striking than what I have found between young and old examples of *P.*

*tetricus*. Günther (Ann. Mag. Nat. Hist.) regarded large specimens from Port Jackson which had the characteristic marking of *nigromarginatus* as merely colour varieties of *gymnocephalis*. Finally, as small specimens of the *nigromarginatus* form are unknown, and as the essential structural details of the two are similar, I regard them as identical.

The following are the principal characters of the two forms:—

*P. gymnocephalis*. Cheek scales in a single series. Body scales extending on to the extreme bases of the dorsal and anal fins. Caudal truncate, very slightly rounded in small specimens, the lobes sometimes a little produced in older ones. Greenish or reddish, with more or less distinct large white spots on the scales, which are sometimes wanting. Usually some brownish spots and lines radiate from the eye. Pectoral with a dark basal bar. Dorsal and anal usually with a median dark band, and spotted, a violet submarginal band; the membrane between the anterior dorsal spines darker. Caudal with dark upper and lower margins.

The specimen recorded from China by Steindachner<sup>4</sup> is not this species according to Klunzinger. I have already<sup>5</sup> given my reasons for considering the specimen recorded by Castelnau from Port Jackson as *Labrichthys parvula* to be not that species but *P. gymnocephalis*.

*Specimens examined*.—Five from near Sydney, and one from Lord Howe Island. The largest is 250 mm. long.

*Hab.*—Botany Bay, New South Wales, northwards to Mooloolah, near Moreton Bay, Queensland; Lord Howe Island; King George Sound (Klunzinger).

*P. nigromarginatus*.—Cheek scales in a single series. Bases of the dorsal and anal not scaly. Caudal truncate, the angles somewhat produced. Purple or purplish green, yellowish posteriorly; a broad crimson band between the soft dorsal and anal fins. Dorsal and anal yellow or crimson with narrow purple margins. Median rays of ventrals blackish. Pectoral yellow with a purple blotch posteriorly, and a dark basal band. Caudal orange with dark upper and lower margins.

<sup>4</sup> Steindachner—Sitzb. Akad. Wiss. Wien, lvi., 1867, p. 312.

<sup>5</sup> McCulloch—Rec. W. Austr. Mus., i., 1912, p. 91.

*Specimens examined*.—Four from near Sydney, two from Moreton Bay and one from Lord Howe Island. Length 277-300 mm.

*Hab.*—Botany Bay, northwards to Caloundra near Moreton Bay; Lord Howe Island.

*PSEUDOLABRUS PARILUS, Richardson.*

*Tautoga parila*, Richardson, Proc. Zool. Soc., 1850, p. 70, and Ann. Mag. Nat. Hist. (2), vii., 1851, p. 286.

*Labrichthys parila*, Günther, Brit. Mus. Cat. Fish., iv., 1862, p. 117; *Id.*, Castelnau, Proc. Zool. Soc. Viet., ii., 1873, p. 137; *Id.*, Macleay, Proc. Linn. Soc. N.S. Wales, vi., 1881, p. 81.

*Pseudolabrus parilus*, Gill, Proc. U.S. Nat. Mus., xiv., 1892, p. 401; *Id.*, McCulloch, Rec. W. Austr. Mus., i., 1912, p. 90, pl. xii.

*Labrichthys rubra*, Castelnau, Res. Fish. Austr. (Vict. Offic. Rec. Philad. Exhib.), 1875, p. 37; *Id.*, Klunzinger, Sitzb. Akad. Wiss. Wien. lxxx. i., 1879, p. 403; *Id.*, Macleay Proc. Linn. Soc. N.S. Wales, vi., 1881, p. 86.

*Pseudolabrus ruber*, Gill, Proc. U.S. Nat. Mus., xiv., 1892, p. 402; *Id.*, Waite, Rec. Austr. Mus., iv., 1902, p. 185, pl. xxviii.

I have already suggested the identity of *P. parilus* and *P. ruber* and having since examined another specimen which has almost as much the markings of *ruber* as of *parila*, I have now no hesitation in uniting them.

Cheek scales in one or two rows, usually in one above and two below. Bases of dorsal and anal fins not scaly. Upper pectoral rays longest. Caudal more or less rounded.

*P. parilus* form.—Greenish, spotted with brown, the spots tending to form five more or less distinct cross bands. Brown lines radiating from the eye. With or without broad darker markings enclosing lighter interspaces on the lower parts of the head. Dorsal and anal with light and dark spots, the latter being most distinct above the body bands: a large anterior dorsal spot.

*Specimens examined*.—Two specimens from Fremantle and one from Doubtful Island Bay. Length 200-225 mm.

*Hab.*—Doubtful Island Bay, King George Sound and Fremantle, Western Australia. In the "Records of the Western Australian Museum" I have given my reasons for supposing Castelnau's record of this species from Port Jackson to be incorrect.

*P. ruber* form.—Reddish-brown in spirits with five broad brown blotches descending from the back; numerous small dark spots on the head and body. A series of irregular dark marks radiating from the eye. Cheeks and throat with broad silvery patches enclosed by brown bands. Scales of lower surface of body with large silver spots. Dorsal and anal with light or dark spots, or both; the membrane darker in the region of the dark body marks.

*Specimens examined*.—One from South Australia; two from Houtman Abrolhos, and one from Fremantle; two from Western Australia including a specimen received from Count Castelnau by the National Museum, Melbourne.

*Hab.*—South and Western Australia.

PSEUDOLABRUS PUNCTULATUS, Günther.

*Labrichthys punctulata*, Günther, Brit. Mus. Cat. Fish., iv., 1862, p. 118; *Id.*, Castelnau, Proc. Zool. Soc. Vict., ii., 1873, p. 138; *Id.*, Macleay, Proc. Linn. Soc. N.S. Wales, vi., 1881, p. 82.

*Pseudolabrus punctulatus*, Gill, Proc. U. S. Nat. Mus., xiv., 1892, p. 401; *Id.*, Waite, Rec. Austr. Mus., vi., 1905, p. 69, pl. xiii.

*Labrichthys edelensis*, Castelnau, Proc. Zool. Soc. Vict., ii., 1873, p. 137; *Id.*, Macleay, Proc. Linn. Soc. N. S. Wales, vi., 1881, p. 85; *Id.*, Gill, Proc. U. S. Nat. Mus., xiv., 1892, p. 403.

Check scales in one or two rows, usually in one above and two below. Bases of dorsal and anal fins not scaly. Upper pectoral rays longest. Caudal rounded. Body dark above the lateral line, light below; an irregular, dark longitudinal band on the lower half which is connected with the upper dark part

by indefinite dark cross-bars. Entire body closely dotted with small blue ocelli. Throat and lower parts of head with dark bars enclosing light areas. Soft dorsal and anal each with three broad dark marks separated by lighter interspaces: margins of the fins lighter. Greater portion of caudal dark, margin lighter. Pectorals light coloured with a blackish basal band.

*Specimens examined*.—One from Houtman Abrolhos and one from Albany: two from South Australia: one from Queenscliff, Victoria. Length 285-385 mm.

*Hab.*—Western Australia, South Australia and Victoria.

PSEUDOLABRUS UNICOLOR, Castelnau.

*Labrichthys unicolor*, Castelnau, Res. Fish. Austr. (Vict. Offic. Rec. Philad. Exhib.), 1875, p. 37; *Id.*, Macleay, Proc. Linn. Soc. N.S. Wales, vi., 1881, p. 85.

*Pseudolabrus unicolor*, Gill, Proc. U.S. Nat. Mus., xiv., 1892, p. 403.

Cheeks without scales. Colour of a dark brown rubyish tint, length eight inches.

*Hab.*—Western Australia. This species has not been recognised since it was first described.

HALICHERES TRIMACULATUS, Quoy and Gaimard.

*Julis trimaculata* Quoy and Gaimard, Voy. Astrolabe, iii., 1835, p. 705, Atl. pl. xx., fig. 2.

*Gnatheria trimaculata*, Bleeker, Atlas Ichth., i., 1862, p. 138, pl. xxxii., fig. 1.

*Halichæres trimaculatus* Jordan and Seale, Bull. U. S. Fish. Bur., xxv., 1906, p. 301, pl. xlvii., fig. 1

*Labrichthys nudigena*, de Vis, Proc. Linn. Soc. N.S. Wales, ix., 1885, p. 881.

The type specimen of *L. nudigena* is dried and much shrivelled, but still shows sufficient characters to leave no doubt as to its identity with *Halichæres trimaculatus*. The only item in the

short description requiring emendment is the statement "scales of the cheeks in one infraorbital series." These "scales" are merely small quadrangular spaces enclosed by series of pores descending from the eye, and are shown in Quoy and Gaimard's figure.

*L. undigena* was described from the Barrier Reef, Queensland. As *Platyglossus trimaculatus*, Kner has recorded it from Sydney, but, as Ogilby has pointed out, this is almost certainly incorrect. Specimens are in the Australian Museum from Murray Island, Torres Strait (Coll. Hedley & McCulloch): Green Island, off Cairns (Coll. Hedley): Hood Bay, New Guinea (Coll. Goldie), and Samoa (Coll. Jordan).

### Family PTEROPSARIDÆ.

#### Genus PARAPERCEIS, Bleeker.

*Paraperceis*, Bleeker, Nat. Tyd. Dierk., iv., 1872, p. 127 (*P. cylindrica*, Bloch.).

*Chilias*, Ogilby, Proc. Roy. Soc. Q'land, xxiii., 1910, p. 40 (*C. stricticeps*, de Vis).

Having compared a specimen of *Chilias stricticeps*, de Vis, received from Mr. J. D. Ogilby, with another of *Paraperceis cylindrica*, Bloch, I fail to find any generic differences between them. Ogilby has described the head of *C. stricticeps* as depressed, but it is normally of the subconical form of *Paraperceis*, although in my specimen the gill-covers and membranes are expanded laterally as often happens in fishes killed in formalin. He also states that the lower jaw is without villiform teeth, whereas there is really a broad band near the symphysis behind the canines. These, and all the other characters relied upon to distinguish *Chilias* are exactly as in *Paraperceis*.

*P. stricticeps* is closely allied to *P. hexophthalma*, Cuv. and Val., of which I have a specimen from Murray Island, Torres Strait, but differs in having a much longer lower jaw, narrower interorbital, and smaller eye, as well as in its colour-marking.

### Family GOBIIDÆ.

#### EVIOTA VIRIDIS, Waite.

*Allogobius viridis* Waite, Rec. Austr. Mus., v., 1904, p. 177, pl. xxiii., fig. 3.

*Eriota zouara*, Jordan and Seale, Bull. U.S. Fish. Bur., xxv., 1905 (1906), p. 386, fig. 75.

I have compared co-types of *E. zouara* with the types of *Allogobius viridis* and find them identical. I have no doubt also, that some other members of this genus figured by Jordan and Seale are merely variations of the one species.

This species is common all along the Great Barrier Reef and I have collected it at Murray Island, Torres Strait; on the Cairns Reef, off Cooktown; and at Masthead Island, off Port Curtis. It has not been previously recorded from Australia.

#### Family SCORPÆNIDÆ.

SEBASTOPSIS SCABER, Ramsay and Ogilby.

(Plate xiii., fig. 2).

*Sebastes scaber*, Ramsay and Ogilby, Proc. Linn. Soc. N. S. Wales, x., 1886, p. 577.

*Scorpana scabra*, Ogilby, Mem. Austr. Mus., ii., 1889, p. 60.

[Not *Sebastopsis scabra*, Jordan and Seale, Bull. U. S. Fish. Bur., xxv., 1906, p. 374, fig. 71.]

D. xii., i/8-10; A. iii/5-6; P. 17-18; V. i./5; C. 13-15.

Height of body  $2\frac{3}{4}$  to  $3\frac{1}{4}$ , length of head  $2\frac{3}{4}$ - $2\frac{1}{2}$  in the length to the hypural. Eye  $2\frac{3}{4}$ -3 in the head. Snout  $\frac{2}{3}$ - $\frac{3}{4}$  in the eye.

Head with large spines and rough scales, only the snout naked. Orbital margin with three spines above, followed by a single postocular one on either side; between the last are usually two small spines directed outwards. There are two occipital spines on either side, the anterior of which arise behind the level of the postocular spines. Two infraorbital ridges terminating in spines posteriorly. A strong spine above and between the nostrils. A series of bony ridges from in front of the eye to the preoperculum, armed with a spine below the eye and another near the preopercular margin; the latter bears a double spine on the same line and two others below it. Operculum with two spines. The pterotic, post-temporal, suprascapular and clavicle bones each bear a spine. The margin of the preorbital is very sinuous but not spiniferous. Anterior nostril with a large tentacle, while others may be

present on some of the larger head spines. Maxillary large, reaching backwards to below the hinder third, or almost to the hinder margin of the eye. Teeth minute, in a band on each jaw and on the vomer: palatines toothless.

Most of the scales strongly ctenoid, only those of the chest cycloid. The lateral line is almost straight: there are twenty-four pores along its length, each ending in a minute spine, and about forty-four rows of scales. The scales extend on to the bases of the soft dorsal, anal, pectoral and caudal fins.

The sixth and seventh dorsal spines are the longest, as long as or shorter than the eye: the rays are higher than the spines, the median ones longest. Second anal spine very long and strong, as long as the rays which are much longer than those of the dorsal. Pectoral reaching to above the anal spines, the lower nine or ten simple and thickened. Ventrals inserted in advance of the pectorals, not reaching backwards to the vent. Caudal rounded.

*Colour*.—Reddish or pink, with brown markings on the head and upper half of the body. Fins spotted with carmine in fresh examples, colourless in preserved specimens.

Described from fourteen examples, including the types, 35-79 mm. long from the snout to the hypural. They were obtained near Sydney and Newcastle, New South Wales, and Lord Howe Island.

SEBASTOPSIS GUAMENSIS, *Quoy and Gaimard*.

*Scorpena guamensis*, Günther, Journ. Mus. Godeffroy, ii., 1873-5, p. 74, pl. lvi., fig. 13.

*Sebastopsis guamensis*, Jordan and Seale, Bull. U. S. Fish. Bur., xxv., 1906, p. 374.

? *Sebastopsis scabra*, Jordan and Seale, *Loc. cit.*, fig. 71 (nec *S. scaber*, Ramsay and Ogilby).

The fish figured by Jordan and Seale as *S. scabra* is not that species, though very closely allied to it. Those authors considered it differed from *S. guamensis* in having a longer anal spine, but a series of thirty-five specimens, including fourteen



from Samoa and identified by them as both *S. gaudensis* and *S. scabra*, seems to me to agree very well with Günther's figure of the former species.

They differ from *S. scabra* in the arrangement of the spines on top of the head and in colouration. In all of my series, including specimens 30-115 mm. long, the infraorbital ridges do not terminate in sharp spines, the occipital spines arise on the same level as, or in front of the end of the postocular spines, and there is only rarely one or two small spines between the latter. The general colour is brown with striking darker bars and spots on the head, body and fins, and there is a more or less distinct black spot on the operculum.

The specimens examined were obtained at the following localities:—Samoa, New Hebrides, Lord Howe Island, Tongatabu, Bogainville Island, Duke of York Island, and Murray Island, Torres Strait.





EXPLANATION OF PLATE XII.

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- FIG. 1. Natives spearing fish. Albany Passage, Cape York.
- FIG. 2. "Werir" fishing. Murray Island, Torres Strait.
- FIG. 3. Fishing with a cast-net. Murray Island, Torres Strait.



1



2



3





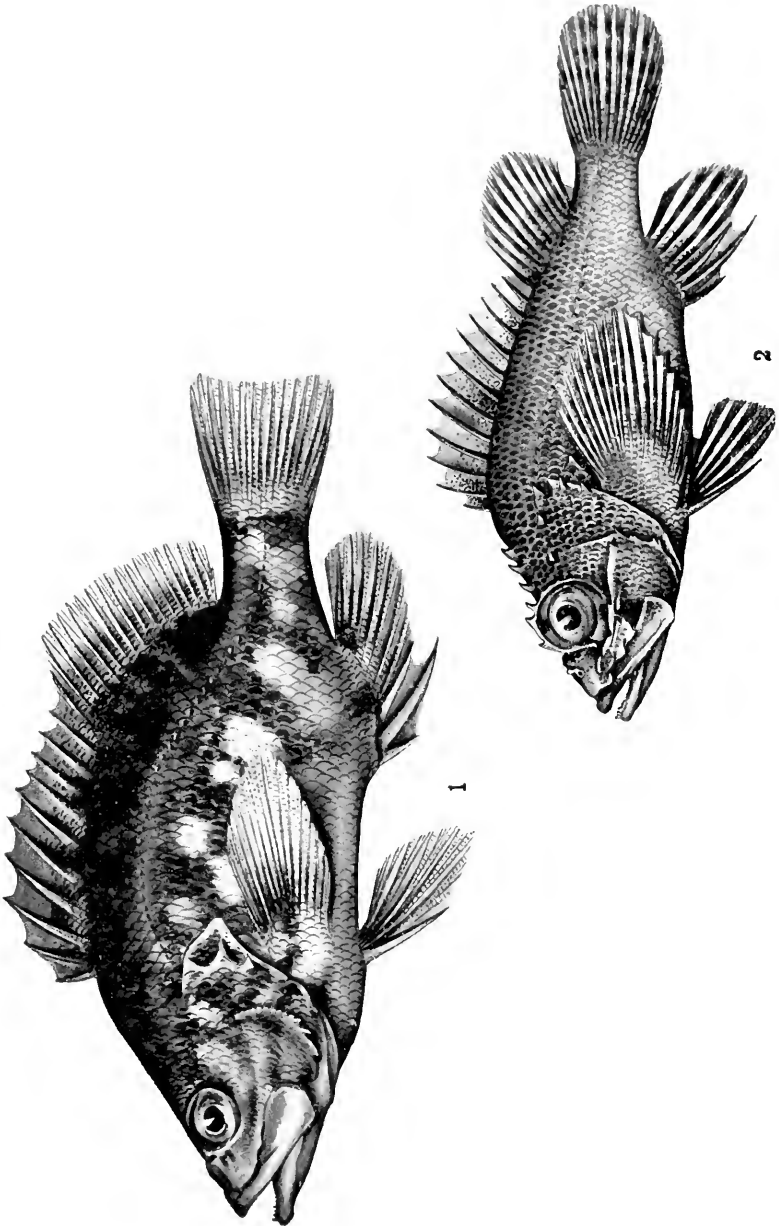
EXPLANATION OF PLATE XIII.

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FIG. 1. *Hypoplectrodes janesoni*, Ogilby.

FIG. 2. *Sebastopsis scaber*, Ramsay and Ogilby.





A. R. McCULLOCH, del.,  
Austr. Mus.

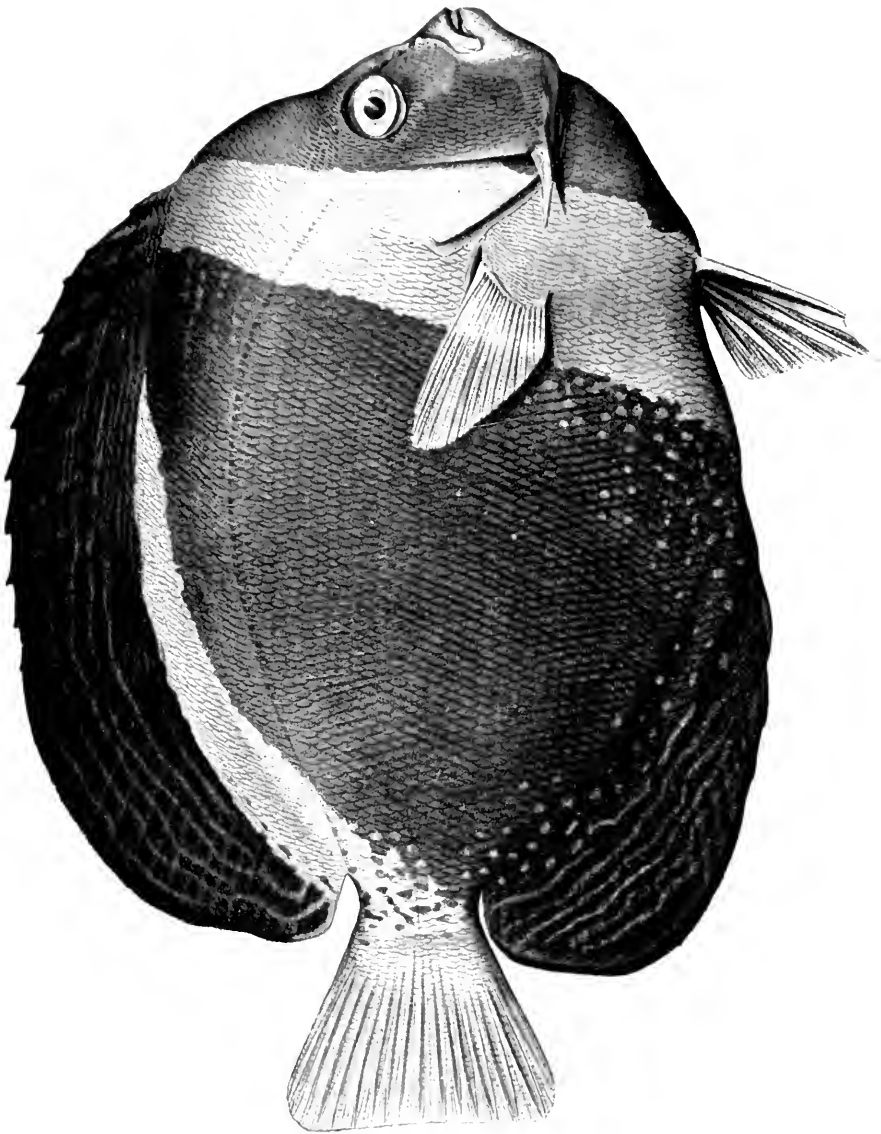




EXPLANATION OF PLATE XIV.

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*Holacanthus duboulayi*, Günther.





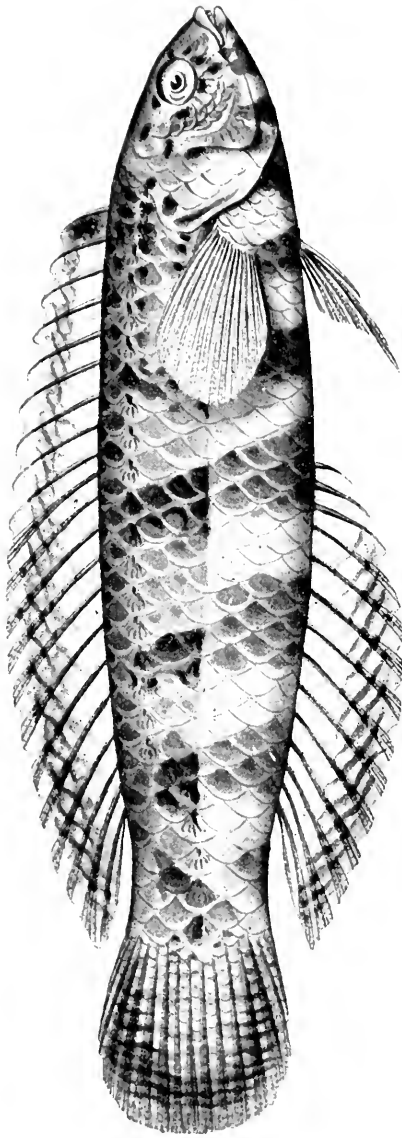


EXPLANATION OF PLATE XV.

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*Eupetrichthys angustipes*, Ramsay and Ogilby.





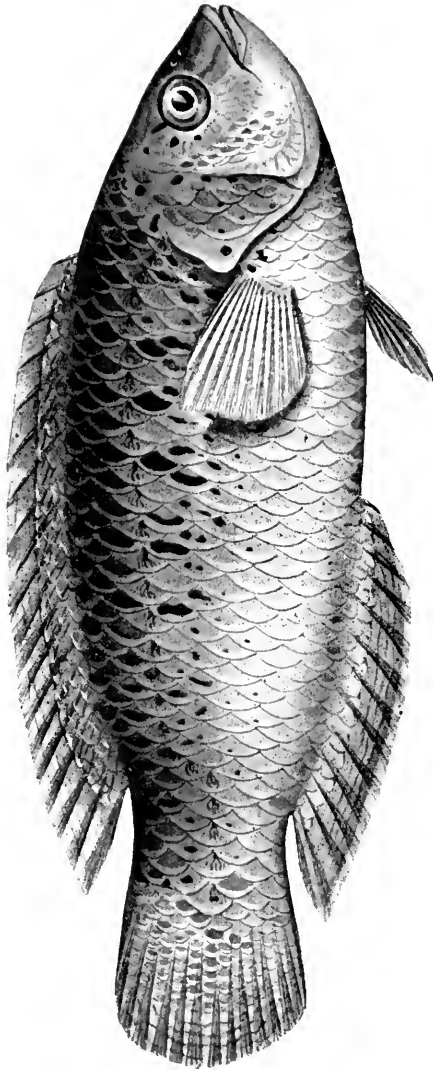




EXPLANATION OF PLATE XVI.

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*Austrolabrus maculatus*, Macleay.





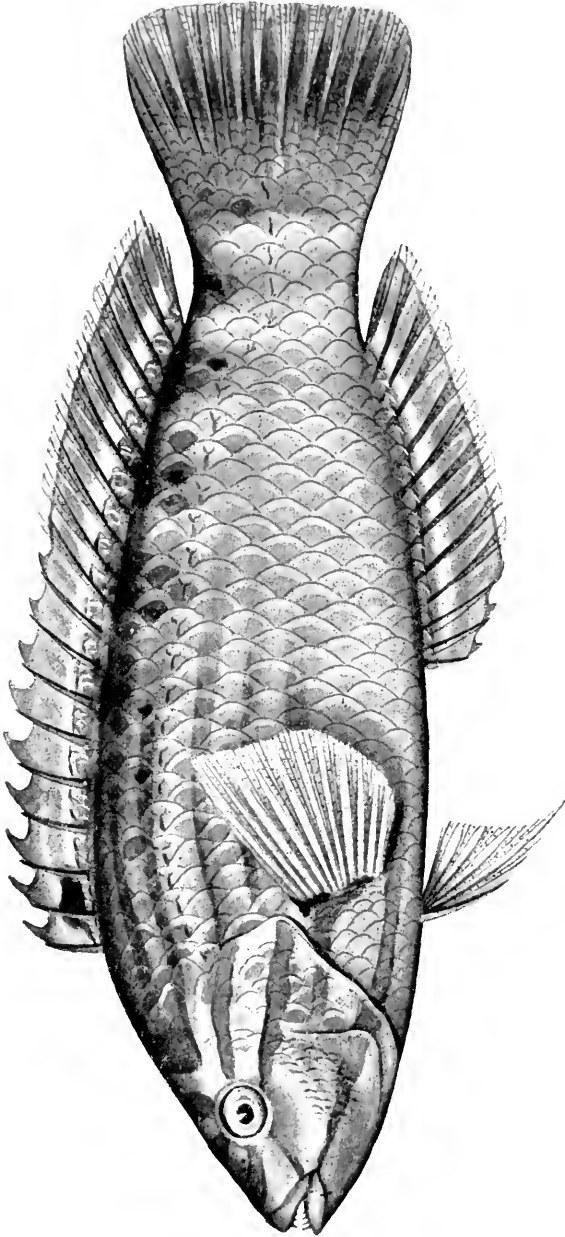


EXPLANATION OF PLATE XVII



*Pseudolabrus guntheri*, Bleeker.





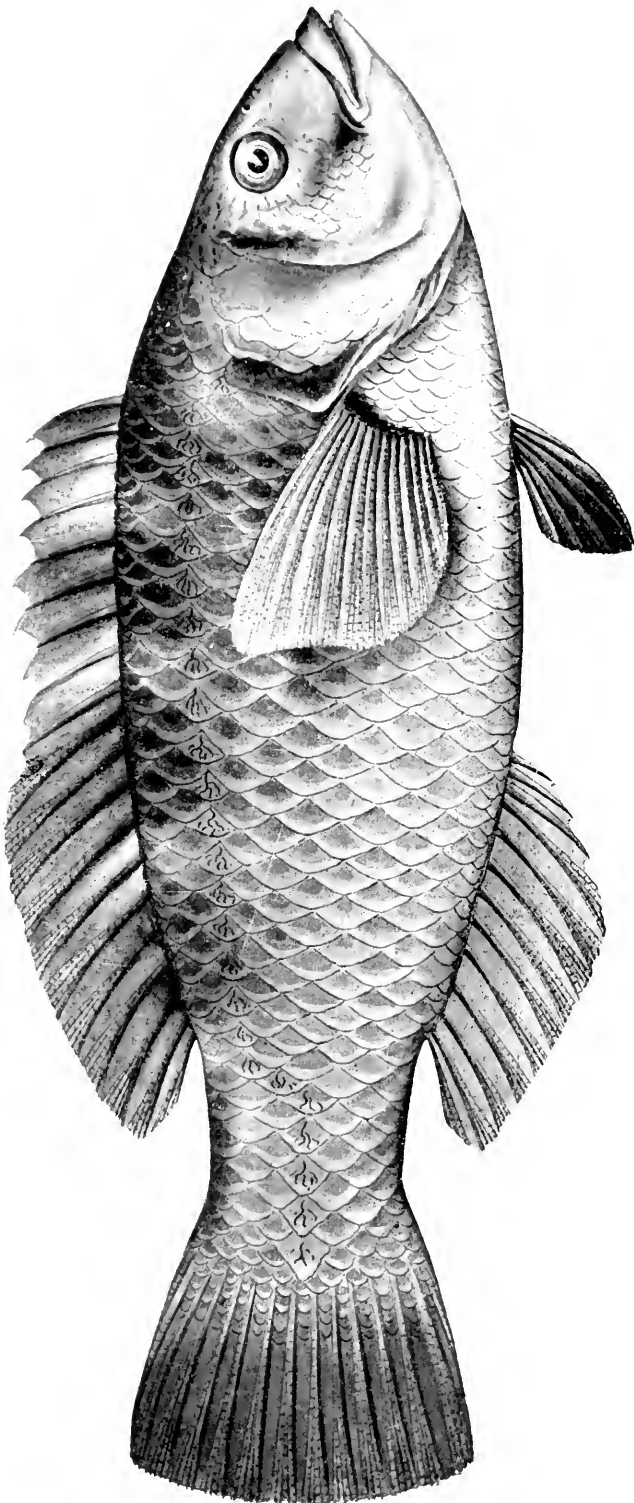




EXPLANATION OF PLATE XVIII.

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*Pseudolabrus fucicola*, Richardson.



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Austr. Mus.,



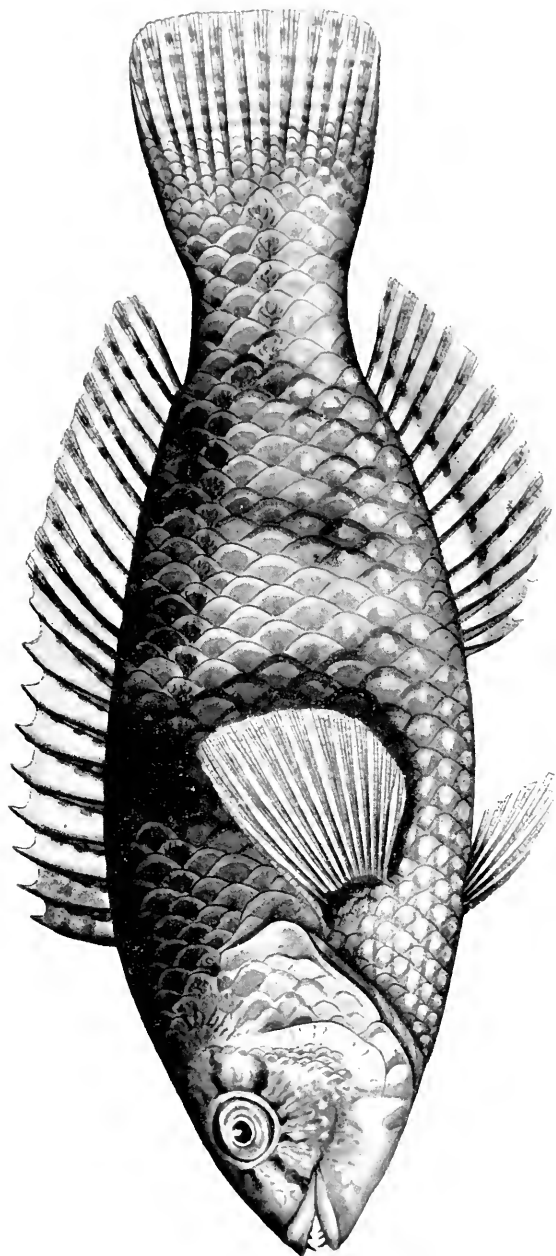


EXPLANATION OF PLATE XIX.

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*Pseudolabrus tetricus*, Richardson. ✕





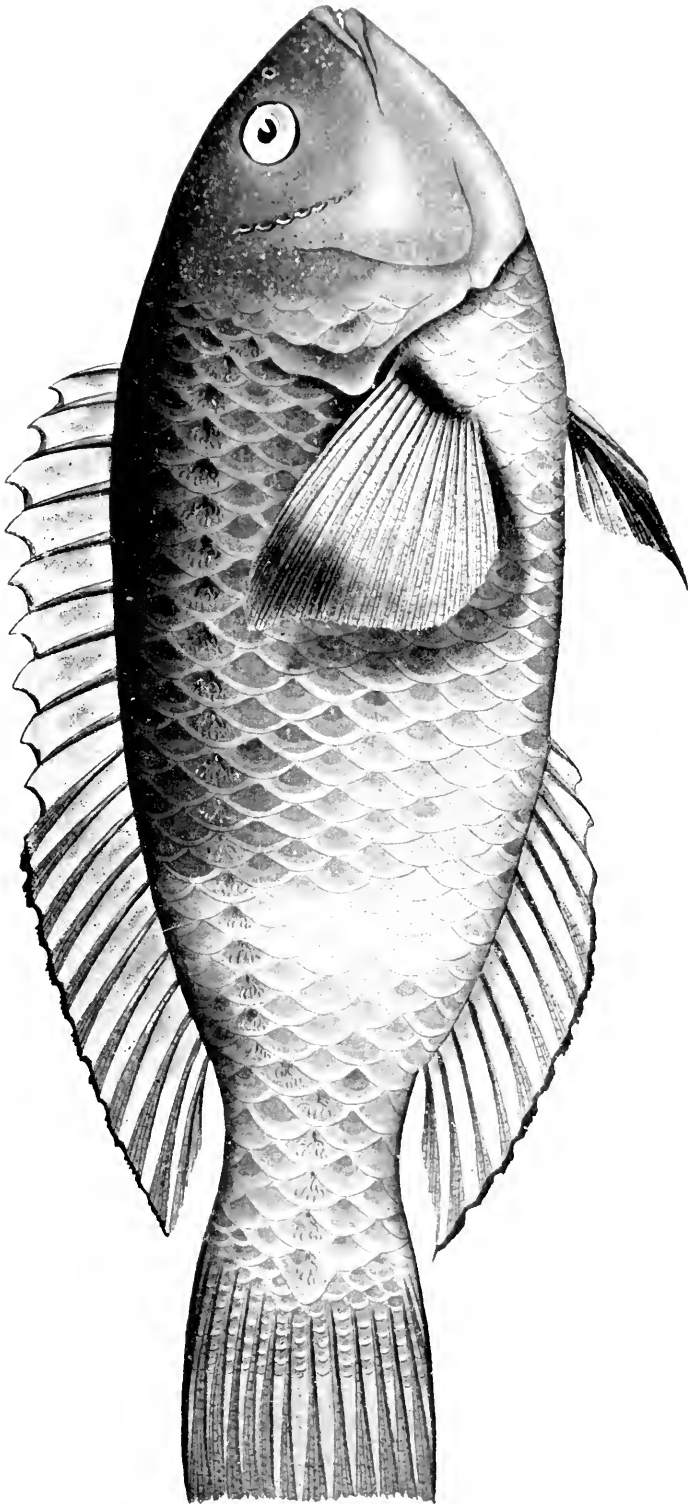




EXPLANATION OF PLATE XX.



*Pseudolabrus gymno-genis*, Günther.



A. R. McCULLOCH, del.,  
Austr. Mus.



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