

STUDIES IN AUSTRALIAN SPIDERS.

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This paper deals with three spiders, two of which are new. Probably the most interesting is that well-known species, *Celaenia excavata* L. Koch, the male of which is recorded for what is believed to be the first time. That this should be so is not surprising in view of the fact that the male is minute in comparison with the female. Such disparity in size between the sexes does not seem to be unusual with the *Epeiridae*, as similar conditions have been recorded in the widely separated genera *Argiope* Audouin, *Arachnura* Vinson, *Nephila* Leach, and *Gasteracantha* Sundevall.

Belonging to the same sub-family as *Celaenia* is *Dolophones elfordi*, sp. nov. Sixteen species of this genus have been recorded in Australia previously. These spiders are noted for their broad and flattened abdomen, and have a somewhat superficial resemblance to the *Gasteracanthae*. The abdomen is not, however, armed with spines, and the labium is longer and more pointed than that of other Epeirids.

With the description of *Rebilus swarbrecki*, sp. nov., the range of the genus is extended into Victoria. Four species have previously been recorded in Australia, namely: *R. lugubris* L. Koch, from Queensland and New South Wales; *R. diversa* L. Koch, from Bowen, Nth. Queensland; *R. praesignis* L. Koch, from Peak Downs, Queensland; and *R. castaneus* Simon, from Western Australia. The remarkable feature of these spiders is the shape of the median spinnerets, and in this respect *Rebilus* is closely allied to the Western Australian genus *Corimaethes* Simon.

The type-specimens, and the allotype of *Celaenia excavata* L. Koch, are in the collection of one of the authors (R. A. D.). Acknowledgements are made to Dr. V. V. Hickman, of Tasmania, and to Messrs. F. G. Elford, L. S. G. Butler, and Eyre Swarbreck, of Melbourne, for their help and encouragement.

Order ARANEAE.

Sub-order DIPNEUMONOMORPHAE.

Branch TRIONYCHAE.

Family EPEIRIDAE.

Sub-family EPEIRINAE.

Genus *Celaenia* Thorell, 1868.

CELAENIA EXCAVATA L. Koch

Male		mm.
Total Length	.. .. .	2.67
Length of Cephalothorax	.. .. .	1.45
Width of Cephalothorax	.. .. .	1.24

Length of Abdomen	..	..	..	..	1.51
Width of Abdomen	..	..	..	..	2.03
Height of Abdomen	..	..	..	..	1.64

	Femur.	Patella.	Tibia.	Meta-tarsus.	Tarsus.	Total.
Leg i ..	1.72	0.71	0.98	0.50	0.36	4.27 mm.
ii ..	1.72	0.71	0.98	0.50	0.36	4.27 mm.
iii ..	0.93	0.31	0.46	0.36	0.33	2.39 mm.
iv ..	1.04	0.31	0.61	0.49	0.30	2.75 mm.
Palp ..	0.31	0.18	0.14	—	0.36	0.99 mm.

Carapace dark brown, with a few white squamose hairs scattered over the surface; marginal band yellowish. Chelicerae, maxillae, labium, sternum, and coxae, dark brown. Legs: dark brown; end half of tibiae yellowish; metatarsi yellowish, slightly darker at base, brownish at apex. Palpi lighter brown. Abdomen creamy-yellow, darker on anterior and posterior slopes; a square pattern of black spinules near the base; a mixture of smaller black spinules and white squamose hairs scattered sparsely over the surface. Spinnerets dark brown.

Carapace rounded, surface granular, broadest and highest between legs ii and iii, from where it slopes forward and narrows into a conical protuberance around which the median eyes are grouped. Clypeus concave, equal to approximately $3/9$ th of the diameter of A.M.E.

Eyes arranged in two recurved rows as in Figure 1. Ratio of eyes A.M.E. : A.L.E. : P.M.E. : P.L.E. = 27 : 18 : 20 : 17. The A.M.E. are separated from each other by $40/27$, from A.L.E. by $14/27$, and from P.M.E. by $14/27$ of their diameter. The P.M.E. are separated from each other by $23/10$, and from P.M.E. by $13/10$ of their diameter. The lateral eyes, placed on a common tubercle, are separated by $11/9$ of the diameter of A.L.E. The median ocular quadrangle is broader than long in the ratio 41 : 29, and broader in front than in rear in the ratio 41 : 39.

Chelicerae conical, granular, and with few hairs. Fang short. Mouth parts and sternum also granular. Maxillae oblong, parallel, base narrowed. Labium almost semi-circular, broader, at base, than long in the ratio 6 : 5. Sternum oval, ending in a point between the fourth coxae, longer than broad in the ratio 3 : 2.

Legs 1 = 2, 4, 3; sparsely clothed with bristle-like setae, dorsal surface of femorae, patellae, tibiae, and metatarsi, with white squamose hairs, tarsi with black bristles dorsally. Tarsi with serrated bristles and three claws. Superior claws on legs i and ii unequal, the prolateral much the larger, both unarmed. Superior claws on legs iii and iv equal. Palpal organ as in Figure 2.

Spines — Except for femorae i, ii, and iii, and one bristle-spine on patella iii dorsally near apex, the legs are without spines. Femorae i, ii, and iii, have two longitudinal ventral lines of tooth-like spines which vary in size and are less numerous on femora iii. Femora iv is unarmed.

Abdomen broad, tapering to front and rear, truncate in front, elevated. Spinnerets rosette-shaped, median pair hidden, terminal joints of superior and inferior pairs dome-shaped.

Locality: Carnegie, Victoria. A single male specimen collected on 4th February, 1946, from near a female which had been kept under observation for several months. The active movements of the male attracted attention, but unfortunately any mating that may have occurred was not witnessed. The female had a total length of 13.7 mm.

Genus *Dolophones* Walckenaer, 1837.*DOLOPHONES ELFORDI*, sp. nov.

Female

mm.

Total Length	..	..	..	..	..	2.63
Length of Cephalothorax	..	..	..	..	..	3.72
Width of Cephalothorax	..	..	..	..	..	4.55
Length of Abdomen	..	..	..	..	..	6.27
Width of Abdomen	..	..	..	..	..	11.59

	Femur.	Patella.	Tibia.	Meta- tarsus.	Tarsus.	Total.
Leg i	3.47	1.81	2.77	2.52	1.01	11.58 mm.
ii	3.47	1.81	2.77	2.64	1.01	11.70 mm.
iii	2.99	1.44	1.69	1.63	1.06	8.81 mm.
iv	4.25	1.99	2.44	3.54	1.20	13.42 mm.
Palp	1.27	0.69	0.74	—	1.25	3.95 mm.

Carapace yellowish-brown, sparsely covered with light brown and a few dark brown hairs, eyes enclosed by patches of dark brown. Chelicerae yellowish. Maxillae and labium yellowish at base, cream at apex. Sternum and coxae yellowish-red, provided with a few fine whitish hairs. Legs yellowish; femorae ii, iii, and iv, yellowish-red, fading to yellowish at apex; metatarsus iv with a black apical ventral patch; tarsi yellowish-red at apex, with a black median ventral patch. Palpi yellowish with darker patches. Abdomen above fawn with greenish-grey markings; ventral surface dark grey, from epigastric furrow to base of abdomen white. The colouring of the dorsal surface turns underneath and forms a margin around the ventral surface. Spinnerets brown.

Carapace broadest at rear, gradually narrowing in front. Cephalic part low, with a median longitudinal groove extending to the base of the ocular tubercle; cephalic striations moderately distinct. Thoracic part with three longitudinal grooves and two small round depressions. Clypeus equal to approximately 5/4 of the diameter of A.M.E.

Eyes arranged in two rows as in Figure 3. Anterior row procurved from in front, recurved from above. Posterior row procurved. Ratio of eyes A.M.E. : A.L.E. : P.M.E. : P.L.E. = 12 : 8 : 16 : 8. The A.M.E. are separated from each other by 13/12, from A.L.E. by 40/12, and from P.M.E. by 17/12 of their diameter. The P.M.E. are separated from each other by 42/16, and from P.L.E. by 33/16 of their diameter. The lateral eyes, placed on a common tubercle, are separated by 1/8 of the diameter of A.L.E. The median eyes are grouped on a low tubercle, the median ocular quadrangle being broader than long in the ratio 67 : 40, and broader in rear than in front in the ratio 67 : 37.

Chelicerae strong, stout, with lateral condyles. Promargin of furrow with three unequal teeth, of which the one furthest from the base of the fang is much the largest, and the one nearest the base is the smallest, the median tooth being placed in advance of the other two. Retromargin with three teeth, of which the one furthest from base of fang is much the largest.

Maxillae somewhat oval in shape, provided with apical scopulae. Labium longer than broad in the ratio 7 : 6, apex pointed.

Sternum subround, longer than broad in the ratio 71 : 67, ending posteriorly in a double point between the well-separated fourth coxae. A medium longitudinal ridge, increasing in height anteriorly, runs from

the middle to the anterior margin. In front of each coxa is a low tubercle.

Legs 4, 2, 1, 3; provided with stiff, almost spinelike bristles. Patellae, tibiae, and metatarsi, flattened dorsally. Tarsi with serrated bristles and three claws. Superior claws robust, equal, and similar, each provided with about nine teeth, of which the median teeth are a little longer than the basal and the apical. Palpi short, provided with stiff bristles. Patellae and tibiae flattened dorsally. The single tarsal claw has about six long teeth.

Spines on legs and palpi arranged as follows: First leg—Femur: dorsal 2 near apex, prolateral 1-1, elsewhere 0. Patella: prolateral 1-1-1, retrolateral 1-1-1, elsewhere 0. Tibia: dorsal 0, prolateral 1-1-1-1-1, retrolateral 1-1-1-1, ventral 2-2-2-2-2. Metatarsus: dorsal 0, prolateral 1-1-1-1-2, retrolateral 2-1-1-2-1, ventral 4-2-2-2-2. Tarsus: 0. Second leg—Femur and patella as in leg 1. Tibia: dorsal 0, prolateral 1-1-1-1, retrolateral 1-1-1-1, ventral 2-2-2-2. Metatarsus and tarsus as in leg 1. Third leg—Femur: dorsal 2 near apex, prolateral 1 near apex, elsewhere 0. Patella: prolateral 1-1-1, retrolateral 1 near apex, elsewhere 0. Tibia: dorsal 0, prolateral 1-1-1, retrolateral 1, ventral 2-1-1-2. Metatarsus: dorsal 0, prolateral 1-1-1-2, retrolateral 1-1, ventral 2-2-2-2. Tarsus: 0. Fourth leg—Femur: dorsal 1-1, elsewhere 0. Patella: prolateral 1 near apex, retrolateral 1 near apex, elsewhere 0. Tibia: dorsal 0, prolateral 1-1-1-1, retrolateral 1-1-1-1, ventral 2-1-1-2. Metatarsus: dorsal 0, prolateral 1-1-1-1-2, retrolateral 1-1-1-1, ventral 2-1-1-1-2. Tarsus: 0. Palp—Femur: 0. Patella: 0. Tibia: dorsal 0, prolateral 1-2, retrolateral 1-1, ventral 1 at apex. Tarsus: dorsal 1-2, prolateral 2-2-2, retrolateral 1-1, ventral 0.

Abdomen somewhat triangular in shape, with the apex of the triangle to the rear. Dorsal surface slightly convex, pleated and folded to the rear, ornamented with a number of ocellated patches, four of which form a median trapezium narrowest in front; eight others form a transverse row along the base, and, from the outermost of these latter, two lateral rows run along each side and merge into the folding towards the rear of the abdomen. Ventral surface slightly concave, corrugated. Epigynum has the form shown in Figure 4. Spinnerets rosette-shaped, terminal joint of inferior pair dome-shaped, posterior spinnerets with longer and tapering terminal joint.

Locality: Wooragee, via Beechworth, Victoria. A single female "found on eucalypts" by a pupil (Frances McIntosh) of State School 653, and forwarded to Mr. F. G. Elford, B.Sc., of the Teachers' College, Melbourne; February, 1946.

Branch DIONYCHAE.

Family GNAPHOSIDAE.

Sub-family HEMICLOEINAE.

Genus *Rebilus* Simon, 1880.

REBILUS SWARRECKI, sp. nov.

Female	mm.
Total Length	20.6
Length of Cephalothorax	8.5
Width of Cephalothorax	8.0
Length of Abdomen	12.1
Width of Abdomen	7.5

	Femur.	Patella.	Tibia.	Meta- tarsus.	Tarsus.	Total.
Leg i ..	9.1	5.0	7.1	5.4	1.9	28.5 mm.
ii ..	11.0	5.6	10.2	7.3	1.9	36.0 mm.
iii ..	8.8	3.3	6.0	4.8	1.8	24.7 mm.
iv ..	9.1	3.1	5.9	4.9	1.8	24.8 mm.
Palp ..	2.4	1.3	1.2	—	2.0	6.9 mm.

Carapace and legs brown, clothed with grey hairs interspersed with a few small black bristles. Marginal band and ocular area almost black. Chelicerae black. Maxillae and labium brown, the former cream towards apex. Sternum and coxae yellow-brown. Abdomen greyish, fairly densely covered with grey hairs. Lung-covers cream. Epigynum dark brown.

Carapace very flat, posterior margin concave. Dorsal grooves distinct. Thoracic groove longitudinal. Cephalic part also with a short longitudinal groove. Clypeus narrow, being equal to approximately $2/5$ of the diameter of A.M.E. A few bristles are present before the A.M.E. and near the A.L.E.

Eyes arranged in two rows as in Figure 5. Anterior row slightly procurved. Posterior row recurved, broader than anterior row in the ratio 265 : 203. Ratio of eyes A.M.E. : A.L.E. : P.M.E. : P.L.E. = 21 : 28 : 13 : 23. The A.M.E. are separated from each other by $21/21$, from A.L.E. by $43/21$, and from P.M.E. by $165/210$ of their diameter. The P.M.E. are separated from each other by $61/13$, and from P.L.E. by $71/13$ of their diameter. The lateral eyes, placed on a common protuberance, are separated by $30/28$ of the diameter of A.L.E. The median ocular quadrangle is broader than long in the ratio 87 : 45, and broader in rear than in front in the ratio 87 : 63.

Chelicerae projecting forward, furnished in front with black bristles. Lateral condyles present. Promargin of furrow with scopula and three subequal teeth. Retromargin with two teeth.

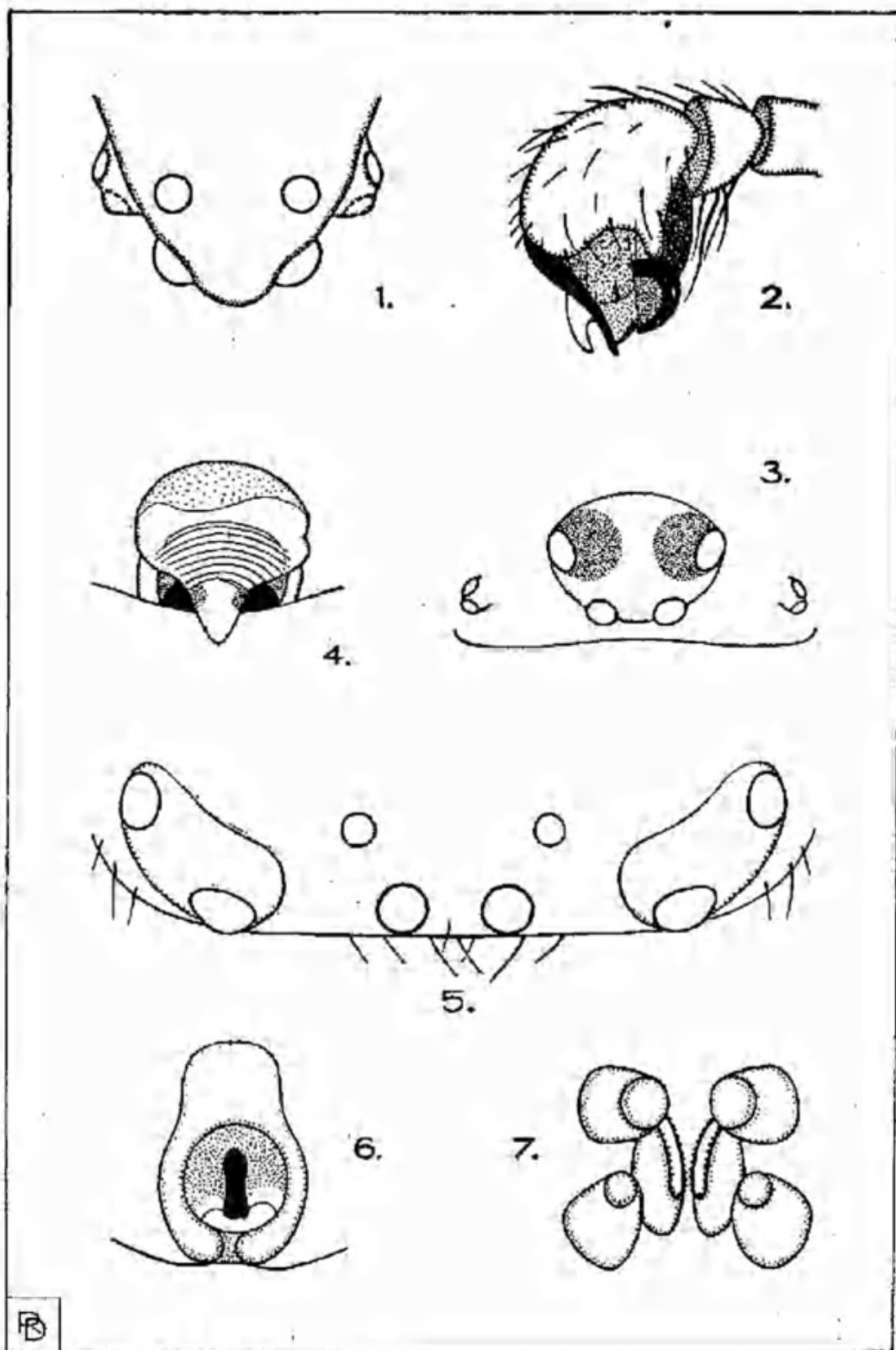
Maxillae constricted in middle, slightly converging over labium, with apical scopulae. Labium longer than broad in the ratio 13 : 11, excavated at base, anterior margin truncate and reaching to about half the length of the maxillae, posterior margin convex.

Sternum somewhat oval in shape, longer than broad in the ratio 3 : 2, ending in an obtuse point between the fourth coxae, in front slightly attenuated and truncate.

Legs 2, 1, 4, 3, laterigrade, sparsely clothed with bristle-like setae. Femorae swollen at base, tapering to apex. Trichobothria present on tibiae, metatarsi, and tarsi. All tarsi, and metatarsi i and ii, with ventral scopulae. Tarsi with claw-tufts and two claws, the claws without teeth. The single palpal claw is also without teeth.

Spines on legs and palpi arranged as follows: First leg—Femur : 0. Patella : 0. Tibia : ventral 2-1-1-2-2 (on left leg 1-1-1-2-2 only), elsewhere 0. Metatarsus : ventral 2-1, elsewhere 0. Tarsus : 0. Second leg—Femur : 0. Patella : 0. Tibia : ventral 2-1-2-2, elsewhere 0. Metatarsus : ventral 2-1, elsewhere 0. Tarsus : 0. Third and fourth legs without spines. Palpi with a few long bristles on tibiae and tarsi, but without spines.

Abdomen very flat, tapering to rear, where it is rounded. Epigynum has the form shown in Figure 6. Inferior spinnerets are separated by approximately $5/3$ of their diameter. Median spinnerets, as in Figure 7, with longitudinal truncature provided with two rows of spinules.



Celaenia excavata L. Koch (Male):

1. Dorsal view of eyes. (The A.L.E. are not visible from above, but their positions are indicated by broken lines). 2. Prolateral view of right palpus.

Dolophones elfordi sp. nov. (Female):

3. Dorso-anterior view of eyes. 4. Epigynum.

Rebilus swarbrecki sp. nov. (Female):

5. Dorsal view of eyes. 6. Epigynum. 7. Spinnerets.

Locality: Mount Buffalo, Victoria. A single female collected by Mr. Eyre Swarbrick; January, 1946.

REFERENCES.

- Koch, L., 1871-1889. — *Die Arachniden Australiens*.
 Rainbow, W. J., 1907-1909. — *Records of the Australian Museum* (vi, 5, p. 336, and vii, 4, pp. 213-226).
 Simon, E., 1892. — *Histoire Naturelle des Araignées* (i).
 ——— 1908. — *Die Fauna Südwest-Australiens* (i, pp. 382-385).

FORESTS AND WATER SUPPLY

The intimate relation of forests to water supply is forcefully shown in an illustrated leaflet just issued by the "Save the Forests" Campaign. The writer of the leaflet, Mr. L. R. East, Chairman of the State Rivers and Water Supply Commission, gives some surprising figures regarding the value of primary production made possible by water conservation work over the past fifty years. The expenditure in the construction of reservoirs and channels for the irrigation districts for this period has been approximately £15,000,000. This large sum, however, is almost equalled in one year's production from irrigation areas. In the year 1943-44, the value of primary products in the natural state from irrigation districts reached a total of £11,351,000, while these products in the manufactured state increased substantially in value.

Mr. East is scathing in his criticism of those who, through thoughtlessness or selfishness, jeopardise the lives of their neighbours and the natural resources of the State.

WHEN DO SNIPE LEAVE VICTORIA?

In a discussion on this question recently it was agreed that most of the birds have left for Asia by the end of February, but one man, a country-dweller, said that he once saw two jack-snipe on April 3. That was in a stubble paddock, which had in places become water-logged after heavy rain. He was fortunate enough to bag both birds, which were in excellent condition, strong flyers, and about the largest of the species he had seen.

Speaking of the movements of snipe in Mornington Peninsula, the old-time game-shooter, H. W. Wheelwright, said that the birds left there in February or the beginning of March, while A. J. Campbell mentions March 12 as his latest record for the exodus. It is worth noting that the eggs in his collection were got towards the end of April on the slopes of Fujiyama, and it is unlikely that the birds, worn out by the long flight from Southern Australia to Japan, would begin laying immediately after their return.

AWARD OF GOLD MEDAL FOR HORTICULTURE.

Congratulations of the Club are extended to Mr. Noel Lothian, a member now resident in New Zealand. At the recent Dominion examination for National Diploma of Horticulture, Mr. Lothian gained highest marks and earned the coveted Cockayne Gold Medal. His first important contribution on the *Wahlenbergia* species ("blue-bells") of Australasia is very shortly to be published by the Linnean Society of N.S.W., and represents years of monographical research into this difficult genus, both here and on the Continent.



Dunn, A P and Dunn, R A. 1946. "Studies in Australian spiders." *The Victorian Naturalist* 63, 87–93.

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