

THE WOLF SPIDERS OF AUSTRALIA (ARANEAE:
LYCOSIDAE): 13. THE GENUS *TROCHOSA*

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ABSTRACT

The Australian species of the genus *Trochosa* — *T. oraria*, *T. tristicula tristicula*, *T. tristicula phegeia*, *T. expolita expolita*, *T. expolita impedita*, *T. martensii*, *T. exculta*, *T. candicans*, *T. alboguttulata* and *T. properipes* — are redescribed. Two new species *T. glarea* and *T. wundurra* are described.

The subfamily Lycosinae has been subdivided into many genera (Roewer 1961), not all of which have been accepted by modern arachnologists. The genus *Trochosa* is one that is generally accepted and although variously defined, appears to be a natural grouping of species. The Australian species described below fall into *Trochosa* when using most of the available keys to the genera of the family Lycosidae.

Collectors names have been abbreviated where a large amount of material has been donated (see McKay 1973 for additional abbreviations): Mr G. B. and Mrs S. R. Monteith = GBSRM; Mr R. Raven = RR; Dr Valerie Davies = VED.

Genus *Trochosa* C. L. Koch 1848

Trochosa C. L. Koch, 1848, pp. 95-6; type species by original designation *Aranea ruricola* de Geer 1778.

Trochosina (subgen.) Simon, 1885, p. 10; type species *Trochosa terricola* Thorell 1856.

Allotrochosina Roewer, 1954, p. 213; type species *Lycosa maunganuiensis* Berland 1925 (misspelt *mananganuiensis* by Roewer).

Diahogna Roewer, 1954, p. 239; type species *Lycosa martensii* Karsch 1878.

Trochosomma Roewer, 1954, p. 304; type species *Trochosa annulipes* L. Koch 1875.

DIAGNOSIS: Small to moderate sized spiders; legs in order of decreasing length 4, 1, 2, 3; tibia of first leg with no more than 3 pairs of ventral spines (apical ventral spines usually present); carapace frequently with a pale median longitudinal stripe including a long dark mark on each side in front of the fovea; first row of eyes gently procurved, as long as or longer than the second

row (rarely shorter); AM eyes larger than AL eyes; retromarginal cheliceral teeth usually 3 on each side (occasionally 2 or 4); fourth tibia with the proximal dorsal spine thinner and more drawn out than the distal spine, frequently reduced to a fine bristle, or in some Australian species the proximal dorsal spine may be absent; first tarsus with or without a long dorsobasal bristle.

DISCUSSION: The genus *Trochosa* was proposed by C. L. Koch in 1848. Simon (1876) considered *Trochosa* and *Arctosa* C. L. Koch 1848 to be synonyms of *Lycosa* Latreille 1804, but in 1885 Simon erected *Trochosina* as a group of *Lycosa* that had *Trochosa* characteristics but only 2 retromarginal cheliceral teeth. In 1937 Simon abandoned *Trochosina* but retained *Trochosa* as a group or subgenus. Dahl (1908) employed *Trochosa* as a full genus but many authors continued to follow Simon. Bonnet (1951) recognised 15 genera including *Trochosa* but excluded *Trochosina*. Roewer (1954) subdivided the subfamily Lycosinae into 88 genera, half of which were listed as new, and later (1959, 1960) provided a diagnosis for his genera and described an additional 10 genera to make a total of 93 genera recognised in his generic revision of the subfamily. Guy (1966) reduced 91 of the genera used by Roewer to 37 genera and 23 subgenera; the genus *Trochosa* was listed with two subgenera (*Allohogna* Roewer 1954, and *Mimohogna* Roewer 1954) whilst four genera were relegated to the synonymy of *Trochosa* (*Trochosina* Simon, *Allotrochosina* Roewer, *Diahogna* Roewer, *Trochosula* Roewer). Fuhn and Niculescu-Burlacu (1971) recognised *Trochosa* but placed

Allohogna and *Mimohogna* into the synonymy of *Lycosa*. From published descriptions of the type species of *Allohogna* and *Mimohogna* it seems clear that these genera are synonyms of *Lycosa*. *Allotrochosina* is regarded by me to be a synonym of *Trochosa* as the type species *Lycosa maunganuiensis* was originally assigned to 'the group *Lycosa terricola* (subgenus *Trochosina* of Simon)' by Berland (1925). *Trochosula* is based on *Lycosa conspersa* L. Koch 1882, a species placed in the genus *Alopecosa* by Bonnet (1955, p. 241); there is also *Trochosa conspersa* (Thorell 1877) listed by Bonnet (1959, p. 4710). I have followed Bonnet in referring *Trochosula* to the synonymy of *Alopecosa*. The genus *Diahogna* Roewer 1954, is here regarded as a synonym of *Trochosa* following the examination of the holotype of the type species *Lycosa martensii* Karsch 1878. *Arctosomma* Roewer 1954, is possibly another generic synonym of *Trochosa* as are the genera *Mustelicosa* Roewer 1954, and *Piratosia* Roewer 1954, but their type species have not yet been examined by me. *Varacosa* Chamberlain and Ivie 1942, was proposed as a subgenus 'for those species of *Trochosa* wherein the cross-piece of the epigynum has the ends curved far forward'; the type species *Trochosa avara* Keyserling 1876, is now regarded as a *Lycosa* by Bonnet (1959, p. 4699) and most American authors. *Dolocosa* Roewer 1960, is possibly a valid genus as the type species *Lycosa (Trochosa) dolosa* Cambridge 1873, has 5 pairs of ventral spines on the tibia of the first leg and numerous spines on other leg segments (Roewer 1960, pp. 935-6, figs. 519, a, c). Bonnet (1959, p. 4702) regards *L. dolosa* as a *Trochosa*, and Guy (1966) considers *Dolocosa* to be a synonym of *Leaena* Simon 1885. *Lycosa furcillata* L. Koch 1867, is not a *Trochosa* as listed by Bonnet (1959), as the first row of eyes is narrower than the second (McKay 1974, pp. 15-18), and the fourth tibia has a well developed dorsobasal spine.

KEY TO AUSTRALIAN SPECIES OF *TROCHOSA*

1. First row of eyes narrower than second row; dorsal surface of abdomen with a dark brown to black diamond-shaped mark bisected by a longitudinal pale stripe (Fig. 3B, C)2
- First row of eyes as broad as or broader than second row; dorsal surface of abdomen without a diamond-shaped mark bisected by a longitudinal pale stripe3

- 2(1). Median apophysis of male palpal organ distinctly hook-shaped
..... *Trochosa expolita impedita*
- Median apophysis of male palpal organ straight, gently curved, or bent, but not hook-shaped
..... *Trochosa expolita expolita*
- 3(1). Epigynum with a well developed chitinous hook on each antero-lateral surface (Fig. 4H) *Trochosa glarea* sp. nov.
- Epigynum without chitinous hooks on antero-lateral surfaces4
- 4(3). Two curved longitudinal white lines commence at the posterior margin of the carapace and extend forwards to join or almost join between the PL eyes where a short white line extends posteriorly from the inner margin (Fig. 4A)5
- No curved white lines on carapace6
- 5(4). White spots on the dorsal surface of the abdomen converge towards spinnerets; no median guide to epigynum (Fig. 4B, C) *Trochosa martensii*
- White spots on the dorsal surface of abdomen diverge posteriorly; a distinct median guide to epigynum (Fig. 4D) *Trochosa exculta*
- 6(4). First pair of legs longer than fourth pair(?) *Trochosa properipes*
- First pair of legs shorter than fourth pair7
- 7(6). Tibiae of first pair of legs with a pair of apical spines, but no median or basal spines on ventral surface; median guide of epigynum expanded into a plate-like structure (Fig. 4I)
..... *Trochosa wundurra* sp. nov.
- Tibiae of first pair of legs with one or two apical and median and basal pairs of spines normally present on ventral surface; median guide, if present, not expanded into a plate-like structure8
- 8(7). Ventral surface of abdomen white or very pale brown9
- Ventral surface of abdomen dark brown with darker markings normally present10
- 9(8). Femur of first leg with one anterior spine; anterior part of the first two tibiae with 1+1 spines; patellae of first and second legs without spines; coastal beaches of southwestern Western Australia (and South Australia?)
..... *Trochosa oraria*

Femur of first leg with two anterior spines; anterior part of the first two tibiae with 1+1+1 spines; patellae of first and second legs with an anterior spine; Shelleys Flats near Goulburn, and coastal beaches, New South Wales .

..... *Trochosa candicans*

- 10(8). Epigynum with lateral arms expanded, generally without a well developed median guide except between the lateral posterior extremities (Fig. 2A-B, D, J)

..... 11

Epigynum without expanded lateral arms, and with a well developed median guide (Fig. 2I, 4F) *Trochosa alboguttulata*

- 11(10). Anterior inner margin of epigynum without well developed cusps; apical spermathecae of female with a curved fertilization tube on the ventral surface (Fig. 2Q); median apophysis of male palpal organ with a spine on the concave side (Fig. 2C, F-G); southwestern Western Australia

..... *Trochosa tristicula phegeia*

Anterior inner margin of epigynum with two well developed cusps; apical spermathecae with a short fertilization tube on the ventral surface (Fig. 2N-P); median apophysis of male palpal organ without a spine on the concave side (Fig. 2K-L); Queensland and New South Wales

..... *Trochosa tristicula tristicula*

Trochosa oraria (L. Koch 1876)

(Fig. 1A-H)

Lycosa oraria L. Koch, 1876, pp. 883-6, pl. 76, figs. 2, 2a, 3, 3a, King George Sound, Western Australia; Simon, 1909, p. 188, Obelisk Hill, Fremantle, Western Australia; Rainbow, 1911, p. 270; Bonnet, 1957, p. 2656.

Lycosa sibyllina Simon, 1909, pp. 188-9, fig. 7, Albany Western Australia; Rainbow, 1911, p. 272; Bonnet, 1957, p. 2664; McKay, 1973, p. 379.

Crocodylosa oraria: Roewer, 1954, p. 238.

Hogna sibyllina: Roewer, 1954, p. 253.

Trochosomma oraria: Roewer, 1960, p. 847.

Ocyale oraria: McKay, 1973, p. 380.

WAM 71-1666-75; WAM 71-1697-709, WAM 71-1801; Fitzgerald River Inlet, 15.vii.1970, RJM, R. Prince, WAM 70-3800-14, WAM 71-642; Fremantle at North Mole, 12.ix.1970, RJM, JG, WAM 70-217; Garden Island, viii.1966, D. S. Adair, WAM 69-844; Geraldton, 5.vii.1971, RJM, WAM 71-1690-6; Guilderton near Moore River mouth, 12.xii.1971, RJM, WAM 71-1993; Lancelin Island, 6.vii.1966, Aquinas College, WAM 71-771-3; Rockingham, 19.v.1971, RJM, WAM 71-1685; Windy Harbour, 21.i.1971, G. W. Kendrick, WAM 72-251.

DESCRIPTION (After L. Koch 1876)

Female C.L. 5.0 mm: Carapace light yellow-brown with yellow hair; a broad white lateral band serrated on its inner margin; a triangular white spot on the foveae, with a straight white line running to the PM; an oblique white stripe on the border between the head and the thorax; the sides of the head tinged white. Mandibles red-brown with yellowish-white hair; maxillae yellow-brown, honey-yellow anteriorly; labium dark red-brown. Abdomen dirty yellow-brown with yellowish-white hair; a lance-shaped spot, anteriorly white, posteriorly yellow, and with a black border, runs from the anterior of the dorsal surface to the middle of the abdomen; on each side of this spot are three white spots in a longitudinal row; the posterior half of the dorsal surface has an area with a deeply serrated brown to black border which reaches to the middle of the lance-shaped spot, in the middle of this area is an indistinct, light, transverse band behind which are two pairs of white spots. Palpi and legs yellow-brown with wide dark rings at the basal half of the patellae, the tip of the tibiae, and the middle and tip of the metatarsi; remainder of legs with white hair.

Anterior row of eyes straight, and wider than the second row; AM larger than the AL, a radius apart, the same distance from the PM, but closer to the AL; PM about a radius apart, and over a diameter from the PL which are only slightly smaller.

Chelicerae with three promarginal and three retromarginal teeth.

Male C.L. 4.0 mm: Carapace dark brown with brown hair and with a grey-white marginal band deeply serrated on its inner margin; a yellowish longitudinal median stripe runs from the posterior slope to the posterior part of the head; sides of head grey-white with the ocular quadrangle yellowish-grey; mandibles light yellow-brown with yellow-white hair; maxillae and labium brownish-yellow, black to brown on the basal half; sternum yellowish-white. Abdomen grey-white above and below; a brown median field above, which is indented on the sides, and spreads from the base to

MATERIAL EXAMINED

Western Australia: Abrolhos, Gun Island, 6.viii.1971, RJM, WAM 71-1676-7; Post Office Island, 8.vii.1971, RJM, E. Little, WAM 71-1678-9, North Island, 13.vii.1971, RJM, WAM 71-1680-4; WAM 71-1802-6, WAM 71-1991-2, WAM 71-1994; Australind on estuary foreshore, 22.x.1969, RJM, R. W. George, WAM 71-360-2; Dongara, 5.vii.1971, RJM,

the commencement of the posterior slope where it tapers, has the posterior margin deeply cut, and the angles so formed are connected to a brown spot by an oblique brown line; in the middle of this

field is a grey-white longitudinal stripe of the same colour followed by a white spot on either side; spinnerets yellow-brown. Legs and palpi similar to those of the female.

TABLE 1: EYE DIAMETERS AND INTERSPACES OF SPECIES OF THE GENUS *TROCHOSA* CONVERTED TO PERCENT OF THE TOTAL WIDTH OF THE FIRST ROW OF EYES

Species	Regd No.	Sex	C.L.	AM	AL	PM	PL	AM-AM	AM-AL	PM-PM	AM-PM	AL-PM
<i>T. oraria</i>	WAM 71-1991	♀ M	4.8	22	17	36	34	9	6	24	7	9
	WAM 71-1992	♂ M	4.4	24	16	37	33	10	6	22	6	8
	WAM 71-1993	♀ M	6.0	22	17	37	34	10	6	23	9	10
	WAM 69-884	♀ M	6.2	20	16	37	31	9	8	24	9	12
	WAM 71-1802	♀ M	5.2	24	17	38	31	11	7	22	8	11
<i>T. tristicula phegeia</i>	WAM 71-1571	♀ M	5.5	24	18	36	27	12	5	17	11	14
	WAM 71-1572	♀ M	5.8	26	22	32	26	10	4	19	8	9
	WAM 71-164	♀ M	4.5	22	16	32	27	5	6	18	11	14
	WAM 71-165	♂ M	3.2	25	17	35	33	6	5	14	10	14
	WAM 71-166	♀ M	5.3	24	15	35	25	6	7	15	11	12
<i>T. tristicula tristicula</i>	W5786	♀ M	4.5	19	16	35	30	9	12	21	7	10
	W5786	♀ M	4.1	19	18	39	33	6	11	22	9	12
	W5786	♀ M	3.8	18	15	36	31	9	14	22	6	11
	W5786	♀ M	4.3	19	18	35	30	9	13	22	8	11
	W5786	♂ M	4.0	18	18	37	32	8	10	19	6	10
	W5786	♂ M	4.0	20	19	36	33	10	12	21	9	12
	W5786	♂ M	3.4	21	20	42	38	10	13	18	7	11
	W5786	♂ M	4.0	17	15	37	29	10	12	21	6	9
<i>T. expolita expolita</i>	SYNTYPE	♂ M	4.0	20	18	43	39	12	5	34	10	12
	W5732	♂ M	3.4	19	16	48	40	13	6	37	13	13
	S22	♀ M	2.4	17	15	50	41	13	7	37	15	15
<i>T. expolita impedita</i>	WAM 71-423	♀ M	3.8	19	22	46	38	11	4	36	13	11
	WAM 71-424	♀ M	4.0	18	21	40	36	13	3	36	12	9
	WAM 71-548	♀ M	4.5	18	18	42	34	15	3	35	13	10
	WAM 71-425	♂ M	4.7	19	21	43	36	14	5	36	17	15
	WAM 71-426	♂ M	4.0	19	22	47	39	11	5	38	14	14
	WAM 71-427	♂ M	3.9	19	19	43	32	14	3	35	14	14
	WAM 71-428	♂ M	4.5	17	21	41	37	12	3	37	16	12
	WAM 71-429	♂ M	4.3	18	18	45	37	11	5	37	17	14
<i>T. martensii</i>	N.M.	♀ M	6.3	20	17	29	26	10	6	29	20	19
	N.M.	♀ M	5.5	20	17	31	26	13	7	27	18	25
	N.M.	♀ M	5.6	20	16	30	26	13	6	32	16	24
<i>T. exculta</i>	LECTOTYPE	♀ M	7.2	22	17	30	26	12	6	30	18	20
<i>T. alboguttulata</i>	HOLOTYPE	♀ M	4.7	23	15	38	33	9	8	23	9	9
	S24	♀ M	3.5	25	16	33	31	11	9	22	11	6
	S24	♀ M	3.4	25	18	35	30	8	4	21	9	8
	S23	♀ M	4.4	25	20	40	35	6	4	17	8	7
<i>T. glarea</i>	HOLOTYPE	♀ M	3.5	24	17	36	32	10	5	19	7	6
<i>T. wundurra</i>	HOLOTYPE	♀ M	4.5	21	16	32	30	9	7	25	5	7

Anterior row of eyes barely wider than the second; the eyes and their interspaces otherwise similar to those of the female.

VARIATION: *Trochosa oraria* is quite variable in colour. Specimens taken on the white beach sands away from piles of dead seaweed may have the colour pattern as described by Koch, or may have the abdomen very pale cream with two inverted V-shaped dark marks anteriorly on the dorsal surface followed or separated by a light longitudinal stripe to about the middle of the abdomen where it is bordered on each side by a white spot preceded by a dark brown irregular mark; two or three short forwardly pointing oblique brown bars may follow or be broken into spots or blotches. Some specimens taken from banks of dry brown seaweed (mainly *Posidonia*) may be a very dark red-brown colour matching that of the seaweed, with a pale marginal band on the carapace and the abdomen marked above by a pale anterior longitudinal stripe reaching the middle of the abdomen with rows of white dots on either side, frequently followed more posteriorly by two large pale to white oval spots; the sides of the abdomen may be brown or pale-brown with scattered black-brown spots. Extreme examples of each colour form appear quite distinct but numerous intermediate colour patterns may be found where the beach is littered with separate heaps of rotting seaweed.

Eye measurements were recorded for 5 specimens; each measurement is given below in Table 1 as a percent of the total width of the first eye row.

Variation in the ventral spines of the tibia of the first legs was as follows: 2+2+2 both legs in 3 females, 5 males, 2+2+0 both legs in 2 females, 2+2+2 (LHS) 2+1+2 (RHS) in 1 male, 1+2+0 (LHS) 2+2+0 (RHS) in 1 female. Tibia 4 with the dorsobasal bristle absent in all specimens.

Variation in the shape of the epigynum is illustrated in Figure 1B, D, F and the internal genitalia of WAM 71-1991 and WAM 71-1993 is shown in Figure 1C, E. The male palpal organ is illustrated in unexpanded and partly expanded conditions in Figure 1G, H.

SIZE RANGE: Mature females C.L. 4.2 to 6.8 mm. Mature males C.L. 3.5 to 4.5 mm.

DIAGNOSIS: *Trochosa oraria* is characterised by the shape of the epigynum, the anterior row of eyes wider than the second row, and restricted habitat. *Lycosa sibyllina* was described from the

brown form of *Trochosa oraria* and is a junior synonym.

LIFE HISTORY

Mature females have been collected from May to January and are most common in July. Mature males have been found in July and October. Courting males were found at Dongara, Geraldton and the Abrolhos Islands during July. One female carrying young was collected at Guilderton in December.

The courtship behaviour of the male consists of palpal drumming, and a slow walk with the fore-legs held horizontally forwards, lifted in a slow alternate fashion, and vibrated fairly rapidly. Males from Dongara responded to the pheromone of females from North Island, Abrolhos, and a very dark brown male responded to the pheromone of a pale sand inhabiting female. One mature male from Green Head, north of Jurien Bay responded to a mature female from North Island, Abrolhos, and copulated with the female on 10 September 1971; this female was maintained in the laboratory until it died in late October.

HABITAT

Three specimens were collected on the damp sands of the estuary at Australind, all other specimens were taken from white beach sands or piles of rotting seaweed on the beach. *Trochosa oraria* shelters under seaweed or detritus on the beach or may shelter under the broad leaves of *Arctotheca nivea* on coastal sand dunes. Occasional specimens may be collected from limestone rubble on the beach.

BURROW

Simple retreats are built among strands of seaweed, or open burrows 4 mm in diameter and descending some 40 to 50 mm into the slope of coastal dunes may be constructed. This species wanders at night and may be located some distance from the burrow. When approached *Trochosa oraria* will withdraw the legs under the body and crouch low on the sand, or may retreat head first into the interspaces of the seaweed banks.

DISCUSSION

Roewer (1954) placed *T. oraria* into the genus *Crocodylosa* but after examining the type placed it in *Trochosomma*. Guy (1966) considers *Trochosomma* a synonym of *Crocodylosa* a subgenus of *Ocyale*. McKay (1973) placed *T. oraria* provisionally into *Ocyale*.

Ocyale and *Crocodilosa* have the length of the legs in decreasing order 4, 3, 1, 2, and are therefore quite distinct from *Trochosa* with the legs in order of decreasing length 4, 1, 2, 3. Bonnet (1959, p. 4701) retains *annulipes* in the genus *Trochosa* and from the description of this species given by Roewer (1960, pp. 852-3) I have no hesitation in relegating *Trochosomma* Roewer 1954 to the synonymy of *Trochosa*.

Roewer erected *Trochosomma* on the basis that the distance AM-AL is less than the distance AM-AM whereas in *Trochosa* AM-AL = AM-AM. In *Trochosa oraria* AM-AL is less than AM-AM but in *T. tristicula phegeia* the distance AM-AM may be more or less than the distance AM-AL, and this character is therefore not regarded as consistent within all species of *Trochosa*.

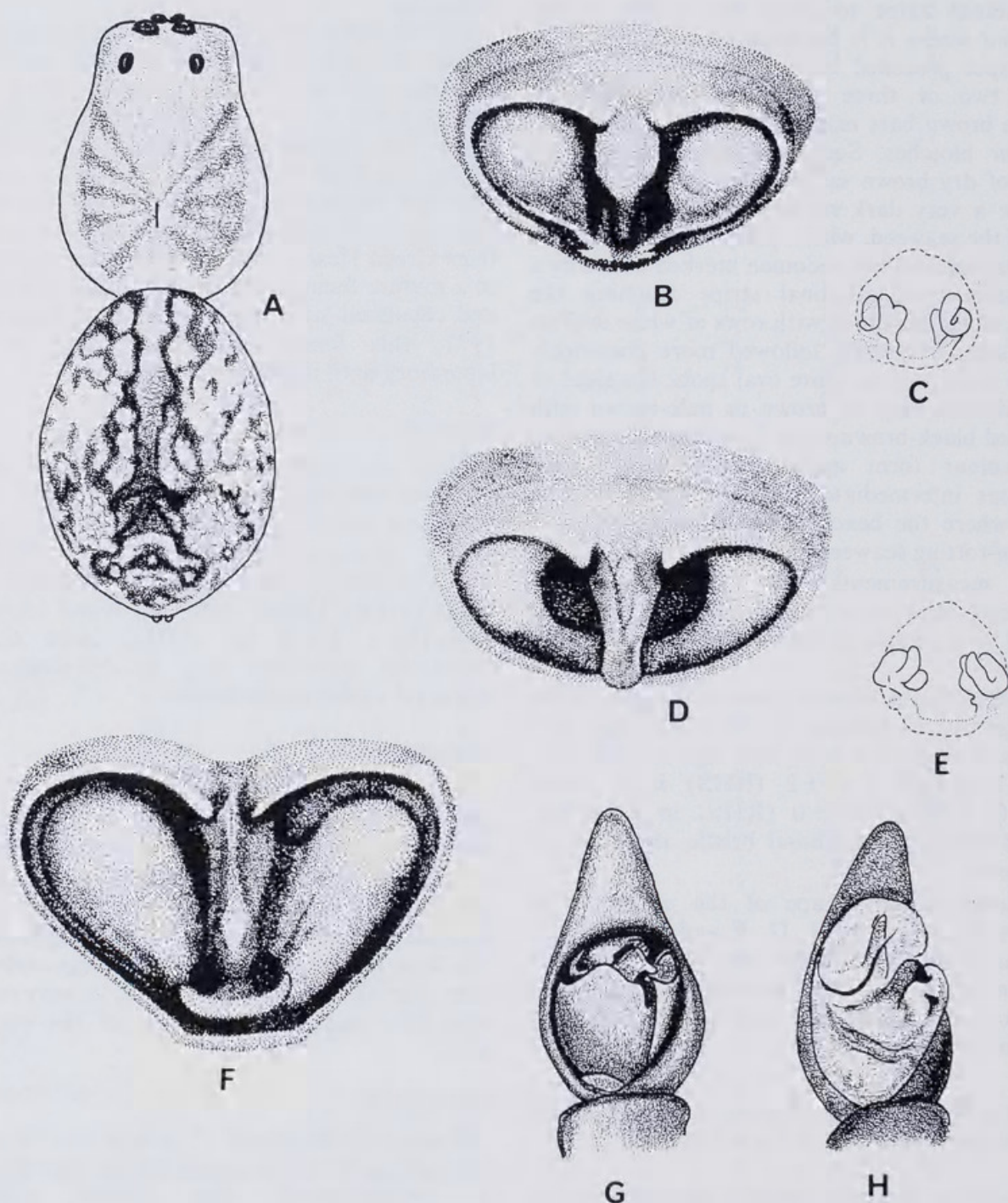


FIG. 1: *Trochosa oraria*. A, mature female; B, epigynum of WAM 70-217; C, internal genitalia of WAM 71-1991; D, epigynum of WAM 69-844; E, internal genitalia of WAM 71-1993; F, epigynum of WAM 72-251; G, male palpal organ of WAM 71-1922; H, male palpal organ of WAM 71-1922 expanded.

***Trochosa tristicula phegeia* (Simon 1909)**
(Fig. 2A–H, Q)

Lycosa phegeia Simon, 1909, pp.189–90, fig. 8, Cannington, Western Australia; Rainbow, 1911, p. 271; Bonnet, 1957, p. 2658; Rack, 1961, p. 38.
Tricostea phegeia: Roewer, 1954, p. 298; 1960, p. 867.
Tricca phegeia: McKay, 1973, p. 381.

MATERIAL EXAMINED

SYNTYPE: Western Australian Museum labelled 'Hambg. S.W. Austral. Exp. 1905. 123 Cannington. 28.ci' dried and pinned, now in spirit.

OTHER MATERIAL: Western Australia: Australind on estuary foreshore, 22.x.1969, RJM, R. W. George, WAM 71–375–6; Bibra Lake, 4.xi.1960, BYM, WAM 71–1572; Brentwood Swamp, 6.xii.1970, RJM, WAM 71–164–9; Chinocup Reserve, 6 km east of Pingrup, 11–17.ii.1972, HB, WAM 72–331; Churchman's Brook, 23.x.1952, BYM, WAM 71–1571; Deepdene, 15.xi.1969, M. and E. Archer, WAM 71–510, WAM 71–1570; Pemberton at Beedelup Falls, 20.ii.1969, RJM, WAM 71–443; Walpole, near Point Nuyts, 17.ii.1969, RJM, WAM 69–876.

DESCRIPTION (After Simon 1909)

Male. Carapace tawny-red with sparse ash-grey to white hair, with a narrow white marginal band; space between eyes black; mouth parts dark chestnut; sternum tawny-red. Abdomen dark, ash-grey in middle, with the sides covered by white hair, and anteriorly marked by a short brick-coloured longitudinal band with three or four rows of very small white dots laterally. Undersurface deep ash-grey to yellow with the middle a little darker and irregularly banded with white hair. Legs tawny-red, a little darker and more rust-coloured towards the extremities.

Anterior row of eyes slightly recurved, slightly wider than the second row; eyes almost equidistant, the AM at least a third larger than the AL; AL further from the edge of the clypeus than from the PM; PM about a radius apart.

Female. Larger in size. Anterior row of eyes almost straight. Epigynum as long as wide, bluntly rectangular with a dark yellow egg shaped depression.

VARIATION: Some specimens may have the carapace dark brown to almost black without a marginal band. The abdomen has a lighter longitudinal stripe on the anterior dorsal surface in all specimens; the venter is usually brownish with about three or four longitudinal darker stripes. Legs uniform brown in all specimens. Anterior row of eyes straight or slightly recurved, and wider than the second row. Chelicerae with

three to four promarginal teeth, the middle one largest; three retromarginal teeth about equal in size.

The eye measurements for WAM 71–1571, ♀ M, expressed in units are AM:AL:PM:PL = 13.5:10:20:15; distance AM–AM 7, AM–AL 3, AM–PM 6; AL–PM 8, PM–PM 9.3. Clypeus to AM 10. Width of the first eye row 56, width of second eye row 47. Eye diameters and interspaces given in Table 1, the first eye row wider than the second in ratio 72:60, 78:64, 63:51, 48:43.

Variation in the shape of the epigynum is illustrated (Fig. 2A, B, D). The internal genitalia is illustrated in Figure 2H. The shape of the median apophysis and embolic guide of the mature male is given in Figure 2C, E, F, G. The shape of the apical spermatheca from the side is given in Fig. 2Q.

SIZE RANGE: Mature females C.L. 2.7 and 5.8 mm. Mature males C.L. 2.5 to 3.2 mm.

DIAGNOSIS: First row of eyes wider than the second row; epigynum with expanded lateral arms, and the male palpal organ with a curved median apophysis bearing a spine on the concave side (Fig. 2C, F, G). Spermathecae of female with a curved fertilization tube situated on ventral surface.

LIFE HISTORY

Mature females have been collected during October to February, and mature males are common in December. Females with egg cocoons were captured at Bibra Lake in November, and at Walpole in February. This species is commonly associated with *Lycosa pullastra*, *Trochosa expolita impedita*, and occasionally *Trochosa oraria*.

HABITAT

Trochosa tristicula phegeia inhabits the damp or wet margins of swamps, lakes, streams and estuaries. One specimen was found at a freshwater seepage area on the beach at Walpole.

BURROW

A shallow burrow or retreat is excavated below stones or rotting vegetation. Most specimens are found wandering near grass or rushes.

DISCUSSION

Trochosa tristicula phegeia and *T. tristicula tristicula* are regarded as subspecies due to the similarity in coloration, eye pattern, epigynum and

male palpal organ. Both subspecies inhabit damp situations and are at present known from geographically isolated populations.

Both subspecies evidence variation in the shape of the epigynum and the male palpal organ, and some specimens of both populations lack the converging dark bars on the ventral surface of the abdomen. The male of the eastern Australian subspecies differs from Western Australian specimens in lacking a small spine on the concave side of the median apophysis. Females of both subspecies have the epigynum variable in shape. The western subspecies lacks a median guide in some females, and has a well developed curved fertilization tube on the ventral surface of the apical spermathecae.

Additional material is required, and a series of male palpal organs from both subspecies should be scanned by electron microscope. Cross-mating both subspecies may indicate the closeness of the relationship and determine whether behavioural or genetic isolating mechanisms have evolved.

***Trochosa tristicula tristicula* (L. Koch 1877)**
(Fig. 2J–P, 3A)

Lycosa tristicula L. Koch, 1877, pp. 892–93, pl. 77, figs. 2, 2a, Sydney, New South Wales; Rainbow, 1911, p. 273.

Trochosula tristicula: Roewer, 1954, p. 304; 1960, p. 859; 1961, p. 4.

Trochosa tristicula: McKay, 1973, p. 381.

MATERIAL EXAMINED

HOLOTYPE: Not examined; location unknown.

OTHER MATERIAL: Queensland: Amamoor Creek via Amamoor, 29.xi.1974, GBSRM, 5 ♂M 1 ♀M, QM W6890; Bunya Mountains, 1.vi.1975, GBSRM 1 ♂M, QM W5790, 30.iii.1975, GBSRM, 1 ♀M, QM W5792, 12.i.1975, GBSRM, 1 ♀M, QM W5802, 30.iii.1975, GBSRM, 1 ♀M 1 ♂M, QM W5807; Bunya Mountains at Saddletree Creek, 29.iii.1975, GBSRM, 1 ♀M, QM W5805; Bunya Mountains National Park near Daranbayan picnic grounds, 4.ix.1974, R. Raven, B. Jamieson, 4 ♀M 4 ♂M, QM W5786; Casy Creek via Imbil, 9.xi.1974, GBSRM, 5 ♂M, QM W5900, 31.xii.1974, GBSRM, 1 ♀M 4 ♂M, QM W5901, 27.iii.1975, GBSRM, 1 ♀M, QM W5990; Coeran Plateau via Traverston, 28.iii.1975, GBSRM, 1 ♂P, QM

W5902; Conondale at Bouloumba Creek, 29.xi.1974, GBSRM, 1 ♂M, QM W5933, 26.x.1974, GBSRM, 2 ♂M, QM W5936, 19.iv.1975, GBSRM, 1 ♂M, QM W5937, 23.viii.1975, GBSRM, 2 ♂M, QM W5938, 22.ii.1975, GBSRM, 3 ♀M 4 ♂M, QM W5939, 19.iv.1975, GBSRM, 1 ♀M, QM W5944; Cooloola–Teewah Creek, 13.vii.1973, R. Raven, 1 ♀M, QM W5784; Cunninghams Gap, 28.xii.1974, GBSRM, 1 ♂M, QM W5934; Dingo Creek via Traverston, 31.xii.1974, GBSRM, 1 ♀M 3 ♂M 1J, QM W5894, 27.iii.1975, GBSRM, 2 ♀M 1 ♂M 1J, QM W5895, 13.viii.1975, GBSRM, 1 ♂M, QM W5896, 9.xi.1974, GBSRM, 1 ♂M, QM W5898; Emuvale, at Bald Mountain, 17.xi.1974, GBSRM, 6 ♀M 7 ♂M, QM W5935; Gold Creek via Imbil, 31.xii.1974, GBSRM, 1 ♂M, QM W5889, 27.iii.1975, GBSRM, 5 ♀M 12 ♂M 1 ♀P 1 ♂P, QM W5891, 9.xi.1974, GBSRM, 3 ♀M 6 ♂M 1J, QM W5892, 16.vi.1975, GBSRM, 1 ♀M 2 ♂M 1 ♀P 1 ♂P, QM W5893, 23.viii.1975, GBSRM, 1 ♀M 1 ♂M, QM W5897; Granite Creek, Bulburin State Forest, 3.v.1975, GBSRM, 1 ♀M 2 ♂M 1 ♀P 1 ♂P 2J, QM W5881, 5.x.1974, GBSRM, 5 ♀M 2 ♂M 2 ♂P 5J, QM W5883, 29.xii.1974, GBSRM, 6 ♀M 3 ♂M 1 ♂P 6J, QM W5880, 3.v.1975, GBSRM, 1 ♀M 3 ♂M 2 ♀P 2J, QM W5885; Little Yabba Creek via Kenilworth, 27.iii.1975, GBSRM, 1 ♂M, QM W5798, 29.xii.1974, GBSRM, 1 ♀M 1 ♂M, QM W5799, 16.vi.1975, GBSRM, 1 ♀M, QM W5800; Mary Cairncross Park via Maleny, 16.vi.1975, GBSRM, 1 ♀M, QM W5791, 27.iii.1975, GBSRM, 1 ♀M, QM W5794, 9.xi.1974, GBSRM, 1 ♂M 2J, QM W5795, 27.iii.1975, GBSRM, 1 ♂M, QM W5797, 9.xi.1974, GBSRM, 1 ♀M 1 ♂M 3J, QM W5801, 9.xi.1974, GBSRM, 1 ♀M, QM W5806; Mount Cabinet via Jimna, 30.ii.1974, GBSRM, 1 ♂M, QM W5808; Mount Tenison Woods via Mount Glorious, 12.xi.1975, GBSRM, 1 ♂M, QM W5947; Numinbah Arch, Nerang Valley, 14.xii.1974 GBSRM, 1 ♂P, QM W5882; O'Reillys Guest House, Lamington, 11.iv.1976, GBSRM, 1 ♀M, QM W6891; Rathdowney at Philp Farm, Levers Plateau, 4.iii.1976, GBSRM, 1 ♀M 1 ♂M, QM W6892; Repeater Station, Springbrook, 13.x.1975, GBSRM, 1 ♀M, QM W5884; Rosen's Lookout, Beachmont, 14.xii.1974, GBSRM, 1 ♂M, QM W5899; The Palms, via Cooyar, 25.i.1976, GBSRM, 4 ♂M, QM W6895, 1 ♂M, QM W6898, 14.viii.1976, GBSRM, 1 ♂M, QM W6896, 1.v.1976, GBSRM, 1 ♂M, QM W6897, 17.x.1976, GBSRM, 2 ♂M, QM W6899; Tungi Creek, Jimna, 10.xi.1974, GBSRM, 1 ♂M, QM W5879; Water Park Creek, Corio Bay, 19.vii.1974, Littoral Society of Queensland, 1 ♂M, QM W5785; Wrattens Camp via Widgee, 29.xii.1974, GBSRM, 4 ♂M, QM W5985, 28.iii.1975, GBSRM, 5 ♀M 2 ♂M, QM W5986, 10.xi.1974, GBSRM, 1 ♂M, QM W5987, 2 ♀M 5 ♂M 1 ♂P, QM W5988. New South Wales: Brindle Creek,

FIG. 2: *Trochosa tristicula phegeia*. A, epigynum of a female from Deepdene Cliff, W.A.; B, epigynum of female from Brentwood, W.A.; C, F, G, median apophysis of males from Brentwood, W.A.; D, epigynum of female from Walpole, W.A.; E, embolus and embolic guide of male from Brentwood; H, internal genitalia of female from Churchman's Brook, W.A.; Q, lateral view of apical spermathecae of female from Brentwood, W.A.

Trochosa tristicula tristicula. J, epigynum of female from Bunya National Park, Qd.; K, median apophysis of male from Corio Bay, Qd.; L, median apophysis of male from Bunya Mountains, Qd.; M, internal genitalia; N–P, lateral view of apical spermathecae of 3 females from Queensland.

Trochosa alboguttulata. I, epigynum of female from Cooloola, Qd.

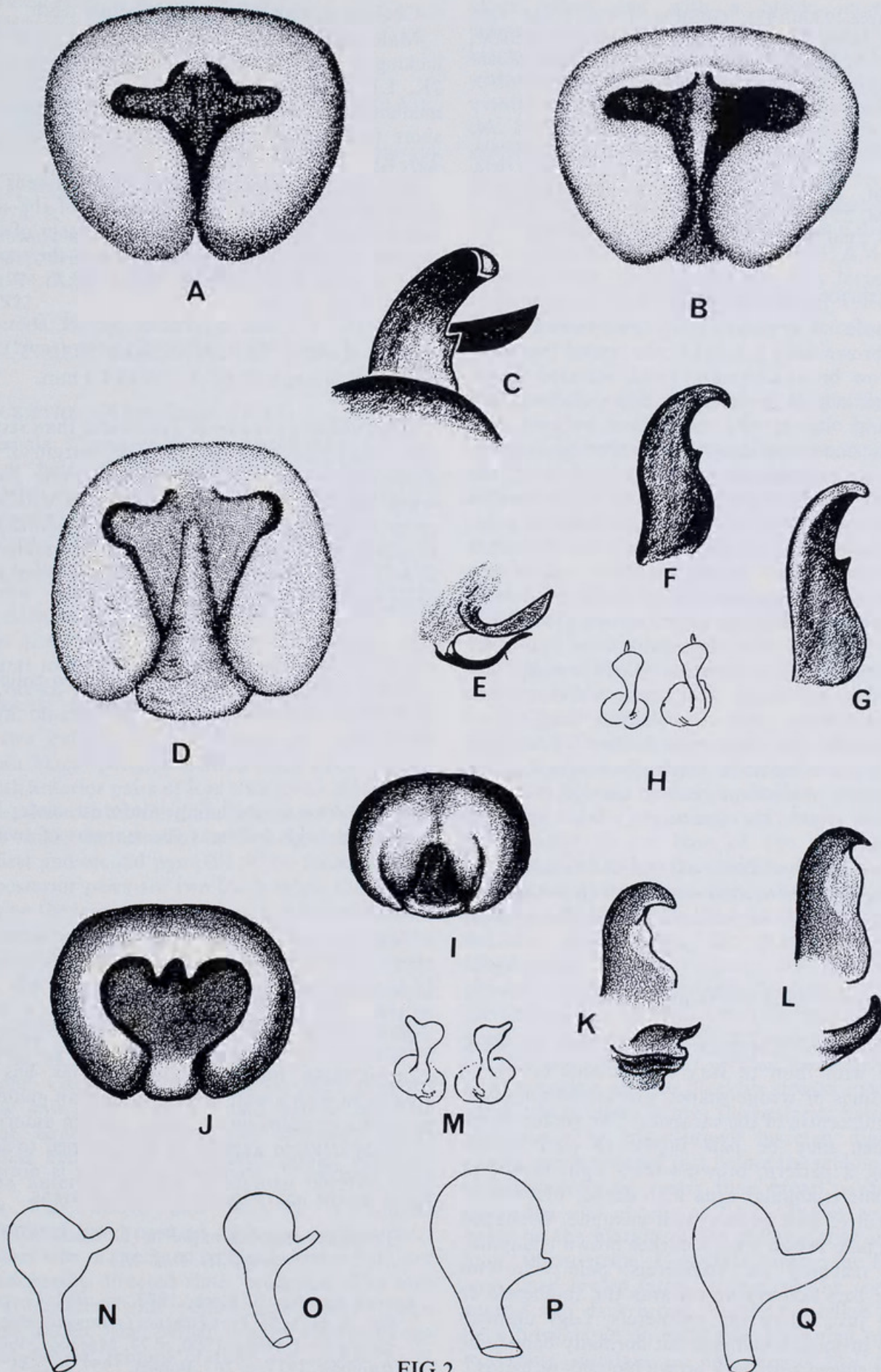


FIG 2

Wiangaree, 23.iii.1975, GBSRM, 1 ♀M 1 ♂M, QM W5989; Mount Nardi via Nimbin, 2.viii.1975, GBSRM, 1 ♀M 7 ♂M 1J, QM W5803, 1 ♂M, QM W5809; Mount Warning, 7.iii.1976, GBSRM, 1 ♀M, QM W6893, 7.xi.1976, GBSRM, 1 ♂M, QM W6894; Nightcap Range via Dunoon, 16.xi.1974, GBSRM, 1 ♀M 1 ♂M, QM W5903, 23.iii.1975, GBSRM, 1 ♀M, QM W5904; Tweed Lookout, Wiangaree State Forest, 16.ii.1974, GBSRM, 1 ♀M 2 ♂M, QM W5789, 27.xii.1974, GBSRM, 2 ♀M 5 ♂M 1J, QM W5793, 2 ♀M 1 ♂M, QM W5804, 23.iii.1975, GBSRM, 3 ♂M, QM W5796.

DESCRIPTION (after Koch 1877)

Female. Carapace dark red-brown with black-brown hair; parallel to the lateral margin is a narrow brownish-yellow band, serrated above; on either side of the lateral declivity are two short radiating striae; the boundary between the cephalic and thoracic part is indicated by a narrow stripe; a longitudinal stripe commences at the posterior declivity and stretches as far forward as the PL eyes, on each side of this stripe are two short longitudinal cephalic striae; paturon dark red-brown, lighter distally; maxillae and labium red-brown; sternum red-brown. Abdomen covered with yellow brown hair above and on the sides; a narrow lance-shaped brownish-yellow spot bordered with black at the anterior end dorsally; this spot does not reach the centre. Undersurface brownish-yellow with two blackish longitudinal stripes which converge towards the rear; between these a third blackish longitudinal stripe which commences immediately behind the epigynum but does not reach the spinnerets. Palpi and legs red-brown.

Anterior row of eyes recurved and considerably broader than the second row; eyes equidistant; the AM considerably larger than the AL; PM a radius apart.

Male: Similar in coloration to female.

VARIATION: Carapace light brown to dark brown with faint to very conspicuous brown or black lines or wedge-shaped marks radiating out from the centre of the carapace. The venter of the abdomen may be pale brown to dark brown without a pattern; brown with a light brown or very pale triangular area with darker blotches in the centre; pale brown with a vague W-shaped mark; pale brown with a darker brown triangular mark reaching the spinnerets; pale with two darker bars converging towards the spinnerets or fusing just before the spinnerets. Legs uniform brown in some specimens but normally banded or almost ringed with dark brown blotches or bands.

Chelicerae with three retromarginal teeth.

Male palpal organ with the median apophysis lacking a small spine on the concave side (Fig. 2K, L). Epigynum of female with a posterior median guide (Fig. 2J). Apical spermathecae with short fertilization tube on ventral surface (Fig. 2M-P).

The eye measurements of eight specimens are given below in Table 1 as a percent of the total width of the first eye row. Upper tangent of first eye row slightly procurved, wider than the second row in ratio 85:79, 80:77, 78:71, 85:78, 91:81, 80:73, 71:66, 83:79.

SIZE RANGE: Mature females C.L. 3.3 to 4.9 mm. Mature males C.L. 2.9 to 4.3 mm.

DIAGNOSIS: First row of eyes wider than second row; epigynum with the anterior margin of the depression with two small points; male palpal organ with a curved median apophysis without a spine on the concave side; legs normally banded or ringed with black-brown. Apical spermathecae with a small fertilization tube on the ventral or ventro-lateral surface.

LIFE HISTORY

Mature males and females have been collected throughout the year. The breeding season is unknown.

HABITAT

Forested areas, including rainforest, under logs, leaves and bark and near the margins of swamps and creeks.

BURROW

Unknown

DISCUSSION

See under *Trochosa tristicula phegeia*. This subspecies may be confused with *Trochosa alboguttulata* but the latter species has the epigynum with a well developed median guide and no points or cusps on the inner margin anteriorly. *T. alboguttulata* appears to be confined to sandy soils whereas *T. tristicula tristicula* is normally found on the heavy loams of forested areas.

Trochosa expolita expolita (L. Koch 1877) (Fig. 3B-F, J-M)

Lycosa expolita L. Koch, 1877, pp. 917-19, pl. 79 figs. 4, 4a, 5, 5a, Port Denison (=Bowen), Brisbane Queensland; Hogg, 1900, p. 77, Macedon, Victoria; Rainbow, 1911, p. 267; Bonnet, 1957, p. 2641.

Avicosa expolita: Roewer, 1954, p. 236.

Schizocosa expolita: McKay, 1973, p. 381.

MATERIAL EXAMINED

SYNTYPE: British Museum (N.H.), BM 1919.9.18. 337, ♂M, C.L. 4.0 mm, Brisbane.

OTHER MATERIAL: Queensland: Brisbane, Museum grounds, Bowen Hills, 10.vii.1975, RJM, 1 ♂M, QM W5732; Cabbage Tree Creek, Sandgate, from wasp nest, 1.i.1976, R. Raven, 33J, QM W5726; Emu Park via Rockhampton, 28.xi.1973, RJM, 1 ♀M, QM W5724; The Gap, Brisbane, 3.i.1973, RJM, 1 ♀M, QM W5734, 1.iv.1974, RJM 1 ♂M, QM S21, 28.iii.1974, 1 ♀M, QM S22.

Victoria: Eltham, xii.1923, S. Butler, 1 ♀M 1 ♂M, NM; Nunawading, 2.ii.1954, A. Neboiss, 1 ♀M 1J, NM.

DESCRIPTION (After Koch 1877)

Female: Carapace dark, covered with greyish-yellow hair; mandibles brown to black with yellowish hair; maxillae, labium and sternum dark red-brown, the latter with greyish-yellow hair. Abdomen basically black, with greyish-yellow hair, a lighter longitudinal stripe runs from the anterior base to the spinnerets and suddenly widens in its posterior half; on either side of this stripe posteriorly is a row of white dots. The femoral joint of the palpi and the femora of the legs brown-yellow, the remaining joints reddish-brown; on the femora of the third and fourth legs are two indistinct darker rings; the tips of all femora black; patellae shaded black above; tibiae of both anterior pairs of legs with three black spots below, those of the third and fourth pairs with two black rings; the terminal half of the metatarsi of the first and second pairs black, on these joints of the posterior pairs are two black rings; the lighter parts on the legs are covered with yellowish hair.

Anterior row of eyes procurved, not as broad as the second; AM slightly larger and further apart than the AL, almost adjoining the latter; AM about a diameter from the PM; PM over a diameter apart and almost twice this distance from the PL.

Male: Carapace dark, covered with greyish-yellow hair, and with a broad lighter coloured lateral band; mandibles and sternum black; maxillae and labium red-brown, lighter coloured at the anterior margin. Abdomen covered with black hair above and with a continuous longitudinal band covered with grey-yellow hair; on either side of the band in the posterior half, are two forwardly directed short branches; sides and ventral surface with yellow-brown hair. Palpi reddish-brown, the palpal organs darker. Legs reddish-brown; femora of the two anterior pairs

black below and with a black, interrupted longitudinal stripe above, and posteriorly with black longitudinal spots; femora of the third legs with three black rings; femora of the fourth legs with three black transverse spots anteriorly and one black terminal spot posteriorly; tibiae and metatarsi with black spots; the hair on the legs greyish-yellow.

Anterior row of eyes slightly procurved, with the eyes about equal in size; AM about a diameter apart and a little further from the PM; AM about a radius from the AL; PM not very large, only slightly larger than the PL, and about a diameter apart. Three promarginal and three retromarginal cheliceral teeth.

VARIATION: The carapace is frequently dark brown with a well defined broad pale brown to cream longitudinal median stripe that extends to the posterior margin where it tapers to a point; a well defined lateral band, pale brown to cream in colour, extends around the margin of the thoracic slopes of the carapace but does not join posteriorly; lateral slopes of the carapace with black to black-brown wedge-shaped marks terminating just before or projecting slightly into the lateral band. Abdomen above with the anterior half lighter than the posterior half and with a very distinct white, cream or yellowish lanceolate longitudinal stripe commencing at the anterior slope and reaching the middle of the abdomen where it tapers to a point or blends imperceptibly with the broader posterior median longitudinal pale bar that may arise anteriorly in the pale area to continue to the base of the spinnerets or commence at about the middle of the abdomen behind a very conspicuous black-brown somewhat diamond-shaped mark that is bisected by the anterior pale stripe; the posterior median longitudinal bar is outlined by black-brown pigment that may extend over the posterior half of the abdomen or be confined to the margins of the posterior pale bar where it forms a somewhat parallel black-brown bar with an irregular lateral edge breaking up into blackish streaks extending anteriorly or laterally over the posterior half of the abdomen. The black-brown bisected diamond-shaped mark situated just before the middle of the abdomen may be longer than broad or broader than long and appear as two triangles with the bases on the margin of the pale anterior median longitudinal stripe. Legs light brown; the femora with dark brown lateral stripes or the complete ventral half dark brown; anterior patellae with a dark brown spot on each side, becoming reduced to brown smudges on the lateral tips of the

posterior patellae; distal tips of femora with dorsolateral dark brown spots. The legs may have the above markings very distinct or quite faint. Undersurface of abdomen without markings or with a few small brown scattered spots laterally.

Anterior row of eyes slightly procurved (recurved in Koch 1877), shorter than the second row in ratio 46:61, 62:79, 49:58. Eye measurements for the syntype and two specimens are given below in Table 1 as a percent of the width of the first row of eyes.

Tibia of fourth leg with a dorsobasal bristle.

SIZE RANGE: Mature females C.L. 2.3 to 4.0 mm. Mature males C.L. 3.4 to 4.0 mm.

DIAGNOSIS: First row of eyes narrower than the second row; a distinctive epigynum; a dark brown to black diamond-shaped mark bisected by a longitudinal pale stripe on the dorsal surface of the abdomen. The median apophysis of the male is almost straight, gently curved or bent, but not hook shaped.

LIFE HISTORY

Mature females are found throughout the year and males are common from April to July. *T. expolita expolita* is active throughout the day and night.

HABITAT

Abundant on short grass, pastures and suburban lawns.

BURROW

A shallow retreat is constructed among grass roots.

DISCUSSION

See *Trochosa expolita impedita*.

Trochosa expolita impedita (Simon 1909) (Fig. 3G-I, N-O)

Lycosa impedita Simon, 1909, pp. 187-88, fig. 6, Gooseberry Hill (= Gooseberry Hill), Western Australia; Rainbow, 1911, p. 269; Bonnet, 1957, p. 2646; McKay, 1973, p. 379; 1974, pp. 10, 11, 12.

Allocosa impedita: Roewer, 1954, p. 206.

MATERIAL EXAMINED

HOLOTYPE: Not examined; location unknown.

OTHER MATERIAL: Western Australia: Australind at estuary foreshore, 22.x.1969, RJM, R. W. George, 1J, WAM 71-374; Bunbury Highway at Ludlow, 10.ix.1961, BYM, 1 ♀M, WAM 71-1565; City Beach

Primary School, 16.ix.1968, I. Eliot, 1 ♀M, WAM 69-857, 1 ♀M 2 ♂M 1 ♀P, WAM 69-858-61; Collie, 23.x.1961, BYM, 1 ♀M, WAM 71-1566; Pinjarra, 10.ix.1961, BYM, 1 ♀M 1J, WAM 71-1567-69; Rossmoyne, Canning River, RJM, ix.1968, 1 ♀M 4 ♀M, WAM 69-846-50, xi.1968, 2 ♂M 1J, WAM 69-862-64, 1 ♀M, WAM 69-866, 9.xi.1968, 1 ♀M, WAM 69-870, x.1969, 1 ♀M 1 ♂M, WAM 71-706-07, x.1968, 3 ♀M 2 ♂M 2 ♂P, WAM 71-99-105, viii.1970, 1 ♀M, WAM 71-131, ix.1970, 2 ♂M, WAM 71-141-42, x.1970, 1 ♀M 3 ♂M, WAM 71-147-50, 12.i.1971, 1 ♂M, WAM 71-259, 4.xi.1970, 1 ♀M, WAM 71-260, 7.i.1971, 2 ♂M, WAM 71-261-62, xi.1970, 4 ♀M 8 ♂M 1 ♀P 1 ♂P, WAM 71-423-36, 4.xi.1970, 1 ♀M, WAM 71-548, 25.x.1970, 1 ♀M, WAM 71-549.

South Australia: Waite Institute, Claremont, 22.ix.1975, R. Cook, 1 ♂M 1 ♀P, SAMARA535.

DESCRIPTION (After Simon 1909)

Female: Carapace black with a few white hairs towards the edge; a wide, golden, longitudinal, median band, pointed posteriorly; chelicerae dark chestnut with a few deep golden bristles; mouth parts and sternum black with a few black bristles and the layers at the top reddish-tinged.

Abdomen somewhat black above and covered with white hair; on the posterior half is a golden longitudinal band, rather narrow, and with a long point. Undersurface paler with a few white hairs, the belly with abundant golden hair, and irregular dark bands.

Legs deep yellowish-red, darker towards the extremities; femora with three black rings that are frequently broken; tibiae partly black-coloured and ringed.

Anterior row of eyes slightly curved forwards; AM not or barely larger than AL and are a little further from each other than from the AL; AL not much further from the edge of the clypeus than from the PM; PM about a diameter apart.

Epigynum twice as wide as long, semi-circular, and divided by a reddish, flat, wide, parallel-sided diaphragm; the epigynum is imprinted on both sides and is set apart by a thick slanting reddish edge.

Male: Similar to *T. expolita expolita*.

VARIATION: Similar to that of *Trochosa expolita expolita*; both sexes may have the legs uniformly coloured, and three converging dark bars may be present or absent on the ventral surface of the abdomen. Eye measurements were recorded for 8 specimens; each measurement is given below in Table 1 as a percent of the total width of the first eye row.

Variation in the shape of the epigynum is illustrated in Figure 3H-I, and the internal genitalia of WAM 71-423 is shown in Figure 3G.

The hook-like median apophysis and curved embolic guide of the male palpal organ of WAM 69-846 is illustrated in Figure 3O.

SIZE RANGE: Mature females C.L. 2.2 to 4.8 mm. Mature males C.L. 2.6 to 4.9 mm.

DIAGNOSIS: First row of eyes slightly narrower than the second row, a distinctive epigynum, and a dark brown to black diamond-shaped mark bisected by a longitudinal pale stripe on the dorsal surface of the abdomen. The median apophysis of the male palp is hook-shaped.

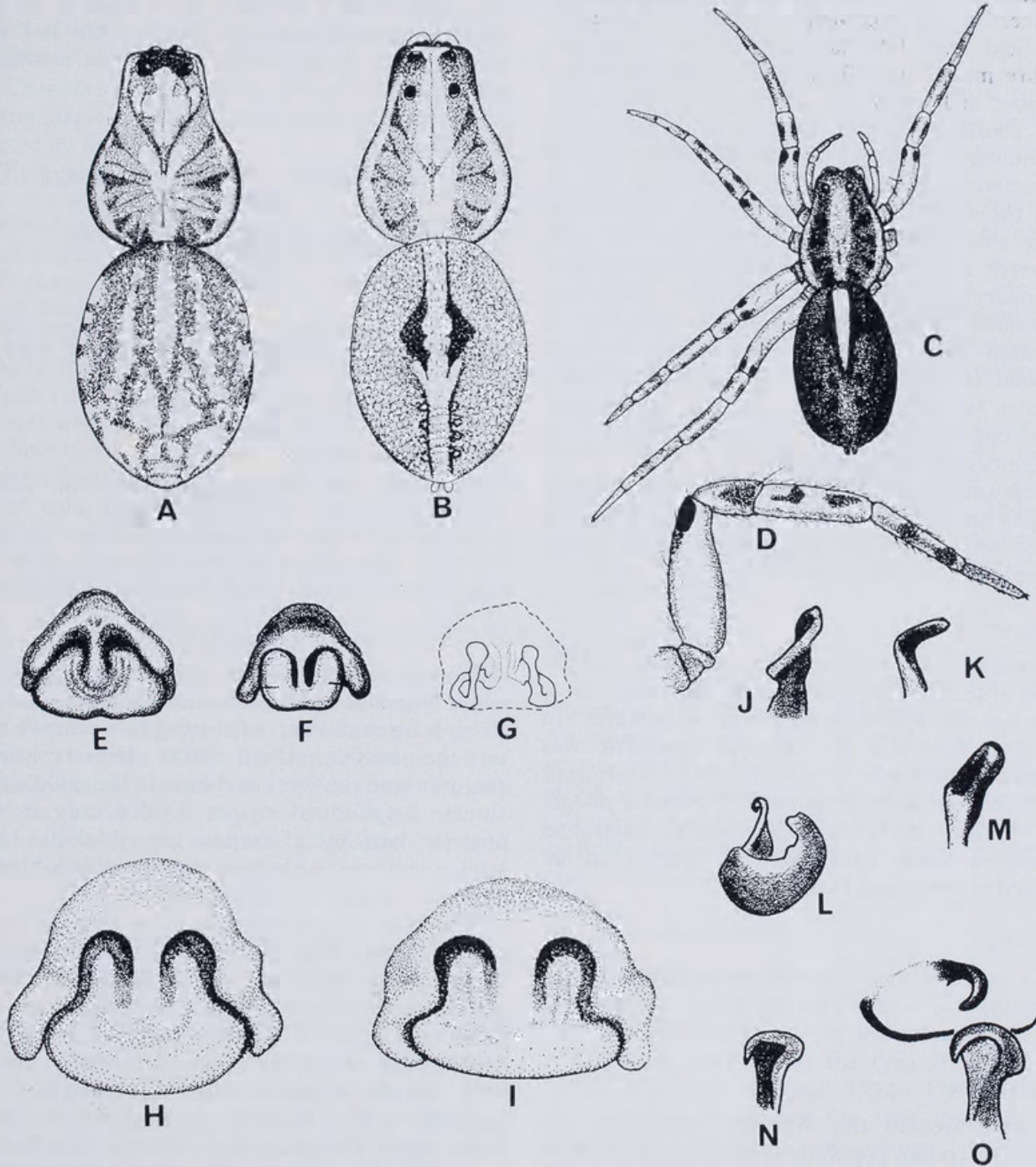


FIG. 3: *Trochosa tristicula tristicula*. A, female from Bulburin State Forest, Qd.

Trochosa expolita expolita. B, female from Brisbane; C, female from Nunawading, Vic.; D, foreleg; E, epigynum of female from Nunawading, Vic.; F, epigynum of female from Brisbane; J, median apophysis of male from Brisbane; K, M median apophysis of male from Eltham, Vic.; K, lateral view; M, ventral view; L, median apophysis of male from Brisbane.

Trochosa expolita impedita. G, internal genitalia of female from Rossmoyne, W.A.; H-I, epigyna of females from Rossmoyne, W.A.; N, male palpal organ from Waite Institute, S.A.; O, male palpal organ from Rossmoyne, W.A.

LIFE HISTORY

Mature females are found throughout the year but are most abundant during the summer months. Mature males commence courting in late October and are common during November and December. After courtship the males decline in numbers during late November but may persist in the field until late January. In the laboratory mature males cease feeding after mating in late October and many die during early November. The courtship display consists of rapid palpal drumming as soon as the female pheromone is contacted, with short forward jerks and short runs with the anterior pair of legs raised; some males make short jerky runs and then jerk the body forwards and backwards whilst the legs remain stationary. Mature males that had previously responded to the pheromone or presence of unmated *T. expolita impedita* females did not respond to the pheromone of *Lycosa pullastra* females (see McKay 1974, pp. 10–11). Females with egg-cocoons were collected during late November and early December.

This subspecies, like *L. pullastra* hunts during the day and at night. Field temperatures recorded 5 mm above the substrate adjacent to the spider ranged from 12.0°C to 36.0°C.

HABITAT

Areas with short grass, suburban lawns, and the banks of temporary creeks. This subspecies is most abundant on well-watered lawns or pastures. In Western Australia *T. expolita impedita* was collected from the estuary foreshore at Australind in association with *T. oraria*, *T. exculta phugia* and *Lycosa pullastra*. The South Australian specimens were collected from Lupins in an orchard at the Waite Institute.

BURROW

No burrows were located on suburban lawns; this subspecies shelters among grass roots and was found to be active during the day and night.

DISCUSSION

I have treated the Western Australian and South Australian populations as a subspecies of *T. expolita* due to a slight but apparently constant difference in the shape of the median apophysis of mature males of both subspecies. Further collecting from Victoria and South Australia is necessary to establish this relationship. Both subspecies appear to be identical in colour pattern and habitat requirements. The response of the mature males of the eastern subspecies to the

pheromone of the western subspecies has not been tested.

Roewer (1954) placed *L. impedita* into the genus *Allocosa* Banks 1900, considered by Guy (1966) to be a subgenus of *Lycosa*. I have placed both subspecies into the genus *Trochosa* as although the first row of eyes is slightly smaller than the second row, the fourth tibia has the dorsobasal spine drawn out into a fine bristle or absent.

DISTRIBUTION

Western Australia and South Australia.

***Trochosa martensii* (Karsch 1878)**
(Fig. 4A–C)

Lycosa martensii Karsch, 1878, pp. 812–3, Australia.
Diahogna martensii: Roewer, 1954, p. 239; 1960, p. 745.

Trochosa martensii: McKay, 1973, p. 381.

MATERIAL EXAMINED

HOLOTYPE: Zool. Museum Humboldt-Univ. Berlin, ZMB No. 756, ♀P, C.L. 5.1, Australia.

OTHER MATERIAL: Alexandra, Victoria, 7.xi.1927, collector unknown, NM, 1 ♀M, C.L. 6.3 mm; 7.xii.1954, A. Neboiss, NM, 2 ♀M, C.L. 5.5, 5.6 mm.

DESCRIPTION (After Karsch 1878)

Female: Carapace pale yellow-brown with a white longitudinal stripe commencing between the PL eyes on each side and curving in a concave line on the outside; these white lines continue posteriorly to the fovea and have in the middle two similar longitudinal stripes divided only in the anterior half by a narrow gap. Maxillae and labium covered with hair; fangs reddish-brown. Sternum covered with black hair.

Abdomen yellow-brown with a median longitudinal white line commencing on the dorsal surface at the base and extending posteriorly to the foremost depressed pair of spots; on the posterior half are 4 white spots decreasing in size towards the spinnerets; sides of abdomen dotted with small white specks. Undersurface of abdomen with a faint brown transverse curved stripe before the spinnerets, and separated from it by a narrow gap, a broader, almost rectangular brown transverse band; the middle part of the ventral surface with a pale yellowish-brown parallel trapeze with narrow yellowish margins, whose shorter side lies at the back and converges with the anterior yellow border of the broad brown transverse band. Spinnerets thick pale yellow. Colour of legs not given by Karsch.

Anterior row of eyes procurved, wider than second row, AM larger than AL. Ratio of eyes in micrometer units AM:AL:PM:PL=12:9:17:14; distance AM-AM 9, AM-AL 6, AM-PM 10, AL-PM 14 (between lens of eye), PM-PM 20. Clypeus to AM 10. Length of first eye row 63, length of second eye row 53. All measurements were difficult to obtain due to complete loss of pigment.

Chelicerae with three promarginal teeth; three retromarginal teeth of about equal size (not 4-5 as stated by Karsch).

Epigynum not completely formed but is stated by Karsch to have been an obliquely-oval yellow-brown plate, which on either side has a dark-brown pointed platelet directed posteriorly. The shape of the epigynum was not discernable in the holotype.

The palpi are almost spine-free above and wholly spine-free below. The distribution of the spines on the legs (from Karsch) is as follows: femora and patellae without ventral spines; tibiae of first and second pairs have one spine on the outer side of the anterior end, one spine on the inner side, one laterally next to the latter but slightly higher, and one in the middle; tibiae of the third pair have 4 on the outside and 3 on the inside; tibiae of fourth pair with 5 on the outside and 2 on the inside; metatarsi of all legs have on the ventral surface from rear to front 2+2+3 spines, the distribution of spines on the upper side is similar. An examination of the holotype shows the fourth tibiae to have the dorsobasal spine absent, the tibia of the first leg with one pair of apical ventral spines and one spine on the prolateral side.

The holotype is completely bleached without any discernable colour pattern.

VARIATION: Adult specimens have the carapace brown with a white to fawn lateral band and on the dorsal surface at the posterior margin two longitudinal white lines curve forwards to between the PL eyes where two short white lines extend posteriorly on the inside; some vague light and dark stripes radiate out from the foveal region.

Abdomen brown with a white longitudinal stripe extending from the anterior slope to about the middle of the dorsal surface where some white spots extend towards the spinnerets; on each side of this white stripe is a series of 3-4 white spots converging posteriorly on each side; sides of abdomen flecked with short, frequently broken, white lines; anterior slope of abdomen with white longitudinal lines and spots extending up on to the

dorsal surface; undersurface of abdomen brown without markings; sternum brown; (Fig. 4A).

Legs and palpi brown with faint white stripes on the dorsal surface of the distal half of the femora, and the complete length of the tibiae. Palpi with 3 small spines on the dorsal surface of the femora. A dorsobasal bristle present on the fourth tibia; 2+2+2 ventral spines on the first tibia.

Eye diameters and interspaces given in Table 1, the anterior row, wider than the second row in ratio 85:71, 85:70, 80:68. The distance between the PM eyes slightly less than, equal to, or slightly greater than the diameter of the PM eyes.

Epigynum oval with a wide transverse guide and no median guide (Fig. 4B-C). Mature males are at present unknown.

Juveniles, prior to emerging from the egg cocoon, have a pattern of two wide longitudinal lines on the carapace and a pale longitudinal dorsal stripe on the anterior half of the abdomen.

DIAGNOSIS: *Trochosa martensii* is similar in colour pattern and eye measurements to *T. exculta*, but differs in having the white spots on the posterior dorsal surface of the abdomen converging towards the spinnerets instead of diverging and in lacking a median guide to the epigynum.

LIFE HISTORY

Mature females were captured in early November and December at Alexandra, Victoria. All three mature females had egg cocoons measuring 8.3 x 6.9 mm, 7.1 x 6.8 mm, and one of 7.8 x 6.8 mm had 132 developed young ready to emerge. Females possibly release young during early November through to late January. Mature males were not collected.

HABITAT AND BURROW

Unknown at present.

DISCUSSION

Trochosa martensii is the type species of the genus *Diahogna* Roewer 1954. This genus is characterised by having the first tibia with no more than 3 pairs of ventral spines; 3 retromarginal cheliceral teeth, anterior row of eyes procurved and wider than the second row; distance AM-AL shorter than distance AM-AM; distance PM-PM wider than the diameter of the PM eye. The holotype and one mature female fall into the genus *Diahogna* as defined above, and one mature female falls into the genus *Allohogna* using the key provided by Roewer (1959). Guy

TABLE 2: MEASUREMENTS OF LEG SEGMENTS OF
T. MARTENSII IN MM FROM KARSCH

Leg	Femur	Patella and Tibia	Metatarsus and Tarsus
1	3.0	3.1	3.8
2	3.3	3.1	3.4
3	3.5	2.8	3.8
4	4.5	4.0	5.7

(1966) considers both *Diahogna* and *Allohogna* synonyms of *Trochosa* when eye diameters and interspaces are employed as generic characters.

DISTRIBUTION

Known from Alexandra, Victoria. Karsch (1878) gives no precise locality as the holotype was found by Professor E. von Martens of Berlin in a parcel containing Australian shells. Von

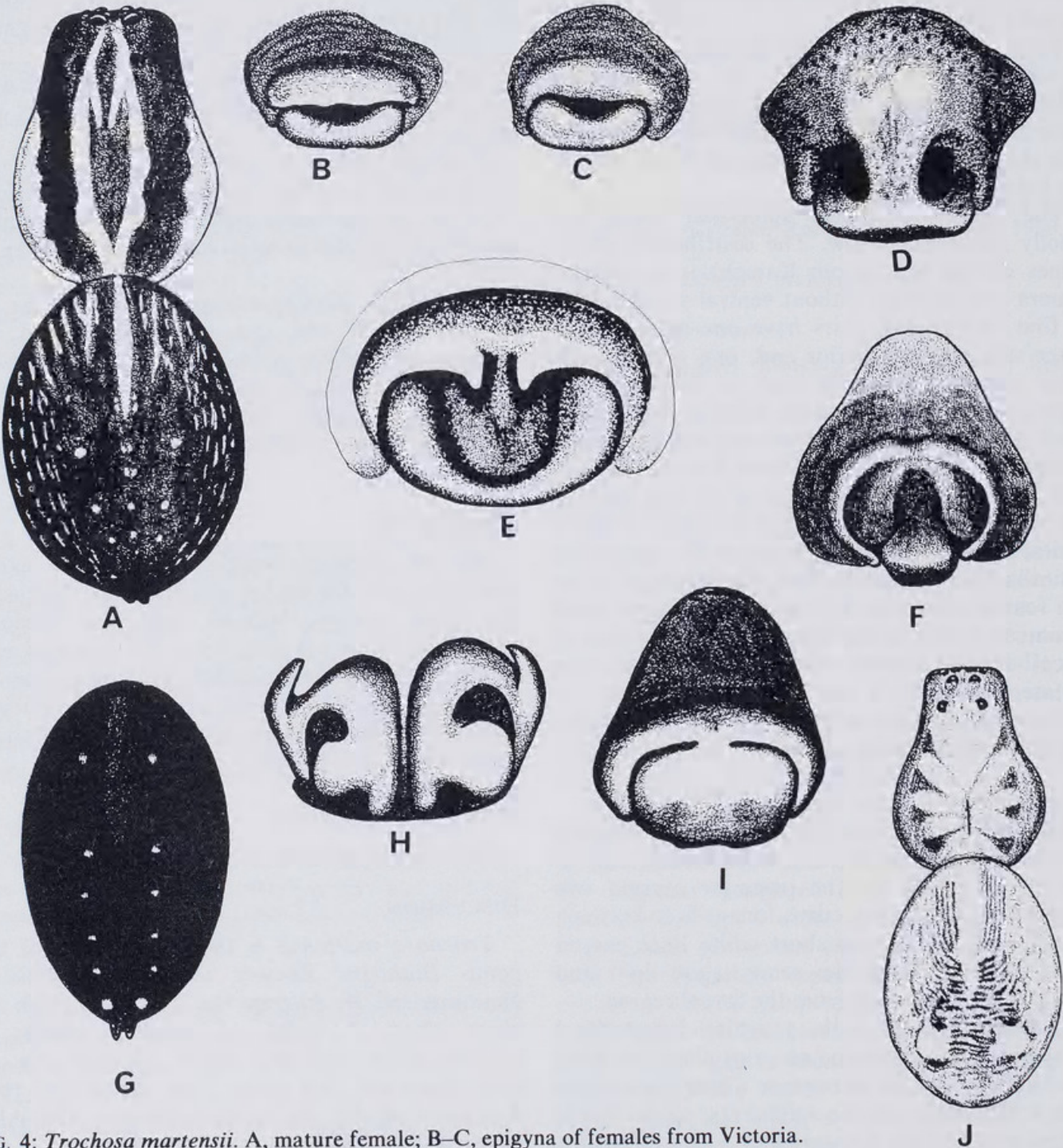


FIG. 4: *Trochosa martensii*. A, mature female; B-C, epigyna of females from Victoria. *Trochosa exculpta*. D, epigynum of lectotype. *Trochosa* (?) *candicans*. E, epigynum of female from Reevesby Island. *Trochosa alboguttulata*. F, epigynum of holotype. *Trochosa glarea*. G, dorsal surface of abdomen; H, epigynum of holotype. *Trochosa wundurra*. I, epigynum; J, holotype.

Martens worked on terrestrial molluscs in addition to marine molluscs.

***Trochosa exculta* (L. Koch 1876)**
(Fig. 4D)

Lycosa exculta L. Koch, 1876, pp. 881–883, pl. 76, Figs. 1, 1a, 1b, 1c, Sydney, New South Wales; Rainbow, 1911, p. 267; Rack, 1961, p. 37.

Allohogna exculta: Roewer, 1954, p. 212.

Trochosa exculta: McKay, 1973, p. 381.

MATERIAL EXAMINED

SYNTYPE: British Museum (N.H.), BM 1919.9.18.333, ♀M, C.L. 7.2 mm, Sydney. Here designated as lectotype. The two syntypes present in the Zool. Inst. Zool. Mus. Hamburg (Rack 1961) are without precise data, and were not examined.

DESCRIPTION (After Koch 1876)

Female: Carapace dark reddish-brown with yellow-brown hairs, the pattern pure white. Lateral margin of thorax with a fairly broad border that is serrated across the coxae of the second and third legs; four short radial striae on the lateral declivity; two small dots on the lateral margin of the caput and behind the most posterior of these is a small crescentic dot; two curved longitudinal lines commencing at the posterior declivity and converging anteriorly and posteriorly to a point; these lines reach almost to the PM, and from their anterior point, two short lines extend posteriorly.

Abdomen brown-yellow, with the pattern white. A narrow longitudinal line commences at the base and continues almost to the middle; on either side of this longitudinal line, commencing at the base and running posteriorly is a longitudinal row of small spots; these spots become larger and more conspicuous at the base of the abdomen, and smaller and wider apart posteriorly; another pair of spots is sometimes present between the third and fourth spots; a longitudinal white line sometimes present on the lateral margin. The median longitudinal stripe is sometimes formed of yellowish hairs.

Palpi yellow-brown with a darker tarsal joint, and a white spot dorsally at the tip of the femur.

Legs yellow-brown or reddish-brown, with yellow-brown hair; femora sometimes with two blackish rings and a white line at the end; patellae and tibiae with a white line dorsally, on the tibiae this line is usually interrupted; in some specimens there are also two white spots at the rear; metatarsi with two white spots dorsally.

Anterior row of eyes straight, and considerably broader than the second row. Eyes equidistant by a radius; AM larger and a diameter from the PM.

PM a diameter apart and $1\frac{1}{2}$ times as far from the PL. PL barely larger than the AM.

Palpi shorter than the cephalothorax. Legs robust, without a well formed scopula. A spine at the anterior end of femur 1.

From Sydney; called by Mr Daemel a water spider probably because of its habitat near the water and its ability to run across the surface of the water. Live animals, according to Mr. Daemel, are light and dark green with brown and white lines and dots; the legs are dirty green. A young male, found at Gayndah, fully corresponds with the female.

An examination of the lectotype confirmed the presence of a dorsobasal bristle on the fourth tibia. The eye diameters and interspaces in micrometer units are AM:AL:PM:PL=22:17:30:26; distance AM–AM 12, AM–AL 8 between lens of eye 3 between base, AM–PM 18, AL–PM 20 between lens, 16 between base, PM–PM 30. Clypeus is about the width of AM. Length of first eye row 99, length of second eye row 84. All measurements recorded in Table 1 as a percent of the width of the first row of eyes.

Epigynum illustrated in Figure 4D.

DIAGNOSIS: *Trochosa exculta* is very similar to *Trochosa martensii* but differs in the white pattern on the dorsal surface of the abdomen and in having a median guide to the epigynum (Fig. 4D).

DISCUSSION

Karsch (1878) stated that *T. martensii* belonged to the group 1A (*Lycosa exculta*) of Koch, but did not discuss why he considered his immature female (*T. martensii*) to be a separate species. The discovery of fresh material of *T. martensii* allows a separation of the two species. Further collecting is necessary to describe the male palpal organ of both species and elucidate their relationship.

DISTRIBUTION

Sydney, New South Wales, and Gayndah, Queensland.

***Trochosa candicans* (L. Koch 1877)**
(Fig. 4E)

Lycosa candicans L. Koch, 1877, pp. 888–890, pl. 76, Figs. 5, 5a, 6, 6a, 6b, Sydney, New South Wales; Rainbow, 1911, p. 266; Hickman, 1950, p. 5, Reevesby Island, South Australia; Bonnet, 1957, p. 2637.

Trochosula candicans: Roewer, 1954, p. 304.

Trochosa candicans: McKay, 1973, p. 381.

MATERIAL EXAMINED

HOLOTYPE: Not examined; location unknown.

OTHER MATERIAL: (?) Reevesby Island, South Australia, xii.1936, J. Clark, ♀M, C.L. 3-6 mm, NM.

DESCRIPTION (after L. Koch 1877)

Female: Cephalothorax light yellow-brown with white hair; maxillae reddish-brown; labium dark yellow-brown; sternum brownish-yellow with white hair. Abdomen above and below white; from the base originate two diverging brown lines terminating in a small brown spot; two strongly diverging lines with inwardly curved ends follow, and posterior to these are additional spots covered by thick white hair. At the posterior half of the abdomen is a longitudinal row of brownish chevrons. Spinnerets, palpi and legs brownish-yellow with white hair.

Anterior row of eyes straight, wider than the second row. AM considerably larger than AL. AM almost a radius apart and the same distance from the AL and the PM. PM a radius apart and barely a diameter from the PL. PL considerably larger than AM.

Male: Cephalothorax as in the female. Abdomen white above and below, with four pairs of brown spots dorsally; the anterior pair at the base, the second and third connected by a brownish longitudinal stripe; the posterior pair small dots.

Legs and palpi white with cymbium yellow-brown and covered with yellow-white hairs.

VARIATION: The specimen from Reevesby Island (Hickman 1950, p. 5) agrees with the description of *Lycosa oraria*. The femur of the first leg has 1+1+0 spines dorsally, 1 anterolateral spine (not 2 anteriorly as recorded by Koch for *T. candicans*), and the first and second patellae lack spines (1 on each patellae in *T. candicans*). The mature female epigynum is similar in morphology in both species (Koch 1877, p. 886) and I am therefore unable to assign this specimen to *Trochosa candicans* with confidence. It is possible that *Trochosa oraria* extends across the Great Australian Bight into South Australia.

HABITAT

Specimens from Shelly's Flats (about 19 km from Goulburn), and under joists above high water mark at Bondi Beach (Koch 1877).

DISCUSSION

The identity of *Trochosa candicans* must await a comparison of males and females of *T. oraria* from Western Australia with the South Australian population (*T. oraria*?) and a series of *T. candicans* from the type locality (Sydney, New South Wales).

***Trochosa alboguttulata* (L. Koch 1878)**
(Figs. 2I, 4F)

Lycosa albo-guttulata L. Koch, 1878, pp. 975-6, pl. 85, figs. 3, 3a Bowen, Queensland; Hogg, 1900, p. 77. Macedon, Victoria. Rack, 1961, p. 36.

Lycosa albo-guttata [misspelt]: Rainbow, 1911, p. 265. Queensland, New South Wales, Victoria.

Arctosippa alboguttulata: Roewer, 1954, p. 231.

Arctosippa alboguttata [misspelt]: Roewer, 1960, p. 759 (type re-examined).

Diapontia alboguttulata: McKay, 1973, p. 381.

MATERIAL EXAMINED

HOLOTYPE: Zool. Inst. Zool. Hamburg, No. 14558, Cat. Araneae No. 446, ♀M, C.L. 4-7 mm, Bowen.

OTHER MATERIAL: Queensland: Myora Creek, North Stradbroke Island, 2.iii.1974, RJM, 1 ♀M, QM S23; Point Lookout, North Stradbroke Island, 2.iii.1974, RJM 2 ♀M, QM S24. Cooloola, Teewah Creek, 13.vii.1973, RR, 1 ♀M, QM W5784.

DESCRIPTION

Carapace dark yellow-brown, with a narrow median longitudinal stripe, covered with brownish-yellow hair, stretching from the posterior margin to the PM. A yellowish band on the lateral margin; this band disintegrates into small spots covered with yellow hair. On the lateral declivity of the thoracic part are two white hair-striae. Mandibles, maxillae and the labium reddish-brown; sternum brown-yellow, with yellow hair. Legs brown-yellow; the femora with two lighter coloured rings covered with white hair; on the middle of the tibiae above is a yellowish hair-spot; on the metatarsi of the 3rd and 4th pairs a longitudinal stripe of white hair dorsally. Palpi brownish-yellow, the tibiae and tarsal joints more vivid brown. Abdomen dark brown with a narrow longitudinal stripe covered with brownish-yellow hair on the dorsal side reaching to the middle of the abdomen. On each side of this stripe is a row of white hair-spots; on the posterior half these hair-spots are arranged in arched rows. Under-surface of abdomen brownish-yellow with two black longitudinal stripes beginning at the posterior margin of the epigastric furrow,

converging posteriorly and reaching the spinnerets.

Anterior row of eyes slightly recurved, wider than the second row, equidistant by slightly less than a radius of an AM. AM considerably larger than AL, their distance from the PM more than their radius. PL as large as the AM.

Chelicerae with 3 small promarginal and 3 larger retromarginal teeth.

Labium more than half length of maxillae. Palp as long as the carapace. Legs dull with short hair; the metatarsi and tarsi of the first and second pair with a thinner scopula. On femur I, on the anterior end, two spines; all patellae of the anterior pairs lack spines. On the tibiae of the 3rd and 4th pairs 1 dorsal spine.

VARIATION: The yellow marginal band may be faint or absent in mature females. Legs uniformly coloured without rings, spots or stripes. The two black longitudinal stripes on the undersurface of the abdomen may be quite faint.

Eye measurements for the holotype and three mature females are recorded in Table 1 as a percent of the total width of the first eye row.

The epigynum of the holotype is illustrated in Figure 4G.

SIZE RANGE: Mature females C.L. 3.6 to 5.5 mm.

DIAGNOSIS: First row of eyes wider than the second row. Undersurface of abdomen brownish with two black longitudinal stripes converging posteriorly. Similar to *Trochosa tristicula tristicula* but the epigynum has a well developed median guide and no points on inner margin anteriorly.

LIFE HISTORY

Mature females with egg cocoons were captured in March at North Stradbroke Island. Mature males have not been collected.

HABITAT

The holotype was collected from Bowen, possibly on coastal sands; the North Stradbroke Island material was collected during the day-time from below litter under trees growing on sandy soil; two specimens were collected on the beach below *Melaleuca* trees, the other specimen from below *Acacia* near the creek bank.

BURROW

Unknown.

DISCUSSION

Roewer (1954) placed *T. alboguttulata* into the genus *Arctosippa* Roewer, considered a subgenus of *Diapontia* Keyserling, a South American genus, by Guy (1966). In *Diapontia* the AL eyes are as large as the AM, whereas in *T. alboguttulata* the AL eyes are smaller than the AM. The fourth tibia of *T. alboguttulata* has a dorsobasal bristle.

Trochosa properipes (Simon 1909)

Lycosa properipes Simon, 1909, p. 189, Guildford and Subiaco, Western Australia; Rainbow, 1911, p. 271.

Allohogna properipes: Roewer, 1954, p. 212; 1960, p. 735.

Trochosa properipes: McKay, 1973, p. 381.

MATERIAL EXAMINED

The location of the holotype is unknown to me.

DESCRIPTION (After Simon 1909)

Male, 9 mm: Carapace dark, irregularly marked on the thoracic part by a golden longitudinal median line and by a long golden line on the edge; chelicerae reddish; sternum pale dark-reddish.

Abdomen somewhat black, covered with ash-grey to blackish hair and variegated with bent hairs; in the front it is decorated by a longitudinal, rather narrow and pointed band covered with golden hairs. Undersurface with dark hairs but black near the spinnerets.

Legs long (the front ones are obviously longer than the hind ones), dark-reddish, covered with very fine long, and closely growing bristles. The anterior tibiae armed with thin spines lower down 3+3, the middle tibiae with longer spines and a small spine on the inner side near the top. Metatarsi armed with stronger spines 2+2 and three smaller ones at the top. The fourth legs have numerous spines but the tibiae are protected by a single dorsal spine situated on the top half. Palpi with 1+1+3 dorsal spines on the femur, patella and tibia about equal in length; tarsus narrow, scarcely wider than the tibia, coming to a long point and exceeding the bulb; the small, somewhat round bulb (Cymbium?) is protected by a black apophysis at the top that is slanting and obliquely truncated.

Anterior row of eyes almost straight, slightly procurved, eyes almost equidistant, obviously wider than the second row; AM at least one third larger than AL which are at least three times more distant from the edge of the clypeus than

from the PM; PM separated by a space almost a third smaller than an eye.

Retromarginal cheliceral teeth 3, almost touching, with the middle one a little larger.

DISCUSSION

The collecting station 103 was made at the townsite of Guildford near the Swan River on 19 May, and 28 August, 1905. The habitat is described as scrubland, flatland west of the Darling Ranges and much cultivated. Station 109 Subiaco, 6 August 1905 is described as garden and 'coastland' and probably refers to the margin of Herdsman's Lake. I found no *Trochosa* species at either locality despite at least four attempts to locate this species.

Simon states that the first pair of legs are obviously longer than the hind ones, a condition rare in lycosid spiders, therefore '*L. properipes*' may belong to the family Pisauridae. As Simon placed this species into *Lycosa* and it has most of the *Trochosa* characteristics I have retained it in this genus.

Trochosa glarea sp. nov. (Fig. 4H, J)

MATERIAL EXAMINED

HOLOTYPE: Queensland Museum, S25, ♀M, C.L. 3.5 mm, Big Tuan Creek near Boonooroo, via Hervey Bay, Queensland, collected by R. J. McKay, 21 October 1976. In spirit.

DESCRIPTION

Carapace light brown covered with short dark hairs; a very faint trident-like pale pattern commences at the anterior tip of the fovea and runs anteriorly as a central longitudinal stripe with a mediolateral stripe running almost parallel from the base at the fovea; this pattern may not be evident in life; some dark marks radiate out from the foveal region; no pale lateral band; paturon, fang, maxillae and labium brown; sternum and coxae light brown. Abdomen light brown above with dark brown to black hairs and darker irregular blotches; an indistinct pale longitudinal stripe commences anteriorly and reaches the middle of the abdomen; a pair of white spots anteriorly followed by a pair of white spots almost at the middle of the abdomen, the four spots are followed by three pairs of white spots somewhat wider apart on the posterior half of the abdomen; just before the base of the spinnerets is a pair of bright white spots; sides of abdomen blotched with dark pigment. Undersurface of abdomen light

TABLE 3: MEASUREMENTS OF LEG SEGMENTS OF
T. GLAREA IN MM

Leg	Femur	Patella	Tibia	Metatarsus	Talus
1	2.4	1.2	1.9	2.0	1.1
2	2.3	1.1	1.6	1.7	1.0
3	2.1	1.0	1.4	1.7	0.9
4	2.8	1.2	2.4	3.1	1.2

brown with a darker somewhat mottled area before the spinnerets. Legs uniform pale brown.

Anterior row of eyes with the upper tangent slightly recurved, wider than the second row in the ratio 84:78. Ratio of eyes in micrometer units AM:AL:PM:PL = 20:14:30:27; distance AM-AM 8, AM-AL 4, AM-PM 6, AL-PM 5, PM-PM 16. Clypeus to AM 15.

Chelicerae with three promarginal teeth, the middle one largest, three retromarginal teeth of equal size.

Tibia of first leg with 2+2+2 ventral spines. Tibia of fourth leg with a thin dorsobasal spine.

The epigynum is of characteristic shape, with a well developed chitinous hook on the antero-lateral surfaces (Fig. 4H).

VARIATION: Mature males were not collected.

DIAGNOSIS: Anterior row of eyes wider than second row; six pairs of white spots on the dorsal surface of the abdomen, those before the spinnerets most conspicuous; epigynum of characteristic shape, with a well developed chitinous hook on the antero-lateral surfaces.

HABITAT

The holotype was collected from among gravel and small pebbles on the damp edge of a flowing stream.

BURROW

Unknown.

DERIVATION

From the latin glarea meaning gravel.

Trochosa wundurra sp. nov. (Fig. 4I, J)

MATERIAL EXAMINED

HOLOTYPE: Queensland Museum, S96, ♀M, C.L. 4.5 mm, Hyden Lake, Hyden, Western Australia, collected by R. J. McKay, 28 March 1970. In spirit.

DESCRIPTION

Carapace light brown; area within ocular quadrangle dark brown; some thin dark brown lines, terminating laterally in wedge-shaped brown marks radiate out from the foveal region; lateral margin of carapace dusky; paturon and fang dark brown; labium mid-brown; maxillae light brown; sternum and coxae pale brown to dark cream. Abdomen light brown to cream; dorsal surface with a distinct pale longitudinal stripe that commences at the anterior slope and terminates in a point about middle of abdomen; the anterior part has the longitudinal stripe outlined by a series of parallel dark brown to black streaks becoming transversely arranged on posterior two thirds where they demarcate two irregularly shaped blotches situated on each side of the dorsal midline; sides streaked with black-brown, the lower sides blotched or spotted with dusky marks. Undersurface of abdomen pale the lateral slopes spotted with dark brown marks. Legs uniform pale brown to cream.

Anterior row of eyes with the upper tangent slightly procurved, wider than the second row in the ratio 56:50. Ratio of eyes in micrometer units AM:AL:PM:PL = 12:9:18:17; distance AM-AM 5, AM-AL 4, AM-PM 3, AL-PM 4, PM-PM 14. Clypeus to AM 4.

Chelicerae with three promarginal teeth, the middle one largest; three retromarginal teeth of about equal size.

Tibia of first leg with one pair of apical ventral spines only, metatarsus of first leg with 2 + 2 + 2 ventral spines. Tibia of fourth leg without a dorsobasal bristle or spine.

The epigynum is of characteristic shape with the median guide expanded into a plate-like structure (Fig. 4I).

VARIATION: Mature males were not collected.

DIAGNOSIS: Anterior row of eyes wider than the second row; tibiae of the first pair of legs with a pair of apical ventral spines only; epigynum of characteristic shape.

TABLE 4: MEASUREMENTS OF LEG SEGMENTS OF
T. WUNDURRA IN MM

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus
1	2.7	1.5	2.0	2.3	1.1
2	2.5	1.4	2.0	2.3	1.2
3	2.6	1.3	1.8	2.6	1.2
4	3.2	1.5	2.3	3.6	1.6

HABITAT

On the sandy shoreline of Lake Hyden.

BURROW

Unknown

DERIVATION

From the aboriginal 'wundurra' meaning warrior.

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Mr B. Campbell of the Queensland Museum offered valuable criticism of the manuscript, and Mrs Janet Byrne typed the final draft. Dr L. E. Koch and Dr A. Neboiss forwarded material for study.

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