

The orb weaver genus *Acusilas* (Araneae, Araneidae)

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Summary

Additional information, including the first description of a male, is given for the little known araneid genus *Acusilas*, a genus placed by Simon in the group Cycloseae. Redescriptions of the females of *A. coccineus* Simon and *A. africanus* Simon are given, together with descriptions of the male and female *A. malaccensis* sp. n. and of the female *A. gentingensis* sp. n.

Introduction

In August 1979 we spent a few days in the Genting highlands of Malaya, a forested, hilly region some 30 miles north of Kuala Lumpur. Here the grounds of our host, Henry Barlow, quite soon merged with surrounding jungle. Whilst searching in the garden, we noticed, radiating from the opening in a small, brown, dead, folded leaf, a sector (roughly one-third) of a loosely woven orb web. Upon closer investigation there emerged from this folded leaf, a brilliantly coloured, yellow, orange and black araneid of reasonable size (an event strongly reminiscent of, and just as surprising as, our first discovery of a female *Araneus alsine*) together with a very small, yellowish spider. We fully expected this to be a spiderling or possibly another, commensal, spider species. No further 'spiderlings' emerged and a closer examination of the smaller spider revealed that it was an adult male. The larger brightly coloured spider turned out to be a mature female. These spiders and the web were photographed in the field. As both the epigyne of the female and the palp of the male were rather unusual for araneids, we attempted, but without success, to identify the specimens. A year or so later these specimens were seen by H. W. Levi who immediately pronounced them to be an *Acusilas* species. After a further lapse of several months another *Acusilas* species was found as a result of looking through the transparencies that had been

taken of the former species. Next to them were photographs of a noticeably smaller, much duller coloured araneid which also had a rolled leaf retreat at the hub of an almost complete orb web. Our notes revealed that this spider had been collected whilst still immature, probably no more than 100 metres from the web of the former species, brought home and reared, reaching maturity in something less than a year. Examination of this specimen showed that it, too, was an *Acusilas* species. As the retreats of *Acusilas*, like those of our *Araneus alsine* (Walck.), are easily overlooked, there could well be further *Acusilas* species in that region of the world.

According to Roewer (1942) the genus *Acusilas*, at that time, consisted of two described species – one Indonesian and one African – both described by Simon in 1895 and known only from females. Although Simon figured the cephalothorax of the African species, he did not provide drawings of the epigynes in his descriptions. Specimens of these two species, *A. coccineus* and *A. africanus*, were borrowed from the Paris Museum for comparison. The present paper gives a redescription of the females of these species, together with a description of the two *Acusilas* species, namely *A. malaccensis* sp. n. and *A. gentingensis* sp. n., taken at Genting. A drawing of the epigyne of *A. coccineus* is given by Yaginuma (1969).

In the following discussion certain characters possessed by *Acusilas* are compared with those of other genera in the Cycloseae. These indicate that *Acusilas* is not close to *Cyclosa*, but until more information is forthcoming about the other genera in the Cycloseae it is perhaps best, for the present, to leave *Acusilas* in the Cycloseae.

Cycloseae

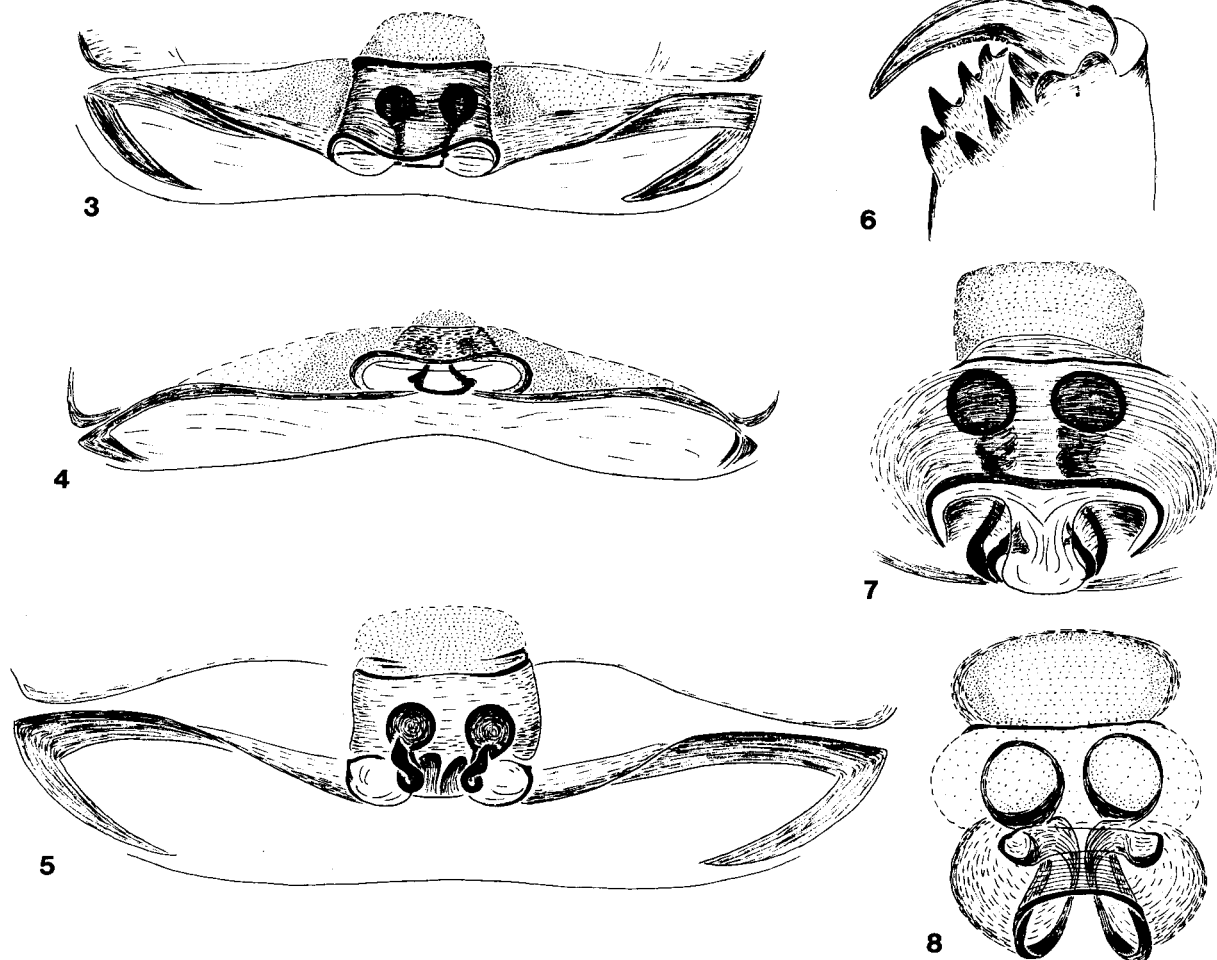
The Cycloseae group of the family Araneidae given by Simon in his *Histoire Naturelle des Araignées* (1895, 1903) consists of six genera, namely *Cyclosa*, *Nemoscolus*, *Salassina* (listed as *Edricus* in Roewer, 1942), *Acusilas*, *Deione* and *Nemospiza*.

The unifying character of these six genera, Simon (1895: 778) took to be the shape of the cephalothorax of the females. "Je réunis dans ce groupe toutes les espèces dont la partie céphalique, assez étroite, est limitée, en arrière, au moins chez les femelles, par un profond sillon entier et semi-

segments of the inferiors; inner pair small and more or less hidden by the remaining four, which are short, stout and conical; spinners located near the rear, underneath the abdomen, and more or less hidden when viewed from above; anal tubercle and colulus well developed. *Palps*: Starting pale orange on the femur becoming darker on metatarsus, each with pectinate claw. *Legs*: Uniform orange, darker than cephalothorax and abdomen; fairly stout but with metatarsi and tarsi noticeably thinner than tibiae; pronounced row of spines ventrally on tarsi and

metatarsi, less so on tibiae and femora. Legs, in general, with more setae and hairs towards the tarsi and gradually lessening towards femora. Trichobothria dorsally, particularly visible on tibiae, but also on tarsi and metatarsi. Three claws all about the same size, upper pair pectinate. Lengths in mm:

Leg	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	3.2	1.6	2.6	2.5	1.0	10.9
II	2.9	1.6	2.3	2.2	1.0	10.0
III	2.2	1.1	1.4	1.4	0.8	6.9
IV	3.2	1.6	2.3	2.6	1.1	10.8



Figs. 3-6: *Acusilas coccineus* Simon, female. 3 Epigyne, ventral view; 4 Epigyne, rear view; 5 Vulva, dorsal view (different specimen); 6 Left chelicera, rear view. x 45.

Figs. 7-8: *Acusilas africanus* Simon, female. 7 Epigyne, ventral view; 8 Vulva, dorsal view. x 45.

Epigyne and vulva: Figs. 3-5. The description and drawings were made from 4 specimens in MNHN Paris, vial 8861.

Male: Unknown.

Distribution: Moluccas and Java, Indonesia; New Guinea; Japan; Korea.

Acusilas africanus Simon (Figs. 7, 8)

Acusilas africanus Simon, 1895: 785, fig. 849, ♀. Thorell, 1899: 43. Roewer, 1942: 752. Bonnet, 1955: 157.

Description of female

Total length: 11.8 mm. *Carapace*: Length 5.2 mm; width, thoracic part 3.1 mm, cephalic part 1.6 mm; light yellow-orange but lacking darker edge, otherwise similar to *A. coccineus*. *Eyes*: Similar to *A. coccineus*; ratio of transverse diameters, interocular distances and height of clypeus (on same scale)

(13)		77		(13)
3				3
(10)	20	(13)	18	(13)
		17	17	(10)
		(13)	15	(13)
		19	19	

Chelicerae: Uniform light yellow, parallel but somewhat shorter and stouter than *A. coccineus*. *Sternum, labium, maxillae, coxae*: As *A. coccineus*, but indentation on *trochanters* is shallower. *Abdomen*: Dorsally with large white scutiform patch with yellow surround, laterally darker, ventrally light. Three pairs of symmetrically placed, impressed orange dots clearly visible dorsally. Appearance generally flatter and more rectangular than *A. coccineus*, maximum width at anterior edge, square shouldered. Length 6.9 mm, width 4.5 mm. *Spinners*: As *A. coccineus*, but located nearer tip of abdomen. Anal tubercle, large, but colulus less pronounced than in *A. coccineus*. *Palps*: Generally as *A. coccineus*, but less hairy and spiny. *Legs*: Similar to *A. coccineus*, but distinctly annulated, particularly apically on each segment, but often with a fainter ring medially and basally. Less spiny and hairy, and trichobothria less easily visible than in *A. coccineus*. Claws as *A. coccineus*. Measurements in mm:

Leg	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	3.8	1.9	3.0	2.9	1.3	12.9
II	3.8	1.9	2.6	2.6	1.1	12.0
III	2.6	1.4	1.8	1.6	1.0	8.4
IV	4.1	1.9	3.0	2.9	1.1	13.0

Epigyne and vulva: Figs. 7 and 8. Description and drawing were made from the single specimen in MNHN Paris, vial 17036, from Gabon.

Male: Unknown.

Distribution: Gabon, Sierra Leone, Camerouns.

Acusilas malaccensis sp. n. (Figs. 9-17)

Description of female paratype

Total length: 10.2 mm. *Carapace*: Length 4.3 mm; width, thoracic part 3.5 mm, cephalic part 1.4 mm; uniform light yellow-orange, no dark border, otherwise as *A. coccineus*. *Eyes*: Posteriors only with narrow black surrounds, otherwise similar to *A. coccineus*; posterior medians with narrow tapetum; ratio of transverse diameters, interocular distances and height of clypeus (on same scale as previously):

(9)		60		(9)
2				2
9)	18	(14)	14	(14)
		15	15	18
		(13)	14	(13)
		15	15	

Chelicerae (Fig. 12): Parallel, uniform yellow, chelicer teeth similar to *A. coccineus* but with a number of small wart-like protuberances or denticles between the margins. *Sternum, labium, maxillae, coxae*: As *A. coccineus*, and *trochanters* with a clear, shallow indentation. *Abdomen* (Fig. 16): Dorsally almost entirely whitish-yellow with 5 equispaced, narrow, transverse black bands of length roughly two-thirds width of abdomen; 5 pairs of impressed dots lying near or in the black bands; sides of abdomen bright orange, darker than carapace; ventrally, orange with a broad, whitish, rectangular patch between epigyne and spinners; length 5.9 mm, width 5.1 mm. *Spinners, anal tubercle and colulus*: As *A. coccineus*. *Legs*: Femora, patellae and apical 1/5 of tibiae uniform orange, darker than carapace, remaining 4/5 of tibiae, metatarsi and tarsi jet black, making a striking contrast; spines, trichobothria and claws as *A.*

coccineus. Measurements in mm:

Leg	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	4.2	1.9	3.2	3.1	1.2	13.6
II	4.1	1.8	3.5	3.0	1.3	13.7
III	2.8	1.3	1.6	1.6	1.0	8.3
IV	4.1	1.8	2.9	3.0	1.1	12.9

Epigyne and vulva: Figs. 9-11.

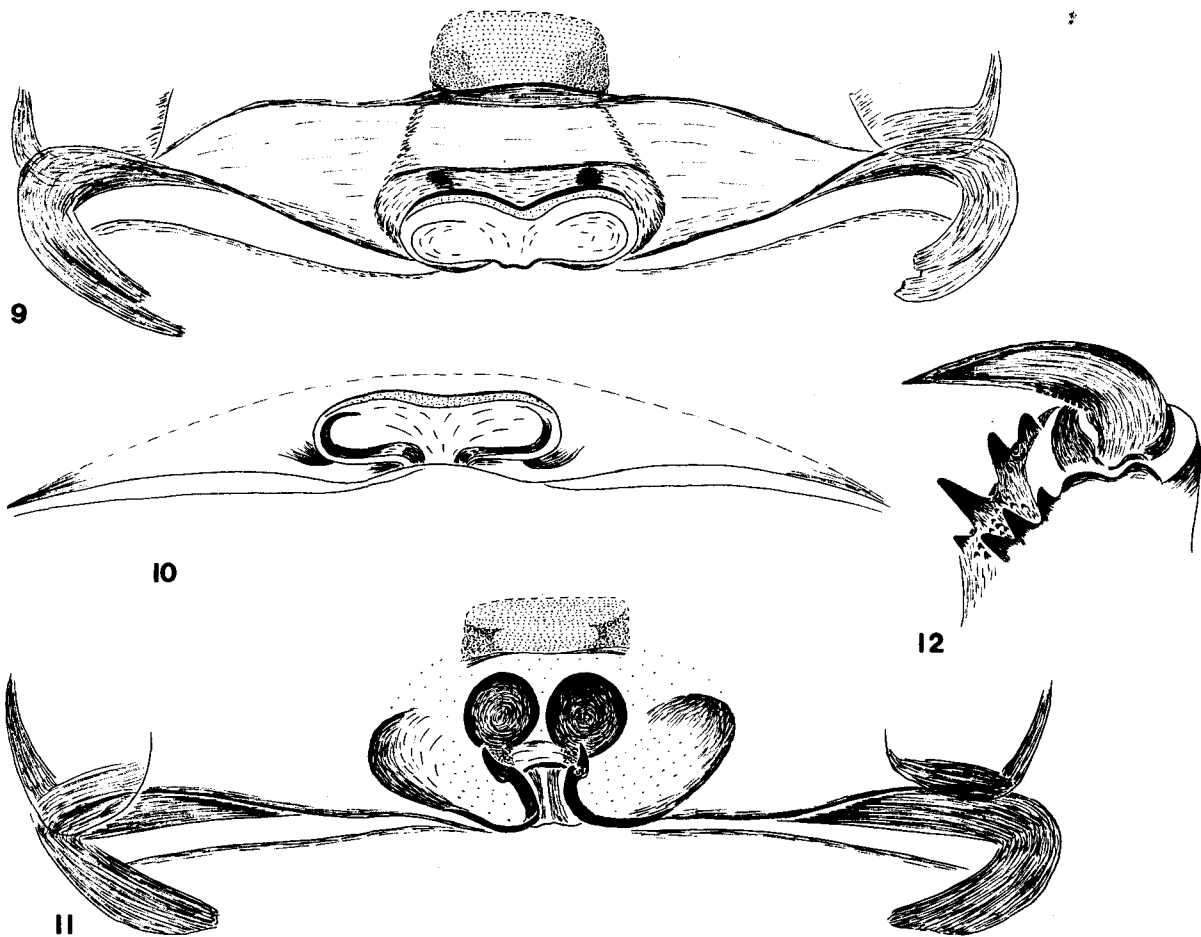
Description of male holotype

Total length: 1.8 mm. *Carapace*: Length 1.0 mm, maximum width, thoracic part 0.8 mm; light yellow-orange in centre darkening to orange towards the edge; pear-shaped, cephalic part narrowing in front but merging gradually with the thoracic part, unlike

the female; tegument smooth, shiny, with a few forward-pointing hairs, particularly near the eyes. *Eyes*: As viewed from above, in two rows, less recurved than female; as well as narrow black surrounds, ocular area noticeably dark; medians relatively large but not located on a prominence; ratios for the transverse diameters, interocular distances and height of clypeus (on same scale as female):

(5)	4	(7)	6	(7)	4	(5)
1		7		7		1
(4)	2	(7)	4	(7)	2	(4)
		4		4		

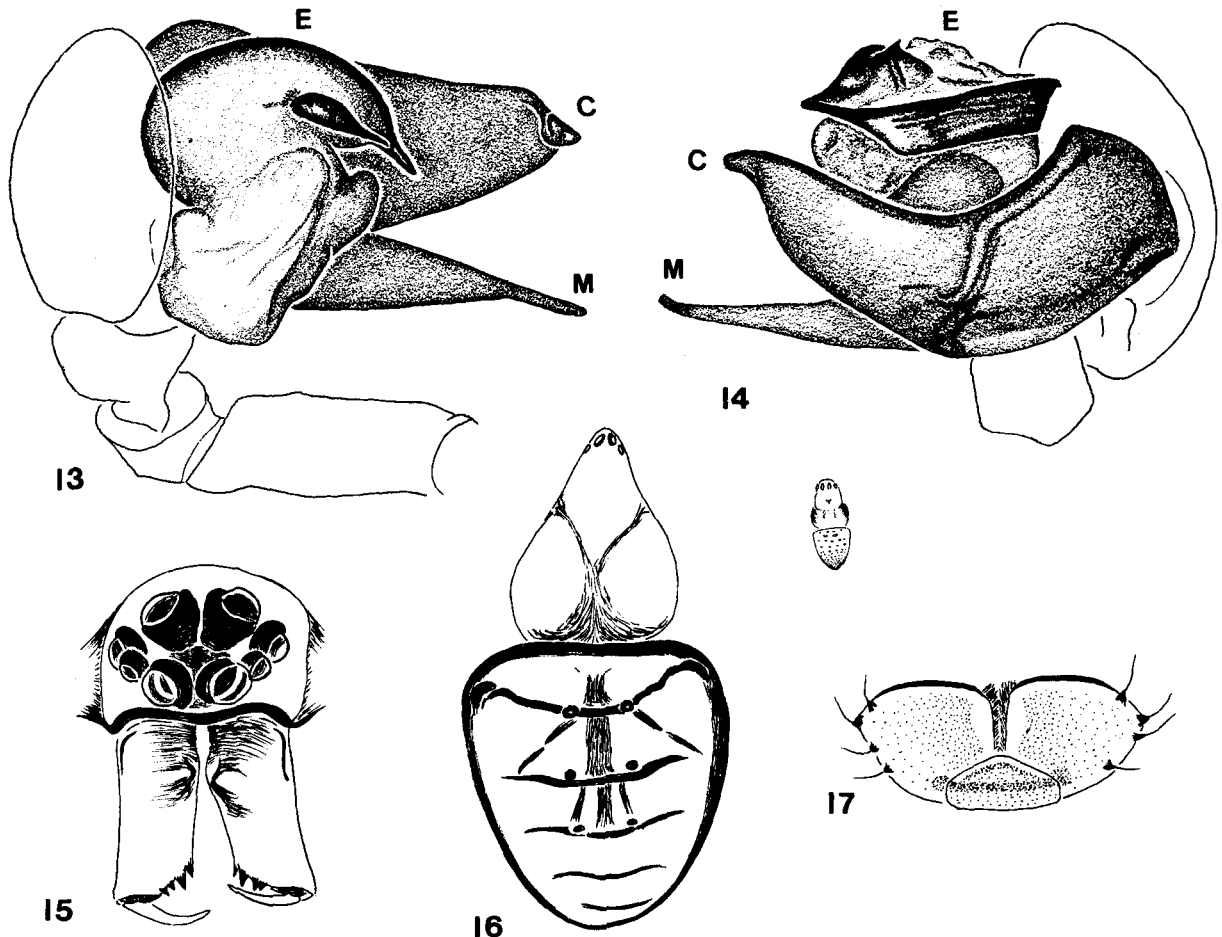
(These measurements give a disparity of 2:1 on diameter of eyes compared with 6:1 in overall length



Figs. 9-12: *A. malaccensis* sp. n., female. 9 Epigyne, ventral view; 10 Epigyne, rear view; 11 Vulva, dorsal view; 12 Left chelicera, rear view. x 45.

between female and male.) *Clypeus*: Uniform darkish orange with two long, forward-pointing hairs. *Chelicerae* (Fig. 15): Parallel, orange, lighter at apex; pronounced protuberances on both front and rear of chelicerae; exterior edge keeled; cheliceral margins with 4 teeth on outer margin and none on inner margin; fangs short and pale. *Sternum*: Uniform yellow with darker patches between coxae; scutiform, broader between coxae II and much less pointed between coxae IV than female; smooth, with a few dark hairs along edge. *Labium*: Orange-yellow,

broad, somewhat pointed apically, reborder hardly visible unlike female, reaches roughly mid-point of maxillae. *Maxillae* (Fig. 17): Orange, interior edges white, broad with several tubercles carrying hairs or bristles on exterior edge, keeled edge anteriorly; apical hair tufts pale and much less pronounced than in female; one or two hairs visible on surface. *Coxae*: Uniform orange-yellow, broad, squarish, with coxae III smallest; smooth. *Trochanters*: Orange-yellow, edge obscure. *Abdomen* (Fig. 16): Dorsally light whitish-yellow anteriorly becoming darker towards



Figs. 13-14: *A. malaccensis*, male, left palp. 13 Mesal-apical view; 14 Lateral view. x 150. C = conductor; E = embolus; M = median apophysis. Drawings by H. W. Levi.

Fig. 15: *A. malaccensis*, male. Front view. x 50.

Fig. 16: *A. malaccensis*, male and female. View from above. x 6.

Fig. 17: *A. malaccensis*, male. Labium and maxillae. x 100.

spinners, covered with small black patches, arranged in slightly curved parallel, transverse lines, closer together basally, the symmetrical red dots scarcely visible in this pattern; square shouldered, sides parallel up to midway and then gradually rounded basally; ventrally, colour as dorsally; between gastric fold and spinners some of the dorsal rows of black patches coalesce, forming short black, transverse lines. *Spinners*: Relatively smaller, much as for female with anal tubercle and colulus pronounced. *Palps* (Figs. 13 and 14): Orange, slightly darker on tibiae and femora. *Legs*: Generally orange, and although femora and patellae are lighter than remaining segments, there is no striking contrast as on legs of female; although legs become progressively more hairy from femora to tarsi, there are scarcely any spines as such; some trichobothria are visible; patellae all with a noticeable retrolateral protuberance. Measurements in mm:

Leg	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	0.7	0.3	0.5	0.4	0.3	2.2
II	0.6	0.2	0.4	0.4	0.3	1.9
III	0.4	0.2	0.2	0.2	0.2	1.2
IV	0.5	0.2	0.4	0.3	0.3	1.7

Material examined: Holotype male and paratype female only. Collected at ground level in a remnant patch of primary rain forest, 16-22 August 1979, Genting, Pahang, Malaya. A further, but immature female of *A. malaccensis*, with typical curled leaf retreat and web was seen in the nearby jungle on the day following the original discovery. This specimen was not taken. The male holotype and female paratype of *Acusilas malaccensis* (J. & F. Murphy vial 8408) have been deposited in the British Museum (Nat. Hist.).

Distribution: Genting, near Kuala Lumpur, Malaya. Another female, undoubtedly of this species, photographed by M. W. F. Tweedie, across the Strait of Malacca, at Lembah Anai, near Bukit Tinggi, Sumatra on 29 Nov. 1974.

Acusilas gentingensis sp. n. (Figs. 18-20)

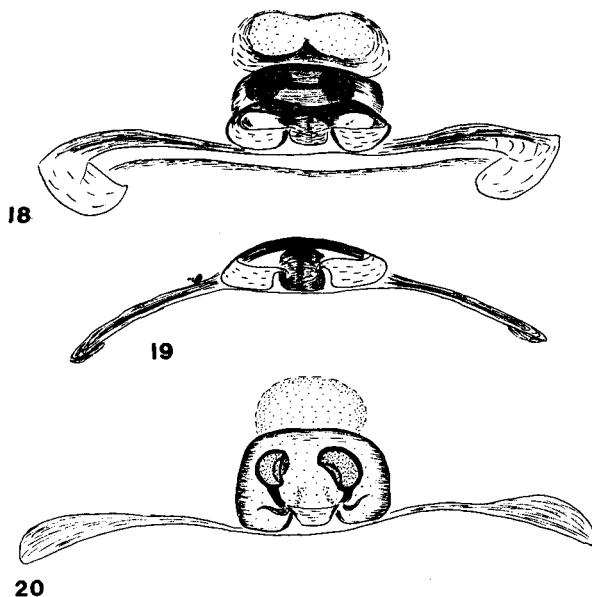
Description of female

Total length: 5.6 mm. *Carapace*: Length 2.2 mm; width, thoracic part 2.1 mm, cephalic part 1.2 mm; basically dull yellow, darker on cephalic part and sides; broken dark line along edge of carapace;

cephalic part typical, thoracic part separated from cephalic part and with radial furrows more pronounced than on other species; smooth, with a few forward-pointing hairs. *Eyes*: All with narrow, dark surrounds and eye area generally dark; medians on a prominence; in two rows, strongly recurved, as viewed from above; ratios of transverse diameters and interocular distances (on same scale as previously):

(9)		56		(9)
2				2
(10)	15	(9)	12	(9)
		14	14	15
		(9)	12	(9)
		10	10	

Clypeus: Uniform dark yellow with two long forward-pointing, black hairs; narrow, comparable to *A. coccineus*; tegument smooth. *Chelicerae*: Yellow, darker basally; in general parallel, but slightly divergent apically; cheliceral margins with 3 teeth on inner margin and 4 on outer, central two large and outer two small, and a number of small denticles between the margins as in *A. malaccensis*. *Sternum*: Dull yellow with darker patches; scutiform and with slight protuberances opposite coxae; matt surface with well spaced long dark hairs, particularly on the



Figs. 18-20: *A. gentingensis* sp. n., female. 18 Epigyne, ventral view; 19 Epigyne, rear view; 20 Vulva, dorsal view. x 40.

protuberances. *Labium*: Dark yellow with thick, white reborder; pointed, reaching mid-point of maxillae; smooth with a few dark hairs. *Maxillae*: Dark yellow with white inner margins; broad, with exterior edges parallel; keeled on anterior edge and with dense, fine, brownish hairs apically. *Coxae*: Yellow with dark patches; coxae III smallest; smooth with a few dark hairs. *Trochanters*: Yellow, with shallow, rounded indentation. *Abdomen*: Dorsally dull white with sides and area above spinners darker; anterior edge jet black, bordered with white; general shape oval, slightly square-shouldered anteriorly; ventrally, whitish with dark transverse stripes near spinners; uniform covering of dark hairs; length 3.4 mm, width 2.7 mm. *Spinners*: As *A. coccineus*, anal tubercle large and colulus well developed with several long hairs. *Palps*: Yellow, lighter on femora gradually darkening towards metatarsi; few spines dorsally on femora, becoming quite spiny on metatarsi; each with pectinate claw. *Legs*: Lighter yellow on femora and patellae becoming darker towards tarsi; annulations or hint of annulations on all segments except patellae, fairly stout, but metatarsi and tarsi thinner; metatarsi and tarsi with more bristles and spines than other segments; trichobothria dorsally on tibiae, metatarsi and tarsi, but particularly on tibiae; three claws, upper pair pectinate. Measurements in mm.

Leg	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	2.1	1.0	1.5	1.4	0.9	6.9
II	1.9	0.9	1.3	1.3	0.8	6.2
III	1.3	0.6	0.7	0.7	0.6	3.9
IV	1.7	0.9	1.4	1.4	0.7	6.1

Epigyne and vulva: Figs. 18-20.

Male: Unknown.

Material examined: Holotype female only. Collected at ground level in a remnant patch of primary rain forest, 16-22 August 1979, Genting, Pahang, Malaya. The holotype female of *A. gentingensis* (J. & F. Murphy vial 8838) has been deposited in the British Museum (Nat. Hist.).

Distribution: Single specimen known only from Genting near Kuala Lumpur, Malaya.

Observations

The original, curled leaf retreat, with the spider inside it, was placed in a tube and brought back to England. Two sprigs of *Bryophyllum tubiflorum* were

stuck into peat in a shallow dish and the whole covered with a perspex cover. The retreat complete with spider was balanced on top of one of the sprigs. A day or two later the spider had left the retreat, built a web slung between the two sprigs and had started to construct a new retreat from particles of peat. This was destroyed and the original retreat was placed on the floor of the cage by F. M. M. A day or two later the original retreat had been hoisted into position in a new web (Fig. 1).

Acknowledgements

We would like to thank M. Hubert of the Museum National d'Histoire Naturelle, Paris for the loan of specimens, Dr H. W. Levi for the original identification, certain drawings and for subsequent interesting correspondence connected with this group of spiders, Dr W. G. Eberhard for information about the web of *Salassina*, P. Hillyard of the British Museum (Nat. Hist.) for library research, and finally Henry Barlow, our host at Genting for all his hospitality, but particularly for providing us with a naturalist's paradise — his garden.

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circulaire, la partie thoracique convexe, quelquefois gibbeuse, marquée d'une fossette arrondie, arquée, cordiforme ou plus rarement longitudinale, toujours bien séparée du sillon céphalique".

According to Roewer (1942) there are some 100+ *Cyclosa* spp., 11 *Nemoscolus* spp., and 7 *Salassina* spp., whereas there are only 2 *Acusilas* spp. and but one species in each of *Deione* and *Nemospiza*. Furthermore, these last three genera are known only from females. Simon (1903) also states that *Deione* is close to *Acusilas* and that *Nemospiza* is close to *Nemoscolus*.

In his discussion on the Cycloseae, Simon (1895: 781) mentions, in a footnote, that *Epeira albida* L. Koch might also be an *Acusilas* sp. The *E. albida* specimen at the British Museum (probably the type) agrees with Koch's drawing and description but is certainly not an *Acusilas* species, its epigyne being like that of a more conventional kind of araneid.

The males of *Cyclosa*, *Nemoscolus* and *Salassina* are generally of a size comparable to, but usually smaller than, their females. However the male of *Acusilas malaccensis* sp. n. is very much smaller than the female, with a disparity in size comparable to that between certain male and female *Nephila*. The overall length ratio of female to male is about 6 for *A. malaccensis* (Fig. 16) as against about 8 for *N. maculata* (Fabr.). This size difference might well explain why, hitherto, the males of *A. coccineus* and *A. africanus* have been overlooked or possibly described under another name in another group of araneids. Unlike *Cyclosa*, the male *Acusilas malaccensis* has no hook on coxae I and no tooth on the palpal femur. There are four protuberances or warts, each with a single bristle, on the exterior edge of the maxillae (Fig. 17). The posterior median eyes have a narrow tapetum as in *Nemoscolus*, but unlike those of *Cyclosa* which have a broad tapetum.

Although in all the genera the carapace possesses the characteristic groove between the cephalic and thoracic parts, there are noticeable differences in the shape of the carapace of the various genera. The head of the female *Acusilas* is very pointed (Fig. 16). We also understand from Dr Levi that although *Salassina* has female genitalia similar to those of *Acusilas*, it has a very wide head and that *Deione* also has a very wide head.

The webs of *Cyclosa* and *Nemoscolus* hang more

or less vertically whilst the webs of *Salassina*, observed so far, are more or less horizontal (W. G. Eberhard pers. comm.). All are closely woven. The web of *Cyclosa* is a complete orb with a stabilimentum, but the spider has no retreat. The egg sacs are often incorporated in the stabilimentum. *Salassina* constructs a complete orb web which has an open hub, the spider sitting right at the centre of the web and with no obvious retreat. The web of *Nemoscolus* has no stabilimentum but has a conical tube of thick, paper-like material, suspended vertex uppermost and opening downwards, the mouth of the tube being at the centre of the web. This tube acts both as a repository for the egg sacs and also as a retreat. The orb is not complete, there being a gap in the region occupied by the retreat. We have seen examples of gaps of approximately 60° and 90°.

In contrast to these, according to the picture in Matsumoto *et al.* (1976: 66) and observations of ours, the webs of *Acusilas* are loosely woven, hanging

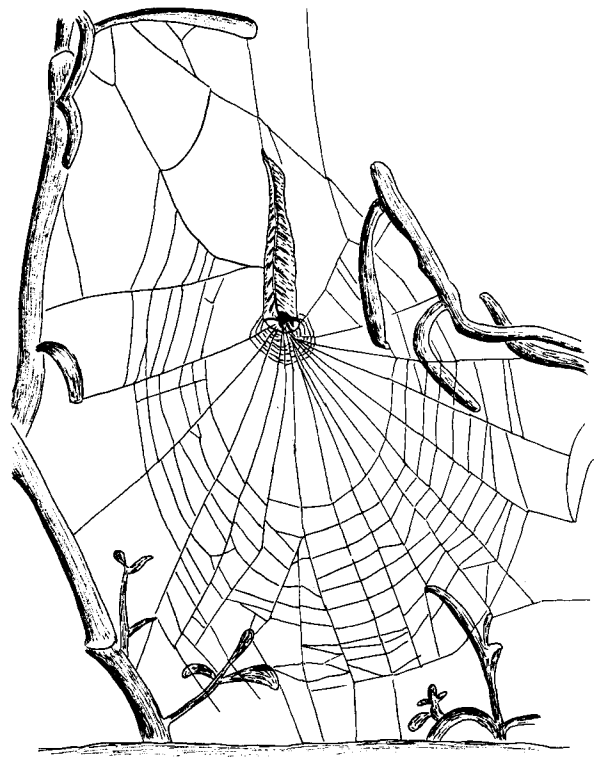


Fig. 1: *Acusilas gentingensis* sp. n. Web and retreat of female (constructed in captivity). x 0.7.

more or less vertically, with the tube of *Nemoscolus* almost exactly replaced by a dead leaf, rolled or folded into a cone. From the picture in the book the web of *A. coccineus* appears to be an almost complete orb whereas the web we observed for *A. malaccensis* was merely a sector, about one-third of an orb, and that of *A. gentingensis*, constructed in captivity, had a gap of about 45°. These are depicted in Figs. 1 and 2. The web of *A. malaccensis* was not quite vertical, possibly 20° off, but the shape of the cage of *A. gentingensis* more or less dictated a vertical web.

Acusilas coccineus Simon (Figs.3-6)

Acusilas coccineus Simon, 1895: 785, ♀. Kulczynski, 1911: 479. Petrunkevitch, 1928: 135. Roewer, 1942: 752. Bonnet, 1955: 157. Yaginuma, 1962: 24; 1969: 59, fig. 139, ♀. Paik, 1967: 60. Matsumoto, S., Shinkai, E. & Ono, H., 1976: 66, ♀.

Description of female

Total length: 7.6 mm. **Carapace:** Length 3.8 mm; width, thoracic part 3.5 mm, cephalic part 1.6 mm; light orange with darker striae, carapace edged with

thin, dark orange line; cephalic part narrow, steep, with thoracic part broad, fairly shallow; cephalic part and thoracic part separated by a pronounced furrow; tegument smooth with some small, short, forward-pointing bristles. **Eyes:** As viewed from above, in two strongly recurved rows, edged with rather narrow, black bands; medians located on a slightly raised, rounded prominence; ratios of transverse diameters of eyes (), interocular distances and height of clypeus:

(11)		64		(11)
1				1
(8)	15	(12)	11	(12)
		11	11	(8)
		(12)	14	(12)
		9	9	

Clypeus: Orange, smooth, with a few forward-pointing black hairs. **Chelicerae** (Fig. 6): Orange in general, darker basally; parallel, fairly long and narrow; smooth with a few dark hairs on interior edges; cheliceral margins with long teeth, 4 on outer margin and 3 on inner, fangs dark orange, short. **Sternum:** Uniform light orange with darker edge; scutiform, broad anteriorly, pointed posteriorly, coxae IV close together; smooth, with sparse, long, dark hairs. **Labium:** Orange, with thick, white, slightly pointed reborder; broad, apex reaching mid-point of maxillae; smooth, with a few dark hairs, anterior edge keeled, interior edge and apex with dense orange hairs. **Coxae:** Uniform orange; broad, roughly the same size, except coxae III which are noticeably smaller; smooth with a few dark hairs near the lateral edges. **Trochanters:** Orange, with a slightly rounded indentation; smooth. **Abdomen:** Length 6.0 mm, width 4.8 mm. Overall colour orange, darker dorsally; dorsally with darkish marks near the sides and above spinners. Colour plates in Yaginuma (1969) and Matsumoto *et al.* (1976) indicate a light transverse band across anterior edge and shoulders – not evident on Paris specimens; slightly longer than broad, flattish, anterior edge straight, slightly square shouldered, maximum width about ¼ its length from anterior edge, dorsally 4 pairs of distinct, impressed, dark orange dots, symmetrically placed and in longitudinal lines; uniform covering of short, equispaced hairs. **Spinners:** Six, orange except for the whitish, and less hairy, apical

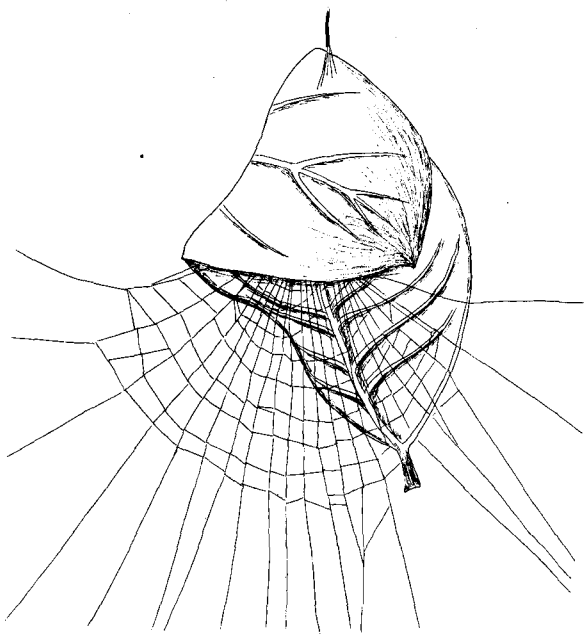


Fig. 2: *Acusilas malaccensis* sp. n. Platform web and retreat (drawn from photograph taken in the field). x 2.