FURTHER NOTES ON THE SPIDERS OF NEW GUINEA I (ARGYOPIDAE)

by

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With 125 text-figures and 4 maps

Abstract. — In this paper several collections of spiders are dealt with, originating from New Guinea, Bismarck Arch., Solomon Is., and from islands of the Great Barrier Reef and in the Coral Sea. Descriptions, figures and/or remarks are given of the following species: *Argyope aemula* (Walckenaer), *A. actherea* (Walckenaer), *A. appensa* (Walckenaer), *A. avara* Thorell, *A. ocyaloides* L. Koch, *A. picta* L. Koch, *A. protensa* L. Koch, *A. reinwardti* (Doleschall), *Cyrtophora cylindroides* (Walckenaer), *C. moluccensis* (Doleschall), *Cyclosa bifida* (Doleschall), *C. camelodes* (Thorell), *C. vallata* (Keyserling) (compared with *C. mulmeinensis* (Thorell)), *C. albopunctata* Kulczynski, *Larinia tabida* (L. Koch), *Araneus cordiformis* (L. Koch), *A. dehaani* (Doleschall), *A. laglaizei* (Simon), *A. nauticus* (L. Koch), *A. theisi* (Walckenaer), *A transmarinus* (Keyserling), *Anepsion peltoides* (Thorell), *A. hammeni* Chrysanthus, *A. buchi* Chrysanthus, *Poecilopachys verrucosa* (L. Koch), *Arkys lancearius* Walckenaer, *Herennia ornatissima* (Doleschall), *Nephila maculata* (Fabricius), *N. plumipes* (Latreille), *N. malabarensis* (Walckenaer), *Gasteracantha crucigera* Bradley, *G. pentagona* (Walckenaer), *G. scintillans* Butler, *G. brevispina* (Doleschall), *G. mediofusca* (Doleschall), *G. quadrispinosa* (Cambridge), *G. signifera* Pocock, *G. fasciata* Guérin and *G. taeniata* (Walckenaer).

Descriptions and figures are given of the following new species: *Argyope takum* ♀, *Gea brongersmai* ♀, *Araneus poltyoides* ♀, *Poecilopachys minutissima* ♂, *Archemorus sibil* ♀, *A. roosdorpi* ♀, *Arkys nimdol* ♂ and *Orsinome monulfi* ♀.

Lists of localities only, are given for several other species.

INTRODUCTION

Several collection trips made in New Guinea by members of the staff of the Rijksmuseum van Natuurlijke Historie, Leiden, between 1952 and 1959, resulted in a large quantity of spiders. Through the kindness of Prof. Dr. L. D. Brongersma, Director of the Museum, and Dr. L. van der Hammen, Curator of the Department of Arachnida, I was able to study these materials, together with specimens given to the Museum by other collectors.

Specimens from several other collections are included in this study; part of them have been collected in New Guinea, part in the islands of the Bismarck Archipelago, the Solomon Is., islands of the Great Barrier Reef and in the Coral Sea.

I wish to thank the Directors and Curators of Arachnida of the Institutes, mentioned below, for putting these collections at my disposal. A list, with the abbreviations used in the present paper, follows.

CAS: California Academy of Sciences, San Francisco (Dr. P. H. Arnaud).
CHR: collection Fr. Chrysanthus.
MCZ: Museum of Comparative Zoology, Cambridge USA (Dr. H. W. Levi).
RMNH: Rijksmuseum van Natuurlijke Historie, Leiden (Dr. L. van der Hammen).
UNE: University of New England, Armidale, Australia (Dr. H. Heatwole).
ZMH: Zoologisches Museum Hamburg (Dr. G. Rack).
ZMK: Zoologiske Museum København (Dr. B. Petersen).

COLLECTORS (alphabetically):

T. Aarons	Mr. Hendriksen	J. W. van Nouhuys
J. van den Assem	J. van der Hoeven	W. J. Roosdorp
T. Barbour	L. B. Holthuis	E. S. Ross
J. C. Bauwens	Fr. G. van Hout	F. E. Sawyer
K. W. J. Boelen	G. Jackson	S. Schädler
M. Boeseman	Mrs. E. Kranendonk	H. Schijemann
L. D. Brongersma	D. L. Leiker	M. Thiel
R. Bulmer	H. M. Malkin	W. Vink
G. Duncker	Rev. & Mrs. Marcus	M. Wegener
B. Gray	Br. Monulf	R. G. Wind
L. van der Hammen	Mr. Nelissen	E. O. Wilson
H. Heatwole		

EXPEDITIONS:

Koninklijk Nederlands Aardrijkskundig Genootschap — all specimens collected in 1939 near Etna Bay and Wissel Lakes (KNAG).
Noona Dan Expedition 1961-1962 — all specimens collected in the Bismarck Arch. and the Solomon Is. in 1962.
Star Mountains Expedition — all specimens collected in 1959.

Maps. — On four maps the approximate situation of the localities is indicated. The accurate situations of all localities of the Star Mountains Expedition (from Tanah Merah to the Star Mountains) are indicated on several maps published by Brongersma & Venema (1960, 1962, 1963). As to the exact situation of the localities, in which spiders have been collected by the Noona Dan Expedition, and for details on these localities, cf. Petersen, 1966.

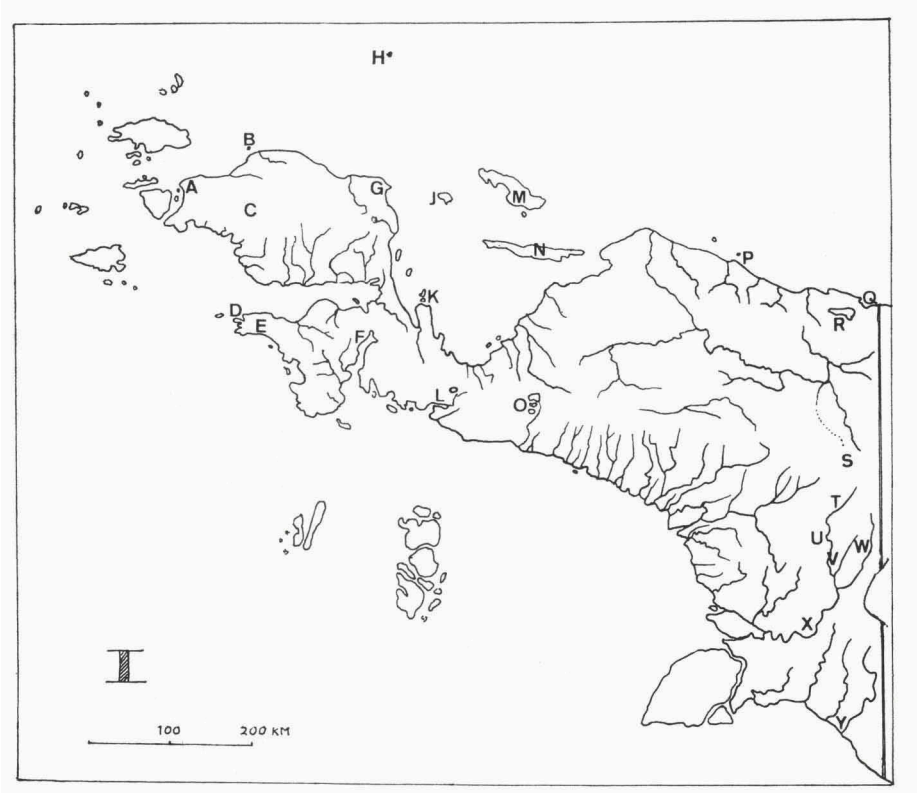
Map I: western part of New Guinea (Irian Barat, Indonesia).
Map II: eastern part of New Guinea (Territory of Papua & New Guinea).
Map III: Bismarck Archipelago + Solomon Is.
Map IV: part of Great Barrier Reef and Coral Sea.

The localities are registered from West to East and from North to South; several localities, situated close to each other are indicated with one letter.

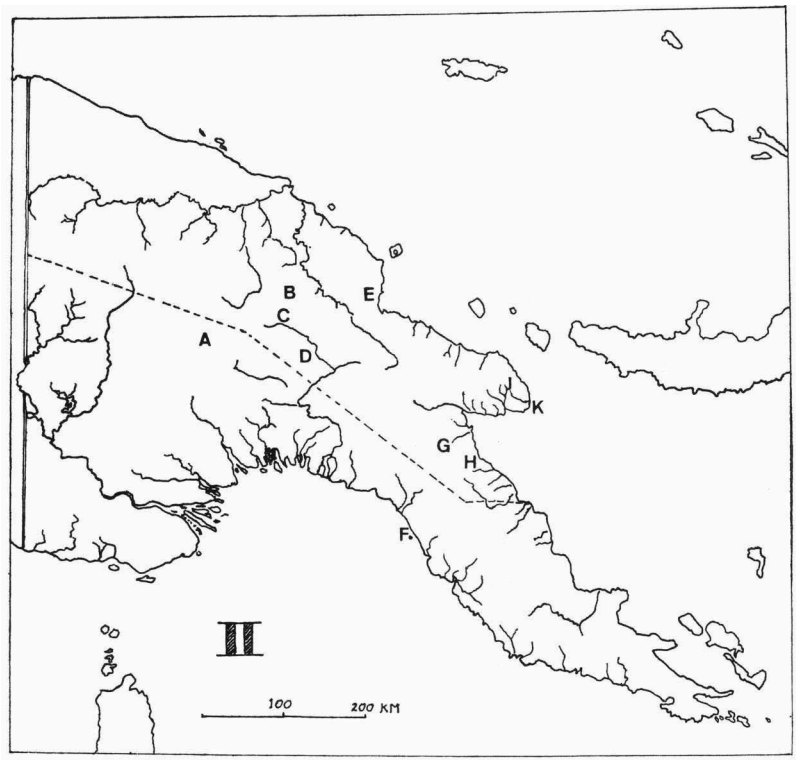
Alphabetical list of localities. — Roman ciphers refer to the maps, where the locality can be found. "—A" means: a locality in the neighbourhood of A.

Admiralty Is. III B	Argoemi Bay I F	Biak I M
Ajamaroe I C	Baiyer Valley II C	Bird I. IV H
Antares Mts. I S	Banatam III E	Bismarck Arch. map III A
Araboe-bivak — I O	Betabib I S	Boliu III C

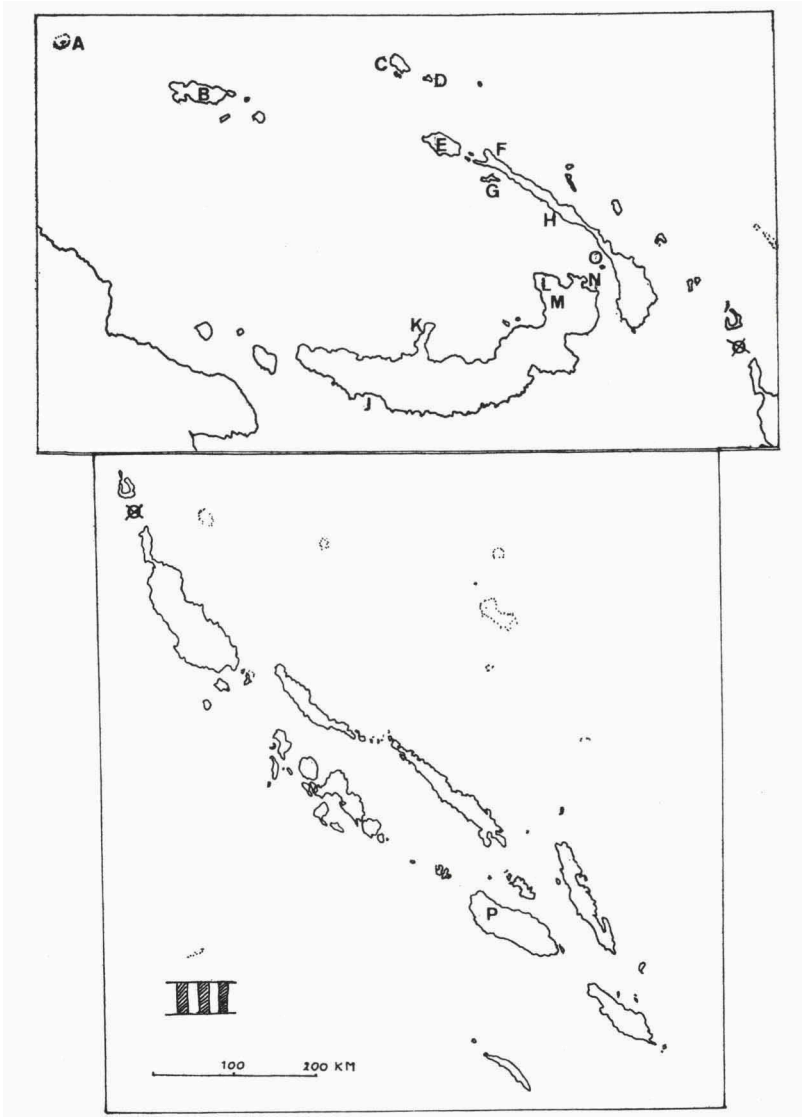
Bulolo II G
Capricorn Group IV F
Cato I. IV J
Chilcott I. IV E
Cyclops Mts. — I Q
Denboek I S
Digoel I X
Djidmaoe — I C
Duke of York I. III O
Dyaul III G
Eaborae III C
Elles — I C
Emananusa — III C
Enarotali I O
Erskine I. IV F
Etna Bay I L
Fak Fak I E
Finschhafen II K
Fr. Wilhelmshafen II E
Genjem — I Q
Green I. IV C
Guadalcanal I. III P
Hermit Is. III A
Herold Cays IV D
Heron I. IV F
Hollandia I Q
Holtekang — I Q
Honiara III P
Jautefa Bay — I Q
Jende I. I K
Joka — I R
Kaironk Valley II B
Kalili Bay III H
Katem I S
Kavieng III F
Kawakit I T
Kotabaroe — I R
Kouh, Digoel I U
Langemak Bay — II K
Lavongai III E
Lemkamin III H
Lizard I. IV B
Logoweng II K
Lombrun III B
Lorengau III B
Luf I. III A
Madang II E
Maffin Bay I P
Malakata III C
Mandiwa — I F
Manokwari I G
Manus I. III B
Mapia I. I H
Mariang I U
Massawa III C
Matthias Is. III C
Merauke I Y
Middelburg I. I B
Mindiptana I W
Molbokon I S
Mongi Watershed II J
Mt. Missim II H
Mussau I. III C
Neu Hannover III E
Neu Mecklenburg III F H
Neu Pommern III J-N
New Britain III J-N
New Ireland III F H
Nimdol I S
Noemfoor I. I J
North East Cay IV G
Nymph I. IV A
Ok Bon I S
Ok Sibil I S
Ok Tenma I S
Ok Tsjob I S
One Tree I. IV F
Owi I. — I M
Pak I. — III B
Paniai (Lake) I O
Pulle Bay III J
Rabaul III N
Roon I. I K
Schrader Mts. II B
Sedorfojo — I C
Sekroe I D
Sentani (Lake) I R
Seroei I N
Sibil I S
Solomon Is. Map III B
Sorong I A
Squally I. III D
Star Mts. I S
Sturm I. III D
Sumuna III G
Tage (Lake) I O
Takum I T
Taletasi (Lake) III C
Talumalaus III C
Tanah Merah I V
Tari II A
Tassital III C
Tenmasigin I S
Tigi (Lake) I O
Vaisisi III K
Valoka III K
Wakde I. — I P
Wimba II D
Wissel Lakes I O
Wreck I. IV F
Yalom III M
Yaramanda II C



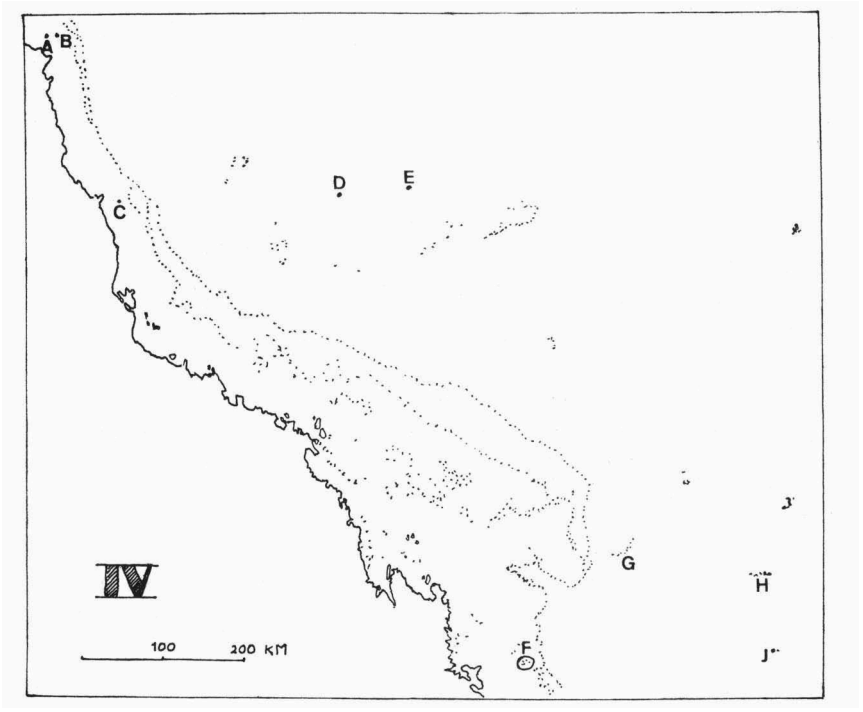
Map I. Western part of New Guinea (Irian Barat, Indonesia): A = Sorong; B = Middelburg I.; C = Ajamaroe (with Djidmaoe, Elles, Sedorfojo); D = Sekroe; E = Fak Fak; F = Argoemi Bay (with Mandiwa); G = Manokwari; H = Mapia Is.; J = Noemfoor I.; K = Roon I. (with Jende I); L = Etna Bay; M = Biak I. (with Owi I.); N = Seroei (Japen I.); O = Wissel Lakes (with Araboe bivak, Enarotali, Lake Paniai, Lake Tage, Lake Tigi); P = Maffin Bay (with Wakde I.); Q = Hollandia (Djajapoera) (with Cyclops Mts., Genjem, Holtekang, Jautefa Bay); R = Lake Sentani (with Joka, Kotabaroe); S = Star Mountains (Antares Mts., with Betabib (Ok Sibil), Denboek (Ok Sibil), Katem, Molbokon (Ok Tsjob), Nimdol, Ok Bon, Ok Sibil, Ok Tenma, Ok Tsjob, Tenmasigin); T = Takum (with Kawakit); U = Kouh, Digoel (with Mariang); V = Tanah Merah; W = Mindiptana; X = Digoel; Y = Merauke.



Map II. Eastern part of New Guinea (Territory of Papua & New Guinea): A = Tari; B = Schrader Mts. (with Kaironk Valley); C = Baiyer Valley (with Yaramanda); D = Wimba; E = Madang (= Fr. Wilhelmshafen); F = Yule I; G = Bulolo; H = Mt. Missim; J = Mongi Watershed; K = Finschhafen (= Logoweng) (with Langemak Bay).



Map III. Bismarck Archipelago + Solomon Is.: A = Hermit Is. (with Luf I.); B = Manus I. (Admiralty Is.) (with Lombrun, Lorengau, Pak I.); C = Mussau I. (St. Matthias Is.). (with Boliu, Eaborae, Emananusa I., Malakata, Lake Taletasi, Talumalaus, Tassital); D = Squally I. (Sturm I.); E = Lavongai (Neu Hannover) (with Banatam). *New Ireland* (Neu Mecklenburg): F = Kavieng; G = Dyaul I. (with Sumuna); H = Lemkamin (with Kalili Bay). *New Britain* (Neu Pommern): J = Pulle Bay; K = Vaisisi (with Valoka); L = Massawa; M = Yalom; N = Rabaul; O = Duke of York I. *Solomon Is.*: Guadalcanal I.; P = Honiara.



Map IV. Part of the Great Barrier Reef and the Coral Sea: A = Nymph I.; B = Lizard I.; C = Green I.; D = Herold Cays; E = Chilcott I.; F = Capricorn Group (with Erskine I., Heron I., One Tree I., Wreck I.); G = North East Cay; H = Bird I.; J = Cato I.

ARGYOPINAE

Argyope Audouin, 1825

Argyope aemula (Walckenaer, 1841) (fig. 1-3)

Epeira aemula Walckenaer, 1841, Hist. nat. Ins. apt. *2*: 118 (♀).
Epeira striata Doleschall, 1857, Natuurk. Tijdschr. Ned. Indië 13: 415 (♀); 1859, Acta Soc. Sci. Ind.-Neerl. 5: 30, Pl. 9 fig. 2 (♀).
Argiope magnifica L. Koch, 1871, Arachn. Austral. 1: 27, Pl. 2 fig. 6 (♀).
Argiope aemula Thorell, 1877, Ann. Mus. civ. Stor. nat. Genova 10: 364 (♀ ♂).

Material. — West New Guinea: Sekroe, -.7.1897, Schädler, ♀; Lake Paniai, 20.8.1939, 2♀, 5 juv.; -.9.1939, 2♀; 17.11.1939, ♀ (all KNAG); Hollandia, 22/23.2.1953, Brongersma, ♀; Hollandia, cape near "Invasiestrand", 10.1.1954, van der Hammen, ♀; Jautefa Bay near Hollandia, 26.12.1953, van der Hammen, ♂; Genjem near Hollandia, 13.1.1954, van der Hammen, ♀; between Kotabaroe and Sentani, 18.12.1953, van der Hammen, ♀; Sibil, Basiskamp, 1260 m, -.5/8.1959, 21♀, 2 juv.; Tenmasigin, 1800 m, 22.5.1959, ♀; Ok Tenma, 1500 m, 19.5.1959, ♂ (all Star Mts. Exped.); without locality, 15/30.9.1939, KNAG, ♀; (all RMNH).

East New Guinea: Wimba, National Gardens, 20.8.1963, Vink, 3♀, ♂, 30 juv. (RMNH); Wimba, Kuboe Range, 1950 m, 8.9.1963, Vink, ♂ (RMNH); Kaironk Valley, Schrader Mts, 4500', 12.5.1966, ♀; -.8.1966, ♀; 9.9.1966, ♀, 2 juv. Jackson; same locality, 5500', 2.10.1963, Bulmer, ♀; probably same locality, without date, Bulmer, ♀ (all CHR); Mongi Watershed, Huon Pen., 1200-1300 m, 11/12.4.1955, Wind, ♀ (MCZ); Finschhafen, -.5/6.1945, Sawyer, juv. (CAS).

The type locality of this species is Celebes; it has a rather wide distribution in the Indo-Australian area: it is known from India to New Guinea and Australia (Roewer, 1942: 739; Bonnet, 1955: 670). There is not a single specimen in the large collections gathered by Br. Monulf in the environs of Merauke and Mindiptana between 1956 and 1965.

Argyope aetherea (Walckenaer, 1841)

Argyope aetherea (Walckenaer) Chrysanthus, 1958, Nova Guinea, new ser. 9 (2): 237, 242; fig. 7-12, 20, 24 (♀ ♂).

Argiope boetonica Strand, 1915, Abh. Senckenb. Naturf. Ges. 36: 215, Pl. 16 fig. 53 (♂). **syn. nov.**

Material. — West New Guinea: Sedorfoio, 20.7.1952, Rev. & Mrs Marcus, ♀ f. *deusta* Thor.; Borokoe, Biak, 12.3.1952, Brongersma, ♀ f. *deusta*; Biak, -.5.1952, Brongersma, ♀ f. *deusta*; Biak, between Base and Nicakamp, 3.12.1953, van der Hammen, 4 juv.; Lake Paniai, -.8/9.1939, KNAG, 6♀; between Enarotali and kampong Idajakottae, 13.7.1952, Roosdorp, 2♀; Genjem near Hollandia, 13.1.1954, van der Hammen, ♀ f. *deusta*; Ok Sibil, Basiskamp, 17.7.1959, ♀; Takum, kamp Hifob, 10.9.1959, 2♀; Kouh, Digoel, 10 m, 8.9.1959, 30♀, 4♂, 5 juv.; Tanah Merah, 3.9.1959, 2♀ (all Star Mts. Exped.) (all RMNH).

East New Guinea: Mongi Watershed, Huon Pen. 3700-4000', 11.4.1955, Wilson, ♀ (MCZ).

Bismarck Arch.: New Britain, Pulle Bay, -.-.1909, Duncker, 2♀ f. *deusta* (ZMH); New Ireland, Lemkamin, 900 m, -.4.1962, Noona Dan Exped. ♀, 2♀ f. *deusta*; Kavieng, 12.1.1962, Noona Dan Exped. ♀ (all ZMK).

Great Barrier Reef: Lizard I., 27/29.9.1967, Heatwole, ♀ ♂ (UNE).

Dr. O. Kraus (Senckenberg Museum, Frankfurt a.M.) kindly permitted me to study the holotype (and only known specimen) of *A. boetonica* Strand (SMF 3505), originating from Celebes. This examination convinced me that it is a male of *A. aetherea*. Strand (l.c. p. 216) made the following remark: "Wahrscheinlich das Männchen zu irgend einer schon im weiblichen Geschlecht bekannten Art".

Argyope appensa (Walckenaer, 1841) (fig. 4-8)

Epeira appensa Walckenaer, 1841, Hist. nat. Ins. apt. 2: 111 (♀).

Epeira crenulata Doleschall, 1857, Natuurk. Tijdschr. Ned. Indië 13: 414 (♀); 1859, Acta Soc. Sci. Ind.-Neerl. 5: Pl. 3 fig. 7 (♀).

Argiope chrysorrhoea L. Koch, 1872, Arachn. Austral. 1: 38, Pl. 3 fig. 5 (♀).

Argiope crenulata Thorell, 1878, Ann. Mus. civ. Stor. nat. Genova 13: 30 (♂); Roewer, 1938, Mém. Mus. Hist. Nat. Belg., Hors Série, 3 (19): 33, fig. 23 (♀).

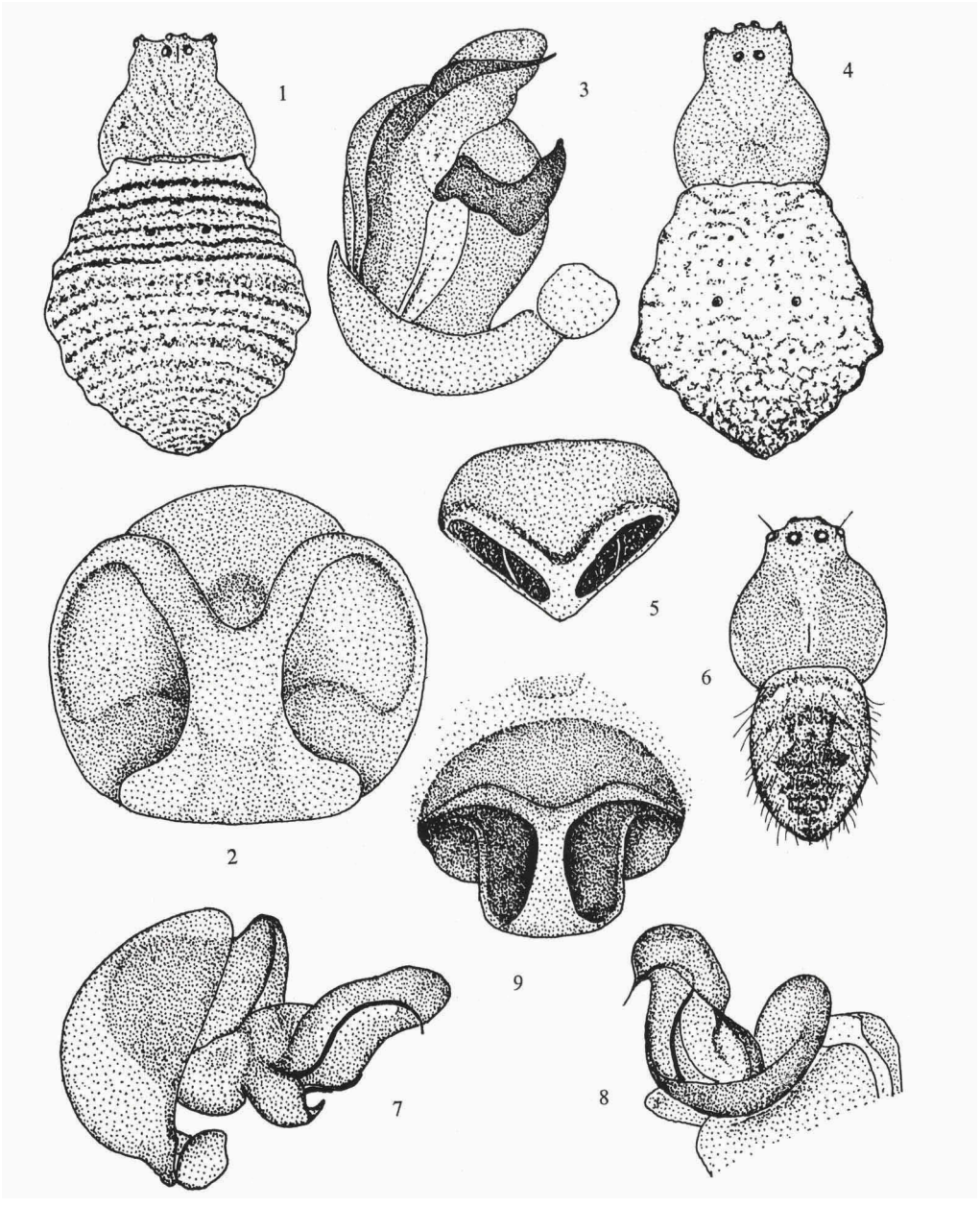


Fig. 1-3. *Argyope aemula* (Walckenaer). 1, ♀ ; 2, do., epigyne; 3, ♂, left palp, inner side. Fig. 4-8. *A. appensa* (Walckenaer). 4, ♀ ; 5, do., epigyne; 6, ♂ ; 7, do., left palp, inner side; 8, do., spiral tip of the left palp, antero-lateral aspect. Fig. 9. *A. avara* Thorell, ♀, epigyne. — 1, 4, × 3; 2, × 36; 3, × 40; 5, 9, × 18; 6, × 14; 7, 8, × 60.

Material. — West New Guinea: Doom I., 18/20.4.1952, Brongersma & Roosdorp, ♀; Middelburg I., 3.7.1952, Brongersma & Roosdorp, 2 ♀, juv.; Ajamaroe, 29.2.1952, Brongersma, ♀; Pegoen I., Mapia atoll, 18.7.1952, Brongersma, ♀; Noemfoor I., -.7.1952, van der Hoeven, ♀; 4.11.1953, van der Hammen, 2♀ (all RMNH); Roon I. & Jende I., 1906/7, Barbour, ♀ (MCZ); Hollandia, near "Invasiestrand", 9.1.1954, van der Hammen, ♀ (RMNH).

East New Guinea: Fr. Wilhelmshafen, 17/20.5.1909, Duncker, 5 ♀ (ZMH).

Bismarck Arch.: Hermit Is., 1.3.1911, Schijemann, 30♀ (ZMH).

This species, originally described without type locality, is known from Sumatra to Australia and New Caledonia (Roewer, 1942: 740; Bonnet, 1955: 672). Nearly all specimens, mentioned above, have been collected on islands in the neighbourhood of New Guinea; the remaining specimens in the Northern part.

The pattern of the abdomen is somewhat variable: in some it is like in our fig. 4, other specimens look more like L. Koch's fig. 5, whereas others resemble more Doleschall's fig. 7.

Dr. J. Cooreman and Mr. J. Kekenbosch (Institut royal des Sciences naturelles de Belgique, Brussels) kindly enabled me to study specimens from Indonesia, identified by Roewer (1938: 33, as *A. crenulata* Dol. = *A. appensa* Walck.): the identifications are correct; the figure of the epigyne (fig. 23), however, is misleading. I suppose that it is drawn after an epigyne almost entirely separated from the abdomen and then viewed from the underside.

Argyope avara Thorell, 1859 (fig. 9-12)

Argiope avara Thorell, 1859, Oefv. Svensk. Vet. Ak. Förh. 16: 299 (♀); 1868, Eugenies Resa omkring jorden, Upsala: 27 (♀); L. Koch, 1871, Arachn. Austral. 1: 44 (♀); Mc Cook, 1893, Amer. Spiders 3: 222, Pl. 14 fig. 1 (♀); Simon, 1900, Faun. Hawaiiens. 2 (5): 476 (♀ ♂); Strand, 1915, Abh. Senckenb. Naturf. Ges. 36: 208, Pl. 16 fig. 57a-b, Pl. 17 fig. 59a-c, 60a-b (♀).

Material. — Bismarck Arch.: Mussau I., Talumalaus, 23.1. and 5.2.1962, 3 ♀, juv.; Emananusa, 29.1.1962, 2 ♀; Tassital, 3.6.1962, ♀, 2 juv. (all Noona Dan Exped. — ZMK).

Solomon Is. 18.12.1909, Martens, ♀ (ZMH).

Thorell described this species after specimens from California and Honolulu. L. Koch gave a translation of Thorell's 1868 description (in German), Strand discussed many specimens of this species, originating from Squally I. (near Mussau I.), Keule I. (Koil I., N. of East New Guinea), Wogeo (Schouten I.) and Lo I. (Lou I. — Admiralty Is.). He pointed out the great variability, labelling some of these varieties with a special name and adding figures of three of them.

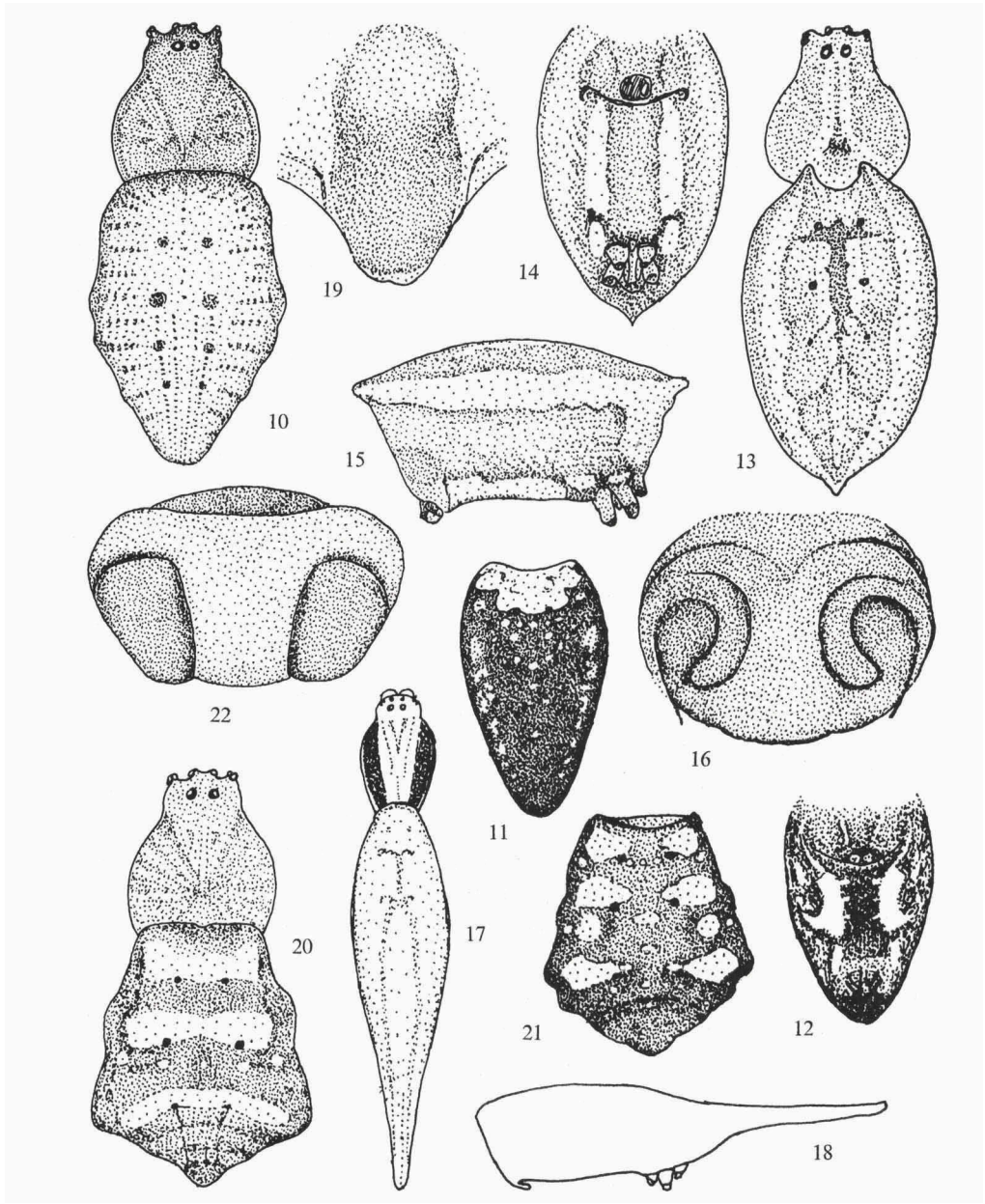


Fig. 10-12. *Argyope avara* Thorell. 10, ♀; 11, do. (from the Solomon Is.), abdomen; 12, the same ♀, abdomen, ventral aspect. Fig. 13-16. *A. ocyaloides* L. Koch. 13, ♀; 14, do., abdomen, ventral aspect; 15, do., lateral aspect; 16, do., epigyne. Fig. 17-19. *A. protensa* L. Koch. 17, ♀; 18, do., abdomen, lateral aspect; 19, do., epigyne. Fig. 20-22. *A. reinwardti* (Doleschall). 20, ♀; 21, do. (from Sekroe), abdomen; 22, do., epigyne. — 10-12, × 2; 13-15, × 7; 16, × 75; 17, 18, 20, 21, × 3; 19, × 25; 22, × 36.

In all specimens of the Bismarck Arch. (ZMK) the pattern of the abdomen is as in fig. 10, identical with Strand's fig. 57a. The transverse lines are distinct on the borders only, whereas in Thorell's specimens these lines, at least in the posterior part of the abdomen, cross the whole surface. The pattern of the ventral side of the abdomen is somewhat variable but basically as in Strand's fig. 59a.

The specimen of the Solomon Is. (fig. 11, 12; ZMH) strongly differs from the others: it is smaller, but Strand mentioned smaller specimens from Keule I.; the abdomen is for the greater part dark brown, the lighter parts are not concentrated round the four anterior muscle points as in Strand's ab. *ocelligera* from Keule I. (his fig. 60a); the sternum is uniformly yellow and the longitudinal bands on the ventral side of the abdomen are very broad. Both varieties are mentioned by Strand: the first in a specimen from Keule I., the second in a specimen from Wogeo. The epigyne of this specimen from the Solomon Is., however, is absolutely identical with that of all other specimens.

Argyope chloreides Chrysanthus, 1961

Argyope chloreides Chrysanthus, 1961, Nova Guinea, Zoology, no. 10: 197, fig. 5-8 (♀).

Material. West New Guinea: Seroei, Japen I., 4/13.5.1952, Roosdorp, ♀ (RMNH).

Argyope ocyaloides L. Koch, 1871 (fig. 13-16)

Argiope ocyaloides L. Koch, 1871, Arachn. Austral. 1: 30, Pl. 2 fig. 8 (♀).

Material. — West New Guinea: Maffin Bay, -.9.1944, Ross, ♀ (CAS).

This specimen is in complete agreement with Koch's description, figures, holotype from Port Mackay and paratype from Rockhampton (ZMH); in Koch's figure the "shoulders" are not so distinct. By giving this name Koch wanted to express the resemblance of the pattern of the abdomen with that of *Ocyale* (*Pisaura*) *mirabilis* (Clerck).

The species has never been mentioned after the first description (Roewer, 1942: 742; Bonnet, 1955: 692).

Argyope picta L. Koch, 1871

Argyope picta L. Koch, Chrysanthus, 1958, Nova Guinea, new ser., 9 (2): 237, 242; fig. 1-6, 19, 21, 23 (♀ ♂).

Argiope squallica Strand, 1915, Abh. Senckenb. Naturf. Ges. 36: 216, Pl. 16 fig. 54 (♂) **syn. nov.**

Material. — West New Guinea: Ajamaroe, -.6.1952, Brongersma & Roosdorp, 2 ♀; 1/6.4.1955, ?, 2 ♀; between Ajamaroe and Taminaboean, 7.6.1952, Brongersma & Roosdorp, ♀, Sedorfojo, -.7.1952, Marcus, 4 ♀, 3 juv.; Sekroe, -.5/7.1897, Schädler, 5 ♀,

2 juv. (all RMNH); Fak Fak, 6.7.1939, Wind, ♀ (MCZ); Manokwari, 15.9.1904, van Nouhuis, 2 juv.; between Wosi and Sowi, S. from Manokwari, 25.4.1952, Brongersma & Roosdorp, ♀; Mandiwa, Argoemi Bay, 12.7.1952, Brongersma, ♀; Noemfoor I., -.7.1952, van der Hoeven, 2♀; Biak, 7/26.2.1952, ♀, 2 juv.; -.5.1952, 5 ♀; from nest of wasp, 17/25.2.1952, 2 ♀, 4 juv.; Borokoe, 12.3.1952, ♀ (all Brongersma); Sorido strip, 31.3.1952, Brongersma & Roosdorp, juv.; Base, 5.4.1952. Roosdorp, ♀ ♂; -.11/12.1953, van der Hammen, ♀, 2 ♂, 4 juv.; -.9/12.1953, Personnel Royal Netherlands Navy, ♀, ♂, 3 juv.; Seroei, Japen I., 4/13.5.1952, Roosdorp, 3♀, 3 juv.; -.1.1954, van Hout, 2 ♀, 4 juv.; Lake Paniai, -.8/9.1939, KNAG, 3♀, juv.; Lake Tage, 30.12.1954, ?, ♀; Waghete, Lake Tigi, 11/12.1.1955, ?, 8♀; Wissel Lakes, 1954, Boelen, ♀, 2 ♂, 3 juv. (all RMNH); Maffin Bay, -.6/10.1944, Ross, 6 ♀, 3 ♂ (CAS); Hollandia, 23.12.1953, ♀; Jautefa Bay near Hollandia, 2.1.1954, ♀ ♂; "Invasiestrand", 9.1.1954, ♀; Genjem, near Hollandia, 4 ♀; Hollandia, from nest of wasp, 23.1.1954, ♂ (all van der Hammen); ibid. 14.8.1956, 15 juv. van den Assem; Ok Sibil, 1260 m, -.7.1959, juv.; Tanah Merah, 24.8. 1959, ♂ (Star Mts. Exped.) (all RMNH).

East New Guinea: Finschhafen, -.5/6.1945, Sawyer, ♀ (CAS).

Bismarck Arch.: Manus I., Lorengau, 19.6.1962, 5♀; 21.7.1962, ♂; Mussau I., Talumalaus, -.1.1962, 2♀, ♂; 9.2.1962, ♀; Emananusa, 29.1.1962, ♂; Lake Taletasi, 4.6.1962, 2 juv.; Lavongai, Banatam, 16/21.3.1962, 3♀; New Ireland, Lemkamin, 900 m, 6/21.4.1962, 18♀, 2♂; Danu, Kalili Bay, 30.4.1962, 3♀; New Britain, Vaisisi, 9.7.1962, 6♀; Valoka, 9.7.1962, ♀; Yalom, 1000 m, 10/23.5.1962, 22 ♀, 2♂, 12 juv. (all Noona Dan Exped., ZMK); New Ireland, 1905, Wegener, ♀; New Britain, Massava, 22/24.11.1908, Duncker, juv.; Pulle Bay, -.2.1909, Duncker, ♀ (all ZMH).

It seems that this species occurs in nearly all localities where collecting took place, and that it is rather common.

Strand described his *A. squallica* after two males from Japen I. A study of these specimens (holotype and paratype — the only known specimens) in the Senckenberg Museum, Frankfurt a.M. (SMF 3588, 3589) convinced me that they are males of *A. picta*. Strand (l.c. p. 217) remarked: "Ist wahrscheinlich das Männchen zur einer schon im weiblichen Geschlecht bekannten Art".

Argyope protensa L. Koch, 1871 (fig. 17-19)

Argiope protensa L. Koch, 1871, Arachn. Austral. 1: 211, Pl. 18 fig. 8 (♀).
A. syrmatica, L. Koch, 1871, ibid.: 213, Pl. 18 fig. 9 (♀).

Material. — Great Barrier Reef: Lizard I., 25/27.9.1967, Heatwole, ♀ (UNE).

This specimen fully agrees with L. Koch's description and figures. The type locality of the species is Port Denison, Queensland; it is recorded from Australia, New Zealand and New Caledonia (Roewer, 1942: 743; Bonnet, 1955: 693).

Argyope reinwardti (Doleschall, 1859) (fig. 20-22)

Epeira trifasciata Doleschall, 1857, Nat. Tijdschr. Ned. Ind. 13: 416 (♀); 1859, Act. Soc. Sci. Ind. Neerl. 5: Pl. 1 fig. 3 (♀) — preocc.
Epeira reinwardti Doleschall, 1859, ibid.: 31, Pl. 15 fig. 5 (♀).

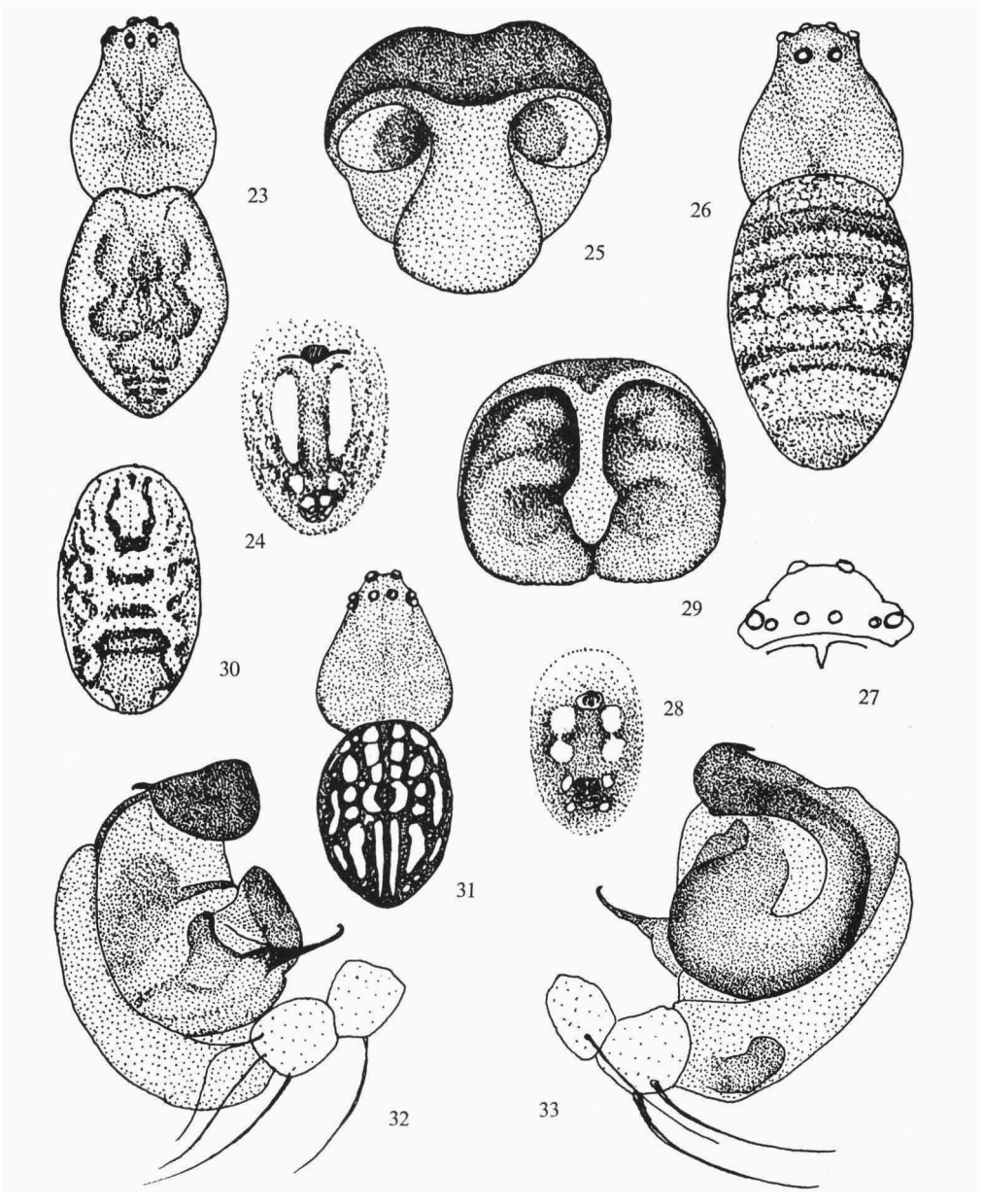


Fig. 23-25. *Argyope takum* nov. spec. 23, ♀ ; 24, do., abdomen, ventral aspect; 25, do., epigyne. Fig. 26-29. *Gea brongersmai* nov. spec. 26, ♀ ; 27, do., eye region; 28, do., abdomen, ventral aspect; 29, do., epigyne. Fig. 30. *Cyrtophora cylindroides* (Walckenaer), ♀ (from Admiralty Is.) abdomen. Fig. 31-33. *C. moluccensis* (Doleschall). 31, ♂ ; 32, do., left palp, inner side; 33, do., left palp, outside. — 23, 24, × 7; 25, 29, × 75; 26, 31, × 14; 27, × 25; 28, × 9; 30, × 3; 32, 33, × 60.

Argiope reinwardti Workman, 1896, Malays. Spiders: 29, Pl. 29 (♀); Strand, 1907, Zool. Jahrb. Syst. 24: 417 (♀).

Material. — West New Guinea: Sekroe. -.7.1897, Schädler, ♀; Etna Bay, 22/30.11. 1939, KNAG, ♀; Lake Paniai, -.9.1939, 9♀; Araboe bivak, -.10.1939, KNAG, 10♀; Lake Tage, 30.12.1954, ?, ♀; Enarotali, 10.1.1955, ?, ♀; Takum, kamp Hifob, 10.9.1959, Star Mts. Exped., ♀ (all RMNH).
East New Guinea: Wimba, National Gardens, 1950 m, 20.8.1963, Vink, 3 ♀ (RMNH); Mongi Watershed, Huon Pen. 1200-1300 m, 11/13.4.1955, Wilson, ♀ (MCZ).

The type locality of *E. trifasciata* Doleschall is Amboina, that of *E. reinwardti* is Java; its area extends from the Sunda Is. over New Guinea and Australia to some islands in the Pacific (Roewer, 1942: 741; Bonnet, 1955: 693).

In a specimen from Sekroe the pattern of the abdomen (fig. 21) differs from the normal, the epigynes, however, are identical.

In his "Katalog" Roewer listed *A. plana* L. Koch, 1867 among the synonyms of *E. trifasciata* Forskål (cf. Bonnet, 1955: 695); a study of the syntypes (ZMH) confirmed this opinion. Also the male, described and figured by Keyserling (1886, Arachn. Austral. 2: 133, Pl. 10 fig. 5) as *A. fasciata* Hentz (= *plana* L. Koch) is a male of *A. trifasciata* (ZMH).

In the Brussels collection there are several *Argyope* specimens from Indonesia, labelled by Roewer *A. reinwardti* (1938, Mém. Mus. Hist. Nat. Belg., Hors Sér., 3 (19): 35). Some of them belong to *A. catenulata* (Dol.) as I pointed out in my 1958 paper (Nova Guinea, new ser., 9 (2): 243); the others are *A. versicolor* (Dol.); Roewer's fig. 24 does not represent the epigyne of *A. reinwardti* but that of *A. versicolor*.

Argyope takum nov. spec. (fig. 23-25)

Material. — West New Guinea: Takum, kamp Hifob, 10.9.1959, Star Mountains Expedition, ♀, holotype (RMNH).

This *Argyope* female resembles *A. doboensis* Strand, 1911 (Abh. Senckenb. naturf. Ges. 34: 144, Pl. 4 fig. 6) from the Aru Is. Although the holotype (and only known specimen) of this species (SMF 3534) is juvenile, the Takum specimen cannot be the adult female of this species because the pattern of the ventral side of the abdomen is distinctly different: three pairs of white spots between two narrow white stripes. Moreover the abdomen of *A. doboensis* is pointed at the end and the point clearly extends beyond the spinnerets.

The epigyne of the Takum specimen is nearly identical with that of *A. anasuja* Thorell, 1887 (= *ornata* sensu Simon, 1884, from India) figured by Gravely (1921, Rec. Indian Museum, Calcutta, 22: 412, fig. 3a);

the pattern of the abdomen of this species, however, resembles that of *A. aetherea.*

Female (holotype). — Cephalothorax (fig. 23): length 3.5 mm, width 2.8 mm, greyish brown; width of the eye region 1.4 mm. Chelicerae, maxillae and labium greyish brown. Sternum: length and width 1.5 mm, brown with broad whitish central part. Legs: brown; measurements (partly broken off) I -, II 15, III 8, IV 13 mm.

Abdomen (fig. 23): length 4.5 mm, width 3.4 mm, yellowish grey with brown pattern and borders; ventral side: fig. 24, brown with two broad white blots. Spinnerets brown. Epigyne (fig. 25) dark brown.

The male is unknown.

Gea C. L. Koch, 1843

Gea brongersmai nov. spec. (fig. 26-29)

Material. — West New Guinea: Tanah Merah, 24.8.1959, Star Mountains Expedition, 2 ♀, holotype and paratype (RMNH).

These two *Gea* females strongly resemble *G. argiopides* Strand, 1911 (Abh. Senckenb. naturf. Ges. 34: 146, Pl. 4 fig. 10, Pl. 5 fig. 51) from the Aru Is. This species, however, is much larger (7 mm) and its epigyne, though similar, is distinctly different. The differences between the Tanah Merah specimens and any of the other twelve species, known from the Indo-Australian area, are greater.

Female (holotype). — Cephalothorax (fig. 26): length 1.8 mm, width 1.7 mm, brown, the cephalic part yellowish brown; width of the eye region 0.8 mm (fig. 27). Chelicerae, maxillae and labium brown with lighter tips. Sternum: length 0.8 mm, width 1.0 mm, brown with a rather narrow longitudinal white band. Palps yellow. Legs brownish yellow with broad brown rings, femora of the I legs totally brown; measurements: I 8.0, II 7.5, III 5.5, IV 7.2 mm.

Abdomen (fig. 26): length 3.0 mm, width 1.9 mm; underground grey with white spots, the darker narrow transverse bands are reddish brown; the underside (fig. 28) is brown with large white blots; the spinnerets and the epigyne (fig. 29) are yellowish brown.

The male is unknown.

It is a pleasure for me to dedicate this species to Dr. L. D. Brongersma, leader of the Star Mountains Expedition.

ARANEINAE, CYRTOPHOREAE

Cyrtophora Simon, 1864

Cyrtophora beccarii (Thorell, 1878)

Cyrtophora beccarii (Thorell), Chrysanthus, 1960, Nova Guinea, Zoology, no. 3: 25, fig. 9-13 (♀ ♂).

Material. — West New Guinea: Sibil, 1260 m, -.6/7.1959, Star Mts. Exped., 7♀, juv. (RMNH); Mindiptana, -.-.1965, Monulf, ♀ (CHR).
East New Guinea: Rangemak Bay, 12/16.1.1909, Duncker, ♀ (ZMH).
Bismarck Arch.: Mussau I. Talumalaus, 23.1.1962, Noona Dan Exped. ♀ (ZMK).

Cyrtophora cicatrosa (Stôliczka, 1869)

Cyrtophora cicatrosa (Stôliczka), Chrysanthus, 1960, Nova Guinea, Zoology, no. 3: 28, fig. 19-23 (♀ ♂).

Material. — East New Guinea: Finschhafen, 16.5.1944, Ross, ♀ (CAS).

Cyrtophora cylindroides (Walckenaer, 1841) (fig. 30)

Cyrtophora cylindroides (Walckenaer), Chrysanthus, 1959, Nova Guinea, new ser., 10 (2): 200, fig. 6, 10, 25 (♀); 1960, Nova Guinea, Zoology, no. 3: 25, fig. 1, 2 (♂).

Material. — West New Guinea: Hollandia, near "Invasiestrand", 9.1.1954, van der Hammen, juv. (RMNH); Mindiptana, Monulf, 2.4.1959, juv. (CHR).
East New Guinea: Rangemak Bay, 12/16.1.1909, Duncker, ♀ (ZMH).
Bismarck Arch.: Pak I. (Admiralty Is.) 10.10.1908, Duncker, ♀ (ZMH).

The pattern of the abdomen of the female from the Admiralty Is. (fig. 30) is more conspicuous than in the specimens from New Guinea.

Cyrtophora moluccensis (Doleschall, 1857) (fig. 31-33)

Cyrtophora moluccensis (Doleschall), Chrysanthus, 1959, Nova Guinea, new ser., 10 (2): 199, fig. 4, 8, 28 (♀).

Material. — West New Guinea: Ajamaroe, -.6.1952, Brongersma & Roosdorp, ♀, 2 juv.; 1/6.4.1955, ?, 42 ♀; Djidmaoe, 13.6.1952, Brongersma, ♀; Pegun I., Mapia Atoll, 18.7.1952, Brongersma, ♀; Noemfoor I., -.11.1953, Hendriksen, 3 ♀; 2.3.1955, ?, ♀; Biak, 31.3.1952, Brongersma & Roosdorp, 2 juv.; -.5.1952, Brongersma, 7♀ 4 juv.; -.11.1953, van der Hammen, 2♀, 3 juv.; Owi I., 23.3.1952, Roosdorp, 2♀, 3♂, 2 juv.; Wissel Lakes, -.8/9.1939, KNAG, 25♀; Araboe bivak 21/28.10.1939, KNAG, 2 ♀; Enarotali, 13.7.1952, Roosdorp, 9♀; 25.12.1954, ?, ♀, juv.; Lake Tage, 30.12.1954, ?, 15♀, 12 juv.; Hollandia, "Invasiestrand", 29.12.1953, van der Hammen, 2 ♀, juv.; Genjem, near Hollandia, 13.1.1954, van der Hammen, ♀; Joka, Lake Sentani, 20.10.1954, Holthuis, 2 ♀; Hollandia, -.10.1954, Boeseman & Holthuis, ♀; Ok Sibil, 1260 m, 8.5.1959, 4 juv.; 1.6.1959, juv.; Molbokon, 10.9.1959, 10 juv. (Star Mts. Exped.) (all RMNH).
East New Guinea: Yaramanda, Baiyer Valley, 4900', 5.2.1964, Bulmer, ♀ (CHR).
Bismarck Arch.: Hermit Is., Luf I., 27.6.1962, ♀, 8 juv., Noona Dan Exped. (ZMK); Manus I., Pak I., 10.10.1908, Duncker, ♀ (ZMH); Lorengau, 21.7.1962, ♀; Mussau I., Emananusa, 29.1.1962, ♀, juv.; Lavongai, Banatam, 21.3.1962, ♀; Dyaul I., Sumuna, 5.3.1962, 2 ♀; New Ireland, Lemkamin, 900 m, -.4.1962, 13 ♀; Kalili Bay,

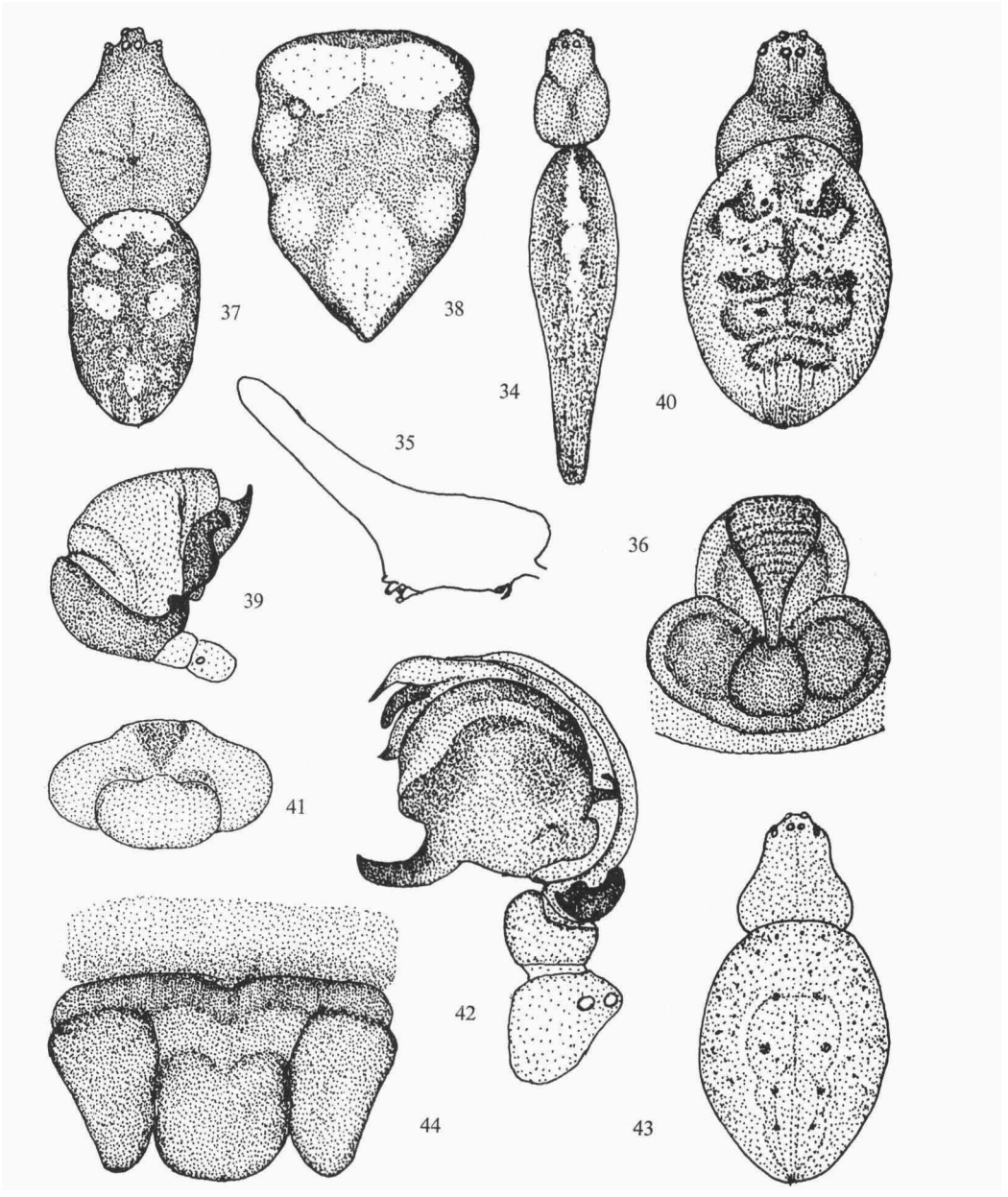


Fig. 34-36. *Cyclosa bifida* (Doleschall). 34, ♀; 35, do., abdomen, lateral aspect; 36, do., epigyne. Fig. 37-39. *C. camelodes* (Thorell). 37, ♂; 38, do., sternum; 39, do., right palp, outside. Fig. 40, 41. *C. vallata* (Keyserling). 40, ♀; 41, do., epigyne. Fig. 42. *Larinia tabida* (L. Koch) ♂, left palp, outside. Fig. 43, 44. *Araneus cordiformis* (L. Koch). 43, ♀; 44, do., epigyne. — 34, 35, × 7; 36, 41, 44, × 75; 37, 40, × 14; 38, × 25; 39, × 45; 42, × 40; 43, × 5.

29.4.1962, 3 ♀; New Britain, Yalom, 1000 m, -.5.1962, 36 ♀, Noona Dan Exped. (ZMK).

Solomon Is.: Guadalcanal I., Honiara, 1.8.1962, juv. (ZMK).

Great Barrier Reef: Lizard I., 25/27.9.1967, Heatwole, ♀ (UNE).

Among a large number of females, collected at many localities there are only three males (from Owi I., fig. 31-33). In the females from Pak I. and Lorengau, both Admiralty Is., the abdomen is uniformly dark brown with the exception of the anterior yellowish blot, which is as in the common patttern.

ARANEINAE, ARACHNUREAE

Arachnura Vinson, 1863

Arachnura melanura Simon, 1867

Arachnura melanura Simon, Chrysanthus, 1961, Nova Guinea, Zoology, no. 10: 203, fig. 39-41, 68 (♀).

Material. — West New Guinea: Kouh, Digoel, 10 m, 8.9.1959, Star Mts. Exped., ♀ (RMNH).

ARANEINAE, CYCLOSEAE

Cyclosa Menge, 1866

Cyclosa bifida (Doleschall, 1859) (fig. 34-36)

Epeira bifida Doleschall, 1859, Act. Soc. Sci. Ind. Neerl. 5: 38, Pl. 2 fig. 8 (♀),
Epeira macrura Thorell, 1877, Ann. Mus. civ. Stor. nat. Genova 10: 402 (♀).
Epeira bifida Doleschall, Thorell, 1878, ibid. 13: 73 (♀); Workman, 1896, Malays. Spid.: 33, Pl. 33 (♀ ♂).

Material. — East New Guinea: Mongi Watershed, Huon Pen. 11/13.4.1955, Wilson, 3 ♀ (MCZ).

In the name of this species, in the description and the figure Doleschall emphasized the fact that the tip of the very slender abdomen ends in two small knobs; the type locality is Amboina.

Thorell (1877) studied *Cyclosa*'s from Celebes, strongly resembling *C. bifida*. He believed that they belonged to a separate species and described them as *Epeira macrura* because in these specimens the tip of the abdomen was not divided. In his 1878 paper, however, he said in Latin: "I now studied specimens, many females and one adult male, from Amboina. The female is identical with the female of *E. macrura* in all details, also in the shape of the epigyne, the only difference being the tip of the abdomen. In all females from Amboina it is divided (*E. bifida*), in all females from Celebes (not so many) it is simple and rounded (*E. macrura*)" (p. 77-78). He therefore concluded that *E. macrura* is a synonym of *E. bifida*.

In the specimens from Huon Pen. the tip of the abdomen is simple and rounded (fig. 34).

The species is known from India to New Guinea (Roewer, 1942: 757; Bonnet, 1956: 1309).

Cyclosa camelodes (Thorell, 1878) (fig. 37-39, 116)

Cyclosa camelodes (Thorell), Chrysanthus, 1961, Nova Guinea, Zoology, no. 10: 201, fig. 16-18, 81 (♀).

Material. — West New Guinea: Biak, -.11/12.1953, van der Hammen, 4 ♀; Hollandia, 9.1.1954, van der Hammen, 2 ♀ (RMNH), Maffin Bay, 1.11.1944, Ross, ♀ (CAS).
Bismarck Arch.: New Britain, Valoka, 8.7.1962, ♀ ♂; Duke of York I. Manuan, 19.7.1962, ♀ ♂, Noona Dan Exped. (ZMK).
Great Barrier Reef: Lizard I., 25/27.9.1967, ♀; Nymph I., 23/26.9.1967, ♀ ♂, Heatwole (UNE).

Although Kulczynski (1911, Nova Guinea, 3: 479) first mentioned a male of this species, collected together with a female in Siari, North New Guinea, he has not given either a description or figures, neither have the few other authors who spoke about this species.

The material listed above contains three couples, each of them collected on the same place and the same day; moreover, the general shape of the abdomen, the small humps, each marked by a white blot (on fig. 37 the third pair), the two rather conspicuous white blots on the ventral side anteriorly to the spinnerets, the pattern of the white blots on the sternum (fig. 38): all these characters are just like in the female and make it certain that these males belong to *C. camelodes*. They are much darker than the female: the whole body is dark brown, the snow white blots strongly contrasting. Palp: fig. 39, 116. In the male from Valoka the white blots on the dorsal side of the abdomen are much reduced: only the anterior and the median ones are left; on the sternum only the anterior one is clearly visible.

Cyclosa insulana (Costa, 1834)

Cyclosa insulana (Costa), Chrysanthus, 1961, Nova Guinea, Zoology, no. 10: 199, fig. 19-27, 80 (♀ ♂).

Material. — West New Guinea: Sedorfojo, 20.7.1952, Rev. & Mrs Marcus, 2 ♀ (RMNH); Fak Fak, -.5/6.1939, Wind 3 ♂ (MCZ); Biak, 31.3.1952, Brongersma & Roosdorp, ♂; -.11.1953, van der Hammen, 2 ♀, ♂; Hollandia, -.12.1953; -.1.1954, van der Hammen, 4 ♀; Sibil, Basiskamp, 1260 m, 25.5.1959, Star Mts. Exped. juv. (all RMNH).
East New Guinea: Wimba, National Gardens, 1950 m, 20.8.1963, Vink, 15 ♀ (RMNH); Bulolo, 17.12.1967; 17.3.1968, Gray, 2 ♂ subad. (CHR); Mongi Watershed, Huon Pen., 3700-4000', 11.4.1955, Wilson, 6 ♀ (MCZ); Finschhafen, 7.5.1944, Ross, ♀ (CAS).
Bismarck Arch.: Lavongai, 16.3.1962, ♂; New Ireland, Lemkamin, 900 m, -.4.1962, 5 ♀, ♂; New Britain, Valoka, 8.7.1962, ♀; Yalom, 1000 m, 17.5.1962, ♀ (all Noona Dan Exped. — ZMK).

Cyclosa vallata (Keyserling, 1886) (fig. 40, 41, 117-119)

Epeira vallata Keyserling, 1886, Arachn. Austral. 2: 149, Pl. 12 fig. 5 (♀).
Cyclosa vallata (Keyserling), Bösenberg & Strand, 1906, Abh. Senckenb. Naturf. Ges. 30: 203, Pl. 15 fig. 411 A-F (♀ ♂).

Material. — West New Guinea: between Kotabaroe and Sentani, 28.12.1953, van der Hammen, 3 ♀ (RMNH).

Through the kindness of Dr. G. Rack and Dr. M. Grasshoff I could compare the material, mentioned above, with 11 syntypes (♀) from Rockhampton, Queensland, of *E. vallata* Keyserling (ZMH) and with nine females and one male from Japan, determined by Bösenberg & Strand as *C. vallata* (SMF 3660, 3661).

Most syntypes are rather well preserved: only the pattern of the abdomen has somewhat faded away but in some specimens it is still sufficiently discernable, the tubercles on the abdomen are conspicuous and, at least in some specimens, the epigyne is clear.

All females from Japan are in poor condition: from the pattern of the abdomen some vestiges only are present, which suggest a pattern similar to that of the syntypes, the tubercles are less conspicuous but still discernable, the epigyne looks very much like that of the syntypes. I therefore suppose that Bösenberg & Strand's identification is correct. The pattern of the perfectly preserved male (fig. 117) corroborates this assumption.

The specimens from Kotabaroe certainly belong to *C. vallata* Keys.: the epigyne, the pattern and the shape of the abdomen are identical; they are only a little larger, viz., 4.0 mm instead of 3.4-3.8 mm.

Keyserling finished his description of *E. vallata* with the remark that this species resembles *E. camelodes* Thorell. *C. camelodes,* however, clearly differs from *C. vallata,* especially in the shape of its epigyne (cf. Chrysanthus, 1961, Nova Guinea, Zoology, no. 10: 201, fig. 16-18), in the pattern of the ♂ abdomen (cf. fig. 37, 117) and in the structure of the ♂ palp (cf. fig. 39, 116, 118, 119).

The position of *C. mulmeinensis* (Thorell, 1887) is not so clear. Simon at first considered it a good species but in 1908 (Bull. sci. Fr. Belg. 42: 104) he decided that it was a synonym of *C. vallata.* Bonnet (1956: 1326) follows this opinion but Roewer (1942: 758) retained it as a separate species.

In 1961 Prof. Dr. E. Tortonese (Mus. civ. Stor. nat., Genova) kindly enabled me to study one of the cotypes of *E. mulmeinensis* (♀) from Egatpur, India, and I gave a drawing of this specimen and its epigyne in my 1961 paper (p. 203, fig. 34-36).

I am much indebted to Mr. D. J. Clark, British Museum (Natural

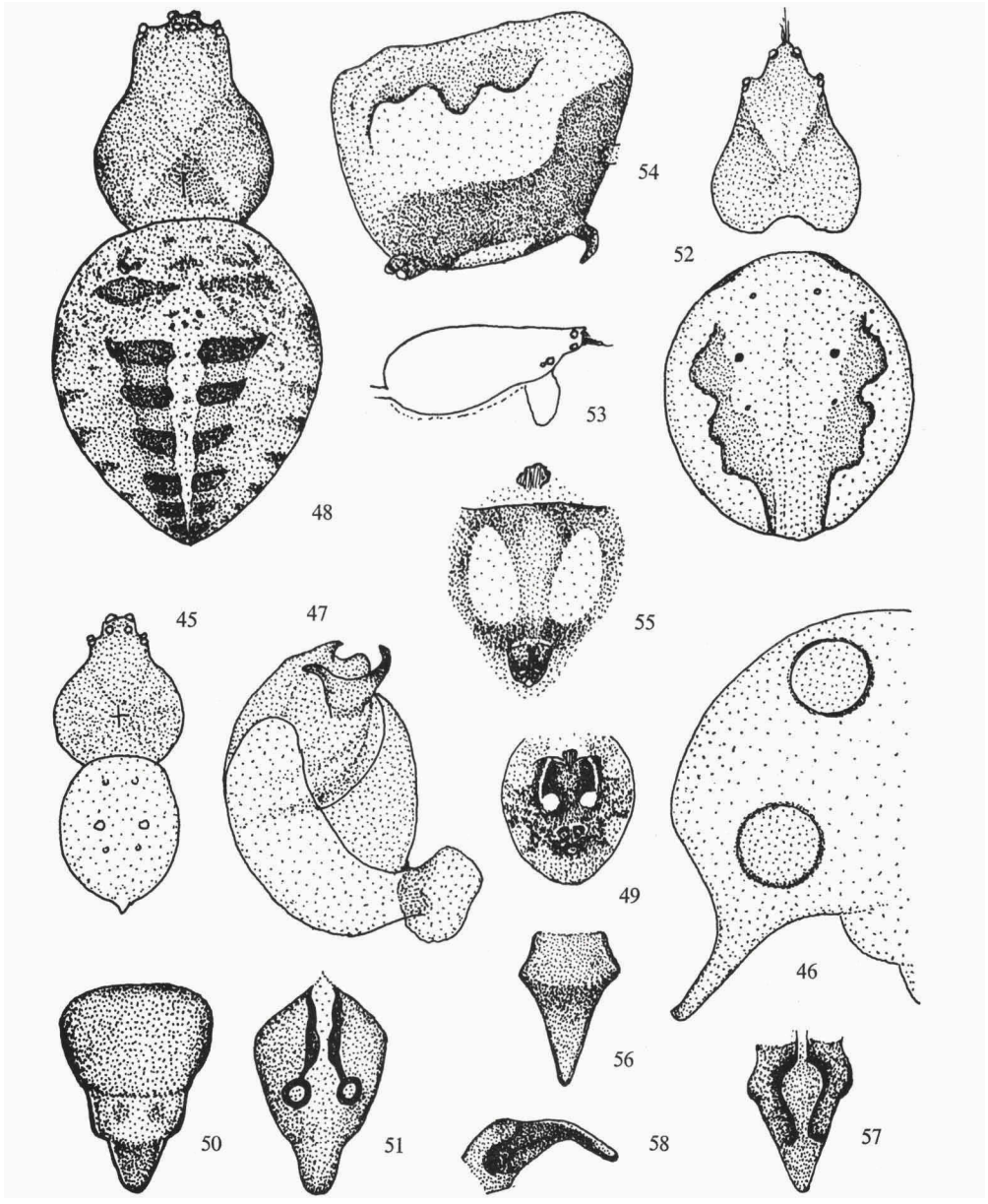


Fig. 45-47. *Araneus laglaizei* (Simon). 45, ♂ ; 46, do., part of cephalothorax, lateral aspect; 47, do., left palp, outside. Fig. 48-51. *A. nauticus* (L. Koch). 48, ♀ ; 49, do., abdomen, ventral aspect; 50, do., epigyne; 51, do., epigyne, underside. Fig. 52-58. *A. poltyoides* nov. spec. 52, ♀ ; 53, do., cephalothorax, lateral aspect; 54, do., abdomen, lateral aspect; 55, do., abdomen, ventral aspect; 56, do., epigyne; 57, do., epigyne, underside; 58, do., epigyne, lateral aspect. — 45, 48, 52-55, × 7; 46, × 75; 47, × 40; 49, × 3; 50, 51, × 35; 56-58, × 30.

History) for the loan of several ♀ and one ♂ from Burma (Thorell, 1895, Spiders of Burma: 192) and to Dr. A. T. Lucas, Director of the National Museum of Ireland, Dublin, for the opportunity to study several ♀ and two ♂ from Malaya, identified by Workman with *E. mulmeinensis* (Malaysian Spiders, 1896: 37; Pl. 37). In all females the pattern of the abdomen and the epigyne are exactly as in the cotype from India. A comparison of the males and of the ♂ palpi of *C. mulmeinensis* (fig. 120-122) and of *C. vallata* (fig. 117-119) makes it clear that the species are different.

C. mulmeinensis has been mentioned from India, Burma, Tonking, Malaya, New Caledonia, Arabia and Africa (Roewer, 1942: 758; Bonnet, 1956: 1326), whereas Roewer (1942: 758) for *C. vallata* only recorded Queensland and Japan.

Cyclosa albopunctata Kulczynski, 1901 (fig. 123-125)

Cyclosa albopunctata Kulczynski, 1901, Rozpr. spraw. Wydz. mat. przyrod. Akad. umiej. 41: 27, Pl. 2 fig. 23, 24 (♂).

Cyclosa velata Chrysanthus, 1961, Nova Guinea, Zoology, no. 10: 201, fig. 28, 30-33 (♀ ♂). **syn. nov.**

Material. — West New Guinea: Mindiptana, 1965, Monulf, 10 ♀ (CHR).

Bismarck Arch.: New Ireland, small island near Kavieng, 13.1.1962, Noona Dan Exped. ♀ (ZMK); New Britain, Massawa Bay, 22/24.11.1908, Duncker, ♀ (ZMH).

The absence of tubercles on the abdomen and the presence — in many females; in others it is broken off — of a conchiform scapus, covering the whole epigyne, induced me in 1961 to describe several females and one male from Merauke (1956/57) and Mindiptana (1959) as a new species *Cyclosa velata,* notwithstanding the fact that the epigyne (without scapus) looks identical with that of *C. mulmeinensis.*

A few years ago Dr. M. Grasshoff (SMF) drew my attention to *C. albopunctata* Kulczynski, 1901 (type locality Eritrea): the palp of this male seemed identical with that of my *C. velata.* I was not able to study the holotype but only Kulczynski's description and figures and a male from Transvaal (SMF 23979), identified by Dr. Grasshoff as *C. albopunctata*: the palpi are identical indeed and exactly as in Kulczynski's figures. Dr. Grasshoff informed me that he examined another male (from Angola — Musée Royal de l'Afrique Centrale, Tervuren) and is certain that this specimen, too, belongs to Kulczynski's species. For comparison I here give: (1) a figure of the abdomen of the ♂ from Transvaal (fig. 123): the pattern is darker and the light blots are somewhat smaller than in my *C. velata* ♂; (2) figures of the palp, outside and inner side, of the same specimen (fig. 124, 125).

No females have been recorded from Africa.

ARANEINAE, MANGOREAE

Larinia Simon, 1874

Larinia tabida (L. Koch, 1871) (fig. 42)

Epeira tabida L. Koch, Keyserling, 1887, Arachn. Austral. 2: 170, Pl. 14 fig. 5 (♂).
Larinia tabida (L. Koch), Chrysanthus, 1961, Nova Guinea, Zoology, no. 10: 205, fig. 46-49 (♀).

Material. — West New Guinea: Seroei, Japen I., 4/13.5.1952, Roosdorp, ♀; Hollandia, from nest of wasp, van der Hammen, 23.1.1954, 6 ♀ (RMNH); Maffin Bay, -.6.1944, Ross, 2 ♀, ♂ (CAS).

The *Larinia* male, collected at Maffin Bay together with two females of *L. tabida* fully agrees with Keyserling's description and figures of the male of this species. The long and strong spines on the patella of the palp are broken off; two "cicatrices" indicate their position.

ARANEINAE, ARANEAE

Araneus Clerck, 1757

Araneus cordiformis (L. Koch, 1871) (fig. 43, 44)

Epeira cordiformis L. Koch, 1871, Arachn. Austral., 1: 82, Pl. 5 fig. 7 (♀).

Material. — East New Guinea: Mongi Watershed, Huon Pen., 3700-4000' 11.4.1955, Wilson, ♀ (MCZ).

Through the kindness of Dr. G. Rack, Zoologisches Museum Hamburg, I was able to compare this specimen with three syntypes from Port Mackay, Australia: apart from the fact that the syntypes are somewhat larger they are identical in all details.

The species was only known from Australia (Roewer, 1943: 826; Bonnet, 1955: 463).

Araneus cyrtarachnoides (Keyserling, 1887)

Araneus cyrtarachnoides (Keyserling), Chrysanthus, 1960, Nova Guinea, Zoology, no. 3: 36, fig. 46, 51, 65, 74 (♀ ♂).

Material. — West New Guinea: Sedorfojo, 20.7.1952, Rev. & Mrs. Marcus, ♀; Owi I., 6.4.1952, Roosdorp, ♂, 2 juv.; Seroei, Japen I., 4/13.5.1952, Roosdorp, ♀, ♂, juv. (RMNH); Maffin Bay, -.9.1944, Ross, ♀ (CAS).
Bismarck Arch.: Dyaul I., Sumuna, 5.3.1962, ♂; New Ireland, Lemkamin, 900 m, 20.5.1962, ♂, Noona Dan Exped. (ZMK).

Araneus dehaani (Doleschall, 1859)

Araneus dehaani (Doleschall), Chrysanthus, 1960, Nova Guinea, Zoology, no. 3: 31, fig. 24-31 (♀).

Material. — West New Guinea: Manokwari, ± 1952, Bauwens, ♀, (RMNH);

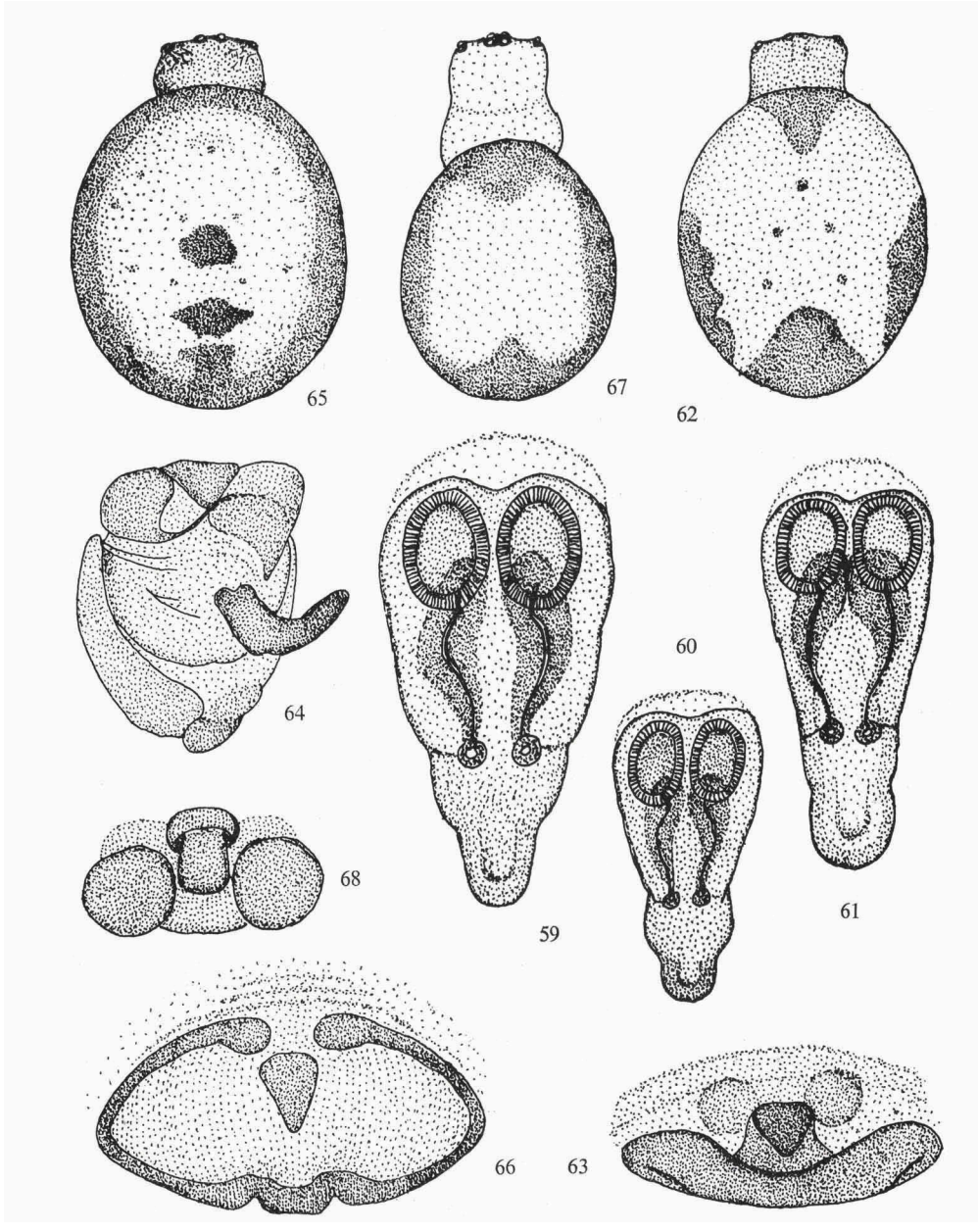


Fig. 59-61. *Araneus theisi* (Walckenaer). ♀, epigyne and vulva. 59, from Kawakit; 60, from Merauke; 61, from Wissel Lakes. Fig. 62-64. *Anepsion peltoides* (Thorell). 62, ♀; 63, do., epigyne; 64, ♂, left palp, outside. Fig. 65, 66. *A. hammeni* Chrysanthus. 65, ♀; 66, do., epigyne. Fig. 67, 68. *A. buchi* Chrysanthus. 67, ♀; 68, do., epigyne. — 59-61, × 40; 62, 65, 67, × 14; 63, × 105; 64, × 70; 66, × 115; 68, × 75.

Maffin Bay, -.10/11.1944, Ross, 2 ♀ (CAS); Kawakit, 11.9.1959, Star Mts. Exped., ♀ (RMNH).

Bismarck Arch.: Lavongai, Banatam, 21.3.1962, 5 ♀; Dyaul I., Sumuna, 5.3.1962, ♀; New Ireland, Lemkamin, 900 m, 6.4.1962, ♀, Noona Dan Exped. (ZMK).

The extreme variability in colour and pattern of this species is well known; some of these varieties have been indicated with a special name, e.g., by Strand (1911, Archiv f. Naturg. 77: 203). In his 1915 paper (Abh. Senckenb. Naturf. Ges. 36: 222, Pl. 17 fig. 68) he gave a short description and a figure of his f. *octopunctigera*: "Von Anir, nordöstlich von Neu Mecklenburg [New Ireland] habe ich zwei Exemplare (Fig. 68) vor mir, die mit intensiv roten Schulterhöckern und tiefschwarzem Rückenfeld hinter diesen versehen sind; in letzterem finden sich zwei nach hinten konvergierende, von den Schulterhöckern entspringende, aus je vier reinweissen, gleichgrossen Punktflecken bestehende Längsreihen".

The five females from Lavongai and the female from Dyaul I. are very dark brown with brilliant orange-red "shoulders"; there are only indistinct traces of lighter spots, somewhat different in all specimens. The female from Lemkamin (New Ireland) is normal.

Araneus granti Hogg, 1914

Araneus granti Hogg, Chrysanthus, 1960, Nova Guinea, Zoology, no. 3: 36, fig. 32, 33, 49, 60, 72 (♀ ♂).

Material. — West New Guinea: Fak Fak, -.5/6.1939, Wind, ♂ (MCZ); Maffin Bay, -.6/8.1944, Ross, 6♀ (CAS); Hollandia, Cape Soeadja, 5.1.1954, van der Hammen, ♂; Ok Sibil, Basiskamp, 1260 m, 1.6.1959, Star Mts. Exped. ♀ (RMNH).

Araneus inustus (L. Koch, 1871)

Araneus inustus (L. Koch), Chrysanthus, 1960, Nova Guinea, Zoology, no. 3: 41, fig. 48, 52, 59, 67, 68 (♀ ♂).

Material. — West New Guinea: Ajamaroe, 29.2.1952, Brongersma, ♀; 1/6.4.1955, ?, ♂; Enarotali, 5.3.1952, Brongersma, ♂; 13.7.1952, Roosdorp, ♀; Wissel Lakes, 1954, Boelen, 2 ♀ (RMNH); Mindiptana, 1965, Monulf, ♀ (CHR).

East New Guinea: Finschhafen, -.5/6.1945, Sawyer, 2 ♀ (CAS).

Bismarck Arch.: Mussau I., Boliu, 5.6.1962, ♀; New Britain, Valoka, 8.7.1962, ♀, Noona Dan Exped. (ZMK).

Solomon Is.: Guadalcanal I., 2.9.1945, Malkin, ♀ subad. (CAS).

Araneus laglaizei (Simon, 1877) (fig. 45-47)

Araneus laglaizei (Simon), Chrysanthus, 1960, Nova Guinea, Zoology, no. 3: 39, fig. 50, 56, 75 (♀).

Material. — West New Guinea: Sekroe, -.7.1897, Schädler, ♀ ♂; Sedorfojo, 20.7.1952, Marcus, ♀; Ajamaroe, 7.6.1952, Brongersma & Roosdorp, ♀; Hollandia, -.1.1954, van der Hammen, 3 ♀; Takum, kamp Hifob, 10.9.1959, ♀; Kouh, Digoel, 8.9.1959, ♀, Star Mts. Exped. (RMNH).

East New Guinea: Finschhafen, -.4.1944, Ross, ♀ (CAS); Langemak Bay, 12/16.1.1909, Duncker, ♀ (ZMH).
Bismark Arch.: Lavongai, Banatam, 21.3.1962, ♀; New Britain, Yalom, 1000 m, 10.5.1962, ♀, Noona Dan Exped. (ZMK).
Solomon Is.: Guadalcanal I., 1945, Malkin, ♂ (CAS).

Simon (1895, Hist. Nat. Araignées: 820, fig. 872) has given a figure of the remarkable cephalothorax of the male: a small "snout" projects from the clypeus (fig. 46).

Araneus lugubris (Walckenaer, 1841)

Araneus lugubris (Walckenaer), Chrysanthus, 1960, Nova Guinea, Zoology, no. 3: 36, fig. 39-42, 45, 69 (♀ ♂).

Material. — West New Guinea: Ajamaroe, -.6.1952, Brongersma & Roosdorp, ♀; Biak, 9.11.1953, van der Hammen, ♀, ♂ (RMNH); Maffin Bay, 10.6.1944, ♂ subad.; 3.10.1944, ♂, Ross (CAS); Hollandia, 22/23.2.1952, Brongersma, ♂; Sibil, -.5/8.1959, 6 ♀, 2 ♂; Tenmasigin, 1800 m, 22.5.1959, ♀, Star Mts. Exped. (RMNH).
East New Guinea: Finschhafen, -.4/5.1944, Ross, 4 ♀, ♂, 3 juv. (CAS).
Bismarck Arch.: Manus I., Lorengau, 21.7.1962, ♂; New Ireland, Lemkamin, 900 m, -.4.1962, 2 ♀, Noona Dan Exped. (ZMK).

Araneus nauticus (L. Koch, 1875) (fig. 48-51)

Epeira nautica L. Koch, 1875, Aegypt. Abyssin. Arachn. Jickeli: 17, Pl. 2 fig. 2 (♀ ♂).
Epeira volucripes Keyserling, 1892, Spinn. Amer. 4: 199, Pl. 9 fig. 147 (♀ ♂); McCook, 1893, Amer. Spiders 3: 162, Pl. 6 fig. 1, 2 (♀ ♂).
Neoscona volucripes F. Cambridge, 1904, Biol. Centr. Amer. Aran. 2: 473, Pl. 44 fig. 18 (♀).
Aranea nautica Bösenberg & Strand, 1906, Abh. Senckenb. naturf. Ges. 30: 222, 403, Pl. 4 fig. 31, Pl. 11 fig. 197, Pl. 12 fig. 299 (♀ ♂).
Neoscona nautica Petrunkevitch, 1930, Trans. Connect. Ac. Sci. 30: 320, fig. 197-199 (♀ ♂).

Only a part of the references and synonyms are mentioned here; complete lists are given by Roewer (1942: 778) and Bonnet (1958: 3058 as *Neoscona nautica*).

Material. — West New Guinea: Sekroe, -.3.1897, Schädler, 5 ♀; Biak, -.5.1952, Brongersma, ♀ (RMNH).

It is remarkable that there are so few specimens of this circumtropical species in the collections, whereas *A. theisi,* also known from all tropical regions, is abundantly present.

Araneus poltyoides nov. spec. (fig. 52-58)

Material. — West New Guinea: Ok Sibil, Basiskamp, 25.5.1959, Star Mountains Exped., ♀ (holotype) (RMNH).

The cephalothorax of this spider suggests a *Poltys* spec.; in that genus,

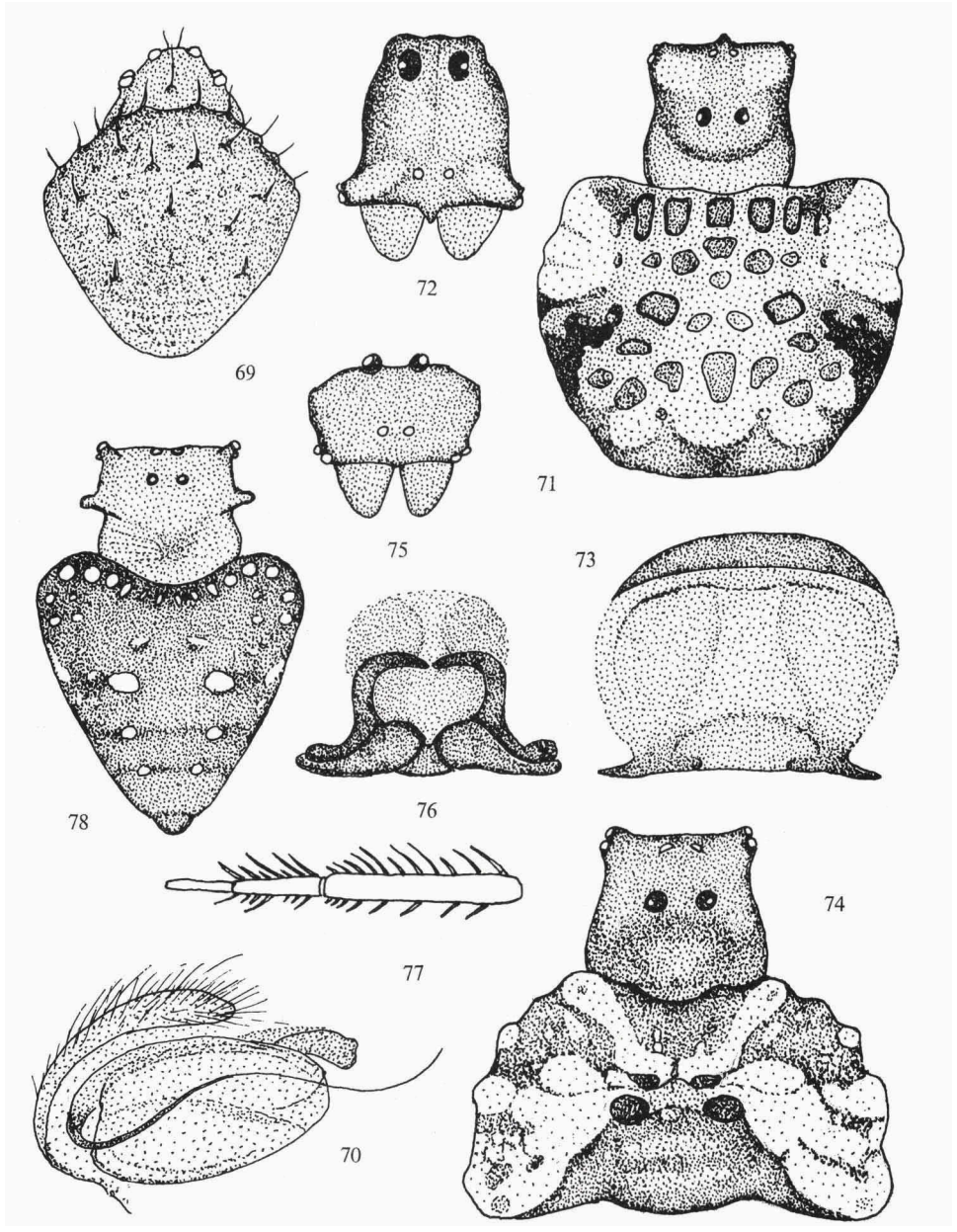


Fig. 69, 70. *Poecilopachys minutissima* nov. spec. 69, ♂ ; 70, do., right palp, antero-lateral aspect. Fig. 71-73. *Archemorus sibil* nov. spec. 71, ♀ ; 72, do., cephalic part, frontal aspect; 73, do., epigyne. Fig. 74-77. *A. roosdorpi* nov. spec. 74, ♀ ; 75, do., cephalic part, frontal aspect; 76, do, epigyne; 77, do., tibia, metatarsus and tarsus of first right leg, underside. Fig. 78. *Arkys lanceatus* Walckenaer, ♂, subadult. — 69, × 25; 70, × 110; 71, × 10; 72, × 14; 73, × 150; 74, 75, 78, × 7; 76, × 75; 77, × 9.

however, only the PLE are at a great distance from the six others, grouped on the "snout".

Within the genus *Araneus* there are two species resembling *A. poltyoides* viz. *A. separatus* Roewer (1942: 833) nom. nov. for *A. singularis* Rainbow, 1900 (Proc. Linn. Soc. N.S. Wales 25: 490, fig. 4) and *A. acuminatus* (L. Koch, 1871, Arachn. Austral. 1: 109, Pl. 9 fig. 2 — ♂) (cf. Rainbow, 1913, Rec. Austral. Mus. 10: 11; fig. 6 — epigyne; 1916, do. 11: 110, Pl. 22 fig. 30, 31 — ♀ and epigyne). *A. separatus* measures 4.7 mm, its cephalothorax is rather heavy and its epigyne is "a large, high, glabrous dark brown eminence, rounded in front, lobed laterally, and terminating in an obtuse point" (p. 491). *A. acuminatus* has a body length of 4.6 mm, the abdomen ends in "two small tubercles, one seated below the other", in the basis of the rather long epigyne there are "two large lateral pits" (receptacula?) (Rainbow, 1916: 111) and its tip is blunt: it is similar to our fig. 61 (*A. theisi* from the Wissel Lakes).

Female (hototype). — Cephalothorax (fig. 52, 53) length 3.7 mm, width 2.8 mm; if one looks at the front part one sees a rather high triangle; brownish grey, the cephalic part with two yellow blots and brown sides. Width of the eye group 1.5 mm, the ME occupying 0.6 mm; a tuft of grey hairs projects from the middle of the ME. The protruding chelicerae, the maxillae and the labium are brown; the pedipalpi yellowish brown. Sternum: length 1.2 mm, width 1.1 mm, yellowish white with narrow brown borders. Legs: I and II yellowish brown, gradually darkening towards the tips, III and IV brownish yellow with several rather broad dark brown rings; measurements: I 11.5, II 10.0, III 6.0, IV 8.5 mm.

Abdomen (fig. 52, 54, 55): length 6.0 mm, width 5.0 mm, height 5.0 mm, the front part overhanging the cephalothorax, yellowish white with a fine brown nervation, folium brown; ventral side (fig. 55) dark brown with two large white blots. Epigyne (fig. 56-58) dark brown.

The male is unknown.

Araneus simillimus Kulczynski, 1911

Araneus simillimus Kulczynski, Chrysanthus, 1961, Nova Guinea, Zoology, no. 10: 199, fig. 12-15, 82 (♀).

Material. — East New Guinea: Finschhafen, -.5/9.1944, Ross, 2♀, ♂ subad. (CAS). Bismarck Arch.: New Ireland, Kalili Bay, 30.4.1962, ♀; Duke of York I., Manuan, 19.7.1962, ♀, Noona Dan Exped. (ZMK); New Britain, Matupi, 1895, Thiel, ♀ (ZMH).

Araneus theisi (Walckenaer, 1841) (fig. 59-61)

Araneus theisi (Walckenaer), Chrysanthus, 1960, Nova Guinea, Zoology, no. 3: 39, fig. 44, 53-55, 61, 73 (♀ ♂).

Material. — West New Guinea: Sekroe, -.7.1897, Schädler, 10 ♀ (RMNH); Fak Fak, -.7.1939, Wind, 3 ♀ (MCZ); Pegun I., Mapia Atoll, 18.7.1952, Brongersma, ♀, ♂, juv. (RMNH); Manokwari, 1906/07, Barbour, 2 ♂ (MCZ); Biak, 12.3.1952, Brongersma, ♀; 21.3.1952, Brongersma & Roosdorp, 6 ♀, 5.4.1952, Roosdorp, ♀, juv.; -.5.1952, Brongersma, 3 ♀; -.10/12.1953, Personell Royal Netherlands Navy, ♂; from nest of wasp, 17/19.2.1952, Brongersma, 3 ♀, ♂; Seroei, Japen I., -.1.1954, van Hout, ♀; Araboe bivak, -.8/9.1939, KNAG, 2 ♀, Enarotali, 12/23.7.1952, Roosdorp, ♀; Wissel Lakes, 1954, Boelen, 9 ♀, juv. (RMNH); Maffin Bay, 1944, Ross, 7 ♀, ♂ (CAS); Sentani, 28.12.1952, van der Hammen, 5 ♀; Hollandia, from nest of wasp, 23.1.1954, van der Hammen, 5 ♀ (RMNH); Hollandia, -.10/12.1944, Aarons, 5 ♀, 5 ♂, juv. (CAS); Ok Sibil, Basiskamp, 1260 m, -.5/8.1959, 15 ♀, 3 ♂, 2 juv.; Katem, 200 m, 27.6.1959, ♀; Takum, kamp Hifob, 10.9.1959, 40 ♀, 10 ♂, 7 juv.; Kawakit, 10/11.9.1959, 370 ♀ + juv, 70 ♂; Kouh, Digoel, 8.9.1959, 150 ♀ + juv., 18 ♂, Star Mts. Exped. (RMNH).

East New Guinea: Finschhafen, 6/7.5.1944, Ross, 5 ♀; -.5/6.1945, Sawyer, 6 ♀ (CAS).

Bismarck Arch.: Hermit Is., Luf I., 27.6.1962, ♂; Mussau I., Talumalaus, 31.1.1962, ♀; Lake Taletasi, 4.6.1962, ♀; Boliu, 5.6.1962, ♂; Lavongai, Banatam, 16.3.1962, 2 ♂ juv.; New Ireland, Lemkamin, 900 m, -.4.1962, 3 ♀, ♂, 8 juv. Noona Dan Exped. (ZMK); New Britain, Matupi, 1895, Thiel, ♀ (ZMH); Valoka, 8/9.7.1962, 2 ♀; Yalom, 1000 m, 23.5.1962, ♀; Rabaul, 25.7.1962, ♀; Duke of York I., Manuan, 19.7.1962, ♀ ♂, Noona Dan Exped. (ZMK).

Coral Sea: Herald Cays, North West Islet, 7.9.1967, 3 ♀, ♂, 8 juv.; Chilcott I., 8.9.1967, ♂ subad.; South West Cay near Chilcott I., 8.9.1967, juv., Heatwole (UNE).

This almost pantropical species is extremely variable, not only as to the colour and the pattern of the abdomen and body length but in respect of the measurements of the copulatory organs. In small specimens (♀ 5-10 mm, ♂ 6-7 mm, e.g., from Merauke) the pattern of the abdomen is distinct and sharply contrasting, the epigyne measures 0.9 mm, the bulbus of the male palp 1.1 mm, whereas in the large specimens (♀ up to 16 mm, ♂ up to 12 mm, e.g., from Kawakit and Kouh, Digoel) the abdomen is almost uniformly dark greyish brown, the epigyne measures 1.5 mm, the bulbus of the male palp 1.7 mm. Although the copulatory organs of the large specimens are 1.5 times those of the small ones they are absolutely identical (cf. fig. 59-61).

In the specimens from the Wissel Lakes (9-12 mm) the colour of the abdomen is dull greyish brown with a somewhat lighter longitudinal central band; the rather slender epigyne (fig. 61) measures 1.2 mm.

Araneus transmarinus (Keyserling, 1865)

Araneus productus (L. Koch), Chrysanthus, 1960, Nova Guinea, Zoology, no. 3: 30, fig. 34, 47, 64, 71 (♀ ♂).

Araneus transmarinus (Keyserling), Dondale, 1966, Austral. Journ. Zool. 14: 1164, fig. 2D-2G (♀ ♂).

Material. — East New Guinea: Mongi Watershed, Huon Pen., 11/13.4.1955, 1200-1300 m, Wilson, ♀ (MCZ).

Great Barrier Reef: Erskine I., 11.5.1968, Heatwole, ♀ (UNE).

In my 1960 paper I tried to establish the differences between *Epeira producta* L. Koch, 1867, and *E. transmarina* Keyserling, 1865, and decided that the specimens in my collection (from Merauke) belonged to *A. productus*. Dondale studied the (syn)types in the Hamburg Museum and many specimens, ♀ and ♂, from Australia; his conclusion is that *A. productus* is a synonym of *A. transmarinus* and now I fully agree with him.

ARANEINAE, ANEPSIEAE

Anepsion Strand, 1929

Anepsion peltoides (Thorell, 1878) (fig. 62-64)

Anepsion peltoides (Thorell), Chrysanthus, 1961, Senckenb. biol. 42: 469, fig. 33, 34 (♀); 1969, Zool. Meded. 44 (2): 33, fig. 9, 11 (♀ ♂).

Material. — West New Guinea: Owi I. (near Biak), 6.4.1952, Roosdorp, ♀; Hollandia, 5/6.1.1954, van der Hammen, 3 ♀ (RMNH).
Bismarck Arch.: Hermit. Is., Luf I., 27.6.1962, ♀ ♂; Mussau I., Boliu, 4.6.1962, ♂; 5.6.1962, ♀; Malakata, 11.6.1962, ♀; Talumalaus, 25.1.1962, ♂; Lavongai, Banatam, 21.3.1962, ♀ (all Noona Dan Exped. — ZMK).

The material mentioned above contained three males, one of them collected together with a female and another in the same locality as another female but with the difference of one day: they certainly belong to the same species. In my 1969 paper I gave a description of the male, which was hitherto unknown, and a figure of the female abdomen (fig. 62 of this paper) and one of the male palp (fig. 64 of this paper).

The male palp of this species strongly resembles that of *A. wichmanni* (Kulczynski, 1911 — Chrysanthus, 1961, loc. cit.: 470, fig. 39, 40) but in *A. wichmanni* the processus of the palpal organ is more slender than in *A. peltoides*.

The type locality of *A. peltoides* is Amboina; the species was also known from the Kei Is. (Roewer, 1942: 892 [as *Anepsia*]; Bonnet, 1955: 324 [as *Anepsium*]).

Anepsion hammeni Chrysanthus, 1969 (fig. 65, 66)

Anepsion hammeni Chrysanthus, 1969, Zool. Meded. 44 (2): 33, 35, fig. 6, 7 (♀).

Material. — West New Guinea: Biak, district of Bosnik, 29.11.1953, van der Hammen, 2 ♀, holotype and paratype (RMNH).

In my 1969 paper I gave a description and figures of this species. The figures are here reproduced in fig. 65 (cephalothorax and abdomen) and 66 (epigyne).

Anepsion buchi Chrysanthus, 1969 (fig. 67, 68)

Anepsion buchi Chrysanthus, 1969, Zool. Meded. 44 (2): 35, fig. 13, 14 (♀).

Material. — Bismarck Arch.: New Ireland, Lemkamin, 900 m, 12.4.1962, ♀ (holotype); 11.4.1962, ♀ (paratype), Noona Dan Exp. (ZMK).

This species has been described in my 1969 paper; I here reproduce the figures (67, cephalothorax and abdomen; 68, epigyne).

ARANEINAE, CYRTARACHNEAE

Cyrtarachne Thorell, 1868

Cyrtarachne friederici Strand, 1911

Cyrtarachne friederici Strand, Chrysanthus, 1961, Nova Guinea, Zoology, no. 10: 209, fig. 60-62, 79 (♀).

Material. — West New Guinea: Maffin Bay, -.6/10.1944, Ross, 2 ♀ (CAS).
Bismarck Arch.: Manus I., Lorengau, 19.7.1962, Noona Dan Exped. 2 ♀ (ZMK).

Cyrtarachne tricolor (Doleschall, 1859)

Cyrtarachne tricolor (Doleschall), Chrysanthus, 1961, Nova Guinea, Zoology, no. 10: 209, fig. 57-59, 78 (♀).

Material. — West New Guinea: Maffin Bay, -.6/10.1944, Ross, 2 ♀ (CAS).
Bismarck Arch.: Dyaul I., Sumuna, 2.3.1962, ♀; New Britain, Valoka, 8.7.1962, ♀, Noona Dan Exped. (ZMK).

Poecilopachys Simon, 1895

Poecilopachys verrucosa (L. Koch, 1871)

Poecilopachys verrucosa (L. Koch), Chrysanthus, 1961, Nova Guinea, Zoology, no. 10: 209, fig. 63-67 (♀).

Material. — West New Guinea: Maffin Bay, -.9.1944, Ross, ♀ (CAS); Takum, Kamp Hifob, 10.9.1959, Star Mts. Exped., ♀ (RMNH).

A study of the types of *P. verrucosa* (L. Koch), *P. bispinosa* (Keyserling, 1865) and *P. speciosa* (L. Koch, 1871), all in the Zool. Museum Hamburg, convinced me that the identification in my 1961 paper was correct. The holotype of *P. verrucosa* is a young female; a female in the same collection, identified by Keyserling as *P. verrucosa* has an epigyne with a pronounced scapus but I am sure that this is an error: my specimens from Merauke and also the specimens in other collections (Vienna, from Fly river, identified by Reimoser; Leiden, from Takum, Star Mts.; San Francisco (CAS), from Maffin Bay) are completely in accordance with L. Koch's description, figure and type specimen. In *P. speciosa* the "horns" on the abdomen are long and the epigyne is different, whereas also in *P. bispi-*

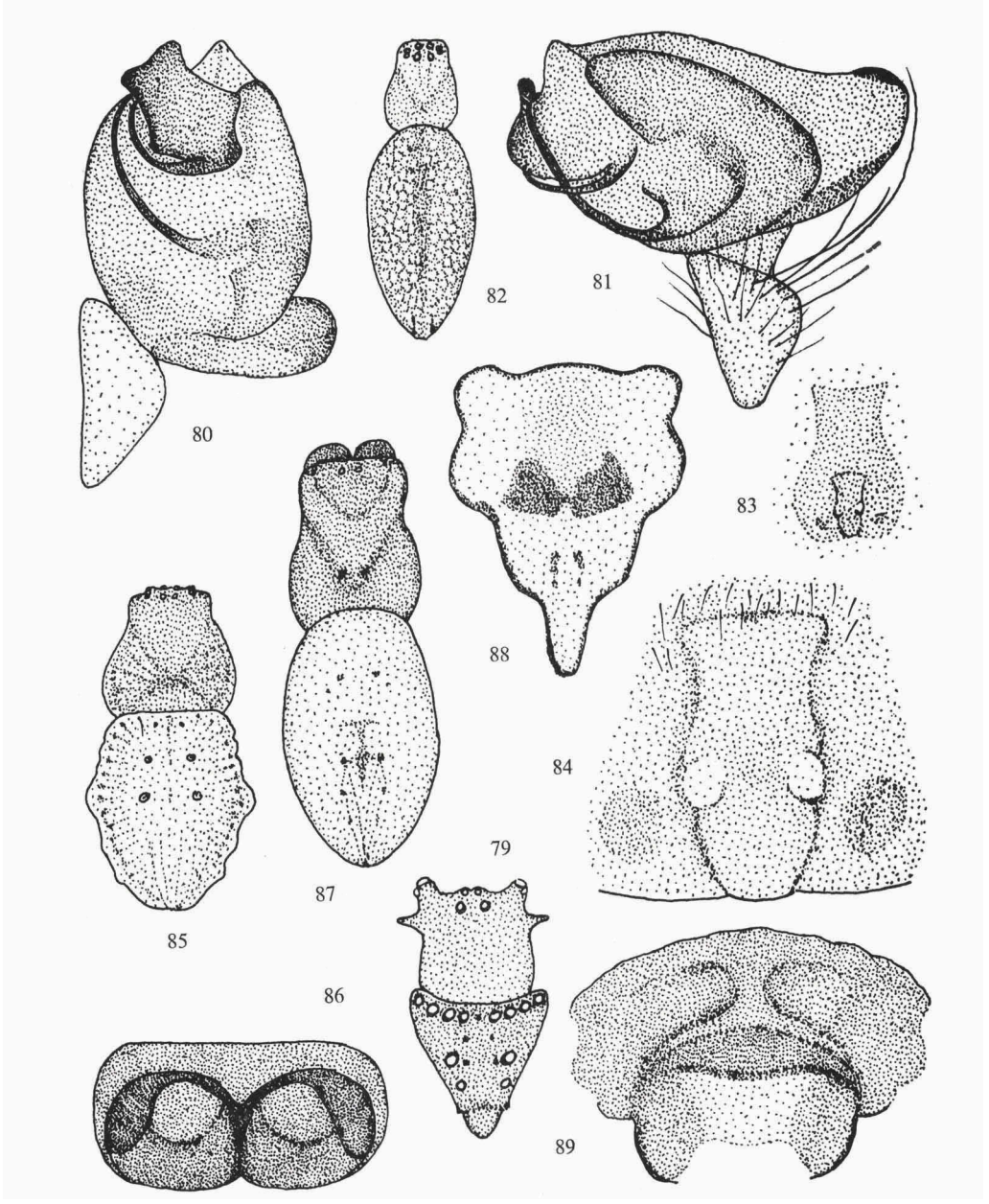


Fig. 79-81. *Arkys nimdol* nov. spec. 79, ♂ ; 80, do., left palp, ventral aspect; 81, do., left palp, outside. Fig. 82-84. *Orsinome monulfi* nov. spec. 82, ♀ ; 83, do., epigyne and surrounding field; 84, do., epigyne. Fig. 85, 86. *Herennia ornatissima* (Doleschall). 85, ♀ ; 86, do., epigyne. Fig. 87-89. *Nephila plumipes* (Latreille). 87, ♀ ; 88, do., sternum; 89, do., epigyne, from behind. — 79, 82, 88, × 7; 80, 81, × 65; 83, 86, × 35; 84, × 150; 85, × 3; 87, × 2; 89, × 20.

nosa the "horns" are more conspicuous and the epigyne differs still more, although this is not so clear in Keyserling's figure.

Poecilopachys minutissima nov. spec. (fig. 69, 70)

Material. — Bismarck Arch.: New Ireland, Lemkamin, 22.4.1962, Noona Dan Exped., ♂ (holotype) (ZMK).

The abdomen of this very small male (1.6 mm) is remarkable on account of several small knobs, each bearing a rather long and stiff hair, arranged along the anterior border and also scattered over the dorsal surface (fig. 69). In this respect it reminds one of *P. verrucosa* (cf. Chrysanthus, 1961, fig. 63, 64). No male of this genus has been described. In 1895 Thorell gave a description of a male of the closely related genus *Cyrtarachne* viz. *C. dimidiata* (Spiders of Burma: 240 — female unknown): the only known male of this genus within the Indo-Australian area. This species has the same characteristic knobs and — as far as can be derived from the description — the male palp must be similar to our fig. 70. I therefore believe that *C. dimidiata* Thorell, 1895 belongs to *Poecilopachys*, a genus created in the same year by Simon for a few species, previously classified within *Cyrtarachne* (Hist. nat. Araign., I: 880). *C.* (*P.*) *dimidiata* measures 2.5 mm.

Male (holotype). — Cephalothorax (fig. 69): length and width 0.8 mm, brown, slightly rugose; width of the eye region 0.5 mm. All mouth parts and sternum brown; legs and palpi yellowish brown. Abdomen (fig. 69): length 1.2 mm, width 1.3 mm, dark brown, very rugose; there are knobs along the anterior border and scattered over the dorsal surface, each bearing a rather long and stiff hair, and some inconspicuous small pits ("sigilla"). Palp: fig. 70.

Female unknown. It may be, however, that this species is the male of *P. verrucosa*, recorded from Samoa (type locality), Queensland, New Guinea and Aru Is.: it may, therefore, also occur in the Bismarck Arch., but I prefer to describe this male (provisionally) as a new species.

ARANEINAE, POLTYEAE

Poltys C. L. Koch, 1843

Poltys illepidus C. L. Koch, 1843

Poltys illepidus C. L. Koch, Chrysanthus, 1961, Nova Guinea, Zoology, no. 10: 211, fig. 70-73 (♀).

Material. — West New Guinea: Biak, from nest of wasp, 25.2.1952, Brongersma, ♀ subad.,; Sorido strip, 31.3.1952, Brongersma & Roosdorp, ♀ juv. (RMNH).
East New Guinea: Finschhafen, 16.5.1944, Ross, ♀ juv. (CAS).

ARANEINAE, ARKYEAE

The Arkyeae form a remarkable group within the Argyopidae, characterized by (1) the squat cephalothorax, (2) the great distance between the anterior and posterior median eyes, (3) the robust and partly flattened legs I and II, provided with strong spines, (4) the coriaceous integument of the abdomen. Three genera belong to this tribe, which is restricted to the Australian area but not yet recorded from New Guinea: *Aera* Urquhart, 1891 with two species, *Archemorus* Simon, 1893 with five species, and *Arkys* Walckenaer, 1837 with seven species.

Archemorus Simon, 1893

Simon knew only one species of this genus, *A. simsoni* Simon, 1893, from Tasmania; therefore some of the characters given by him in his "Histoire naturelle des Araignées" (1895: 898-901; fig. 967), e.g., the shape of the abdomen, are different in the other species. The Leiden collection contains two *Archemorus* females: none of the five descriptions and figures correspond with these specimens.

Archemorus sibil nov. spec. (fig. 71-73)

Material. — West New Guinea: Ok Sibil, Basiskamp 1260 m, 1.6.1959, Star Mountains Expedition, ♀, holotype (RMNH).

This species most resembles *A. occidentalis* Reimoser, 1936 (Treubia, 7. Suppl.: 409, fig. 2, 3); the shape of the abdomen (fig. 2a) and of the epigyne (fig. 2b), however, differ from *A. sibil.*

Female (holotype). — Cephalothorax (fig. 71): length 2.3 mm, width 2.0 mm, reddish brown with darker borders; cephalic part strongly swollen and separated from the thoracic part by a deep semi-circular groove. Eye region: fig. 72; very characteristic, width 1.9 mm, length 1.1 mm. All appendages of the same colour as the cephalothorax, legs III and IV somewhat lighter. Sternum: length 1.0 mm, width 0.9 mm, reddish brown, shining, a little rugose. Legs I and II robust, tibia and metatarsus flattened, provided on each side with rather strong spines (cf. fig. 77), legs III and IV normal; measurements: I 4.5, II 4.2, III 2.8, IV 5.0 mm.

Abdomen (fig. 71): length 4.0 mm, width 5.0 mm, height 4.0 mm, yellow, partly covered with lighter or darker brown; the numerous irregular sigilla are yellowish brown, the surface is bumpy and coriaceous; underside greyish brown except for two yellow blots, continuations of the yellow blots around the "shoulders" of the dorsal side, and a broad yellowish area around the yellowish brown spinnerets. Epigyne: fig. 73.

The male is unknown.

Archemorus roosdorpi nov. spec. (fig. 74-77)

Material. — West New Guinea: Wissel Lakes, between Enarotali and kampong Idajakottoe, 13.7.1952, leg. W. J. Roosdorp, ♀, holotype (RMNH).

This species, too, resembles *A. occidentalis*: the shape of the abdomen is fairly as in that species, the sigilla, however, are rather inconspicuous and the epigyne is distinctly different.

Female (holotype). — Cephalothorax (fig. 74): length 3.5 mm, width 3.6 mm, reddish brown, cephalic part much elevated towards the PME, behind these eyes the cephalothorax slopes rather sharply. Eye region: fig. 75, width 3.2 mm, length 1.8 mm. All appendages reddish brown. Sternum: length 1.7 mm, width 1.3 mm, reddish brown. Legs I and II robust, tibia and metatarsus flattened with rather strong spines on each side (fig. 77); legs III and IV normal; measurements: I 10, II 10, III 5, IV 9 mm.

Abdomen (fig. 74): length 4.8 mm, width 9.0 mm, yellowish white and reddish brown, the median posterior part greyish brown; the sigilla are rather inconspicuous; ventral side greyish brown with numerous small greyish sigilla in transverse rows, towards the borders some irregular blots of the same colour. The reddish brown spinnerets are surrounded by a narrow yellowish white ring. The epigyne (fig. 76) is dark reddish brown.

The male is unknown.

Arkys Walckenaer, 1837

Arkys lancearius Walckenaer, 1837 (fig. 78)

Arkys lancearius Walckenaer, 1837, Hist. nat. Ins. Apt. 1: 497 (♀); L. Koch, 1871, Arachn. Austral. 1: 216, Pl. 19 fig. 1 (♀); Keyserling, 1889, Arachn. Austral. 2: 258, Pl. 23 fig. 9 (♂).

Material. — East New Guinea: Wimba, National Gardens, 1950 m, 20.8.1963, Vink, ♂ subad. (RMNH).

Dr. G. Rack, Zoologisches Museum Hamburg, kindly enabled me to compare this subadult *Arkys* male with several males and females of *A. lancearius* from Sydney and Queensland, identified by L. Koch and Keyserling. Measurements, shape of the abdomen and distribution of the white spots are identical; in the Wimba specimen, however, these spots are smaller, especially the second ones of the median rows; moreover the "horns" on the cephalothorax are longer.

The type locality of *A. lancearius* is said by Walckenaer to be Rio de Janeiro (Brasil); according to Bonnet this certainly is erroneous: the species is only known from Australia and Tasmania (Roewer, 1942: 909; Bonnet, 1955: 664).

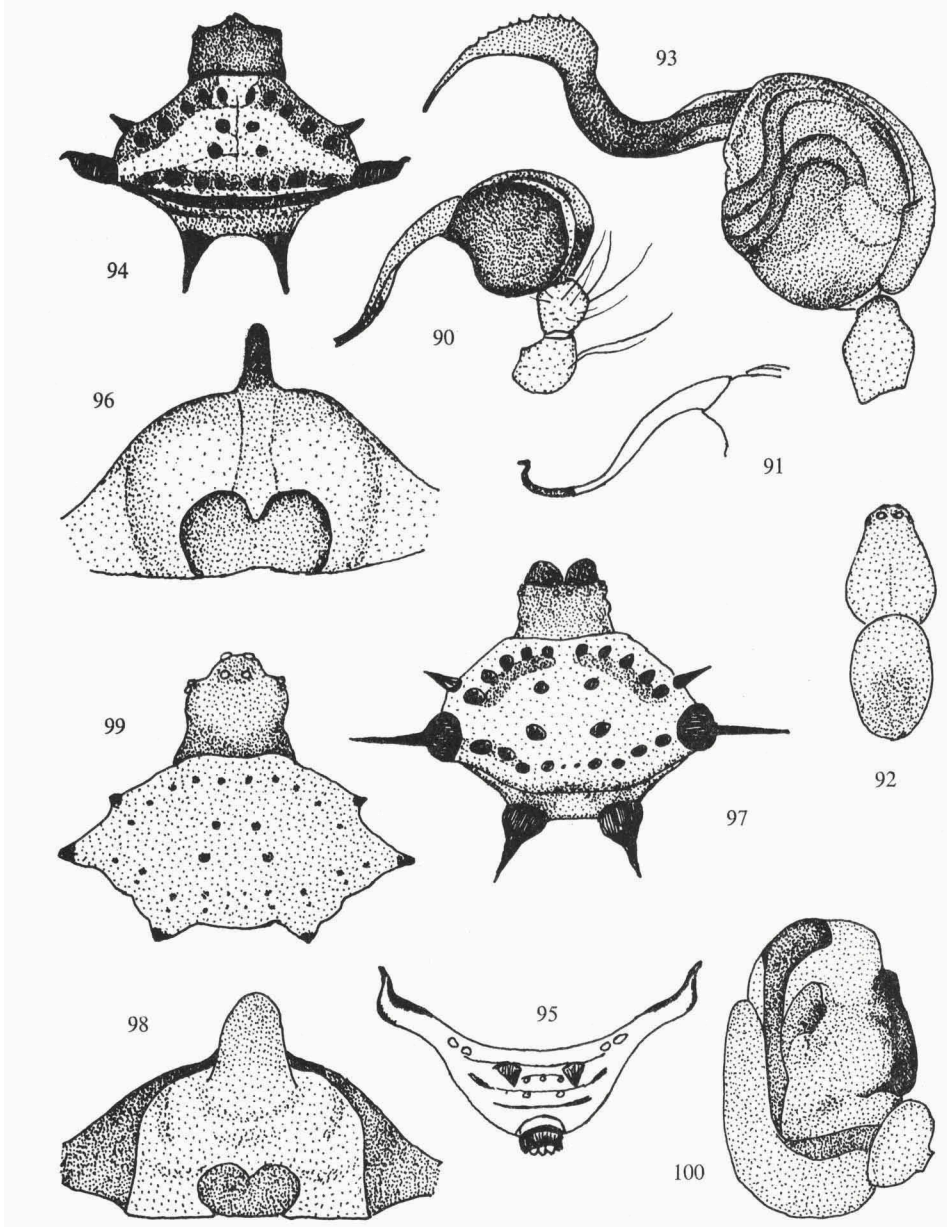


Fig. 90, 91. *Nephila plumipes* (Latreille). 90, ♂, left palp, outside; 91, do., tip of left palp. Fig. 92, 93. *N. malabarensis* (Walckenaer). 92, ♂; 93, do., left palp, outside. Fig. 94-96. *Gasteracantha crucigera* Bradley. 94, ♀; 95, do., sketch of abdomen, from behind; 96, do., epigyne. Fig. 97-100. *G. pentagona* (Walckenaer). 97, ♀; 98, do., epigyne; 99, ♂; 100, do.; left palp, inner side. — 90, 91, × 20; 92, × 7; 93, × 40; 94, 95, 97, × 3; 96, 98, × 75; 9, × 14; 100, × 60.

Arkys nimdol nov. spec. (fig. 79-81)

Material. — West New Guinea: Nimdol, Star Mountains, bivak 36, 1220 m, 1.8.1959, Star Mts. Expedition, ♂, holotype (RMNH).

Compared with the other known *Arkys* species this one is very small; in other respects it most resembles *A. lancearius*.

Male (holotype). — Cephalothorax (fig. 79): length 2.6 mm, width (without "horns") 2.3 mm, yellowish brown. Trapezium of median eyes: length 0.7 mm, width (posteriorly) 0.7 mm, ALE by far the largest of all eyes. All appendages yellowish brown. Sternum: length 1.0 mm, width 0.9 mm, yellowish brown, darkening towards the borders. Legs I and II partly flattened, ventrally with long firm brown spines in two rows; measurements: I 10.5, II 7.5, III 3.5, IV 6.0 mm. Palp: fig. 80, 81.

Abdomen (fig. 79): length 3.3. mm, width 2.5 mm, yellowish grey with 12 white spots; ventral side yellowish grey with rather broad brown borders.

The female is unknown.

METINAE, METEAE

Orsinome Thorell, 1890

Orsinome monulfi nov. spec. (fig. 82-84)

Material. — West New Guinea: Mindiptana, 1959, Monulf, ♀ (holotype) (RMNH).

This species strongly resembles *O. elberti* Strand, 1911 (Arch. Naturg. 77 (1): 204; 1915, Abh. Senckenb. naturf. Ges. 36: 197, Pl. 16 fig. 48) from a small island near Timor, but it is smaller and the epigyne, though similar, is distinctly different.

Female (holotype). — Cephalothorax (fig. 82): length 2.0 mm, width 1.6 mm, yellowish brown, the cephalic part somewhat lighter; width of the eye region 0.8 mm. Chelicerae and maxillae yellowish brown, labium brown, pedipalpi brownish yellow. Sternum: length 1.0 mm, width 0.9 mm, yellowish brown. Legs brownish yellow; measurements: I 12.0, II 9.5, III 4.5, IV 8.0 mm.

Abdomen (fig. 82): length 4.5 mm, width 2.2 mm, grey with many irregular silvery spots and two short black stripes near the tip; ventral side grey, small silvery spots along the borders and in four clusters in the central part: one on each side behind the epigastric furrow and one pair about the middle of this part. The brown spinnerets are implanted one mm from the tip of the abdomen. Epigyne and surrounding field (fig. 83, 84) light reddish brown.

The male is unknown.

NEPHILINAE

Herennia Thorell, 1870

Herennia ornatissima (Doleschall, 1859) (fig. 85, 86)

Epeira ornatissima Doleschall, 1859, Act. Soc. Sci. Ind. Neerl. 5: 32, pl. 1 fig. 5 (♀).
Epeira multipunctata Doleschall, ibid.: 32, Pl. 11 fig. 1 (♀).
Herennia multipunctata Thorell, 1877, Ann. Mus. civ. Stor. nat. Genova 10: 371 (♀).
Herennia ornatissima (Doleschall), Simon, 1894, Hist. nat. Araign. 1: 759 fig. 828, 835 (♂♀).

Material. — Bismarck Arch.: New Britain, Yalom, 1000 m, 10.5.1962, Noona Dan Exped. ♀ (ZMK).

The type locality of this beautiful species is Amboina; it has been recorded from several localities between India and Amboina (Roewer, 1942: 925; Bonnet, 1957: 2160); the above mentioned specimen, identical with several specimens from Sumatra (RMNH), proves that its area is much larger.

Nephila Leach, 1815

Nephila maculata (Fabricius, 1793)

Nephila maculata (Fabricius), Chrysanthus, 1959, Nova Guinea, new ser., 10 (2): 197, fig. 2, 11, 24 (♀); 1960, Nova Guinea, Zoology, no. 3: 23, fig. 3, 4 (♂).

Material. — West New Guinea: Middelburg I., 3.7.1952, Brongersma & Roosdorp, ♀; Ajamaroe, -.6.1952, Brongersma & Roosdorp, 8 ♀, 18 juv.; 1/6.4.1955, ?, 7 ♀, 3 juv.; Djidmaoe, 13.6.1952, Brongersma & Roosdorp, 3 ♀, 20 juv.; Sedorfojo, 20.7.1952, Marcus, ♀, 3 juv.: Elles, 27.7.1952, Marcus, ♀; Noemfoor I., Kameri, 2.3.1955, ?, juv.; Etna Bay, 1939, KNAG, 7 juv.; Biak., -.5.1952, Brongersma, ♀; 6.12.1953, van der Hammen, ♂ subad.; -10/12.1953, Personell Royal Netherlands Navy, ♀; 1.2.1955, ?, ♀; Japen I., Seroei, 4/13.5.1952, Roosdorp, 2 ♀, 3 juv.; -.1.1953, van Hout, 2 ♀; Ambraideroe, near Japen I., 1953, Leiker, ♀ (RMNH); Maffin Bay, -.11.1944, Ross, juv. (CAS); Hollandia, 20.1.1954, van der Hammen, juv.; Genjem, near Hollandia, 13.1.1954, van der Hammen, 2 ♀, 5 juv.; Kota Baroe, near Hollandia, 22.1.1954, van der Hammen, ♀♂; Hollandia, indoors in nest of wasp, 14.8.1956, van den Assem, juv.; Ok Sibil, 1260-1300 m, -.5/11.1959, Star Mts. Exped., 16 ♀; Katem, 200 m, 27.6.1959, juv.; Denboek, 12.8.1959, ♀♂; Takum, Kamp Hifob, 10.9.1959, juv.; Kouh, Digoel, 10 m, 8.9.1959, ♀; Mariang, 12.9.1959, ♀ (all Star Mts. Exped. RMNH); Mindiptana, 1965, Monulf, ♂ (CHR).

East New Guinea: Kaironk Valley, Schrader Mts., 4500', Jackson, 3 ♀; Yaramanda, W. Baiyer Valley, 5000', 8.2.1964, Bulmer, ♀ (CHR), Wimba, Kuboe Range, 1950 m, 8.9.1963, Vink, ♀ (RMNH); Mt. Missim, Stevens, ♀ (MCZ).

Bismarck Arch.: Hermit Is., Luf I., 27.6.1962, ♀; Manus I., Lombrun, 29.6.1962, ♀; Mussau, Talumalaus, -.1.1962, 5 ♀; Tassital, 3.6.1962, 5 ♀; Lavongai, Banatam, -.3.1962, 2 ♀; Dyaul I., 5.3.1962, ♀; New Ireland, Lemkamin, 900 m, -.4/5.1962, 8 ♀; Kalili Bay, 3.4.1962, 2 ♀; New Britain, Vaisisi, 9.7.1962, ♀, 2 juv.; Valoka, 10.7.1962, ♀ (all Noona Dan Exped. ZMK).

Great Barrier Reef: Green I., 17.5.1967, Heatwole, ♀♂.

In the male from Kota Baroe both emboli are partly broken off, precisely at the same point.

Nephila plumipes (Latreille, 1804) (fig. 87-91)

Aranea plumipes Latreille, 1804, Hist. Nat. Ins. 7: 275 (♀).
Nephila venosa L. Koch, 1867, Verh. zool. Bot. Ges. Wien, 17: 183 (♀).
N. prolixa L. Koch, 1871, Arachn. Austr. 1: 149, Pl. 12 fig. 2 (♀).
N. victorialis L. Koch, 1871, ibid.: 150, Pl. 12 fig. 3 (♀).
N. nigritarsis L. Koch, 1871, ibid.: 152, Pl. 12 fig. 4 (♀).
N. flagellans L. Koch, 1871, ibid.: 153, Pl. 12 fig. 5, 6 (♀ ♂).
N. venosa L. Koch, 1871, ibid.: 148, Pl. 12 fig. 1 (juv.).
N. (Cyphonephila) plumipes Latreille, Dahl, 1912, Mitt. Zool. Mus. Berlin, 6: 35, 60, 61 (♀).
Nephila plumipes Latreille, Berland, 1924, Nova Caledonia, Zool. 3 (2): 218, fig. 121 (♂); 1931, Bull. Mus. Hist. Nat. Paris (2) 3: 671, fig. 12-14, (15?), 16 (♀ ♂).

Material. — Great Barrier Reef: Lizard I., 25/29.9.1967, Heatwole, ♂ ♀; Wreck I., 12.11.1967, Heatwole, ♂.

As in *N. maculata* the epigyne of this species is very inconspicuous in its "resting position": a broad yellowish brown lip with a shining black rim; when it is lifted and viewed as far as possible from behind it reveals its real shape. For the greater part it is pitch black and only reflections of light give an impression of its structure (fig. 89). The large knob and the dark blots on the sternum (fig. 88) are characteristic for this species.

In the male, captured on the same small island and during the same days as the female, the tips of the emboli are wanting (fig. 90); in the male from Wreck I. the emboli are complete (fig. 91). It would seem to me that Berland's fig. 121 (1924) is correct but that in his 1931 paper he made a mistake, attributing the palp of *N. plumipes* to *N. edulis* (fig. 16) and that of *N. edulis* to *N. plumipes* (fig. 15). The type locality of *N. plumipes* is "îles de la Mer du Sud" (Latreille); it is known from New Guinea, Australia and adjacent islands (Roewer, 1942: 931; Bonnet, 1958: 3083).

Nephila (Nephilengys) malabarensis (Walckenaer, 1841) (fig. 92, 93)

Nephila (Nephilengys) malabarensis (Walckenaer), Chrysanthus, 1959, Nova Guinea, new ser., 10 (2): 199, fig. 4, 8, 28 (♀).

Material. — West New Guinea: Sekroe, -.3.1897, Schädler, 4 ♀; Sedorfojo, 20.7.1952, Marcus, 2 ♀; Takum, Kamp Hifob, 10.9.1959, ♀; Kouh, Digoel, 10 m, 8.9.1959, 30 ♀, ♂, 4 ♂ juv., 46 juv. Star Mts. Exped. (RMNH); Mindiptana, 24.8.1962, 4 ♂, 2 ♂ juv.; 1965, 2 juv., Monulf (CHR).

Of the four males from Mindiptana one possesses both palpi, one the left palp only, one the right palp only, in one both palpi are missing.

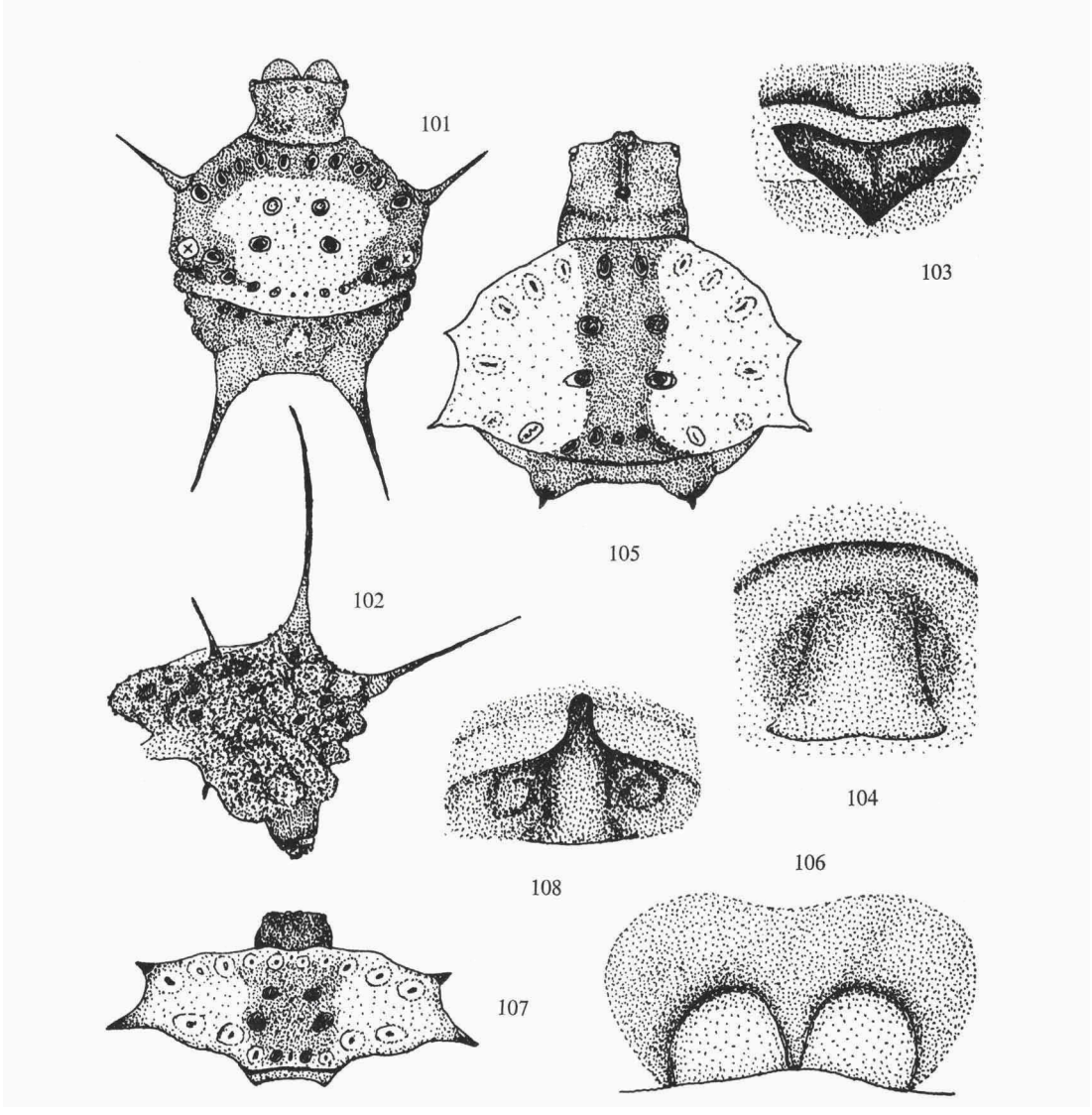


Fig. 101-103. *Gasteracantha scintillans* Butler. 101, ♀ ; 102, do., abdomen, lateral aspect; 103, do., epigyne. Fig. 104. *G. brevispina* (Doleschall), ♀, epigyne. Fig. 105, 106. *G. mediofusca* (Doleschall). 105, ♀ ; 106, do., epigyne. Fig. 107, 108. *G. quadrispinosa* (Cambridge). 107, ♀ ; 108, do., epigyne. — 101, 102, 107, × 3; 103, 104, 108, × 75; 105, × 7; 106, × 150.

GASTERACANTHINAE, GASTERACANTHEAE

Gasteracantha Latreille, 1831

Many difficulties arise in the study of *Gasteracantha* species in consequence of the vagueness of many original descriptions and the different interpretations by subsequent authors. Dahl (1914, Mitt. Zool. Mus. Berlin 7: 237-301) made an extensive study of this genus based on the large collections of the Berlin Museum, which is particularly rich in specimens from the Indo-Australian area. I used his keys and descriptions in the identification of the species treated here.

Gasteracantha (Actinacantha) crucigera Bradley, 1877 (fig. 94-96)

Gasteracantha crucigera Bradley, 1877, Proc. Linn. Soc. N.S. Wales 1: 138 pl. 1 fig. 1 (♀).

G. crepidophora Cambridge, 1879, Pr. Zool. Soc. London, 1879: 287, Pl. 27 fig. 14 (♀).

G. crepidophora & *G. crucigera* Thorell, 1881, Ann. Mus. civ. Stor. nat. Genova 17: 30, 33 (♀).

G. crucigera & *G. crepidophora* & *G. similis* + var. *tenuiscapus* Kulczynski, 1911, Nova Guinea 5: 494-499, Pl. 20 fig. 64-66, 69-71 (♀ ♂).

G. similis var. *melanotica* Kulczynski, 1911, Nova Guinea 9: 123 (♀).

G. (A.) crucigera "mihi", Dahl, 1914, l.c.: 247 (♀).

Material. — West New Guinea: Sekroe, 1897/8, Schädler, 15 ♀; Ajamaroe, 7.6.1952, Brongersma & Roosdorp, ♀; Sedorfojo, -.7.1952, Marcus, ♀; Etna Bay, 22/30.11.1939, KNAG, 2♀; Biak, 1.11.1953, 2 ♀; 23.11.1953, 4 juv., van der Hammen. Owi I., 6.4.1952, Roosdorp, ♀, 5 juv.; Hollandia, -.1.1954, van der Hammen, 13♀; Ok Sibil, Basiskamp, 1260 m, -.6.1959, 3 ♀; Katem, 200 m, 3.7.1959, 2 ♀; Takum, kamp Hifob, 10.9.1959, ♀, Star Mts. Expedition (RMNH).

All references cited above are given by Dahl with a query; he compared about 80 specimens and found that several transitions occur between the "species" described by their authors. He even added: "Ob Bradley diese vorliegende Art vor sich hatte, erscheint mir nicht sicher, da weder in seiner Beschreibung noch in seiner Figur die Biegung des 2. Stachels zum Ausdruck gelangt. Ich folge aber den früheren Autoren, die ebenfalls Material aus Süd-Neu-Guinea vor sich hatten" (l.c. p. 248).

The second thorns are curved upwards (fig. 95); the shape of these thorns is variable. The epigyne reveals the hollows indicated in fig. 96 only when it is lifted up and cleared of a greyish stuff, which often surrounds these openings („Begattungszeichen"); the scapus is somewhat variable. In two specimens from Katem the light-coloured centre of the abdomen is partly replaced by dark blots; in one specimen from Takum only some small light-coloured blots are left.

Gasteracantha (A.) pentagona (Walckenaer, 1841) (fig. 97-100)

Plectana pentagona Walckenaer, 1841, Hist. Nat. Ins. Apt. 2: 168 (♀).
Gasteracantha pentagona (Walckenaer), L. Koch, 1871, Arachn. Austral. 1: 9, Pl. 1 fig. 6 (♀).
G. strasseni Strand, 1914, Abh. Senckenb. naturf. Ges. 36: 229, Pl. 14 fig. 25, 26, Pl. 17 fig. 72 (♀ ♂).
G. (A.) pentagona "mihi", Dahl, 1914, l.c.: 248 (♀).

Material. — Bismarck Arch.: New Ireland, west coast, 1905, Wegener, ♀ (ZMH); Lemkamin, 900 m, -.4.1962, 10 ♀, ♂, 8 juv.; New Britain, Valoka, 8.7.1962, ♀, Noona Dan Exped. (ZMK).

All specimens from New Ireland fully agree with the descriptions and figures mentioned above. In the specimen from New Britain the base of the thorns is red, not black as in the others; for the rest they are identical. According to Dahl (l.c. p. 246) red bases of the thorns distinguish *G. aciculata* (Pocock, 1898) from *G. pentagona,* where the bases are black. It appears that this character is not conclusive.

The type locality of *G. pentagona* is New Ireland and the species is known from the Bismarck Arch. only (Roewer, 1942: 947; Bonnet, 1957: 1963).

Gasteracantha (A.) theisi Guérin, 1838

Gasteracantha theisi (Guérin), Chrysanthus, 1959, Nova Guinea, new ser., 10 (2): 203, fig. 12, 15-18, 20-23 (♀ ♂).

Material. — West New Guinea: Sekroe, -.3/7. 1897, Schädler, 3 ♀, 3 ♂; Sedorfojo, 20.7.1952, Marcus, ♀; Biak, from nest of wasp, 17/19.2.1952, Brongersma, ♀; Biak, -.11.1953, van der Hammen, 4 ♀; Japen I., Seroei, 4/13.5.1952, Roosdorp, 3 ♀, 3 juv.; 1954, van Hout, 2 ♀; Hollandia, -12.1953/-.1.1954, van der Hammen, 4 ♀; Katem, 200 m, -.5/6.1959, 2 ♀, juv.; Kawakit, 11/12.9.1959, 2 ♀; Kouh, Digoel, 10 m, 8.9.1959, 3 ♀, juv. Star Mts. Exped. (RMNH).
East New Guinea: Bulolo, 2.12.1967, Gray, ♀ (CHR); Mongi Watershed, Huon Pen., 1200-1300 m, 11/13.4.1955, Wilson, juv. (MCZ).

Gasteracantha (A.) scintillans Butler, 1873 (fig. 101-103)

Gasteracantha scintillans Butler, 1873, Trans. Entom. Soc. Lond. (2): 156; Pl. 4 fig. 9 (♀).
G. scintillans f. *concolor* Rainbow, 1913, Rec. Austral. Mus. 10: 12 (♀).

Material. — Solomon Is.: Guadalcanal I., rainforest 17 km West of Honiara, 28/29.7.1962, Noona Dan Exped., 6 ♀ (ZMK).

Butler concluded his description with the following words: "The most gorgeously coloured spider in this genus". The surface of the abdomen is very rugose and all dark parts possess a brilliant metallic green hue; in the above mentioned specimens the "fiercy copper-coloured" hind part is green and the central part is not "dark brick-red" but brownish yellow (f. *concolor* Rainbow).

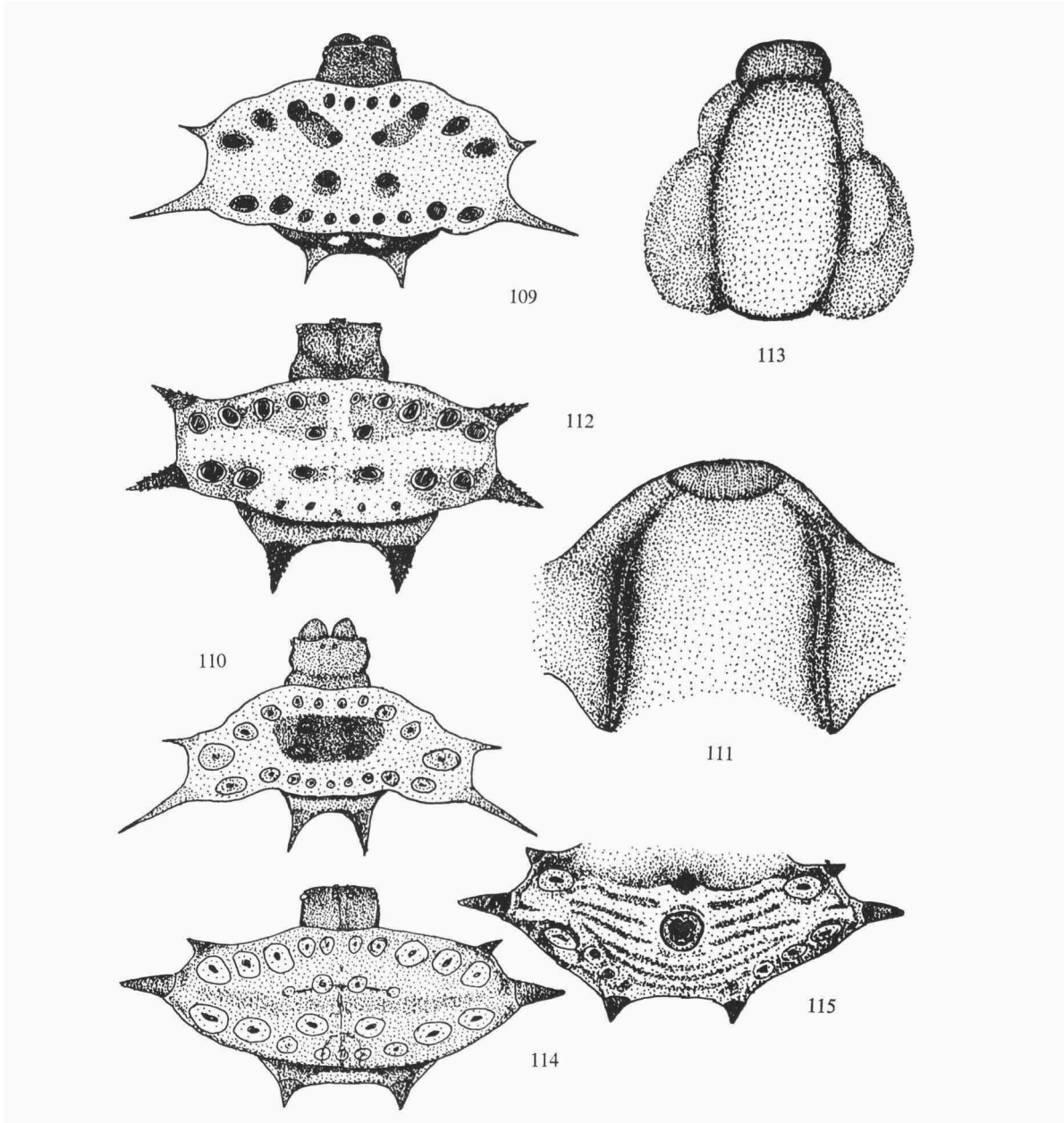


Fig. 109-111. *Gasteracantha signifera* Pocock. 109, ♀ (from Solomon Is., ZMH); 110, ♀ (from Guadalcanal, Solomon Is., ZMK); 111, do., epigyne. Fig. 112, 113. *G. fasciata* Guérin. 112, ♀; 113, do., epigyne. Fig. 114, 115. *G. taeniata* (Walckenaer), ♀ (from Mt. Missim). 114, dorsal aspect; 115, do., abdomen, ventral aspect. — 109, 110, 112, 114, 115, × 3; 111, 113, × 150.

In fig. 101 the second pair of thorns, which are implanted perpendicularly on the abdomen are indicated by a cross (X).

Butler did not know from where he received the holotype; the species, however, is only known from the Solomon Is. (Roewer, 1942: 947; Bonnet, 1957: 1966).

Gasteracantha (Thelacantha) brevispina (Doleschall, 1857) (fig. 104)

Gasteracantha brevispina (Doleschall), Chrysanthus, 1959, Nova Guinea, new ser., 10 (2): 203, fig. 13, 19, 29 (♀); 1960, Nova Guinea, Zoology, no. 3: 25 fig. 5, 6 (♂).

Material. — West New Guinea: Sedorfojo, 20.7.1952, Rev. & Mrs Marcus, ♀; Wissel Lakes, -.8/9.1939, KNAG, 45 ♀ + juv.; -.7.1952, Roosdorp, 2 ♀; Enarotali, -.12.1954,?, 16 ♀, 3 juv.; Wissel Lakes, 1954, Boelen, 50 ♀ + juv.; Lake Tigi, 11/12.1.1955, ?, ♀, juv.: Biak, -2/3.1952, Brongersma & Roosdorp, 4 ♀, 3 juv.; from nest of wasp, -.2/3.1952, Brongersma, 4 ♀; from other nest, 30 juv. (RMNH).

East New Guinea: Mongi Watershed, Huon Pen., 3700-4000', 14.11.1955, Wilson, 4 ♀ (MCZ).

Bismarck Arch.: Mussau I., Eaborae, 14.2.1962, 30 juv.; New Ireland, islet near Kavieng, 13.1.1962, 2 ♀; New Britain, Yalom, 1000 m, 10.5.1962, 6 ♀ — Noona Dan Exped. (ZMK).

Dahl (1914: 259) mentioned the great variability of this species (as *G. mammosa* C. L. Koch); my previous figure (19) depicts a rather light form. The ground colour of the abdomen may be almost black, white spots forming together a triangle with its base on the anterior border of the abdomen and its apex on the posterior. Three young specimens, one from the Wissel Lakes, two from Biak, are uniformly dark greyish brown; all other characters, however, suggest that they belong to this species. The small thorns of the abdomen are sometimes strongly curved upwards. Several specimens are larger than those from Merauke viz., length and width 11-12 mm instead of 8-8.5 mm.

In my previous figure of the epigyne (13) I too much emphasized the median ridge; I now give a new figure (104) which is in better agreement with the common shape of the epigyne.

Gasteracantha (T.) mediofusca (Doleschall, 1859) (fig. 105, 106)

Plectana mediofusca Doleschall, 1859, Acta Soc. Sci. Ind. Neerl. 5: 44, Pl. 13 fig. 9 (♀).

Gasteracantha brevispina (Doleschall) (partim) Chrysanthus, 1959, Nova Guinea, new ser., 10 (2): 203 (♀).

Material. — West New Guinea: Wissel Lakes, 15/16.9.1939, KNAG, 7 ♀; Biak, Base, from nest of wasp, 10.3.1952, ♀, 2 juv.; Borokoe, 12.3.1952, ♀, Brongersma; Base, 5.4.1952, Roosdorp, 2 ♀ (RMNH).

In 1857 (Natuurk. Tijdschr. Ned. Indië 13: 423), Doleschall described *Plectana brevispina* after a specimen from Amboina; in 1859 he added descriptions of *P. flavida, P. roseolimbata* and *P. mediofusca,* based on figures of specimens from Buitenzorg, Java (Pl. 13 fig. 3, 1, 9). Nearly all later authors considered these three species synonyms of *G. brevispina* (cf. Roewer, 1942: 944 — as *G. mammosa* C.L. Koch, 1845; Bonnet, 1957: 1943). Merian, however, (1911, Zool. Jahrb. Syst. 31: 237) considered *G. mediofusca* a good species on account of the clear differences in outward appearance and the fact that it occurred on Celebes beside *G. brevispina* without transitions. Dahl (1914, loc. cit.: 259) discussing *G. brevispina* (as *G. mammosa*) gave the following remark: „Von den Farbenabänderungen sei die Varietät *mediofusca* genannt, da sie nach dem mir vorliegenden Material in Asien und den benachbarten Inseln am meisten Konstanz angenommen zu haben scheint, während sich auf der Karolinen und in Neu Guinea zahlreiche Übergänge finden. An manchen Punkten (Fidschi-Inseln, Mauritius) scheint diese Varietät ganz zu fehlen. Auf Ceylon und Minikoy ist der Hinterleib sehr scharf hell und dunkel gezeichnet. Mit dieser Zeichnung kommt dann auch die Varietät *mediofusca* vor".

The original descriptions do not give clear indications. About *P. brevispina* Doleschall said: "Sternum, mouth parts and coxae light brown", about *P. flavida*: "Yellow, beautifully variegated with black and white", about *P. roseolimbata*: "legs yellowish"; in his description of *P. mediofusca,* however,: "cephalothorax, chelicerae and legs black." The specimens mentioned above have a pattern as in *G. mediofusca* (fig. 105), I and II legs are very dark brown, the other yellowish brown, whereas in all *G. brevispina* specimens all legs are yellowish brown. Moreover, the epigyne is distinctly different (fig. 104, 106); the vulvae of these species are very simple (cf. Chrysanthus, 1959, fig. 29) and therefore it is difficult to detect specific differences.

I therefore believe that *G. mediofusca* is a good species, differing from *G. brevispina.* The holotype is the original coloured picture, prepared by A. Maurevert and preserved in the Rijksmuseum van Natuurlijke Historie, Leiden; Doleschall gave a black-and-white reproduction on Pl. 13 fig. 9.

Gasteracantha (Atelacantha) quadrispinosa Cambridge, 1879

(fig. 107, 108)

Gasteracantha quadrispinosa Cambridge, 1879, Proc. zool. Soc. London 1879: 281, Pl. 26 fig. 1 (♀).

G. papuana Thorell, 1881, Ann. Mus. civ. Stor. nat. Genova 17: 15 (♀).

G. (A.) wolfi Strand, 1914, Abh. Senckenb. Naturf. Ges. 36: 233, Pl. 18 fig. 79 (♀).

G. (A.) quadrispinosa "mihi", Dahl, 1914, loc. cit.: 270 (♀).

Material. — West New Guinea: Holtekang, near Hollandia, 7.1.1954, van der Hammen, ♀ (RMNH).
Bismarck Arch.: Manus I., Lorengau, 19.6.1962, Noona Dan Exped. ♀ subad. (ZMK).

The specimen from West New Guinea agrees with the descriptions of Cambridge, Thorell and Dahl, whereas the subadult female from Manus I. is in complete accordance with Strand's *G. wolfi* from Lo(u) I., near to Manus I.: they are uniformly dark brown. The type locality of *G. quadrispinosa* is Australia; it it also known from New Guinea and the Bismarck Arch. (Roewer, 1942: 947; Bonnet, 1957: 1963).

Gasteracantha (Pachypleuracantha) signifera Pocock, 1898 (fig. 109-111)

G. mollusca (non L. Koch, 1871) Keyserling, 1886, Arachn. Austral. 2: 88, Pl. 7 fig. 1 (♀).
G. signifer Pocock, 1898, Ann. Mag. nat. Hist. (7) 1: 465, Pl. 19 fig. 6 (♀).
G. (P.) signifer Pocock, Dahl, 1914, loc. cit.: 281 (♀); Strand, 1914, Abh. Senckenb. naturf. Ges. 36: 236, Pl. 18 fig. 80, 84 (♀).

Material. — Solomon Is.: 18.12.1909, Martens, ♀ (ZMH); Guadalcanal I., Honiara, 1.8.1962, Noona Dan Exped., ♀ (MZK).

Keyserling and Strand emphasized the great variability of this species; even the characteristic dark blot on the abdomen, which Pocock expressed by the name "ensignbearer", may be much reduced; also the ratio between length and width of the abdomen and the length of the second thorns may vary to a large degree. The two specimens, both from the Solomon Is. (fig. 109, 110) clearly demonstrate this variability; the epigynes, however, are identical (fig. 111). The borders of the abdomen are curved upwards, especially in the first specimen (fig. 109). The type locality is New Georgia (Solomon Is.) and the species is also known from the Bismarck Arch. (Roewer, 1942: 947; Bonnet, 1957: 1968).

Gasteracantha (P.) fasciata Guérin, 1838 (fig. 112, 113)

Gasteracantha fasciata Guérin, 1838, Voyage Coquille, Zool. 2 (2): 53 (♀).
Plectana variegata Walckenaer, 1841, Hist. nat. Ins. Apt. 2: 160 (♀).
G. variegata Thorell, 1881, Ann. Mus. civ. Stor. nat. Genova, 17: 25 (♀).
G. (P.) fasciata "mihi", Dahl, 1914, loc. cit.: 282 (♀).

Material. — West New Guinea: Sekroe, -.3/7.1897, Schädler 3 ♀; Fak Fak, 11.4.1952, Brongersma, ♀; 28.6.1952, Mrs Kranendonk, ♀; Owi I., 23.3.1952, Roosdorp, 3 ♀, 3 juv. (RMNH).

In general appearance *G. fasciata* resembles *G. taeniata* but on closer inspection it differs from that species in the following points: (1) the anterior dark band on the abdomen is interrupted in the middle, (2) the

length of all slender thorns is nearly equal, (3) the distance between the first and the second thorns is longer, (4) the lateral borders are straight, not curved, and (5) a lip-shaped projection extends on the anterior part of the epigyne. Because almost the whole epigyne is pitch-black it is very difficult to obtain a good idea of its structure; the projecting "lip" and the somewhat lighter central part are always discernable.

Gasteracantha (P.) taeniata (Walckenaer, 1841) (fig. 114, 115)

Gasteracantha taeniata (Walckenaer), Chrysanthus, 1959, Nova Guinea, new ser., 10 (2): 202, fig. 5, 14, 27 (♀); 1960, Nova Guinea, Zoology, no. 3: 23, fig. 7, 8 (♂).

Material. — West New Guinea: Ajamaroe — Taminaboean, 7.6.1952, Brongersma & Roosdorp, juv.; Seta — Ajamaroe, 18.6.1952, Brongersma & Roosdorp, 2 ♀, juv.; Sedorfojo, 20.7.1952, Marcus, juv.; Sekroe, -.3.1897, Schädler, 3 ♀, juv.; -.7.1897, Schädler, ♀ (RHNH): Manokwari, 1906/7, Barbour, ♀ (MCZ): Biak, 7.2.1952, Nelissen, ♀; 12.3.1952, 8 juv.; from nest of wasp, 17/19.2.1952, juv., Brongersma; 30/31.3.1952, Brongersma & Roosdorp, ♀, 5 juv.; Wissel Lakes, -.7/9.1939, 72 ♀ + juv.; Lake Paniai, -.8/11.1939, 47 ♀ + juv.; Araboe bivak, 4/28.10.1939, 13 ♀ + juv. KNAG; Wissel Lakes, -.7.1952, Roosdorp, 3 ♀; Enarotali, -.7.1952, Roosdorp, 130 ♀ + juv.; 25.12.1954, ?, 2 ♀, juv.; Lake Paniai, -.8/9.1939, KNAG, 100 ♀ + juv.; 3.1.1955, ?, 3 ♀, 6 juv.; Genjem near Hollandia, 13.1.1954, van der Hammen, 4 ♀ (RMNH); Hollandia, 20.10.1944, Aarons, ♀ (CAS); Ok Sibil, -.4/7.1959, 6 ♀, ♂, 7 Juv.; Ok Bon, -.6/7.1959, 7 ♀, 2 juv.; Ok Tenma, 1500 m, 19.5.1959, 3 ♀; Katem, 200 m, -.5/6.1959, 4 ♀; Nimdol, 1220 m, 1.8.1959, 4 ♀; Tenmasigin, 1800 m, 22.5.1959, 9 ♀; Molbokon, 1800 m, 10.9.1959, 2 ♀; Takum, kamp Hifob, 10.9.1959, 4 ♀; Kouh, Digoel, 10 m, 8.9.1959, 2 ♀, juv. — All Star Mts. Exped. (RMNH).

East New Guinea: Tari, 6.6.1966, Vink, 2 ♀ (RMNH); Kaironk Valley, Schrader Mts., 5750', 26.9.1963, Bulmer, 2 ♀; 4500', 22.9.1966, Jackson, 2 ♀; Yaramanda, Baiyer Valley, 5800', 8.2.1964, Bulmer, 2 ♀ (CHR); Wimba, 19.8.1963, Vink, 100 ♀ + juv. (RMNH); Bulolo, 22.12.1967, Gray, ♀ (CHR); Mt. Missim, Stevens, 2 ♀ (MCZ); Mongi Watershed, Huon Pen., 11/13.4.1955, Wilson, 7 ♀ (MCZ); Finschhafen, 11.9.1944, Aarons, ♀ (CAS).

Bismarck Arch.: Mussau I., Talumalaus, 5.2.1962, 10 ♀ + juv.; Tassital, 1.6.1962, 7 ♀ + juv.; Dyaul I., Sumuna, 2/5.3.1962, 3 ♀, juv.; New Ireland, Lemkamin, 900 m, -.4.1962, 35 ♀, 10 juv.; New Britain, Yalom, 1000 m, -.5.1962, 90 ♀, 3 ♂, Noona Dan Exped. (ZMK).

The long list of localities and the large number of specimens captured in several of them, prove that this species is very common in New Guinea and the Bismarck Arch. In nearly all specimens the characteristic pattern is clear; in two specimens from Lake Paniai and two from Mussau I., only the anterior dark stripe is present, the posterior one, sometimes more vague, is completely absent. Strand (1915, Abh. Senckenb. naturf. Ges. 36: 235, Pl. 18 fig. 75) named this form ab. *obsoletipicta*, but he remarked that all transitions may be present in a large collection from the same locality. One of the specimens from Biak is very small: length 6.5, width 10.5 (both without thorns) whereas the normal measurements are 8-9 mm and 13-15 mm

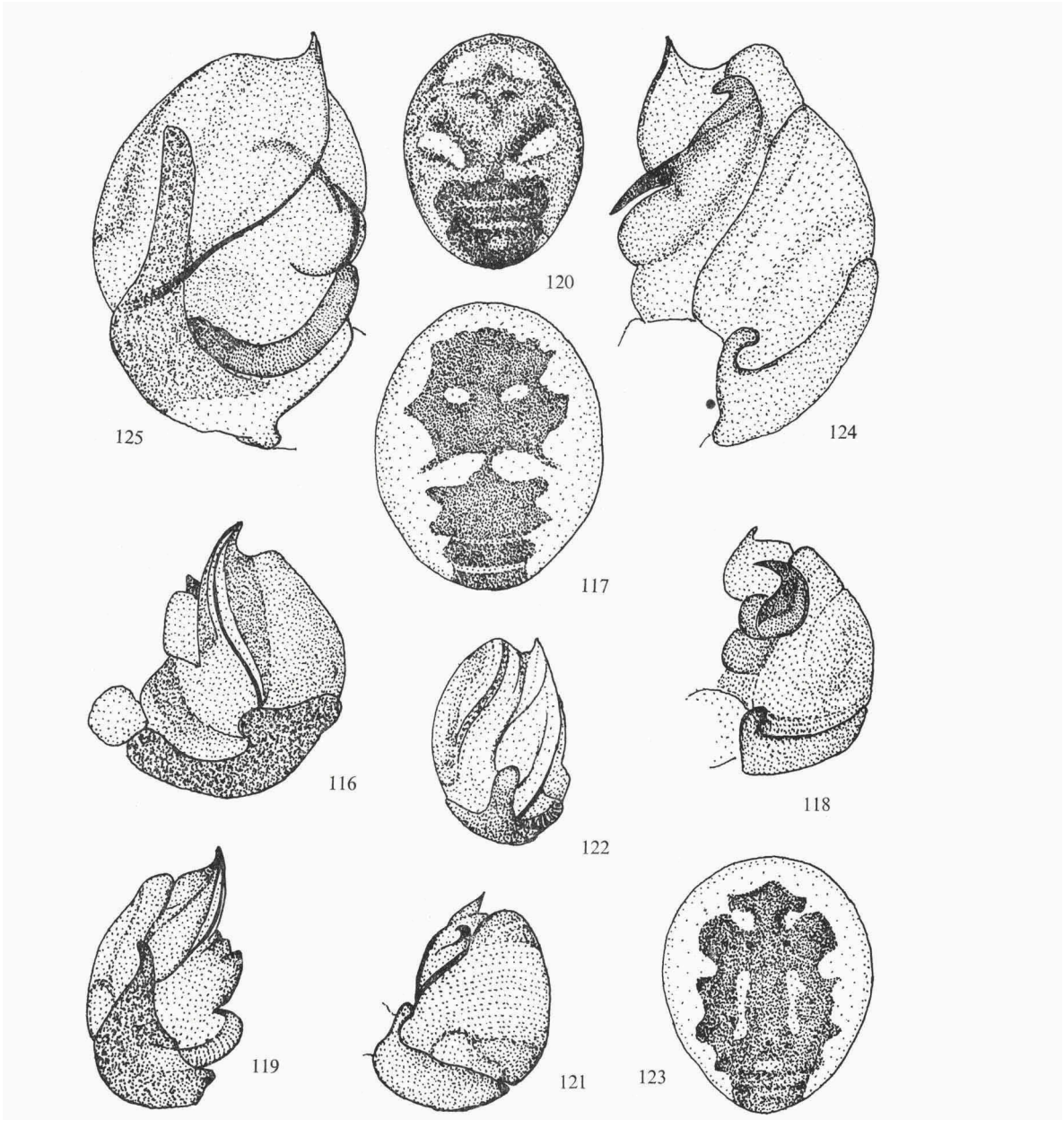


Fig. 116. *Cyclosa camelodes* (Thorell). ♂, right palp, inner side. Fig. 117-119. *C. vallata* (Keyserling). 117. ♂, abdomen; 118, do., left palp, outside; 119, do., left palp, inner side. Fig. 120-122. *C. mulmeinensis* (Thorell). 120, ♂, abdomen; 121, do., left palp, outside; 122, do., left palp, inner side. Fig. 123-125. *C. albopunctata* Kulczynski. 123, ♂, abdomen; 124, do., left palp, outside; 125, do., left palp, inner side. — Fig. 116, 118, 119, 121, 122, × 60; 117, 120, 123, × 25; 124, 125, × 100.

respectively; moreover the posterior thorns are reduced to small blunt knobs; the general appearance and the epigyne, however, are identical with those of normal specimens.

A specimen from Mt. Missim, East New Guinea, strongly differs from the typical form: there are no dark stripes, the sigilla are yellow, the remaining part of the dorsal side is greenish yellow (fig. 114); the ventral side is conspicuous by its bright yellow and dark brown stripes (fig. 115). I could not detect any difference between the epigyne of this specimen and that of the typical form. Another specimen from the same locality has the typical *G. taeniata* pattern.

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