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# Remarks on the Spider Genus Arcys WALCKENAER, 1837, with Description of New Species

**(Araneae, Mimetidae)**

With 6 photographs and 26 figures

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## Introduction

WALCKENAER described 1837 the spider genus *Arcys* [1]) with the species *A. lancearius*. The genus diagnosis is founded mainly on number and position of the eyes, form of labium and gnathocoxae, and a description of the claws. At first, WALCKENAER placed *Arcys* near the Thomisidae, later he noted the great similarity with the Epeiridae (= Araneidae). CAMBRIDGE (1870) placed *Arcys* in the Epeiridae and considered creating a new subfamily. In his treatment of the Australian Arachnida (KOCH & KEYSERLING, 1871–1883) KOCH agreed with this opinion, but placed *Arcys* in the Epeiridae with the proviso that its biology was still totally unknown. Later KEYSERLING (1884–1889) defended the older opinion that *Arcys* belonged to the family of the Thomisidae. He refered to the laterigrad position of the first legs and the similarity of the chelicerae with those of *Xysticus*. SIMON (1888) grouped *Arcys* together with *Gnolus* and *Oarces* in the Mimetinae of his family Theridionidae. SIMON (1890; in DAHL, 1909) cites *Arcys* as a genus of the Mimetidae. This must have been overlooked because other authors treated *Arcys* as a genus of the Araneidae.

In the present study, another genus is recognised, a genus which had been described as *Archemorus* by SIMON (1893). The type species, *A. simsoni*, is compared within the Araneidae to the genus *Oarces*. Both differ in the position of the median eyes, the form of the cephalothorax and the length of the spines at tibia and metatarsus of the first legs. Recently, CHRYSANTHUS (1971) and BALOGH (1978) described new species as *Arcys* and *Archemorus*. BALOGH (1979) gives notes on the ecology, ethology and the distribution of the species of *Archemorus* known to him. Interesting data concerning the way of life, especially the manner of prey capture are given by MASCORD (1980) and ROBINSON (1980). A detailed examination of structure and function of the male copulatory organs of *Arcys clavatus* (= *A. walckenaeri*) gives HEIMER (1981).

The purpose of this study is to define the genus *Arcys*, to show its synonymy with *Archemorus*, to discuss its position within the Mimetidae and to give further informations about the group.

[1]) Original spelling is "*Arkys*", but the greek letter "kappa" is written "c" in latin, thus, the correct writing has to be "*Arcys*".

## Acknowledgements

It is not easy to get specimens of these spiders because they are very rare in arachnological collections. Nevertheless, kind support of many colleagues enabled this study. Material was obtained from the following collections: The Australian Museum Sydney, M. R. GRAY, (AMS); B. P. Bishop Museum Honolulu, Dr. JoAnn M. TENORIO, (BMH); Muséum National d'Histoire Naturelle Paris, Dr. M. HUBERT, (MNHN); Naturhistorisches Museum Wien, Dr. J. GRUBER, (NMW); Queensland Museum Brisbane, Dr. Valerie E. DAVIES, (QMB); Rijksmuseum van Naturlijke Historie Leiden, Dr. L. v. d. HAMMEN, (RNHL); The Western Australian Museum Perth, Dr. L. E. KOCH, (WAM); Zoologisches Museum der Humboldt-Universität Berlin, Dr. M. MORITZ, (ZMB); Zoologisches Museum der Universität Hamburg, Dr. Gisela RACK, (ZMH); collection Dr. V. V. HICKMAN, New Town, Tasmania.

Other colleagues helped me with own informations, literature and discussions: Dr. V. V. HICKMAN, Prof. Dr. O. KRAUS (Hamburg), Prof. Dr. H. W. LEVI (Cambridge, Mass.), Dr. R. V. MELVILLE (London), Dr. M. MORITZ, Dr. W. NENTWIG (Marburg), Dr. R. J. RAVEN (Brisbane). W. NENTWIG and D. WINDSOR translated and corrected the English text. I want to thank them all for their help.

Despite much effort, it was not possible to see the types of the species described by BALOGH (1978).

Abbreviations for the museums are used in the following text as shown above, material of the collections of the Staatliches Museum für Tierkunde Dresden and of the author is not designed separately.

## **Arcys** WALCKENAER

*Arkys* WALCKENAER, 1837. Type species by monotypy *Arkys lancearius* WALCKENAER, 1837.
*Archemorus* SIMON, 1893. Type species by monotypy *Archemorus simsoni* SIMON, 1893. **Syn. n.**

## Description

Prosoma only little longer than broad, mostly unicoloured yellowish or brown. In some species stronger sclerotized and with dense, punctiform fossules, in each a short, strong hair inserted. Behind the eye region in most species hump-like vaults which may form a more or less long, lateral-dorsally directed horn. Form and size of these protuberances are species-specific and sometimes show a sexual dimorphism. The anterior median eyes (AME) are small and separated by their diameter. The posterior median eyes (PME) are mostly separated by more than their diameter. The distance to the AME is so large that the median eye area always is longer than broad. The height of the clypeus is smaller than the length of this area. The lateral eyes (ALE, PLE) nearly touch and are extremely widely separated from the median eyes. Usually, the lateral eyes stand on a common elevation which sticks out laterally from the cephalothorax. The lateral eyes are larger than the PME and often directed to the front and downwards. Sternum a little bit longer than broad, in colour and structure similar to the upper side of the cephalothorax. Labium and gnathocoxae of the sternum's colour, without pecularities. Chelicerae relatively short and strong, with a short claw. The front edge with strong spines. Some species possess small denticles at the margin of chelicerae.

Opisthosoma very variable in form and colour. Numerous sigillae at the front part of the topside in regular arrangements. From here, two (sometimes four) longitudinal rows of larger sigillae lead backwards. These structures are very variable in size, form and colour and are not identical with the insertion of the muscles. The latter are sclerotized too, but less visible than the sigillae.

Legs strongly developed. Tarsus with three short claws. Legs III short, legs IV longer. Legs I and II extremly strongly developed, sometimes reaching the twice length of the last

legs. Tibiae and metatarsi of the legs I and II ventrally with two rows of long, strong spines. The prolateral row with long and rather short spines, sequence typical as in many Mimetidae. Tarsi always without spines. The adult males of all species possess on the prolateral-dorsal side of tarsus I brush-like arrangements of strange, short hairs which are regarded as sensory organs (HEIMER et al., 1982). The function of this organ is unknown.

The structure of the copulatory organs is rather uniform. At the male palp the length of the basal parts is species-specific, that of *A. brevipalpus* being the longest. The tibia is more or less arched, distally with long and strong bristles. Cymbium with a well-developed dorsal paracymbium. The paracymbium of *A. walckenaeri* is very simple, in all other species complicated. In all species the embolus is relatively long and strong. Only one sclerite is developed distally of the tegulum in all species – the median apophysis, a very complex organ that undoubtly has various functions. SHEAR (1981) studied the palps of other Mimetidae and regarded this complex sclerite as a homologon of the terminal apophysis of the Linyphiidae and Araneidae. This is not my opinion. In accordance with VAN HELSDINGEN (1969), LEVI (1971) and MILLIDGE (1977) SHEAR found that terminal apophyses insert at a distal hematodocha of the Araneoidea palpus. Obviously, he overlooked that this distal hematodocha of the Araneidae is a part of the radix. Additionally, the terminal apophyses in most Linyphiidae become intimately attached to the radical part. In contrast to this, none of the known Mimetidae possess a radix or a sclerite which could be homologous to it. The mentioned sclerites of the *Arcys* palpus insert at the same part of bulb, to which in the bulb of the Araneidae median apophysis and conductor are attached (compare LEVI, 1971). The analysis of the function of these sclerites in *Arcys* and other Mimetidae showed that they are median apophyses as well as the median apophyses of other Araneoidea (HEIMER, 1981).

It cannot be excluded that parts of the complex median apophyses developed to the conductor, especially since in most Mimetidae the median apophysis has the function both to attach the bulb to the paracymbium and to conduct the embolus.

The inner genitalia of female show a very uniform structure. In every case one pair of simple receptacula is developed. At the extrance to the fertilization duct an inner membrane may be visible. The external openings of the fertilization ducts lie in more or less large depressions. Beside or between them are large chitinous plates with pocket-like structures. These pockets are paired or median-fused. As an extreme case, in *A. walckenaeri* a structure is developed, which resemble in form and function the scapus of many Araneidae.

## Relationship

According to SIMON (1893) it seems justified, to construct besides *Arcys* the similar genus *Archemorus*. The genus-characterizing patterns of SIMON do not come up to the standards of today. Additionally, the descriptions of further species showed transitions between these genera and changing combinations of these pattern in both genera. E. g., *A. hickmani* n. sp. has the typical abdominal form of *Archemorus* sensu SIMON, the cephalothorax is typical for *Arcys* sensu WALCKENAER. In *A. gracilis* n. sp., the proportions are vice versa.

Beside these differences, patterns common to both genera are numerous and possess a greater importance in recent taxonomy. There is, e. g., a surprising similarity in morphology and function of the copulatory organs in both sexes, form and position of the lateral eyes, and the typical spination of the tarsi of the males of all *Arcys* species is a further evidence of the uniformity within the group.

According to the present examinations, the membership of *Arcys* to the family Mimetidae is certain. Beside their way of life as non-web building predators, the complex paracymbium of the *Arcys* species is typical of all Mimetidae. The cooperation of paracymbium and

median apophysis during the arresting of the bulb in copula (the median apophysis pushs under the paracymbium with its whole length) is characteristic of this family. Except the complex median apophysis there is no further palpus sclerite near the embolus, another characteristic of the Mimetidae. HEIMER & NENTWIG (1982) noted that Mimetidae and relatives do not have cheliceral teeth, but do have spines on their chelicerae. This is true in *Arcys*, although in some species small denticles can be found.

Within the Mimetidae the genus *Arcys* is isolated by its particular body shape, which is as different from *Mimetus* and *Ero* as it is from *Gelanor*. Additionally, no other genus possesses a sensory (?) organ similar to that of *Arcys* males on their first tarsi (HEIMER et al., 1982). Thus, the placement of the subfamily Arcyinae within the Mimetidae seems to be justified.

## Diagnosis

According to the details above, *Arcys* WALCKENAER, 1837 is defined as a genus of the Mimetidae which can be separated from other genera by the following characters: At the cephalothorax behind the eyes area, hump-like vaults are present which may form a more or less long horn. The lateral eyes stand on a common elevation which sticks out laterally and in front of the cephalothorax. The chelicerae are short and strong and bear at the margins of the claw furrow a typical spination and single denticels. The abdomen is strongly modified and possesses dorsal sigillae. Adult males have a brush-like organ at tarsus I which is, presumably, a sensory organ.

## Natural history

BALOGH (1979), MASCORD (1980) and ROBINSON (1980) write that *Arcys* species live on the leaves of trees and bushes waiting for passing insects like Thomisidae do. ROBINSON (1980) could observe *A. roosdorpi* and saw that it builds on leaves a small web at which the spider holds fast with its fourth legs. Passing insects were perceived optically or by their vibrations and were often overwhelmed by a jumping attack. There is the remarkable observation that prey items are wrapped in an araneid way. The author could examine an egg-sac of *A. lancearius* which forms a ball of approximative 8 mm diameter and contained about 20 yellow eggs spun in fine silk. The outer layer is protected by silken loops, well-known in many Mimetidae and Araneidae. MASCORD (1980) describes the egg-sac of several *A.* species, e. g. *Arcys alatus*: "The egg-sac is of flocculent silk, and is suspended on a stalk from under a leaf, being white in colour.". According to HICKMAN (in litt.) *A. simsoni* builds its cocoon in April (fall of the southern hemisphere) in the vegetation near the ground. Spiderlings hatch at the end of July and leave the cocoon in August. According to HICKMAN from one egg-sac of *A. simsoni* 57 spiderlings hatched in May 1953.

## Distribution

As far as known, the genus *Arcys* is widely distributed in the Australian and Indonesian region. The species occur in Tasmania in the south, along the eastern coast of Australia, but also in humid regions of SW-Australia. Other founds were made on Lord Howe Island, New Caledonia, New Guinea, Buru, Java and other Indonesian islands.

Records from South America are dubious. WALCKENAER (1837) wrote to *A. lancearius* "Nouveae-Monde-Amér., mérid.-Brésil, de Rio-Janéiro". The Naturhistorisches Museum Wien possesses a vial with *A. lancearius*, where Brazil and Brisbane were given as collection sites. GRUBER (in litt.): "... – hat etwa Reimoser zwei Serien zusammengeworfen? ..." and "... (die Angabe "Brasilien" dürfte ein Irrtum sein), ...". Until now, no sure records of *Arcys* species from S-America are known.

## The known species

A key to the species of the genus *Arcys* is not given because it would be incomplete without exact knowledge of the forms described by BALOGH (1978). BALOGH's species are listed at the end of the alphabetical list because the author was unable to see them.

### **Arcys alatus** KEYSERLING, 1889 (figs. 1–2)

*Archemorus alatus* (KEYSERLING, 1890: BALOGH (1978, 1979)
*Arcys alatus* KEYSERLING, 1890: MASCORD (1980)

Material examined: 1 ♂ holotype, "Sydney, e Mus. God.", ZMH; 1 ♂, "Rochedal SEQ, R. Raven, I 1975", QMB.

Description:

KEYSERLING (1884–1889) gives a good description of the species and a figure of the habitus (drawn by L. KOCH). Cephalothorax 3.9 mm long, maximal 3.4 mm broad, reddish-yellow with brown middle-stripe, covered densely with white hairs. No „horns" are found behind the eye region. Lateral eyes on a common elevation which sticks out widely. Area between the median eyes approximative the 1.5 fold length of its width. AME stand dense together, the PME separated by three times of their diameter, sitting on smaller elevations. Chelicerae brighter than the cephalothorax, with strong spines on the anterior side. At the margin of the claw furrow a denticle, difficult to see.

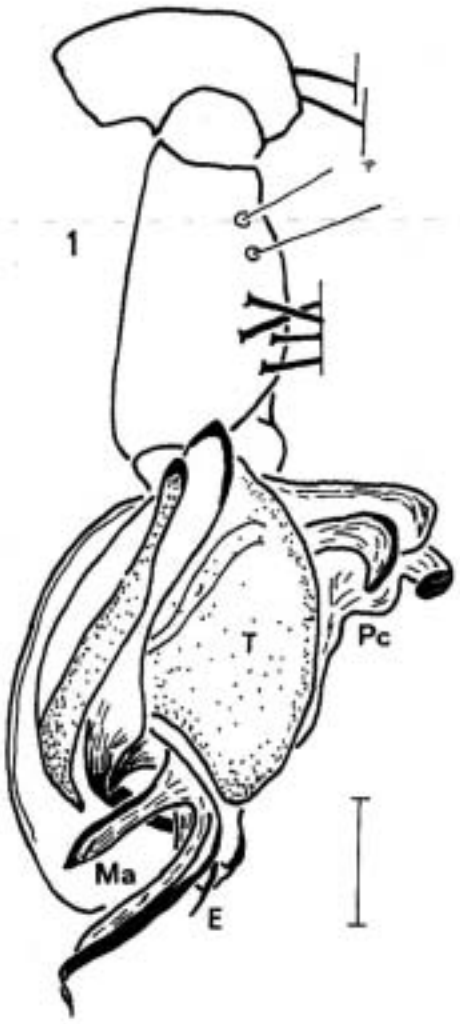
Legs unicoloured yellow, only at tibiae and metatarsi hints of darker rings. Metatarsus IV with one trichobothrium.

| Measurements in mm: | femur | patella | tibia | metatarsus | tarsus |
|---|---|---|---|---|---|
| Leg I | 3.2 | 1.8 | 2.1 | 2.0 | 1.7 |
| Leg II | 3.0 | 1.6 | 1.9 | 2.0 | 1.2 |
| Leg III | 2.2 | 1.0 | 1.1 | 1.1 | 0.6 |
| Leg IV | 3.0 | 1.3 | 1.8 | 1.7 | 0.7 |

Abdomen 4.3 mm long and 5.0 mm broad in its front part. Front part very widened and with large dense sigillae. In the middle, the width narrows to approximative one third of the length. From this point on, nearly parallel abdominal borders. Dorsal and ventral side of a light-yellow, dorsally brown spotted, with brown sigillae.

Tibia of the male palp approximative of the same length as the oval cymbium, with a few strong bristles (fig. 1). Dorsally at the cymbium a large paracymbium (Pc) with two processes on a pad. The apical process is hook-shaped. The lateral lobe (X) is large and sickle-like bent, with a pocket-like slit at its base. The base of the tegulum (T) forms a sclerotized backle in front of the base of the embolus (E). In copula, this structure lies at the concave side of the lateral lobe of the paracymbium. The median apophysis (Ma) is clearly divided into three parts (figs. 1, 2). The longest part leads with its bent end the short embolus to the opening of the epigynum. The median part of the median apophysis is lancet-like, slightly bent and attaches to the epigynum. At the base of the median apophysis, a strongly sclerotized, claw-like part is discernible. In copula, this part grasps the pocket basal to the lateral lobe of the paracymbium, thus, attaching the bulb to the paracymbium.

The median parts of the median apophysis were broken off at both palps of the holotype. This can only occur during the separation of both partners after copulation. Rough handling of the specimens would damage the sclerites which overtop the cymbium. Similar events are known in *A. walckenaeri*. From this and from observations of the movement of the expanding palp the way of copulation occurs can be studied although the female genitalia is still unknown. (BALOGH, 1978 describes 2 juveniles as subadult females and MASCORD, 1980 gives a photograph of two females of this species).



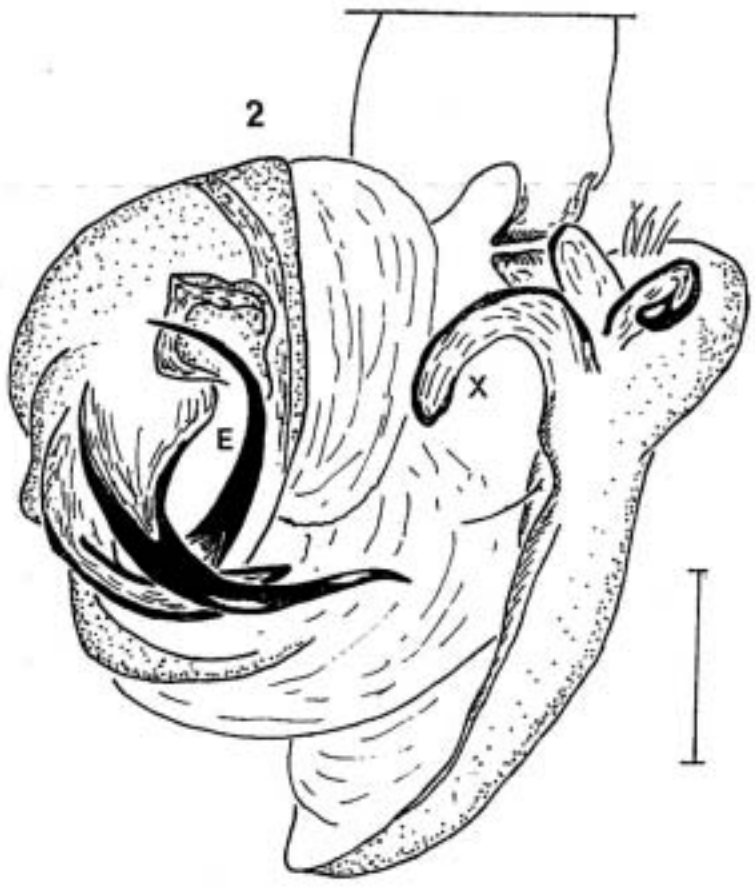




Fig. 1: *Arcys alatus* KEYS., male. Right palp, retrolateral view. – Fig. 2: *Arcys alatus* KEYS., male. Right palp, expanded, dorsal view.

**Arcys brevipalpus** KARSCH, 1878 (fig. 3)

*Arkys perlatus* n. sp.: SIMON (1888)
*Arkys perlatus* SIMON: BERLAND (1924)

Material examined: 1 ♂, "1980/28, New Caledonia, Mt. Koghi, N. L. H. Krauss, II 1980", BMH; 1 ♀, "N. Caledonia, W. of Ponerihouene, J. L. Gressitt, 30. VII. 1971", BMH; 1 ♀, 2 juv., "1980/128, New Caledonia, Yahoue, N. L. H. Krauss, II 1980", BMH; 1 ♂, "19644, Queensland, leg. Schlüter", ZMB.

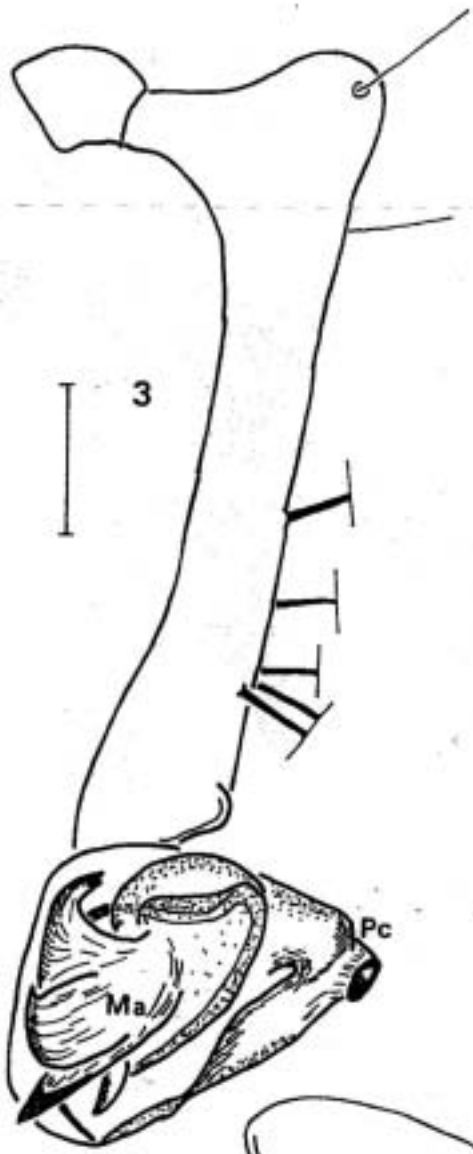
Description:

This species had been described by KARSCH (1878) on the base af one male. SIMON (1888) describes a juvenile female as *Arcys perlatus*. BERLAND (1924) gives good figures which allow easy recognition of the species. Some figures which add to earlier work and a detailed description of the copulatory organs are given here.

The male palp shows an astonishingly long and bent tibia which possesses solitary strong spines (fig. 3). The circular cymbium supports a large paracymbium (Pc). At the base of this a pocket-like deepening is formed. Here, a part of the median apophysis (Ma) is

►

Fig. 3: *Arcys brevipalpus* KARSCH, male. Right palp, retrolateral view. – Fig. 4: *Arcys bulburiensis* n. sp., male. Right palp, retrolateral view. – Fig. 5: *Arcys bulburiensis* n. sp., male. Right palp, expanded, dorsal view. – Fig. 6: *Arcys bulburiensis* n. sp., female. Epigynum, ventral view.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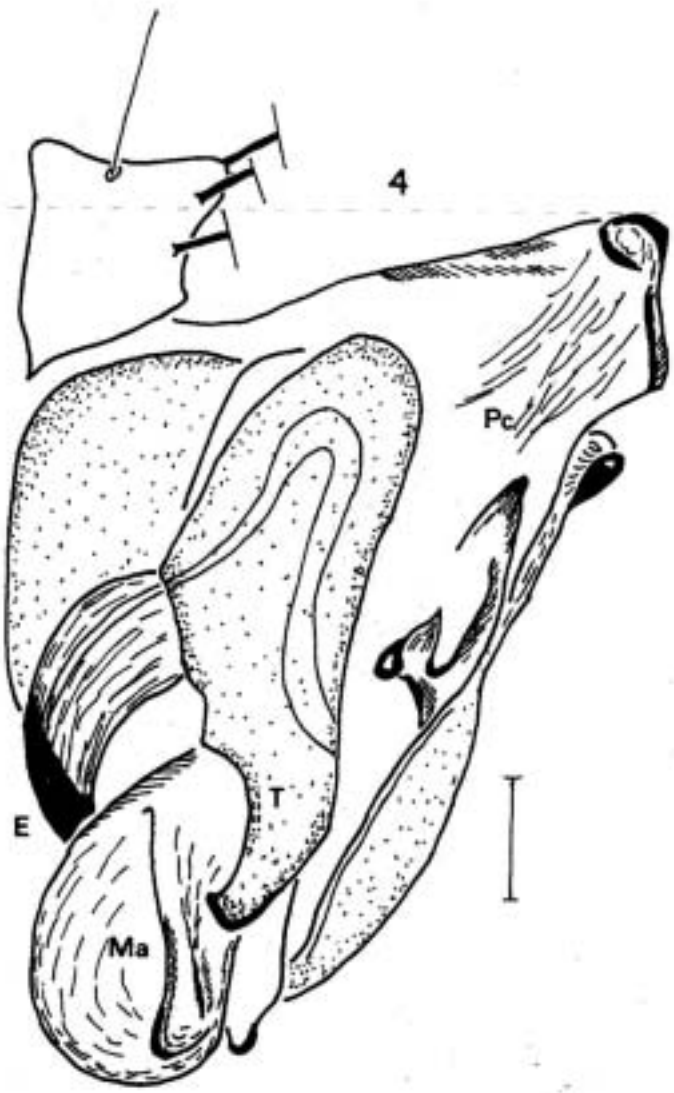
Pc
Ma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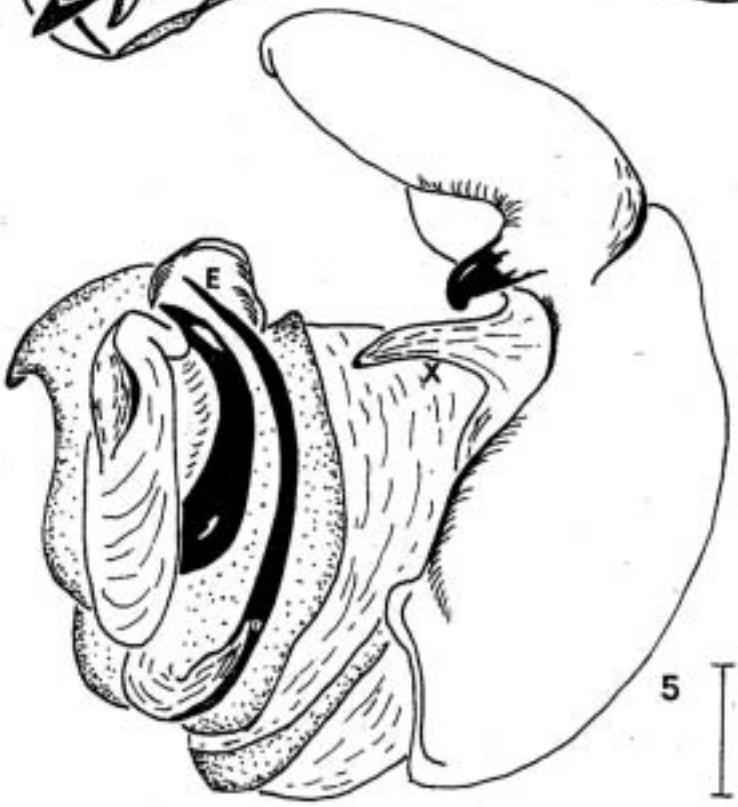
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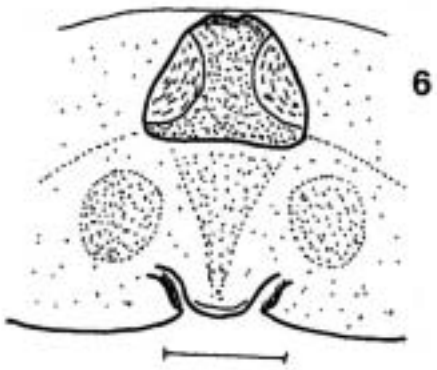
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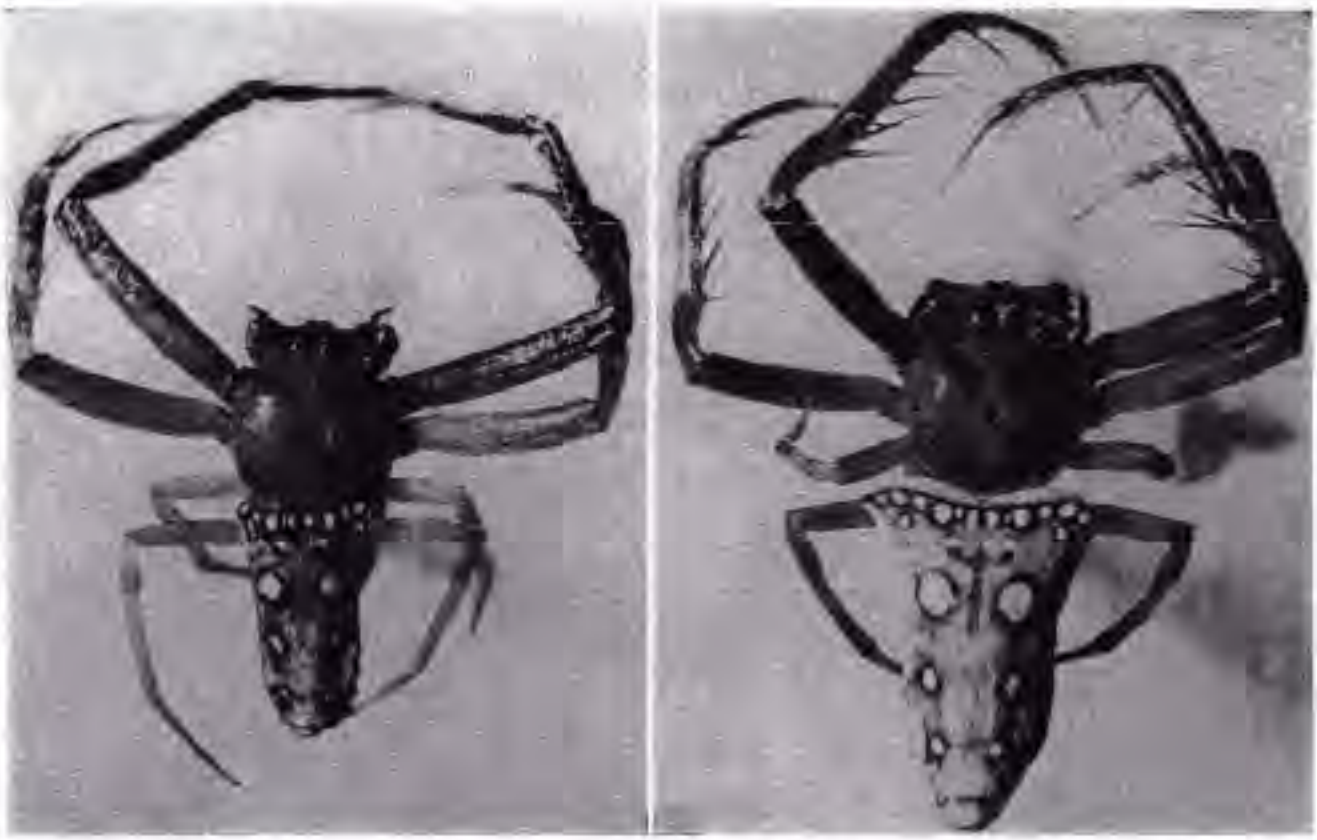


Phot. 1 (on the left): *Arcys bulburiensis* n. sp., male holotype. – Phot. 2 (on the right): *Arcys bulburiensis* n. sp., female paratypoid.

inserted. A lateral lobe is weakly developed and slightly bent. The median apophysis is slightly sclerotized in its larger part. This part normally clasps the embolus and conducts it during copulation. At the same time, this part of the median apophysis attaches the bulb to the paracymbium, grasping with a short process at the mentioned pocket. Distally, the median apophysis takes the form of a strong sclerotized tooth, which continues alongside the paracymbium to the epigynum where it is attached.

The epigynum is similar to that of *A. lancearius*, but the separation of the pockets in two parts is more pronounced in *A. brevipalpus*. Generally, *A. lancearius* and *A. brevipalpus* are very similar, as indicated by the copulatory organs and their function.

**Arcys bulburinensis n. sp.** (Phot. 1, 2; figs. 4–6)

The holotype as a living specimen was photographed by MASCORD (1980) and regarded as *A. perlatus*.

Material examined: 1 ♂ holotype, "KS 5818, Royal Nat. Park, 14. 2. 1970, coll. R. E. Mascord (734)", AMS; 1 ♀ paratypoid, "QM S 859, Binna Burra, SEQ, leg. R. Raven, V. E. Davies, 27.–30. 3. 1976", QMB; 1 ♀ paratypoid, from the same locality; 1 ♂, 1 ♀, "Bulburin state Forest, MEQ, leg. R. Kohout, V. E. Davies, 17.–24. 3. 1975", QMB.

Description of the male holotype:
Cephalothorax 2.8 mm long, maximal width 2.4 mm, yellowish-brown. Area between median eyes trapezium-like with a smaller front line. PME separated by twice their diameter. Lateral eyes on small elevations of the anterior border of the cephalothorax, laterally situated in a ventral direction. Distance ALE-AME 0.7 mm. Behind the lateral eyes a small cone-like „horn" on each side. Chelicerae of the same colour as the cephalothorax, anterior

side with strong spines. Anterior margin of the claw-furrow with two larger and three smaller denticles. Claw of the chelicerae near its articulation with a flat hump.

Legs yellowish-brown without pattern. Sensory (?) organ on tarsus I 0.9 of the length and 0.5 of the width of this segment. Metatarsus IV with one trichobothrium.

| Measurements in mm: | femur | patella | tibia | metatarsus | tarsus |
|---|---|---|---|---|---|
| Leg I | 3.6 | 1.4 | 2.5 | 2.0 | 1.7 |
| Leg II | 3.1 | 1.3 | 2.0 | 1.7 | 1.1 |
| Leg III | 1.3 | 0.5 | 0.9 | 0.8 | 0.5 |
| Leg IV | 1.8 | 0.7 | 1.3 | 1.4 | 0.6 |

Abdomen triangular, 3.4 mm long, largest width 2.1 mm. Main colouration of the ventral and dorsal side light-yellow with single white points. Front border of the dorsal side black with one row of 10 shiny white sigillae. Behind it, four pairs of spots, white with a broad black border. Over the spinnerets one row of three white spots. Lateral parts of the abdomen white.

Palpus (fig. 4) with very short tibia, having a few strong and long bristles. Cymbium very large, appearently nearly triangular because of the broad paracymbium (Pc). Lateral lobe (X) of the paracymbium narrow and slightly bent. Dorsal part of the paracymbium with a large and shovel-like base area. Distally, a strong hook, which is curved towards the bulb, and which showes pocket-like deepenings at its base. Tegulum (T) long-shaped, near the median apophysis (Ma) with a slightly bent process which touches the epigynum and secures the connection between the median apophysis and epigynum. The length of the strong embolus (E) is half the circumference of the tegulum. If the palp is unexpanded the only recognizable structur of the medianapophysis is the broad shell-like part. In copula, this part leans against the dorsal part of the paracymbium and conducts the embolus. On this part of the median apophysis is a stronger lobe (easy to see in the unexpanded state) which grasps into the pockets of the epigynum. By artifically expanding (fig. 5) the bulb, below the above-mentioned parts of the medianapophysis another process of this apophysis can be seen: A strongly sclerotized, spine-like part which is grown together for about two third of its length with the remaining median apophysis. This part lies parallel to the embolus between embolus and tegulum. In copula it is pushed in the pocket between cymbium and paracymbium, thus, attaching the bulb to the paracymbium.

Description of female paratypoides: Cephalothorax 2.8 mm long, width maximal 2.4 mm, yellowish-brown, without distinct pattern. Trapezium between the median eyes 0.3 mm long, front width 0.2 mm. Elevated lateral eyes – as in the male – directed ventrally, distance AME–ALE 0.5 mm. Behind the lateral eyes a coneshaped protuberance, larger than in the male directed to the upperside. Front side of the chelicerae with strong spines, the anterior margin of the claw furrow with one larger and two small denticles.

Legs yellowish-brown, femur I distally and at the base darker.

| Measurements in mm: | femur | patella | tibia | metatarsus | tarsus |
|---|---|---|---|---|---|
| Leg I | 3.2 | 1.6 | 2.7 | 2.3 | 1.2 |
| Leg II | 3.0 | 1.4 | 2.3 | 2.0 | 1.2 |
| Leg III | 1.5 | 0,7 | 1.0 | 0.9 | 0.5 |
| Leg IV | 2.4 | 0.8 | 1.5 | 1.2 | 0.6 |

Abdomen 5.7 mm long, front border 4.5 mm wide, lappet-like drawn to both sides, with similar colouration as in the male. Main colour yellowish-brown with white points. The front border white, behind it a black cross stripe with one row of white sigillae. Four pairs of white, black-bordered spots as in the male. In front of the spinerets a cross row of white points. The sides of the abdomen white, ventral side yellow.

The epigynum is strongly sclerotized around the openings. Orally from the receptacula

seminis a trapezium-like, sclerotized plate with a depression in front. Here the tegulum lies in copula while parts of the medianapophysis of male palp are attached to the lateral pockets of the epigynum (fig. 6).

Derivatio nominis: Named after Bulburin State Forest, the origin of one pair of the species.

**Arcys cicatrosus** (RAINBOW, 1920) **n. comb.**

*Archemorus cicatrosus* sp. n.: RAINBOW (1920)

The author was unable to examine this species. It is described and the habitus figured by RAINBOW (1920). The male and the copulatory organs of both sexes are unknown.

**Arcys cornutus** L. KOCH, 1871 (figs. 7–9)

Material examined: 1 ♂, 3 ♀♀, 3 juv., "KS 5782, kuranda area NQ, J. G. Brooks, 1951", AMS; 1 ♂, 1 ♀, 1 juv., "Maleny SEQ, R. Monroe, 27. XII. 1973", QMB; 3 ♀♀, "Oak Forest NEQ, N. C. Coleman, II 1972", QMB; 1 juv., "3337, Rockhampton, Mus. God.", ZMB; 1 ♀, "437, Port denisson, I 1884", NMW; 1 ♀, "New Guinea, Betege, 20 km NW Koroba, Straatman 23. 9. 1963", BMH.

Description:

The female of this species has been described by KOCH (1871–1883), the male was described later on by KEYSERLING (1884–1889). According to the excellent description and the good figures of both authors this species is well-known. The female has a body length of approximative 9 mm, the male of 4–5 mm. Cephalothorax with well-developed protuberances behind the eye area, abdomen triangular with large white spots. Futher description seems superfluous, excepting the description of structure and function of the copulatory organs.

At the male palp, the short tibia is followed by a long-oval cymbium with a simple, broad paracymbium (Pc) (fig. 7). Its dorsal part is retrolaterally bent. Beside the nearly recognizable lateral lobe (X) a long-drawn pocket is developed. The long embolus (E) is nearly totally covered by the broad and slightly vaulted median apophysis (Ma). At its convexe side is a broad-rounded plate, which clasps the pocket of the epigynum in copula. At its distal border, the median apophysis shows in the embolus' direction three processes which are difficult to see in the unexpanded palp. The process nearest to the tip of the embolus clasps around it and conduct the embolus to the opening of the epigynum (fig. 8). At the same time, the largest part of the median apophysis is held on the inner side of the paracymbium by two of the afore-mentioned processes, one clasping the pocket of the paracymbium and one touching its distal edge.

The epigynum is characterized as a flat pit which dorsally developed into a broad, flat pocket. In copula the plate of the median apophysis of male palp is attached here.

**Arcys curtulus** (SIMON, 1903) **n. comb.**

*Archemorus curtulus* n. sp.: SIMON (1903)

Material examined: 1 juv. holotype, "188089, N. S. W.", MNHN.

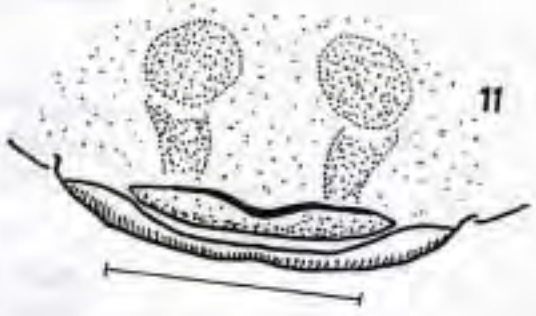
▶

Fig. 7: *Arcys cornutus* L. KOCH, male. Right palp, retrolateral view. – Fig. 8: *Arcys cornutus* L. KOCH, male. Right palp, expanded, ventral-distal view of the bulb. – Fig. 9: *Arcys cornutus* L. KOCH, female. Epigynum, ventral view. – Fig. 10: *Arcys gracilis* n. sp., male. Right palp, retrolateral view. – Fig. 11: *Arcys gracilis* n. sp., female. Epigynum, ventral view.


7
Pc
T
E
Ma


10
X
Pc
T
Ma
Ma
E


9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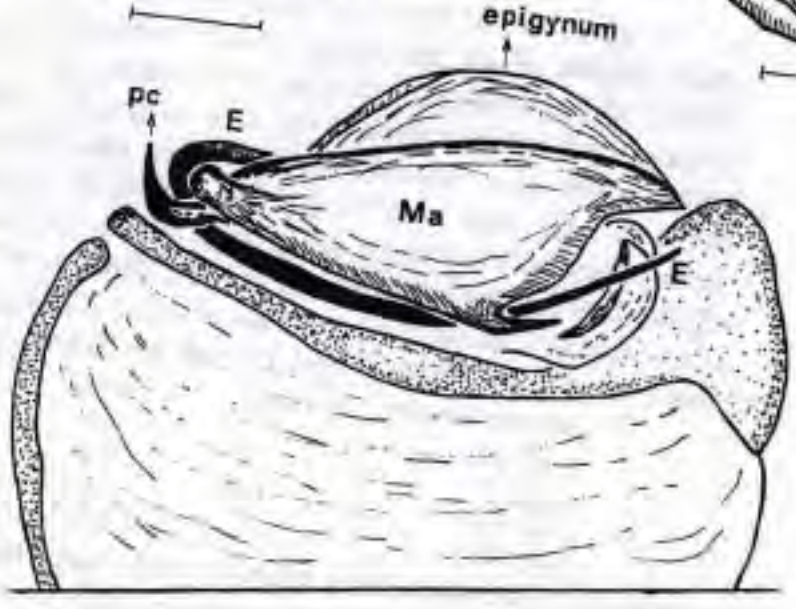

epigynum
pc
E
Ma
E
8

Phot. 3 (on the left): *Arcys gracilis* n. sp., female paratypoid. – Phot. 6 (on the right): *Arcys nimdol* CHRYS., male holotype.

The only known specimen of *A. curtulus* is a very small, juvenil specimen of an *Arcys* species. Thus, *A. curtulus* must regarded as a *species inquirenda*. – MASCORD (1980) regarded a photographed specimen as *A. curtulus*, but because of the afore-mentioned facts this determination must be uncertain.

**Arcys gracilis n. sp.** (phot. 3; figs. 10, 11)

Material examined: 1♂ holotype, 1♀ paratypoid, "QM S 857, 858, Nagarigoon, Lamington Nat. Park, SEQ, V. E. Davies, R. Raven, 8. 4. 1976, Simple notophyll vine forest", QMB; 1♀ paratypoid from the same locality.

Description of the male holotype:

Small species of 4.4 mm body length (cephalothorax 2.0 mm, abdomen 2.4 mm). Cephalothorax width maximal 1.6 mm, yellowish-brown with a small dark brown border. The median eyes form a square 0.3 mm in a side. PME separated by their double diameter. Lateral eyes on a lateral process of the anterior edge of the cephalothorax. The distance between ALE and AME is 0.3 mm. Sternum yellowish-brown like the upper-side of the cephalothorax. Chelicerae short and strong, of the sternum's colour, the anterior margin of the claw furrow with two longer and three very small denticles.

Legs yellow without pattern. The sensory (?) organ on tarsus I 0.8 the length and 0.5 the width of the prolateral-dorsal side of the segment. Metatarsus IV with one trichobothrium.

| Measurements in mm: | femur | patella | tibia | metatarsus | tarsus |
|---|---|---|---|---|---|
| Leg I | 1.7 | 0.7 | 1.6 | 1.4 | 1.0 |
| Leg II | 1.5 | 0.6 | 1.4 | 1.2 | 0.7 |
| Leg III | 1.0 | 0.3 | 0.6 | 0.5 | 0.2 |
| Leg IV | 1.5 | 0.5 | 0.9 | 0.8 | 0.4 |

Abdomen triangular, front edge 2.2 mm. Main colour a creamy white, the underside a little bit darker. On the upper side a white stripe on the whole front edge of the abdomen. Two larger white spots in the middle between the points where the muscles are inserted. Four pairs of black points which are longitudinally distributed on the upper side.

Palpus with short tibia, supporting some stronger and very long bristles. Cymbium with large, divided paracymbium (Pc) which has a strong lateral lobe (X) and two dorsal shovel-like processes (fig. 10). At the base of the distally located process a pocket-like deepening. Bulb with a long-stretched tegulum (T), relatively short embolus (E) and a large median apophysis (Ma) which is divided into three parts. The distal, shell-like part of the median apophysis enables the epigynum to be attached in copula. The two other parts are long and strongly sclerotized. In copula, one attaches the bulb to the paracymbium and the other conduct the embolus at the same time.

Description of the paratypoid females:
Body proportions and colouration similar to the male. Cephalothorax 1.8 mm long with a width of maximal 1.5 mm. Median eyes area longer than broad (0.3 x 0.4 mm). The processes bearing the lateral eyes, stronger developed than in the male. Distance between AME and ALE 0.5 mm. Chelicerae at the front side with long bristles, margin of the claw furrow with one larger and one minute denticle.

Leg colouration similar to the male.

| Measurements in mm: | femur | patella | tibia | metatarsus | tarsus |
|---|---|---|---|---|---|
| Leg I | 1.6 | 0.8 | 1.6 | 1.1 | 0.9 |
| Leg II | 1.2 | 0.7 | 1.2 | 0.7 | 0.7 |
| Leg III | 1.0 | 0.6 | 0.7 | 0.5 | 0.3 |
| Leg IV | 1.4 | 0.6 | 0.8 | 0.6 | 0.4 |

Abdomen coloured like in the male. At the lateral borders some additional white spots. Depending on its width, the female abdomen is something longer than the male abdomen. Epigynum with a broad cross pad (fig. 11) which has a hollowness like a pocket. To this structure attaches the shell-like part of the median apophysis of male palpal organ.
Both females do not differ in their leg measures nor in other body proportions.

Derivatio nominis: Gracilis = elegant, graceful, characterizing the constitution of the spider's body.

**Arcys hickmani n. sp.** (phot. 4, 5; figs. 12, 13)

Material examined: 1♂ holotype, "Trevallyn, Tasmania, V.V. Hickman, 20.1.1928"; 2♀♀ paratypoides, "New Town, Tasmania, V.V. Hickman, 1.3.1936".

Description of male holotype:
Cephalothorax 2.6 mm long, maximal width 2.1 mm. Sides, eye area, clypeus and area around the fovea dark-brown. In median position a broad yellow band which leads from the hind edge to the front. It is forked before reaching the fovea and does not reach the posterior median eyes. Some white scaly hairs along the weakly developed radial stripes. Square of the median eyes 0.5 mm long, distance of the AME 0.2 mm, and of the PME 0.5 mm. Each PME standing on a small elevation. Lateral eyes on a lateral projection of the front edge of cephalothorax, frontally directed to the underside. Sternum light brown, darker at the edges, minutely granulated. Chelicerae short and strong, dark brown, covered with small hairy warts. Front side with thick black bristles. The margin of claw furrow with three strong teeth.

Legs short and strong, strikingly coloured. Femur I dark-brown, with three brown rings. The other segments uniformly dark-brown. The sensory (?) organ at tarsus I 0.9 of the length and 0.5 of the width of this segment. Leg II brigther as leg I. Only faint ring patterns. Tibia thicker, supporting stronger bristles. Legs II and IV yellow, only the femora and patellae of a brownish colour. Metatarsus IV with a trichobothrium.

Phot. 4 (on the left): *Arcys hickmani* n. sp., male holotype. — Phot. 5 (on the right): *Arcys hickmani* n. sp., female paratypoid.

| Measurements in mm: | femur | patella | tibia | metatarsus | tarsus |
|---|---|---|---|---|---|
| Leg I | 1.6 | 0.8 | 1.2 | 0.9 | 1.0 |
| Leg II | 1.5 | 0.5 | 0.9 | 0.8 | 0.7 |
| Leg III | 1.0 | 0.5 | 0.6 | 0.5 | 0.4 |
| Leg IV | 1.5 | 0.4 | 0.9 | 0.6 | 0.4 |

Abdomen narrowed after one third of its length to the end. Thus, the front part appears much broader (3.0 mm) than the hind part (1.7 mm). Total length 3.2 mm. Upper side grevish-brown with an irregular yellow design and some dark-brown sigillae of different size and form. At the end of the first third a cross row of three knobs. From here to the spinnerets four more, flat knobs in a longitudinal row. Sides and underside of the abdomen light yellow. The points where muscles inserted with a broad dark-grey border.

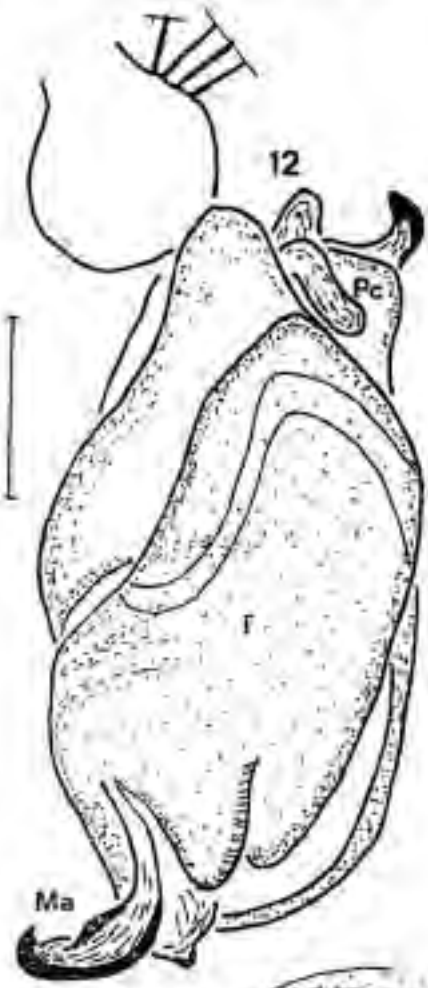
Palpus (fig. 12) with a nearly spherical tibia, supporting some long bristles. Long-oval cymbium with a very small paracymbium (Pc). Lateral lobe (X) of this small and slightly bent. The dorsal part of the paracymbium consists of a short, strong hook and a pad at its base. Together with the base of the median apophysis (Ma), both part of the paracymbium serve as a guide for the embolus during copulation. The tegulum (T) is long-shaped with vault near the median apophysis. In the unexpanded state of the palp, the embolus cannot be seen. It is short and strongly sclerotized. The median apophysis is a large hook which is laterally depressed. In copula the latter is pushed in the lateral pockets of the epigynum.

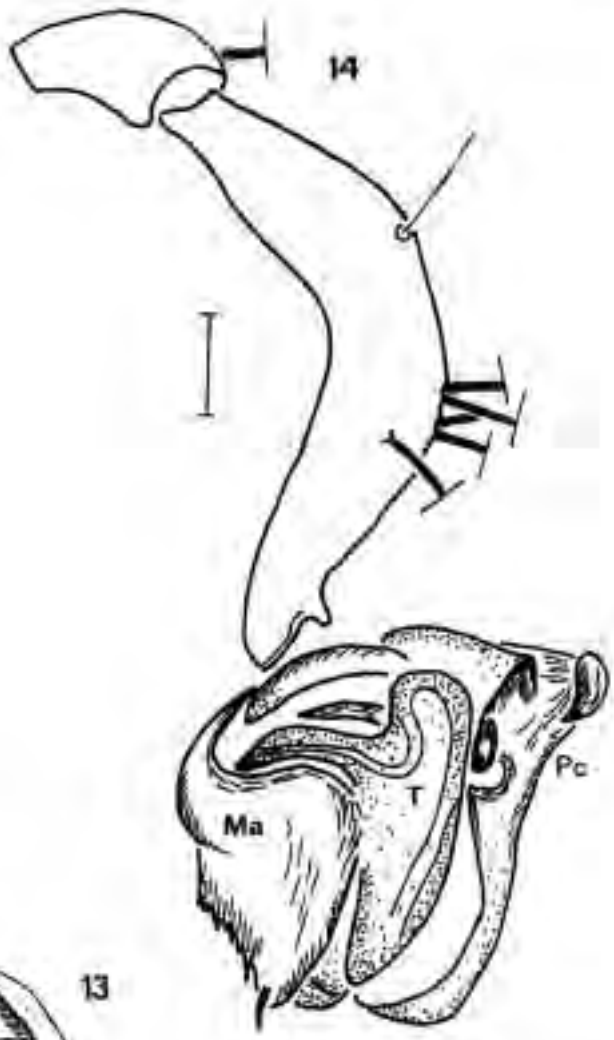
Description of the female paratypoides:

Cephalothorax 4.2 mm long, maximal width 3.4 mm. Colouration similar to the male. Between the PME and the fovea as well as at both sides, largely covered with white scaly hairs. Trapezium between median eyes 0.6 mm long, front 0.3 mm hind 0.8 mm broad. Distance between AME and ALE 1.0 mm. Similar to the male, the PME sit on a small protuberance, the lateral eyes at the vaulted edges of the cephalothorax.

►

Fig. 12: *Arcys hickmani* n. sp., male. Right palp, retrolateral view. — Fig. 13: *Arcys hickmani* n. sp., female. Epigynum, ventral view. — Fig. 14: *Arcys lancearius* WALCK., male. Right palp, retrolateral view. — Fig. 15: *Arcys lancearius* WALCK., male. Right palp, expanded, ventral-distal view of the bulb. — Fig. 16: *Arcys lancearius* WALCK., female. Epigynum, ventral view.


12
Pc
T
Ma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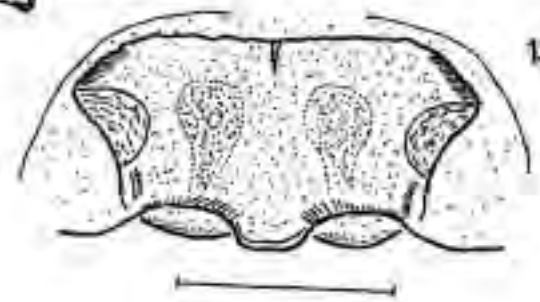
Pc
T
Ma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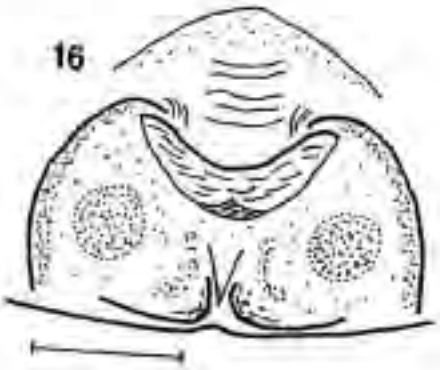
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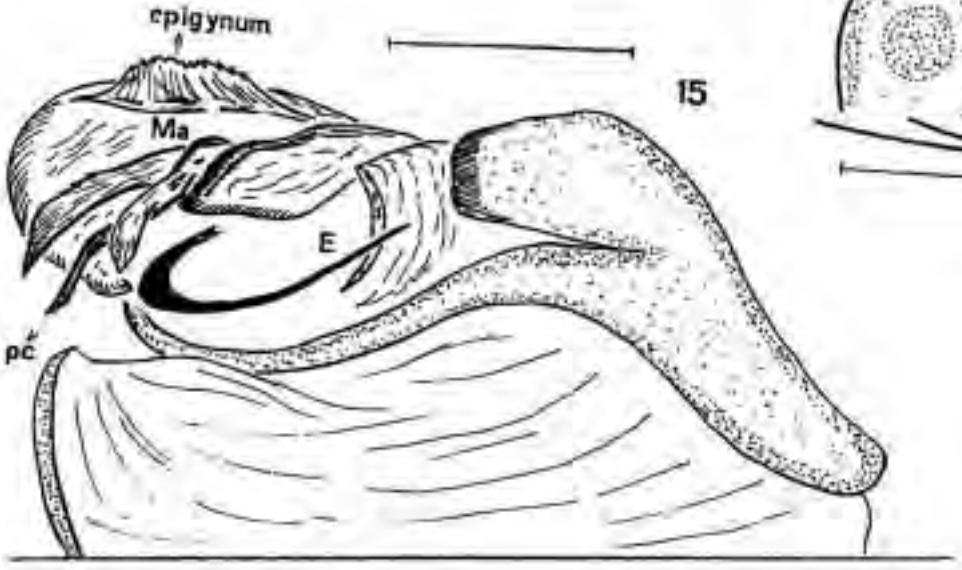

epigynum
15
Ma
E
pc

Legs brown, the femora darker in its distal half. The rings at tibia I form large spots. Tibia II not thickened. All legs are densily covered with white scaly hairs.

| Measurements in mm: | femur | patella | tibia | metatarsus | tarsus |
|---|---|---|---|---|---|
| Leg I | 3.0 | 1.6 | 2.2 | 1.4 | 1.0 |
| Leg II | 2.5 | 1.5 | 2.1 | 1.4 | 0.8 |
| Leg III | 1.8 | 0.6 | 1.0 | 0.7 | 0.4 |
| Leg IV | 3.0 | 1.1 | 2.0 | 1.3 | 0.6 |

Abdomen 8 mm long, and 6.8 mm wide. In both females the abdomen is tightly filled with eggs, thus, the abdominal narrow – clearly to see in the male – can be seen only in outlines. Colouration as in the male but lighter. The knobs are very flat, but in typical arrangement. The ventral side shows the typical design described in the male.

Epigynum with a stronger sclerotized plate, laterally prominent like a wing, thus, building a pocket on each side (fig. 13). In copula, the median apophysis of male palp attached to these pockets. The openings are surrounded by a pad which conducts the embolus.

Derivatio nominis: Dedicated to V. V. HICKMAN who collected this interesting species.

**Arcys lancearius** WALCKENAER, 1837 (figs. 14–16)

*Arkys lancearius* WALCK.: KOCH & KEYSERLING (1871–1883)
*Arkys lancearius* WALCK.: KEYSERLING (1884–1889)

Material examined: 1 ♀ with egg-sac, "KS 5817, Gordonvale NQ, N. C. Coleman, 11. 5. 1975", AMS (this specimen is regarded as a female of *Arcys nimdol* by MASCORD, 1980); 1 ♂, 3 ♀♀, "KS 5789, Brooklana, E. Dorrigo NSW, W. Heron, June 1929", AMS; 1 ♀, 1 juv., "3336, Queensland, Mus. God.", ZMB; 1 ♀, "Wilston, Brisbane SEQ, V. Shepherd, 15. 1. 1980", QMB; 1 ♂, "Brisbane, G. May, 20. 2. 1974", QMB; 1 ♂ subad., "7504, East New Guinea, Wimba, National Garden, Vink, 20. 8. 1963", RNHL; 1 ♂, 1 ♀, 1 juv., "Queensland, 12. 2. 1882, Godeffroy, 313", NMW.

Description:

The type species of the genus was described and illustrated by KOCH & KEYSERLING (1871–1883) and by KEYSERLING (1884–1889) in an excellent manner. Specimens of both sexes are about 8 mm long. The cephalothorax support well-developed "horns" behind the eye region. Characteristic to the species are two large, white spots on the upperside of the triangular abdomen.

The tibia of the male palp is long, bent and bears strong, long bristles (fig. 14). The dorsal part of the well-developed paracymbium (Pc) is retrolaterally bent in its distal part. In its basal part a weakly developed lateral lobe (X) and a small pocket can be seen. In the unexpanded bulb the median apophysis (Ma) appears flat and less sclerotized. During copulation the toothed, distal edge of this part clasps the pocket of the epigynum. Simultaneously, the region which conduct the embolus (E) is pressed against the inner side of the paracymbium and a tooth clasps the pocket of the base of paracymbium (fig. 15). Between the above-mentioned part and the embolus lay three other parts of the median apophysis which cannot be seen in the unexpanded bulb. These narrow, long parts conduct the embolus to the opening of the epigynum.

The epigynum shows a large, flat pit, leading at its hind end into a pocket (fig. 16). In *Arcys brevipalpus*, the pocket of the epigynum and the corresponding parts of the median apophysis are similar but are more strongly constructed.

**Arcys nimdol** CHRYSANTHUS, 1971 (phot. 6, p. 166; fig. 17)

Material examined: 1 ♂, holotype, "7513, West New Guinea, Nimdol, Star Mountains, 1. 8. 1959", RNHL.

Description:
Only one specimen is known from this appearently small species. The cephalothorax with strong pointed "horns" and largely prominent lateral eyes. The triangular abdomen with a typical arrangement of sigillae on its upper side. According to the description and the figures of CHRYSANTHUS, *A. nimdol* is easy to recognize.
Additionally, the male copulatory organ is described here. The oblong cymbium with a broadly-shaped paracymbium (Pc), its dorsal part ending in a simple tip which is bent towards the bulb (fig. 17). At the inner side of the paracymbium, a flat channel can be seen with a small bent lateral lobe (X) beside. The bulb of relatively simple structure, with long embolus (E) and a two-shaped median apophysis (Ma). Its long, bent part might conduct the embolus in copula. The massive, multiple-flapped part of the median apophysis certainly attaches the epigynum.

The female of *A. nimdol* is unknown (MASCORD, 1980 photographed a female of *A. lancearius* as seen above).

**Arcys nitidiceps** SIMON, 1908

Material examined: 1 juv. holotype, "109", ZMB.
The only known specimen is a minute juvenile individual of an *Arcys* species. This and the inexact description by SIMON justify its classification as a *species inquirenda*.

**Arcys occidentalis** (REIMOSER, 1936) **n. comb.** (fig. 18)

*Archemorus occidentalis* n. sp.: REIMOSER (1936)

Material examined: 2 ♀♀, "Cotype, Insel Buru, Toxopeus leg., Reim. det.", NMW.
The situation in this species is far from clear on serveral points. REIMOSER (1936) describes males and females of this species from an unknown number of specimens. The catalogue of the Naturhistorisches Museum Wien records for *Archemorus occidentalis* "1 Stück" (GRUBER, in litt.), in the vial studied by the author were two females. Thus, the description is based on REIMOSER's description and my own examination of the females.

Description:
Animal of medium size, 6.5–7.0 mm long. Cephalothorax with clearly prominent lateral eye area, protuberances behind the eyes only in outlines. Width of the abdomen nearly double its length with irregular formed sigillae. The illustration of the copulatory organs by REIMOSER is quite inexact. His drawing of the epigynum from a front view shows no details. According to my own observations, the plates of the epigynum in front and laterally of the opening are well-developed and differenciated. The lateral plates show a prominent position, thus, building pockets as a possible attachment point for sclerites of the male palp. A pad of these plates reaches medianly to the opening of the epigynum. The middle plate forms a sharp keel which ends behind the openings (fig. 18). In its front part, this plate is strongly enlarged and shows great pocket-like structures.
Corresponding to this (and with regard to REIMOSER's figures) the male palp might possess no widely-shaped, but complicated paracymbium. The medianapophysis must be composed of two ore more small tips and must end distally in two shovel-like processes. REIMOSER: "Das Cymbium zeigt nahe der Basis einen spitzen gekrümmten Fortsatz. Der Bulbus besitzt am Ende zwei gekrümmte spitze Anhänge.".

**Arcys roosdorpi** (CHRYSANTHUS, 1971) **n. comb.** (fig. 19)

*Archemorus roosdorpi* n. sp.: CHRYSANTHUS (1971)

Material examined: 1 ♀ holotype, "7500, West New Guinea, Wissel Lakes, 13. 7. 1952", RNHL.

Description:
Already CHRYSANTHUS (1971) mentioned the great similarity with *A. occidentalis* in his excellent description. *A. roosdorpi* is a rather large species of 8.3 mm body length. The lateral protuberances behind the eye region are developed only in outlines. The lateral eyes sit on minute lateral knobs of the front of cephalothorax. The width of the abdomen is nearly double its length, on the upper side with large, dark sigillae in the middle. Some further details will be added to the unmistakable illustration of the epigynum by CHRYSANTHUS.
Epigynum with a large middle plate (fig. 19) which has pocket-like prominents. The pockets continue on the lateral plates. Median and lateral plates are fused. A small depression an both sides near the openings indicates the limits of the plates.

The male is unknown.

**Arcys sibil** (CHRYSANTHUS, 1971) **n. comb.** (fig. 20)

*Archemorus sibil* n. sp.: CHRYSANTHUS (1971)
*Archemorus sibil* CHRYSANTHUS, 1971: BALOGH (1978)

Material examined: 1♀ holotype, "7510, Ok Sibil, 1. 6. 59, Basiskamp, Ned. Nieuw Guinea Exp. 1959", RNHL.

Description:
This species is well characterized by the description and illustration of CHRYSANTHUS (1971). Cephalothorax highly vaulted, elevations of the lateral eyes and lateral protuberances behind the eyes only in outlines. Abdomen less wide than long, with large, irregular sigillae on its upper side. Body length 6.3 mm.
Epigynum (fig. 20) with one wide, unpaired pocket far in front of the openings. The median plate is very wide, the lateral ends are drawn backwards and cover the openings totally. Lateral plates not discernible.

The male is unknown.

**Arcys simsoni** (SIMON, 1893) **n. comb.** (figs. 21, 22)

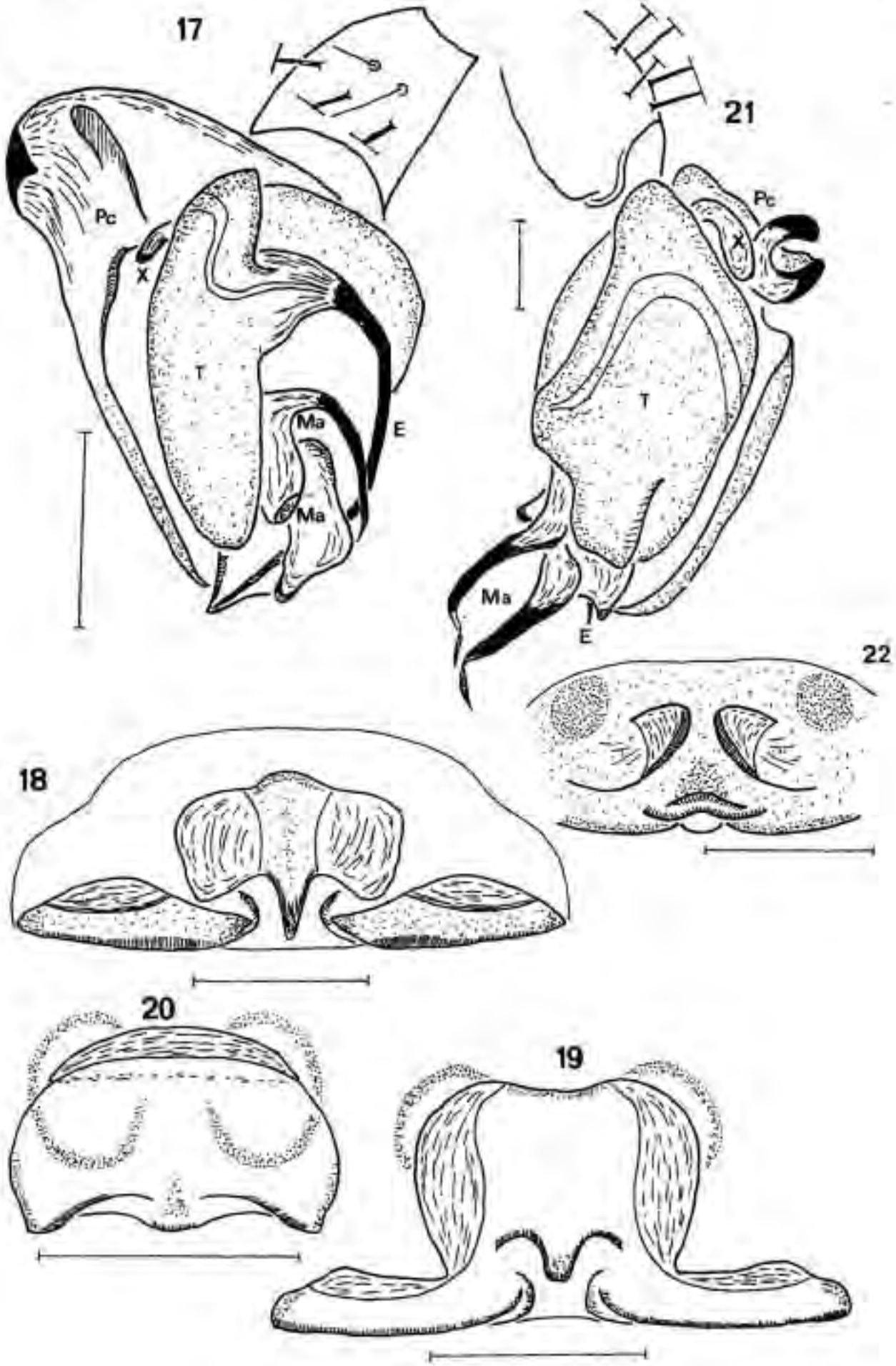
*Archemorus simsoni* n. sp.: SIMON (1893)
*Archemorus simsoni* SIMON, 1893: BALOGH (1978)

Material examined: 1 juv. holotype, "42673, Lauceston, (Tasman.)", MNHN; 1♀, "KS 5773, Ullverstone, Tas., K 6634", AMS; 1♂, "New Town, Tasmania, March 1939, V. V. Hickman"; 1♀, "New Town, Tasmania, May 1948, V. V. Hickman".

Description:
SIMON (1893) and BALOGH (1978) describe juveniles of this species, BALOGH gives some figures. In the Australian Museum Sydney one specimen labelled "*A. alatus*" could be found, which is undoubtly *A. simsoni*, because the body shape differs from the known *alatus*-male, but corresponds well to the descriptions of SIMON and BALOGH. A pair from V. V. HICKMAN corresponds also with these specimen and descriptions. Thus, it is possible for the first time, to characterize both sexes of this species.

▶

Fig. 17: *Arcys nimdol* CHRYS., male. Right palp, retrolateral view. – Fig. 18: *Arcys occidentalis* (REIM.), female. Epigynum, ventral view. – Fig. 19: *Arcys roosdorpi* (CHRYS.), female. Epigynum, ventral view. – Fig. 20: *Arcys sibil* (CHRYS.), female. Epigynum, ventral view. – Fig. 21: *Arcys simsoni* (SIMON), male. Right palp, retrolateral view. – Fig. 22: *Arcys simsoni* (SIMON), female. Epigynum, ventral view.


17
Pc
X
T
Ma
E
Ma
21
Pc
X
T
Ma
E
22
18
20
19

Female: Cephalothorax 2.6 mm long, 2.3 mm broad, light-brown, darker in the middle and at both sides. Covered with short, white hairs. Lateral protuberances behind the eyes only in outlines. PME separated by three times their diameter. The area between median eyes slightly longer than wide. Lateral eyes on little prominent elevations. Chelicerae short and strong, with long spines at its frontal side. The front margin of the claw furrow with two denticles. Sternum dark brown, little longer than wide. Labium of the same colour, gnathocoxae lighter, distally white.

Legs brown, unclearly ringed. Femora basally, tibiae distally widely lightened. Typical spination well-developed. Legs III and IV with few short spines on tibiae and metatarsi. Trichobothrium on metatarsus IV at its distal end.

| Measurements in mm: | femur | patella | tibia | metatarsus | tarsus |
|---|---|---|---|---|---|
| Leg I | 2.4 | 1.3 | 1.6 | 1.1 | 1.0 |
| Leg II | 2.1 | 0.8 | 1.1 | 1.1 | 0.8 |
| Leg III | 1.3 | 0.4 | 0.6 | 0.5 | 0.3 |
| Leg IV | 2.1 | 0.8 | 1.0 | 1.0 | 0.4 |

Abdomen 4.0 mm long, width in front 3.5 mm, hind 2.7 mm, light-yellow, dark-brown marbeled. Upper side with a few, small, dark-brown sigillae in typical arrangements. At the front edge two small knobs, behind them in a median line three more knobs, the first beeing the largest. In its front part, the abdomen is very large, then narrows laterally. At the end on each side a round-shaped vault. Between them a small "tail". Underside greyish-brown with single, small white spots. Spinnerets yellowish-brown.

Epigynum with two large pockets, laterally open to the hindparts (fig. 22). The less-differentiated median plate at the hind edge with a wide pad which covers to openings.

Male: Cephalothorax 2.5 mm long, 2.1 mm wide. In colour and eye arrangement similar to the female, but higher vaulted. Chelicerae like the female as well as sternum, labium and gnathocoxae.

Legs I and II unicoloured brown, III and IV as in the female, but bright parts clearer. All legs weaker spined as in the female.

| Measurements in mm: | femur | patella | tibia | metatarsus | tarsus |
|---|---|---|---|---|---|
| Leg I | 1.9 | 1.1 | 1.3 | 1.0 | 1.0 |
| Leg II | 1.9 | 1.0 | 1.2 | 1.0 | 0.9 |
| Leg III | 1.4 | 0.3 | 0.6 | 0.6 | 0.3 |
| Leg IV | 1.9 | 0.6 | 1.0 | 0.7 | 0.5 |

Abdomen 3.1 mm long, width in front 2.9 mm, in hind 1.3 mm. Upper side coloured like the female. Knobs stronger developed. Lateral narrowings only in outlines, the vaults at both sides of the abdomen are long and pointed, little longer than the "tail". Underside dark grey, laterally larger white spots which are fused in the middle a slender band.

Palpus with short, strongly spined tibia (fig. 21). The long oval cymbium with a complicated paracymbium (Pc) which has two strongly sclerotized and bent tips. Lateral lobe (X) slender and long, well developed. Bulb with long bent tips of the median apophysis (Ma) which together attach to the epigynum during copulation. The basal parts of the median apophysis short and rounded. This enables attaching the bulb to the paracymbium during copulation as well as to conduct the embolus (E).

### **Arcys toxopeusi** (REIMOSER, 1936) **n. comb.**

*Archemorus toxopeusi* n. sp.: REIMOSER (1936)

This species is only known by REIMOSER's description of a juvenile specimen. REIMOSER: "eine Epigyne ist nicht entwickelt". Thus, it is regarded as a *species inquirenda*.

**Arcys walckenaeri** SIMON, 1879 (figs. 23–25)

*Arcys walckenaeri* sp. n.: SIMON (1879)
*Arcys clavatus* n. sp.: KEYSERLING (1884–1889), **n. syn.**

Material examined: 2 ♀♀, 1 juv. types of *A. walckenaeri*, "42, Victoria", MNHN; 1 ♂, "KS 5794, Golgotha Cave, Wichcliffe, M. Gray 23.1.1974", AMS; 1 ♂, 2 ♀♀, 2 juv., "KS 5777, Jenolan Caves NSW, K. 13380", AMS; 1 ♂, "KS 4638, Mile Beach, 26.2.80", AMS; 1 ♂, "39/1–2, Witchcliffe, WA, U. Glauert, 4.1.1939", WAM; 1 ♂, "Sammlung Reimoser, Jenolan Caves, Rainbow", NMW; 1 ♂, "Java"; 1 ♀, "Tasmania, J. Buston", ZMB; 1 ♂, 1 juv., "NSW, leg. H. Overbeck", ZMB.

Description:
By studying the type material of *A. walckenaeri* two adult females were found to be identical with that of *A. clavatus*. *A. walckenaeri* is the older name and gets priority.
Specimens include both sexes, about 7 mm long and discernible by the rather long triangular abdomen. At the cephalothorax the lateral eye region is less vaulted. Behind the eyes, protuberances are well developed. The abdominal colour patterns seem to vary. Specimens from W- and S-Australia including Tasmania are light-yellow with hardly discernible design where as specimens from Queensland and Java are orange to red with white sigillae. Despite this variations no differences in copulatory organs could be found.
The male palp (fig. 23) is characterized by a small paracymbium (Pc) which is vaulted over the dorsal edge of the cymbium. The structure of the bulb is similarly simple. The median apophysis (Ma) is divided into two long, slight branches. Compared to the situation in the unexpanded bulb, the distally laying branch conducts the embolus (E), the longer branche attaches to the epigynum. In copula, the total basal part of the median apophysis is pressed against the paracymbium.
The epigynum (fig. 24, 25) is distinguished by a strong clavus directed frontaly (such a structure was found in no other *Arcys* species). At the dorsal side of this clavus is a pocket with an opening toward the base of the clavus. In copula, the proximal branch of the median apophysis is guided between the female abdomen and the clavus where it clasps the pocket. The principle is similar to that of *A. cornutus* and *A. lancearius*, but in *A. walckenaeri* the system median apophysis and epigynum's pocket has benn turned about 180° to a frontal position This enables an essentially stronger connection between epigynum and bulb. Thus, the paracymbium of *A. walckenaeri* is simple because it has only some conducting and supporting functions.
The strong connection between epigynum and median apophysis is indicated by two males (KS 5794, KS 4638, AMS) in which the long, proximal branch of the medianapophysis was broken off. This must have happened during insertion or separation of the partners. (It could often be observed in spiders that the palp became useless after copulation, but these cases guarantee an especially safe sperm transfer [compare GRASSHOFF, 1970]).

**Arcys (?) varians** (BALOGH, 1978) (fig. 26)

Material examined: 1 ♂, "Mt. Coot-tha, Brisbane SEQ, R. Raven 1.1.1974", QMB.

Description:
One male, labelled as "*A. alatus*", from the Queensland Museum Brisbane could be studied by the author. The palp differs strongly from that of the holotype of *A. alatus*. BALOGH (1978) shows in fig. 19 a male of *Archemorus varians* n. sp. with the note "aberrant abdominal form". The present specimen corresponds in its habit to this figure and is with reservation grouped to *A. varians*. This classification must remain uncertain because BALOGH's description mentions the males but he gives no figures of the palp. Additionally, the type material could not be lent.

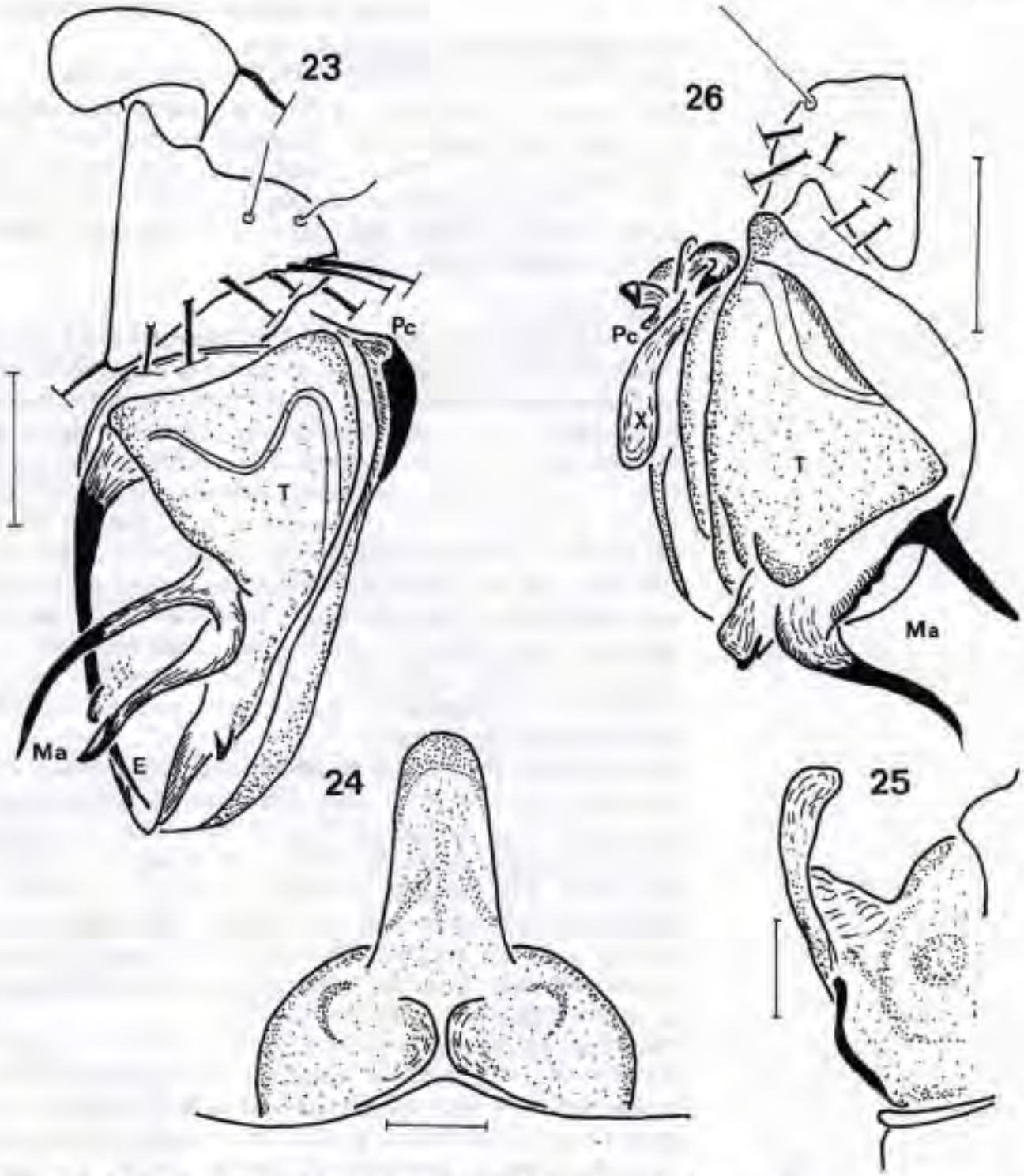



Fig. 23: *Arcys walckenaeri* SIMON, male. Right palp, retrolateral view. – Fig. 24: *Arcys walckenaeri* SIMON, female. Epigynum, ventral view. – Fig. 25: *Arcys walckenaeri* SIMON, female. Epigynum, lateral view. – Fig. 26: *Arcys (?) varians* (BALOGH), male. Left palp, retrolateral view.
Scale lines 0.2 mm for all figures. For abbreviations see text.

Corresponding to the specimen from Queensland, a description of the male palp is given. The short tibia with a few strong bristles and connected to the cymbium by a highly extensible articulation membrane (fig. 26). The latter is characterized by a high movability towards the tibia. The cymbium can probably be turned more than 90° (as in many Araneoidea). At the round cymbium, a less complicated paracymbium (Pc) is developed. On a dorsal pad stand two smaller processes, more anterior process is bent into a hook. At the

base of these processes, is inserted another strong hook, whose tip points towards the wide-shaped lateral lobe (X). The median apophysis (Ma) is characterized by two sclerotized tips. Refered to the unexpanded palp, the distal part is bent and probably conducts the embolus, while the other tip might be attached to the epigynum.
Futher explanations of the function of the palp cannot be given because it appears to be questionable that this palp works together with the epigynum drawn by BALOGH.

Another 10 species were described by BALOGH (1978) as *Archemorus*: *A. coronatus, A. dilatatus, A. furcatus, A. grandis, A. kaszabi, A. montanus, A. transversus, A. tuberculatus, A. varians, A. vicarius*. At mentioned above, non of these species were accessible to the author. Further studies, therefore, must refer to the paper of BALOGH (1978).

## Appendagious note

From the genus *Aerea* URQUHART which is grouped to the Arcyinae too, nearly nothing is known. The author tried to get material from this genus, but got only a reference from HICKMAN (in litt.): "With reference to the genus *Aerea* Urquhart I have never seen the type. In fact all the types of the spiders he described from Tasmania in 1893 have been lost. However, from his description of *Aerea magnifica* it seems to be synonymous with *Archemorus simsoni* Simon.".

**Summary**

*Arcys* WALCKENAER, 1837 (incl. *Archemorus* SIMON, 1893, n. syn.) is recognized a genus of the araneoid family Mimetidae. It is given a revised definition of the genus as well as some notes on natural history and distribution of its species. The function of the copulatory organs is discussed. All species known to the author are regarded and redescribed. Three new species are described: *A. bulburinensis, A .gracilis, A. hickmani.*

**Zusammenfassung**

BEMERKUNGEN ZUR SPINNENGATTUNG ARCYS WALCKENAER, 1837, MIT BESCHREIBUNG NEUER ARTEN

*Arcys* WALCKENAER, 1837 (incl. *Archemorus* SIMON, 1893, n. syn.) wird als Gattung der Familie Mimetidae (Araneoidae) erkannt. Die Definition der Gattung wird überprüft. Ergänzend folgen Angaben zur Biologie, Verbreitung und zur Funktion der Kopulationsorgane. Alle dem Autor bekannten Arten werden genannt und gegebenenfalls revidiert. Drei neue Arten werden beschrieben: *A. bulburinensis, A. gracilis, A. hickmani.*

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