

# The Systematics of the Spider Family Nicodamidae (Araneae : Amaurobioidea)

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## Abstract

A review of the spider family Nicodamidae reveals two subfamilies, Nicodaminae and Megadictyninae, with 29 species. The Nicodaminae contains *Nicodamus* Simon and six new genera, *Ambicodamus*, *Dimidamus*, *Durodamus*, *Litodamus*, *Novodamus* and *Oncodamus*, from Australia, Papua New Guinea and Irian Jaya. *Nicodamus* is restricted to *N. peregrinus* (Walckenaer) and *N. mainae*, sp. nov.; *N. peregrinus* is treated as a senior synonym of *Theridium semiflavum* L. Koch, *Centropelma bicolor* L. Koch and *Ozaleus tarandus* Thorell. *Ozaleus* Thorell is confirmed as a junior synonym of *Nicodamus* by designation of a lectotype for the type species, *O. tarandus*. *Durodamus* contains one species: *D. yeni*, sp. nov. (type species). *Ambicodamus* contains 11 species: *A. marae*, sp. nov. (type species), *A. audax*, sp. nov., *A. crinitus* (L. Koch), comb. nov., *A. dale*, sp. nov., *A. darlingtoni*, sp. nov., *A. emu*, sp. nov., *A. kochi*, sp. nov., *A. leei*, sp. nov., *A. sororius*, sp. nov., *A. southwelli*, sp. nov. and *A. urbanus*, sp. nov. *Litodamus* contains three species: *L. hickmani*, sp. nov. (type species), *L. olga* sp. nov. and *L. collinus*, sp. nov. *Dimidamus* contains six species: *D. dimidiatus* (Simon), comb. nov. (type species), *D. simoni*, sp. nov., *D. leopoldi* (Roewer), comb. nov., *D. arau*, sp. nov., *D. sero*, sp. nov. and *D. enaro*, sp. nov. *Novodamus* contains two species: *N. nodatus* (Karsch), comb. nov. (type species) and *N. supernus*, sp. nov.; *Linyphia melanozantha* Urquhart is treated as a junior synonym of *N. nodatus*. *Oncodamus* contains two species: *O. bidens* (Karsch), comb. nov. (type species) and *O. decipiens*, sp. nov. The Megadictyninae, stat. nov., contains two genera from New Zealand, *Megadictyna* Dahl with

*M. thilenii* Dahl and *Forstertyna*, gen. nov. with *F. marplesi* (Forster), comb. nov. Cladistic analysis confirms the division of the family into two subfamilies, and recognises several subgroups within the Nicodaminae: *Nicodamus* + *Durodamus*, *Ambicodamus* + *Litodamus*, and *Novodamus* + *Oncodamus*.

## Introduction

Spiders of the family Nicodamidae are a familiar sight to collectors in many parts of Australasia, and five generic names have been applied to the family: *Centropelma* L. Koch, *Nicodamus* Simon, *Ozaleus* Thorell, *Megadictyna* Dahl and *Iharukius* Marples. Only two of these two genera are currently recognised, as *Centropelma* is a junior homonym (Simon 1887), *Ozaleus* has been treated as a synonym of *Nicodamus* (Simon 1898), and *Iharukius* as a synonym of *Megadictyna* (Lehtinen 1967; Forster 1970). *Nicodamus* has been recorded from Australia and Irian Jaya, while *Megadictyna* has been recorded from New Zealand.

Twelve species have been attributed to the family, but only 10 are currently recognised (Roewer 1942; Brignoli 1983; Davies 1985). The first described was *Theridion peregrinum* Walckenaer (1841) from 'Brazil'; and L. Koch named three from Australia: *Theridium semiflavum* from Wollongong, New South Wales (Koch 1865), and *Centropelma bicolor* and *Theridium crinitum* from unknown Australian localities (Koch 1872). Karsch (1878) described *Centropelma bidens* from New South Wales and *C. nodatus* from Tasmania. Simon (1887) replaced the preoccupied *Centropelma* with *Nicodamus*, and later (Simon 1897) described *N. dimidiatus* from New South Wales. Thorell (1890) added *Ozaleus tarandus* from an unspecified Australian locality. Urquhart (1893) described *Linyphia melanozantha* from Tasmania, which Hickman (1967) recognised as a nicodamid and treated as a synonym of *N. bicolor*. Dahl (1906) described *Megadictyna thilenii* from New Zealand, which was redescribed by Marples (1959) as *Iharukius forsteri*. Roewer (1938) added *N. leopoldi* from Irian Jaya, and Forster revised *Megadictyna* and recognised two species from New Zealand, *M. thilenii* (as *M. thileniusi*) and *M. marplesi*.

Most of these species have not been subsequently reported in the primary literature since their original description, and many museum specimens have been labelled as *Nicodamus bicolor*, without a full appreciation of the specific diversity within Australia. Diagnostic characters (in particular, the male pedipalps and female epigynes) for most described species are lacking in the literature, and this revision was undertaken to ascertain the identity of material currently housed in museum collections.

## Materials and Methods

As many specimens as possible were borrowed from all major Australian and overseas museums. Unfortunately, several literature records of the ubiquitous '*Nicodamus bicolor*' (e.g. Bashford 1992) were unable to be confirmed due to the lack of reference material. Specimens are lodged in the following institutions:

|      |  |
|------|--|
| AIM  | Auckland Institute and Museum, Auckland                      |
| AM   | Australian Museum, Sydney                                    |
| AMNH | American Museum of Natural History, New York                 |
| ANIC | Australian National Insect Collection, CSIRO, Canberra       |
| BMNH | Natural History Museum, London                               |
| BPBM | Bishop Museum, Honolulu                                      |
| CAS  | California Academy of Sciences, San Francisco                |
| CMNZ | Canterbury Museum, Christchurch                              |
| HC   | Hickman collection, now lodged in Australian Museum, Sydney  |
| ISNB | Institut Royal des Sciences Naturelles de Belgique, Brussels |
| MCZ  | Museum of Comparative Zoology, Harvard                       |
| MNHP | Muséum National d'Histoire Naturelle, Paris                  |
| MNZ  | Museum of New Zealand, Wellington                            |
| NHMW | Naturhistorisches Museum, Wien                               |
| NMV  | Museum of Victoria, Melbourne                                |
| OM   | Otago Museum, Dunedin  |
| QM   | Queensland Museum, Brisbane                                  |
| QVM  | Queen Victoria Museum, Launceston                            |

|      |  |
|------|--|
| SAM  | South Australian Museum, Adelaide                      |
| SMF  | Forschungsinstitut Senckenberg, Frankfurt am Main      |
| SMNH | Swedish Museum of Natural History, Stockholm           |
| SMNS | Staatliches Museum für Naturkunde, Stuttgart           |
| TM   | Tasmanian Museum and Art Gallery, Hobart               |
| WAM  | Western Australian Museum, Perth                       |
| WARI | Waite Agricultural Research Institute, Adelaide        |
| ZMB  | Zoologisches Museum, Museum für Naturkunde, Berlin     |
| ZMH  | Zoologisches Institut und Zoologisches Museum, Hamburg |

Where measurements are expressed as a fraction, the numerator refers to the length of the structure, and the denominator refers to its width. Supplementary data not provided on the locality labels, such as latitudes and longitudes, are presented in parentheses. Although every effort was made to procure the correct coordinates for every locality mentioned in the text, some localities proved to be untraceable which was presumably due to mislabelling of specimens. Some localities were too vague to provide coordinates (e.g. 'SE of S Aust.' or 'Australia'), while others permitted only approximate coordinates to be given (e.g. 'between Blanchetown and Waikerie').

Illustrations of the epigyne omit the setae on one side for clarity. Illustrations of the male tibial apophysis also omit the setae, but indicate the positions of the setal bases.

The following abbreviations are used for eyes: AME, anterior median eye; ALE, anterior lateral eye; PME posterior median eye; PLE, posterior lateral eye; MOQ, median ocular quadrangle. Some collector's names are abbreviated as follows in *Other material*: AFL, A. F. Longbottom; ALY, A. L. Yen; BYM, B. Y. Main; DQC, D. Q. Cavagnaro; ESR, E. S. Ross; GBM, G. B. Monteith; GC, G. Cassis; ISD, Invertebrate Survey Department; GSH, G. S. Hunt; JLH, J. L. Hickman; JMW, J. M. Waldock; KL, K. Longbottom; MEB, M. E. Blosfelds; MRG, M. R. Gray; MSH, M. S. Harvey; RJR, R. J. Raven; RRF, R. R. Forster; SRM, S. R. Monteith; VED, V. E. Davies; VVH, V. V. Hickman.

### Family NICODAMIDAE Simon

Nicodamidae Simon, 1897: 15. — Forster, 1970: 177; Davies, 1985: 92.

Nicodaminae Simon. — Simon, 1898: 221–3; Bonnet, 1958: 3101.

Megadictynidae Lehtinen, 1967: 247, 296. Synonymised by Forster, 1970: 177.

#### Diagnosis

Male palpal tibia with large dorsal apophysis, subdivided into a small basal apophysis (A) and a large blunt apophysis (B) (apophysis A occasionally absent). Pedal tarsi without trichobothria. Metatarsus IV without trichobothrium. Clypeus high. Chelicera with a single distal tooth on promargin.

#### Description

Large to medium-sized cribellate or ecribellate spiders. Carapace longer than wide, somewhat flattened dorsally, with broad fovea, bristles present; clypeus (Fig. 16) high, sloping. Eight eyes, small, in two straight rows (Fig. 10); secondary eyes (ALE, PLE and PME) with canoe-shaped tapetum. Chelicerae (Figs 8, 9, 16) vertical, diaxial, without lateral condyles, with 1 large distal promarginal tooth, without retromarginal teeth; without stridulatory file; venom glands endocephalic. Maxillae converging medially, serrula present (Fig. 7). Male pedipalp (Figs 17, 18) with enlarged tibial apophysis, situated dorsally, subdivided into a small basal apophysis (A) and a large blunt apophysis (B) (apophysis A absent in two *Litodamus* spp.); female pedipalpal tarsus with claw with single tooth-row. Pedipalpal trichobothria: double row on tibia; absent on tarsus. Labium wider than long. Sternum heart-shaped, and without sigilla. Coxae IV separated by posterior portion of sternum. Leg formula: mostly 4123, rarely 1423 or 4213; legs elongate, narrow, with spines; trochanters not notched; metatarsi without preening combs; calamistrum present or absent; tarsi without scopulae; with 3 claws, each toothed (Figs 3, 4); tarsal organ as in Fig. 5. Pedal trichobothria: double row on tibia; single trichobothrium on metatarsi I–III, absent on metatarsus IV; absent on tarsus; morphology as in Fig. 6. Abdomen with long, stiff setae

(except males of *Ambicodamus* spp.) and 3 pairs of dorsal sigilla; female genitalia heavily sclerotised externally, with one pair of receptacula; booklungs connected to anterior spiracles which are situated in epigastric furrow. Heart with 3 pairs of ostia (Fig. 15). Midgut straight. Posterior spiracle slightly anterior to spinnerets. Cribellum present or absent, when present entire, when absent large setose colulus present. Anterior lateral spinnerets 2 segmented, with 2 major ampullate spigots (Fig. 11); posterior median spinnerets short, conical, 1 segmented (Fig. 13); posterior lateral spinnerets long, 2 segmented, second segment tapering distally (Fig. 14). Anal tubercle with basal ring of setae.

#### *Monophyly*

An expanded Nicodamidae (Forster 1970) with cribellate and ecribellate members demands scrutiny for monophyly, as there is little point in examining the relationships of a diphyletic family. Several synapomorphies seem to support monophyly although the character states found within the Nicodamidae are also shared with other groups. The presence of a tibial apophysis situated dorsally, as opposed to retrolaterally, is virtually unique within spiders and is shared by only a few other groups (Griswold 1990). Further discussion on the homology of this apophysis follows.

The presence of only a single cheliceral tooth is highly unusual amongst spiders and lends great support to the monophyly argument.

The lack of tarsal trichobothria and the presence of only a single metatarsal trichobothrium on legs I-III in nicodamids are also plesiomorphic within the Araneomorphae (Lehtinen 1980; Coddington 1990a), but is rare within the 'RTA Clade'. The absence of a trichobothrium on metatarsus IV in all nicodamids is highly unusual within spiders and provides firm evidence for monophyly.

#### *Relationships*

The spiders currently attributed to the Nicodamidae have been placed in a variety of families. *Megadictyna* was regarded as a dictynid by Dahl (1906) at a time when the Dictynidae encompassed an extensive range of cribellate spiders. Lehtinen (1967) placed the genus in its own family and superfamily within the 'Thaididae'. This was rejected by Forster (1970) who transferred it to the Nicodamidae. *Megadictyna* is clearly not closely related to the non-Araneoclada araneomorphs (Hypochilidae, Austrochilidae and Gradungulidae, see Platnick 1977; Forster *et al.* 1987; Platnick *et al.* 1991) and a sister-group relationship with any hypochiloid or austrochiloid would necessitate considerable homoplasy in many characters.

*Nicodamus* (or its original homonymous name *Centropelma*) was regarded as a theridiid by Koch (1872), Petrunkevitch (1929), Roewer (1938, 1942) and Homann (1952), mainly due to the presumed presence of a comb on tarsus IV. Although a series of stiff setae are present on tarsus IV (and occasionally on other tarsi), no other characters would have warranted retention of the family within the Araneoidea, let alone the Theridiidae (see below). Homann's (1952) decision was based upon the structure of the indirect eyes. Simon (1897) erected the family Nicodamidae without comment, but later (Simon 1898) included it as a subfamily of the Agelenidae, at the same rank as Cybaeinae, Ageleninae and Hahniae, now all accorded full family status. Levi and Levi (1962) tentatively transferred *Nicodamus* to the Zodariidae, based on unpublished information supplied by R. Forster, and Lehtinen (1967) suggested that it may represent a separate family within the Zodarioidea. Forster (1970) reinstated the Nicodaminae to full familial status, and included the New Zealand *Megadictyna* within it, thus synonymising the Megadictynidae (Lehtinen 1967). The sister-group relationship of cribellate (*Megadictyna*) and non-cribellate (*Nicodamus*) spider genera was innovative, although Forster was unable to identify the sister-group of the family, but suggested that 'the affinities of the Nicodamidae are with the Araneoidea'. Presumably, this was due to the lack of tarsal trichobothria and the presence of only a single metatarsal trichobothrium, plesiomorphically characteristic of virtually all araneomorph spiders, with the exception of members of the 'RTA Clade'.

The presence of fertilisation ducts in all female nicodamids excludes them from the

Paleocribellatae, Austrochiloidea and Haplogynae. This character state is apomorphic for the Entelegynae (Platnick *et al.* 1991, character 46), although reversals have been reported in the Palpimanoidea and some Araneoidea. Male nicodamids possess a pedipalpal tibial apophysis which is lacking in most spiders excluded from the 'RTA Clade' (Coddington and Levi 1991). This clearly indicates that the Nicodamidae are good members of the 'RTA Clade' (despite their subjugation as 'Other entelegynes' by Coddington and Levi 1991, fig. 2). The identification of synapomorphies for the Orbiculariae and Araneoidea by Coddington (1990a, 1990b) conclusively excludes the Nicodamidae from these groups, particularly as nicodamids possess two major ampullate spigots on the anterior lateral spinnerets (Fig. 11), whereas all orbicularians possess only one.

The tibial apophysis of all male nicodamids is stout, virtually setose and situated dorsobasally or dorsomedially. The stem of the apophysis is very broad and usually occupies more than half the length of the tibia. Some nicodamines (e.g. *Ambicodamus*) also possess an aspinose, prolateral tibial apophysis situated distally. Discussion of the homologies of these apophyses with those found in other members of the 'RTA Clade' is beyond the scope of this study, although the detailed descriptions of phyxelidine apophyses (Griswold 1990) are clearly an excellent starting point for comparison.

Griswold (1990, p. 16) noted that tibial apophyses, either retrolateral or dorsal, are present in all 'RTA Clade' members as well as some Palpimanoidea and some Orbiculariae, where they are considered to be non-homologous with those of the 'RTA Clade'. Most members of the 'RTA Clade' possess a retrolateral tibial apophysis, and those that possess a dorsal apophysis were discussed by Griswold (1990). The dorsal apophysis found in *Legendrena* spp. (Gallieniellidae) and *Cithaeronidae* (Gnaphosoidea) (e.g. Platnick 1984, 1991) and Uliodoninae (Miturgidae) (Griswold 1990) is apparently unaccompanied by a retrolateral apophysis, and is best explained by the dorsal movement of the apophysis. Separate losses of the retrolateral apophysis and additions of a dorsal apophysis are cladistically unwieldy and represent unlikely scenarios. The Gallieniellidae and Cithaeronidae are well nested within the dionychan group Gnaphosoidea (Platnick 1990) and are extremely unlikely candidates as sister-groups to the Nicodamidae. Griswold (1990) noted that amongst the 'RTA Clade' was a group of genera that possess both a dorsal apophysis and a retrolateral apophysis, which he used to define the Amaurobiidae<sup>A</sup>. While it is possible that the dorsal apophysis of nicodamids is homologous with the dorsal apophysis of amaurobiids, the lack of a retrolateral apophysis appears to preclude grouping the two families together, and once again it is more parsimonious to assume that the dorsal apophysis of nicodamids represents a dorsal movement of a retrolateral apophysis.

The position of the Nicodamidae within the 'RTA Clade' are best explored by examining the major groups of 'RTA Clade' members listed by Coddington and Levi (1991).

**Dionycha.** Nicodamids can be excluded from the Dionycha by the presence of an inferior tarsal claw and lack of claw tufts.

**Tengellidae + Lycosoidea.** They can be excluded from the lycosoids and their relatives by the lack of a grata-shaped tapetum (Homann 1952, 1971; Griswold 1993).

**Dictynoidea.** Forster (1970) defined the Dictynoidea by the presence of branched tracheae, a condition also found in other spider families (e.g. Millidge 1986). Nicodamidae possess moderately branched tracheae (Forster 1970, figs 20, 506), and may qualify for inclusion within the Dictynoidea. However, the presence of two major ampullate spigots on the anterior lateral spinnerets (Fig. 11) excludes the Nicodamidae from the Dictynoidea as defined by Coddington (1990b).

<sup>A</sup>Incidentally, specimens of several Australian 'amaurobioid' genera have been examined during comparisons with nicodamids, and I can confirm the presence of both retrolateral and dorsal tibial processes in *Storenosoma* and *Otira* species. Despite the lack of a cribellum, these genera are confirmed in the Amaurobiidae (Davies 1986) as defined by Griswold (1990).

**Amaurobioidea.** The Amaurobiidae and their relatives may have to be seriously relimited as begun by Griswold (1990). Coddington (1990a) suggested that a divided cribellum may be synapomorphic for the Amaurobioidea, but showed that considerable homoplasy is necessary to explain the distribution across the Araneomorphae. The cribellum (when present) may be either divided [Filistatidae, Eresoidea, Amaurobioidea (Amaurobiidae, Titanoecidae, Agelenidae (sensu Forster) and Amphinectidae), some Dictynoidea (Neolanidae, some Dictynidae, some Desidae, e.g. *Badumna*), Tengellidae and Lycosoidea], or entire [Hypochiloidea, Austrochiloidea, the remaining Dictynoidea (e.g. Matachiinae), Nicodamidae, Miturgidae and Deinopoidea]. Outgroup comparison suggests that the undivided cribellum is plesiomorphic for Araneomorphae, with the division of the cribellum occurring subsequently in a number of other taxa. Four steps are needed to resolve this problem without reversals (independent acquisition of divided cribellum by Filistatidae, Eresoidea, some Dictynidae, Neolanidae and Amaurobioidea + Tengellidae + Lycosoidea). A further step is needed to resolve the cladogram with reversals (acquisition of divided cribellum by Araneoclada, reversals by Nicodamidae, Dictynoidea, Miturgidae and Deinopoidea). The only other option (rejected above) is six steps long (divided is plesiomorphic, with subsequent fusion to an entire cribellum by Hypochiloidea, Austrochiloidea, Nicodamidae, Dictynoidea, Miturgidae and Deinopoidea) (see Davies 1993).

**Tarsal trichobothria.** Apart from the presence of a tibial apophysis, the 'RTA Clade' is defined by a second synapomorphy: tarsi with trichobothria (Coddington and Levi 1991). Most other araneomorphs lack trichobothria on tarsi: Hypochiloidea, Austrochiloidea, Haploryninae (except Caponiidae, Lehtinen 1980), Eresoidea, Palpimanoidae, Deinopoidea and Araneoidea. The lack of tarsal trichobothria in all nicodamids also occurs in only a few other members of the 'RTA Clade': Phyxelidinae (Amaurobiidae), most Dictyninae (Dictynidae), *Atelolathys* (Dictynidae: Cicurininae), and Titanoecidae. To suggest that these groups represent the sister-taxa to the remaining 'RTA Clade' would imply large amounts of homoplasy amongst other characters, as discussed by Griswold (1990). The presence of tarsal trichobothria is highly correlated with the presence of two or more metatarsal trichobothria (Lehtinen 1980; Coddington and Levi 1991), and is also virtually restricted to the 'RTA Clade'; the only exceptions amongst Araneomorphae are Filistatidae and Caponiidae (Lehtinen 1980), which presumably represent homoplasies. Of the 'RTA Clade' taxa listed above which lack tarsal trichobothria, only Nicodamidae, Phyxelidinae and possibly Titanoecidae possess the plesiomorphic state of a single metatarsal trichobothrium. Once again it is not parsimonious to maintain these three groups as sister-groups to the remaining 'RTA Clade' members, and it appears that these taxa have reverted to the plesiomorphic character states for trichobothrial number.

Could the Nicodamidae represent the sister-group to any of these groups? Nicodamids lack the main synapomorphy of the Dictyninae, males with mesally excavate chelicerae, and presumably can be excluded from the vaguely defined Circurininae (Lehtinen 1967). A direct relationship with Phyxelidinae seems improbable due to the inclusion of the phyxelidines into a well-defined Amaurobiidae (Griswold 1990). To include the Nicodamidae within the Amaurobiidae would demand that the divided cribellum found in Amaurobioidea (and some other cribellate groups) must reverse to the undivided cribellum found in Megadictyninae. In addition, the loss of unambiguous retrolateral and dorsal tibial apophyses in nicodamids would involve another reversal (see below).

A direct relationship with Titanoecidae requires the same reversal in the cribellum, but is an attractive proposition due to the presence of a dorsal, as opposed to retrolateral tibial apophysis in several species of *Titanoeca* [personal examination of *T. americanum* Emberton, *T. brunnea* Emberton and *T. nigrella* (Chamberlin)]. Other titanoeccids examined (*Goeldia* sp. from Chile) possess tibial apophyses that are situated more prolaterally, which may represent a synapomorphic transformation from a dorsal tibial apophysis groundplan. Titanoeccids lack other synapomorphies of the Nicodamidae (high clypeus, and single cheliceral tooth) and possess a flat epigyne characteristic of the more plesiomorphic nicodamids. Interestingly, titanoeccids and nicodamids are geographically isolated, with the

former occurring in the Americas and Palearctic region, and the latter occurring in the Australasian realm. If they represent a monophyletic group, it may indicate an ancient Pangean split of ancestral stock in Laurasia and Gondwanaland.

An unequivocal sister-group relationship with any other spider group is not apparent at present, due to a confusing array of character states found in nicodamids, and a lack of explicit character analysis within the Dictynoidea and Amaurobioidea. Further work on the relationships of groups currently included within these two superfamilies is necessary before the Nicodamidae can be unequivocally assigned to a superfamily. However as an interim measure, the Nicodamidae are here placed within the Amaurobioidea.

#### *Nicodamid Inter-relationships*

Numerous morphological characters were scored for each species of Nicodamidae (Table 1) and each character is discussed in detail below. The phylogenetic analysis was based upon 57 characters and 29 species, and was conducted with the aid of the parsimony analysis program HENNIG86 (Farris 1988) using the implicit enumeration command (ie). Of the 57 characters, 16 were apomorphic for individual species (represented by 'A' in Table 1: characters 4, 12, 20, 21, 22, 24, 26, 27, 31, 32, 34, 36, 52, 53, 54 and 55), and a further 5 were found in all nicodamids (characters 7, 10, 14, 15 and 57), and were thus excluded from the computational analysis. Missing entries ('?') or inapplicable data ('-') were coded as '??'.

The first two computational analyses treated all characters as additive (=ordered) and utilised the commands t; bb\*; and m\*; bb\*;. They both produced 32 trees with a length of 53, consistency index of 75 and a retention index of 88. All of these trees recognised the subfamilial and generic structure proposed in this paper, and recognised the following clades: *Nicodamus* + *Durodamus*; *Ambicodamus* + *Litodamus*; *Novodamus* + *Oncodamus*; and *Megadictyna* + *Forstertyna*. The 32 trees differed from each other in the internal arrangements of two genera, *Litodamus* (where the position of *L. collinus* varied from the sister-group of *L. olga* to the sister-group of *L. olga* + *L. hickmani*), and *Ambicodamus* (numerous arrangements of the constituent species).

However, these analyses did not support several clades that I had intuitively conjectured were monophyletic. The first was *Litodamus olga* + *L. hickmani*; as mentioned above, the analysis placed *L. collinus* as the sister-group to this pair, or as the sister-group to *L. olga*. The lack of resolution is due to the presence of only a single character for either solution: character 17 (reduced or absent tibial apophysis A) for the former, and character 29 (sinuate median apophysis) for the latter. All subsequent analyses placed a weight of two on character 7 to favour the former, as the other scenario demands the reacquisition of tibial apophysis B in *L. collinus*, an untenable situation. This reduced the number of trees from 32 to 16, each with a length of 55, consistency index of 76 and a retention index of 89.

The second was *Ambicodamus marae* + *A. sororius*. These two species seem well united by character 42 (notch at embolar base), and were occasionally placed in different parts of the cladogram by the initial analysis. Subsequent analyses placed a weight of two on character 42, which consistently placed them as sister-groups. This reduced the number of trees from 16 to 11, each with a length of 56, consistency index of 76 and a retention index of 89. These 11 trees differed only in the resolution of various clades within *Ambicodamus*, and many configurations placed species pairs as sister-groups to other species pairs. The preferred cladogram (Fig. 1) is the simplest, and requires the least amount of homoplasy.

1. The presence of a cribellum has been shown to be apomorphic for the Araneomorphae (see Coddington and Levi 1991), but subsequent losses of the cribellum have occurred in numerous araneomorph groups, including the Nicodaminae.

2. The enlarged spinning field of the posterior lateral spinneret is unique in *Megadictyna* and *Forstertyna* (Forster 1970, fig. 523).

3. Nicodamines possess a row of 3–4 stiff, dark setae in an otherwise large bare area on the dorsal surface of the ALS. Megadictynines and all other spiders that I have examined (see Materials and Methods) lack such setae.

4. The dorsal scute found in male *Durodamus* is unparalleled within the family, but convergences with numerous other spider groups occur.

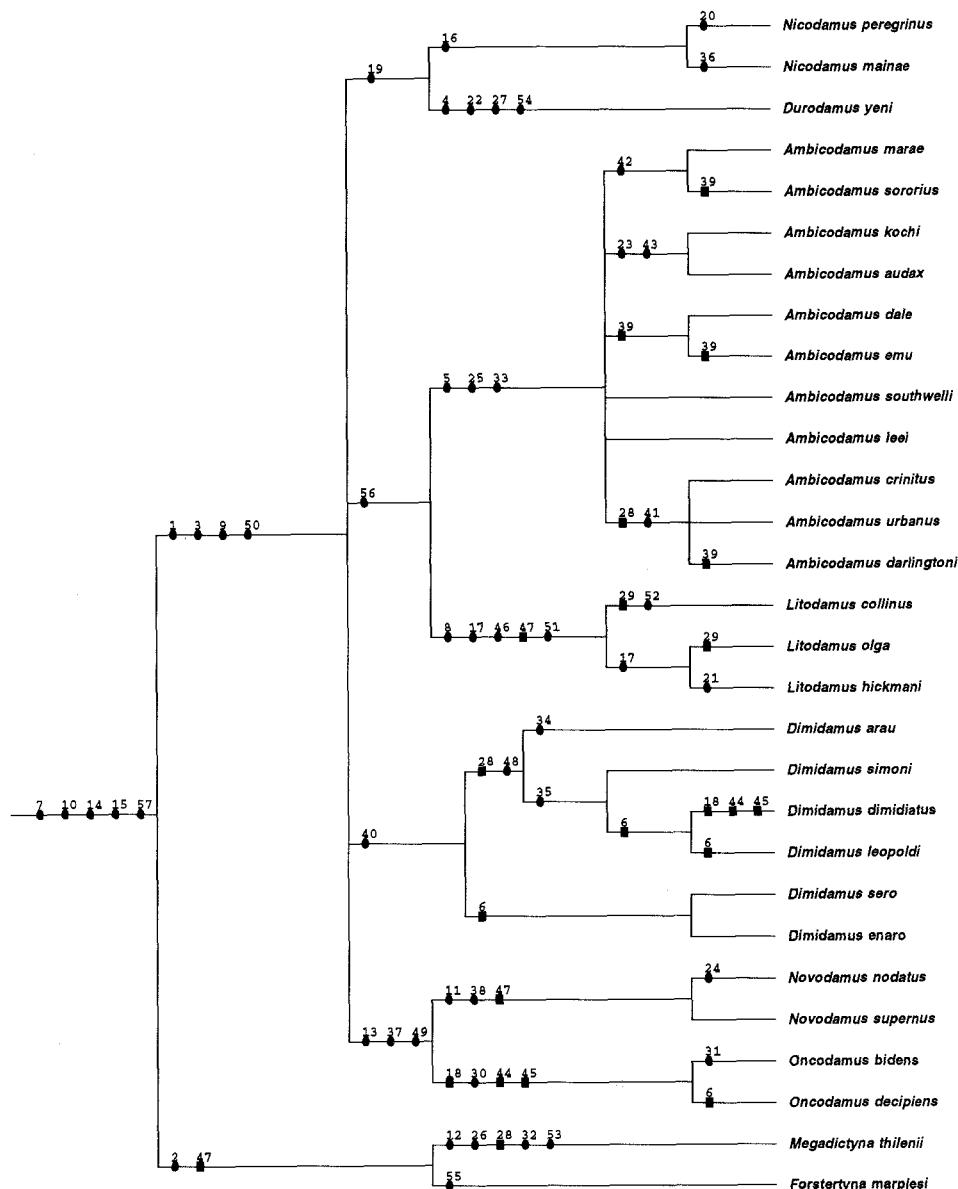
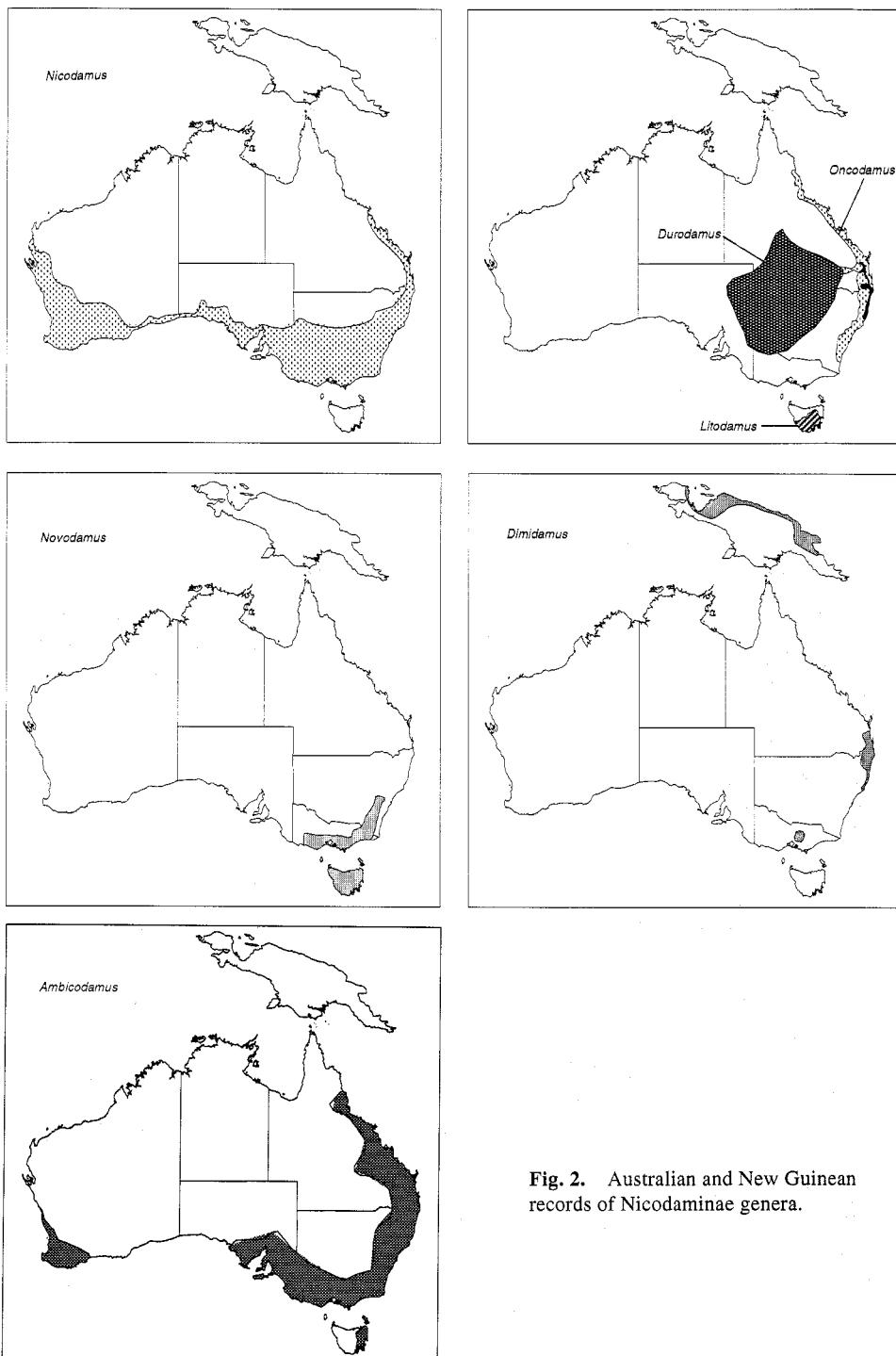


Fig. 1. Preferred cladogram of the Nicodamidae (see text for explanation). Autapomorphy (●), homoplasy (■).

5. The short, stiff abdominal setae of male *Ambicodamus* are not found in any other nicodamid, and are autapomorphic.

6. Four species of *Dimidamus* (*D. dimidiatus*, *D. leopoldi*, *D. enaro* and *D. sero*) and the bicoloured morph of *Oncodamus decipiens* possess red colouration in the abdomen. This red area extends over most of the dorsum in *Dimidamus leopoldi*, *D. enaro* and *D. sero*, but is restricted to the posterior half of the abdomen in *D. dimidiatus* and *O. decipiens*. The acquisition of extensive red areas appears to have occurred independently in *D. dimidiatus* + *D. leopoldi*, *D. enaro* + *D. sero*, and *O. decipiens*.

7. The high clypeus of all nicodamids is unique in the 'RTA Clade'.



**Fig. 2.** Australian and New Guinean records of Nicodaminae genera.

8. The sternum of most nicodamids is red-yellow (nicodamines) or light brown (megadictynines) and the same colour as the carapace. The sternum of *Litodamus* spp. is dark brown or dark yellow-brown, which is apomorphic.

9. The bright red carapace, legs and sternum of nicodamines is clearly apomorphic, although several other unrelated spider groups have independently acquired similar colour patterns [e.g. the theridiids *Nesticodes rufipes* (Lucas) and some Australian species currently attributed to *Steatoda*, and an undescribed hahniid from Western Australia have bright red carapaces and appendages].

10. The single cheliceral tooth found in nicodamids is a highly unusual condition within the Araneae, and is considered apomorphic.

11. The pedipalpal femur of male *Novodamus* is somewhat thickened with a noticeable swelling on the retrolateral face. The thickened condition is unique to that genus and considered apomorphic.

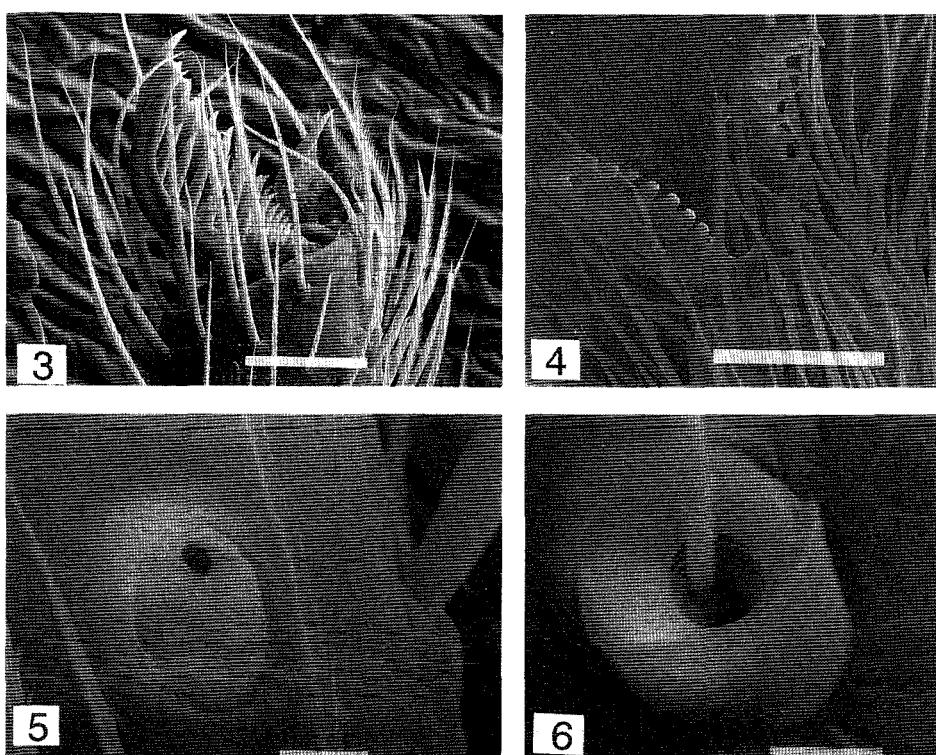
12. In males of *Megadictyna thilenii*, the pedipalpal patella possesses a rounded dorsal apophysis. This apophysis is unique to that species.

13. The basal hook found on the cymbium of *Novodamus* and *Oncodamus* species is unique and clearly autapomorphic for that clade.

14. The movement of the tibial apophysis to a dorsal position is very rare amongst 'RTA Clade' members (Griswold 1990), and is considered apomorphic.

15. The presence of a large tibial apophysis is apomorphic for all 'RTA Clade' members (Coddington and Levi 1990).

16. The highly curved tibial apophysis A in *Nicodamus* is apomorphic, as all other nicodamids possess a straight apophysis (excluding *Litodamus hickmani* and *L. olga*, which lack the apophysis).



Figs 3–6. *Ambicodamus marae*, sp. nov., scanning electron micrographs: 3, claws, male, lateral; 4, claws, male, ventral; 5, tarsal organ, female; 6, trichobothrial base, metatarsus, female.

17. Tibial apophysis A is present in all nicodamines except *Litodamus hickmani* and *L. olga*; an intermediate state is found in *L. collinus* where it is much reduced and poorly sclerotised. Thus, it appears that the loss of apophysis A is a synapomorphy for *L. hickmani* + *L. olga*; the alternative arrangement of independent gains in all nicodamines and *L. collinus* is less parsimonious. The identification of apophysis A in *Megadictyna* is difficult, as the homologies of the separate tibial apophysis entities between *Megadictyna* and the nicodamines poses considerable problems. The small pointed process in *M. thilenii* may be a homologue of apophysis A, although the entire distal portion of the large curved apophysis may represent apophysis A, with the total reduction of apophysis B. Therefore, I choose to code apophysis A as present in *M. thilenii*, despite uncertainties regarding the exact homology. Discovery of a male of *Forstertyna marplesi* may help solve this problem.

18. Tibial apophysis A is situated medially or basally in all nicodamines except *Dimidamus dimidiatus* and *Novodamus* spp. where it has transferred distally. Once again, recognition of apophysis A in *M. thilenii* poses a problem, and it is coded '0' until the male of *F. marplesi* is discovered.

19. Tibial apophysis A has transferred to a basal position in *Nicodamus* spp. and *Durodamus yeni*.

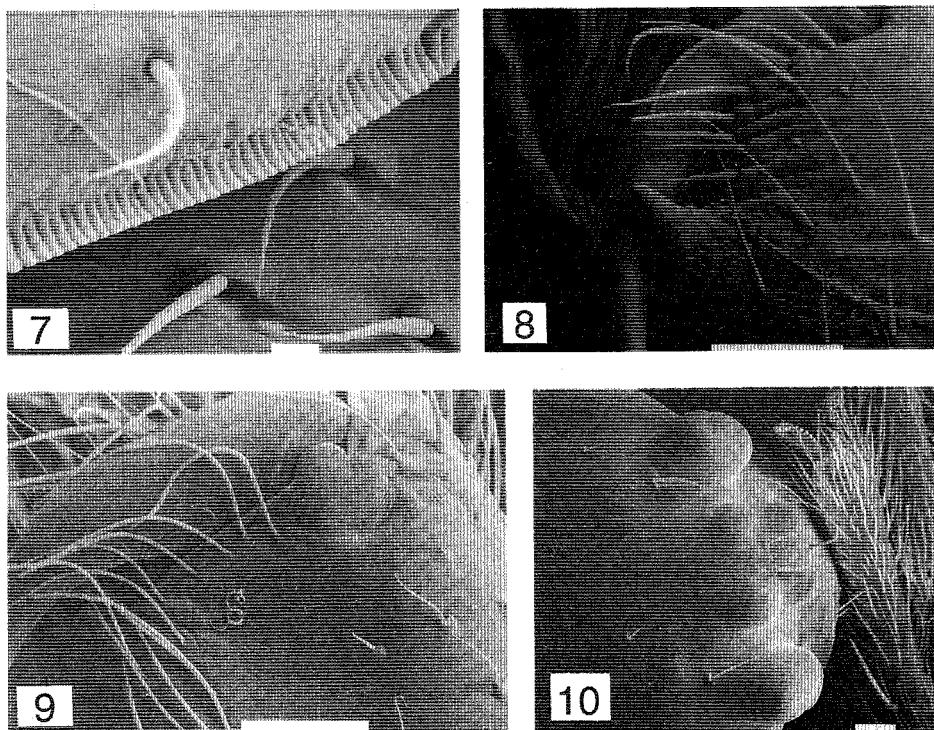
20. The prolateral surface of the tibial apophysis of *Nicodamus peregrinus* bears a small flange, absent from all other nicodamids.

21. The distal margin of tibial apophysis B is truncate in *Litodamus hickmani*.

22. Tibial apophysis B is deeply bifurcate in *Durodamus yeni*, unlike all other nicodamids.

23. The distal margin of tibial apophysis B is broad and blunt in *Ambicodamus audax* and *A. kochi*, as opposed to the rounded or pointed condition found in all other nicodamids.

24. The prolateral margin of tibial apophysis B is deeply excavate in *Novodamus nodatus*, which is autapomorphic.



**Figs 7–10.** *Ambicodamus marae*, sp. nov., scanning electron micrographs: 7, serrula, female; 8, chelicera, posterior, male; 9, chelicera, anterior, male; 10, eye group, male.

Table 1. Character matrix

Co., Condition; CI, Consistency Index; 0, plesiomorphy; 1, 2, apomorphy; 9, not known; -, not applicable; A, autapomorphic for single species; H, homoplasy; S, synapomorphic for two or more species. Ni pe, *Nicodamus peregrinus*; Ni ma, *Nicodamus mainae*; Du ye, *Durodamus yeni*; Am au, *Ambicodamus audax*; Am cr, *Ambicodamus crinatus*; Am dl, *Ambicodamus dalei*; Am dr, *Ambicodamus darlingtoni*; Am em, *Ambicodamus emu*; Am ko, *Ambicodamus kochi*; Am le, *Ambicodamus leleei*; Am ma, *Ambicodamus mariae*; Am so, *Ambicodamus sororius*; Am su, *Ambicodamus southwelli*; Am ur, *Ambicodamus urbanus*; Li hi, *Liodamus hickmani*; Li ol, *Liodamus oliga*; Li co, *Liodamus collimus*; Di di, *Dimidamus dimidiatus*; Di si, *Dimidamus simoni*; Di ar, *Dimidamus arau*; Di le, *Dimidamus leopoldi*; Di en, *Dimidamus enaro*; Di se, *Dimidamus sero*; No no, *Novodamus noctilus*; No su, *Novodamus supernus*; On bi, *Oncodamus bidentis*; On de, *Oncodamus decipiens*; Me th, *Meocodictyna thilenii*; Fo ma, *Forsertia marmorata*.

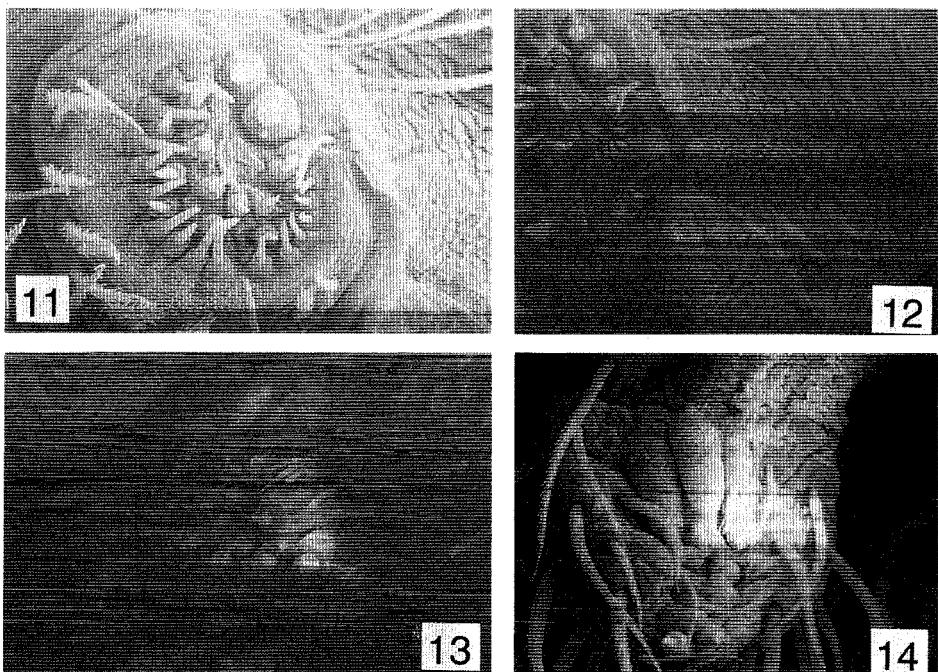


Table 1 continued.

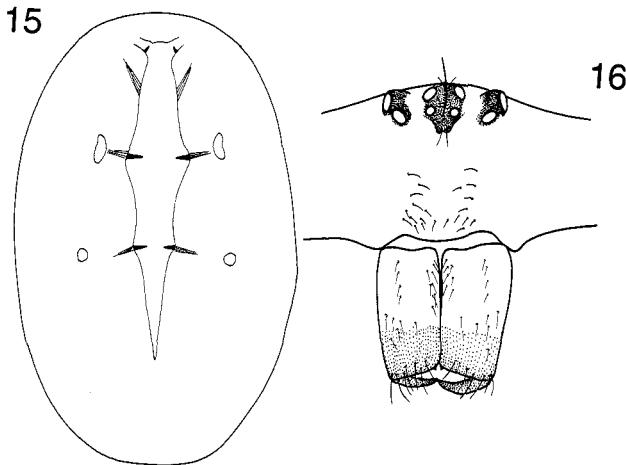
|   | <i>Ni</i><br><i>pe</i> | <i>Ni</i><br><i>ma</i> | <i>Du</i><br><i>ye</i> | <i>Am</i><br><i>au</i> | <i>Am</i><br><i>cr</i> | <i>Am</i><br><i>dl</i> | <i>Am</i><br><i>dr</i> | <i>Am</i><br><i>em</i> | <i>Am</i><br><i>le</i> | <i>Am</i><br><i>ma</i> | <i>Am</i><br><i>so</i> | <i>Li</i><br><i>hi</i> | <i>Li</i><br><i>ur</i> | <i>Di</i><br><i>co</i> | <i>Di</i><br><i>si</i> | <i>Di</i><br><i>ar</i> | <i>Di</i><br><i>le</i> | <i>Di</i><br><i>en</i> | <i>No</i><br><i>no</i> | <i>No</i><br><i>su</i> | <i>On</i><br><i>bi</i> | <i>Me</i><br><i>de</i> | <i>Fo</i><br><i>th</i> | <i>Co</i><br><i>ma</i> |        |        |
|---|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|--------|--------|
| 28. Median apophysis:<br>slender; broad   | 0                      | 0                      | 0                      | 0                      | 1                      | 0                      | 1                      | 0                      | 0                      | 0                      | 0                      | 1                      | 0                      | 1                      | 1                      | 1                      | 1                      | 1                      | 0                      | 0                      | 0                      | 0                      | 0                      | 1                      | 9      | S 0.33 |
| 29. Median apophysis,<br>distal margin:<br>triangular; sinuate                                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 1                      | 1                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 9                      | H 0.50 |        |
| 30. Median apophysis:<br>broad or slender;<br>extremely slender                                     | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 1                      | 1                      | 0                      | 9                      | S 1.00 |        |
| 31. Median apophysis,<br>base: not sclerotised;<br>sclerotised                                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 1                      | 0                      | 9                      | A 1.00 |        |
| 32. Conductor:<br>present; absent   | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 1                      | A 1.00 |        |
| 33. Conductor:<br>simple; cup-shaped  | 0                      | 0                      | 1                      | 1                      | 1                      | 1                      | 1                      | 1                      | 1                      | 1                      | 1                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | -                      | S 1.00 |        |
| 34. Conductor:<br>not falcate; falcate  | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | -                      | A 1.00 |        |
| 35. Conductor, dorsum:<br>smooth; serrate   | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | -                      | S 1.00 |        |
| 36. Conductor, minute<br>spur; absent; present  | 0                      | 1                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | -                      | A 1.00 |        |
| 37. Sclerites:<br>normal; elongate  | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 1                      | 1                      | 0                      | S 1.00 |        |
| 38. Conductor and<br>embolus; separate;<br>fused  | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | -                      | S 1.00 |        |
| 39. Conductor,<br>retrolateral margin:<br>not modified;<br>pronubercance; large<br>rounded swelling | 0                      | 0                      | 0                      | 0                      | 0                      | 1                      | 1                      | 2                      | 0                      | 0                      | 1                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | -                      | 9                      | H 0.33 |        |
| 40. Embolus:<br>otherwise; long,<br>slender   | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 9                      | S 1.00 |        |
| 41. Embolus base:<br>not expanded;<br>expanded  | 0                      | 0                      | 0                      | 1                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 0                      | 1                      | 1                      | 1                      | 1                      | 1                      | 1                      | 1                      | 1                      | 1                      | 1                      | 0                      | 0                      | 0                      | S 1.00 |        |



25. The presence of a prolateral apophysis is autapomorphic for *Amicodamus* spp.
26. The reduction of the tegular sclerites in *Megadictyna* is not found in other nicodamids, and it appears that the conductor has been completely lost.
27. The median apophysis in most nicodamids is entire, while that of *Durodamus yensi* is lamellate, which is considered apomorphic.
28. The median apophysis of *Ambicodamus crinitus*, *A. darlingtoni*, *A. urbanus*, *Dimidamus dimidiatus*, *D. simoni*, *D. arau*, *D. leopoldi* and *Megadictyna thilenii* is quite broad, as opposed to the slender median apophysis found in the remaining species. The broad state appears to have arisen on at least three occasions (*Ambicodamus* spp., the four *Dimidamus* spp. and *Megadictyna thilenii*).
29. In *Litodamus olga* and *L. collinus*, the distal margin of the median apophysis is distinctly sinuate, which is considered apomorphic. This arises twice on the cladogram (Fig. 1), but acquisition at the *Litodamus* node with subsequent loss in *L. hickmani* is equally parsimonious.
30. The extremely slender median apophysis of *Oncodamus* spp. is autapomorphic.
31. In *Oncodamus bidens*, the base of the median apophysis bears a distinct, sclerotised lobe which is lacking in all other nicodamids.
32. The loss of the conductor in *Megadictyna thilenii* is unique in the Nicodamidae.
33. The cup-shaped conductor of *Ambicodamus* spp. is autapomorphic.
34. The falcate conductor of *Dimidamus arau* is not found in any other nicodamid.
35. In three species of *Dimidamus*, the dorsal margin of the conductor is serrate which is apomorphic.
36. The conductor of *N. mainae* bears a minute spur lacking in all other nicodamids.
37. The palpal sclerites are greatly elongate in *Novodamus* and *Oncodamus* spp.
38. The fused conductor and embolus of *Novodamus* spp. is unique.



**Figs 11–14.** *Ambicodamus marae*, sp. nov., scanning electron micrographs of right spinnerets: 11, anterior lateral spinneret; 12, anterior lateral spinneret, showing isolated setae; 13, posterior median spinneret; 14, posterior lateral spinneret.



**Figs 15–16.** 15, *Nicodamus mainae*, sp. nov., female (WAM 93/2659), dissected abdomen showing heart morphology and positions of main sigilla, dorsal; 16, *Ambicodamus kochi*, sp. nov., holotype male, anterior view of carapace showing high clypeus and chelicerae.

39. Four species of *Ambicodamus*, *A. sororius*, *A. dale*, *A. emu* and *A. darlingtoni*, possess a modified conductor where the retrolateral margin bears at least one protuberance. That of *A. emu* is further modified, as it bears a large lateral swelling absent in all other nicodamids. These four species do not appear to represent a clade, as at least *A. sororius* and *A. darlingtoni* are well nested within other clades. However, it is possible that this modification may serve to unite the geographically affiliated *A. emu* and *A. dale* (both from south-eastern Queensland).

40. An extremely long, slender embolus, as in *Dimidamus* spp., is unique in the family.

41. The embolar base of *Ambicodamus crinitus*, *A. darlingtoni* and *A. urbanus* is expanded dorsally, especially in the latter two species.

42. A notch at the base of the embolus is found only in *Ambicodamus marae* and *A. sororius*.

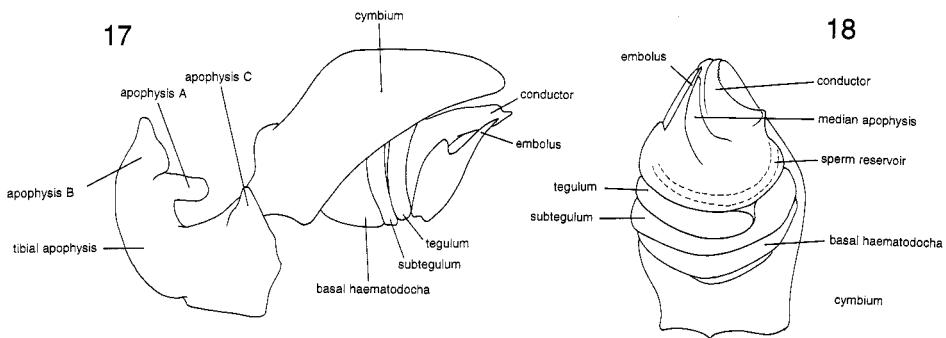
43. The emboli of *A. crinitus* and *A. kochi* are quite thickened, which is in contrast to other nicodamids.

44. Coiled copulatory ducts are found only in *Oncodamus* spp. and *Dimidamus dimidiatus*, and appear to have been derived independently, so they are not homologues.

45. Similarly, the long copulatory ducts of these three species are not found elsewhere, and appear to represent a homoplasy.

46. The lack of sclerotisation of the copulatory ducts is unique to *Litodamus* spp.

47. The position of the copulatory duct openings vary amongst nicodamids. In most nicodamines (*Nicodamus*, *Durodamus*, *Ambicodamus*, *Dimidamus* and *Oncodamus*) the opening is directly on the epigynal face, which is considered to represent the plesiomorphic condition because this state is widespread amongst many other 'RTA Clade' taxa. In *Litodamus* and *Novodamus*, the opening lies within the lateral epigynal margin, and that position appears to have been independently derived from the plesiomorphic condition by the lateral relocation of the opening until it meets the epigynal fold. This is well demonstrated in the sister-groups *Oncodamus* and *Novodamus* where the former has the copulatory duct opening on the epigynal face, and the latter has it in the lateral margin. There is no evidence that *Litodamus* and *Novodamus* are sister-groups based on the lateral displacement of the opening. The third opening position occurs in both *Megadictyna* and *Forstertyna*, where it opens onto the dorsal surface of the epigyne and not externally.



Figs 17–18. *Ambicodamus marae*, sp. nov., male holotype, left pedipalp showing cymbial sclerites and tibial apophyses: 17, prolateral; 18, ventral.

48. The extremely small size of the opening of the copulatory ducts in *Dimidamus dimidiatus*, *D. arau* and *D. leopoldi* is interpreted as apomorphic, as all other known female nicodamids possess large, broad openings. The only species of *Dimidamus* with broad openings is *D. enaro*, and females of *D. simoni* and *D. sero* are currently unknown. These data have been incorporated into the cladogram with small openings defining the clade *D. dimidiatus* + *D. arau* + *D. leopoldi*. The discovery of females of *D. simoni* and *D. sero* will assist in further refining the cladogram.

49. Within the Nicodamidae, the anterior position of the opening of the copulatory ducts is unique to *Novodamus* and *Oncodamus* spp.

50. The fertilisation duct opening faces laterally in many ‘RTA Clade’ spiders, including Megadictyninae, which is here interpreted as plesiomorphic. In other ‘RTA Clade’ members, including all nicodamines, it faces mesally, the apomorphic condition. The polarity may be transposed when further information on the relationships of ‘RTA Clade’ spiders is available.

51. Species of *Litodamus* possess greatly enlarged receptacula, such that they nearly meet in the mid-line; this is unique within the family.

52. A posterolaterally directed receptaculum, as in *Litodamus collinus*, is not found in any other nicodamid.

53. The epigyne of *Megadictyna thilenii* is elongated into a median lobe or ‘scape’, which is autapomorphic.

54. The lateral ‘hook’ on the epigyne of *Durodamus yeni* is unique within the Nicodamidae.

55. The central depression and associated glandular region on the epigyne of *Forstertyna marplesi* clearly distinguishes this species from all other nicodamids.

56. The epigyne of *Ambicodamus* spp. and *Litodamus* spp. is heavily sclerotised, and more importantly distinctly raised from the abdominal surface, which is considered apomorphic.

57. The presence of only a single metatarsal trichobothrium is plesiomorphic for the Araneomorphae (see discussion by Coddington and Levi 1991).

58. The absence of this trichobothrium from metatarsus IV is apomorphic for the Nicodamidae.

59. The absence of tarsal trichobothria is plesiomorphic for the Araneomorphae (see Coddington and Levi 1991).

The resulting cladogram (Fig. 1) defines two subfamilies in Nicodamidae, with the Nicodaminae strongly supported by 3–4 isolated setae on the dorsal surface of the ALS, red

colouration on the cephalothorax and appendages, and the mesally directed fertilisation duct opening. The Megadictyninae are supported by a number of apomorphies, including an enlarged spinning field on the PLS.

The Nicodaminae are divisible into a number of groups, here accorded generic status, with several pairs of sister-genera recognisable: *Novodamus* and *Oncodamus* are linked by three well supported synapomorphies (cymbium with basal hook, tegular sclerites elongate, and anterior position of copulatory duct opening), *Ambicodamus* and *Litodamus* are united by the enlarged epigynal region, and *Nicodamus* and *Durodamus* are linked by the basal movement of tibial apophysis A. *Dimidamus* includes several species united by the extremely small copulatory duct opening (subsequently enlarged in one species), and a long, slender embolus.

### *Biogeography*

Nicodamids are known only from New Zealand, Australia (including Tasmania) and New Guinea (including Irian Jaya), and the distributions of many of the genera and species included here are worthy of further discussion.

*Nicodamus.* The two species are widespread in semi-arid regions of southern Australia (Fig. 2), especially where the average annual rainfall is 250–1000 mm. *N. peregrinus* occurs in eastern Australia from the eastern edge of the Nullarbor Plain to the east coast as far north as Mackay, Qld. *N. mainae* occurs in south-western Australia (Fig. 25) from the Nullarbor Plain to the west coast and north to Coral Bay, WA.

*Durodamus.* The single species occurs in semi-arid regions of eastern Australia (Figs 2, 38) where average annual rainfall is less than 500 mm.

*Ambicodamus.* The 11 species generally occur in areas with average annual rainfall over 500 mm. In Western Australia, *A. kochi* is found in or east of the Darling Ranges, and *A. marae* is found in the moist Karri (*Eucalyptus diversicolor*) forests where average annual rainfall exceeds 1000 mm. The nine other species are found in eastern Australia, where they are most diverse in the southern half. *A. audax* is the only exception, and specimens have been collected in semi-arid zones as far north as the Kuranda, Qld, region (Fig. 40). The sister-species of two eastern species are two Western Australian species: *A. audax* with *A. kochi* (Fig. 40), and *A. sororius* with *A. marae* (Fig. 41), respectively. Although several *Ambicodamus* species are found in relatively high rainfall areas (e.g. *A. southwelli*, *A. sororius*, *A. marae* and *A. crinitus*), most others are found in drier parts of South Australia, western Victoria, Queensland and Western Australia.

*Litodamus.* This genus is known only from Tasmania (Figs 2, 104) where the spiders inhabit closed forests, generally at high altitude. *L. collinus* is known only from Ben Lomond, *L. hickmani* from the Hobart region and *L. olga* from a large part of south-western Tasmania. Isolated females, unidentifiable to species, are known from other areas (Fig. 104); these may represent new species or range extensions of the three described species.

*Dimidamus.* The six species of *Dimidamus* occur in two very disparate regions: four occur in the montane regions of New Guinea (Fig. 124), and two in the temperate closed forests of mainland south-eastern Australia, as far north as Jimna State Forest, Queensland (Fig. 123). The average annual rainfall of the latter regions is always over 1000 mm.

*Novodamus.* This genus is found in the closed forests of south-eastern Australia, including Tasmania (Figs 2, 163). The sister-group relationship of *Novodamus* and *Oncodamus* (see above) is complemented by their allopatric ranges. *Oncodamus* spp. generally occur east of the Great Dividing Range, especially in southern New South Wales, while *Novodamus* species are found on or west of the Range (Figs 163, 184).

*Oncodamus.* The two known species occur in the closed forests of eastern Australia (Fig. 2), with *O. bidens* in southern New South Wales, and *O. decipiens* from Singleton, New South Wales to the Mossman region, northern Queensland (Fig. 184). The distribution of *O. decipiens* is highly disjunct with relictual populations in isolated rainforest pockets. The apparent lack of speciation within this widespread species suggests relatively recent divergence of populations.

*Megadictyninae.* The sole species of *Megadictyna*, *M. thilenii*, occurs over much of New Zealand (Fig. 192), while its sister-group, *Forstertyna* (including only *F. marplesi*), is only known from Fiordland on the South Island (Fig. 192).

### Key to Subfamilies and Genera of Nicodamidae (Males (those of *Forstertyna* not known))

1. Cribellum and calamistrum present; tegular sclerites reduced (Fig. 195); retrolateral tibial apophysis coiled (Figs 193, 194, 196) ..... Megadictyninae *Megadictyna*
- Cribellum and calamistrum absent; tegular sclerites present (e.g. Fig. 44); retrolateral tibial apophysis not coiled (e.g. Figs 42, 43, 45) ..... Nicodaminae .. 2
- 2(1). Abdomen with dorsal scute; median apophysis lamellate (Fig. 34) ..... *Durodamus*
- Abdomen without dorsal scute; median apophysis entire (e.g. Fig. 44) ..... 3
- 3(2). Pedipalpal retrolateral tibial apophysis A absent or very small and desclerotised (Figs 105, 111, 117); sternum dark-brown ..... *Litodamus*
- Pedipalpal retrolateral tibial apophysis A present, always sclerotised (e.g. Fig. 19); sternum red or yellow ..... 4
- 4(3). Pedipalpal retrolateral tibial apophysis A strongly hooked, nearly touching tibia (Figs 19, 26) ..... *Nicodamus*
- Pedipalpal retrolateral tibial apophysis A not strongly hooked (e.g. Figs 42, 178) ..... 5
- 5(4). Pedipalpal femur thickened, with swelling on retrolateral face (Figs 168, 175); embolus fused with conductor (Figs 164, 171) ..... *Novodamus*
- Pedipalpal femur not thickened, retrolateral face without swelling; embolus not fused with conductor (e.g. Figs 42, 178) ..... 6
- 6(5). Abdominal setae short, slender, curved (much smaller than female setae) ..... *Ambicodamus*
- Abdominal setae long (same length as female setae) ..... 7
- 7(6). Base of cymbium with notch (Figs 179, 185); embolus, median apophysis and conductor elongate (Figs 180, 188) ..... *Oncodamus*
- Base of cymbium without notch (e.g. Fig. 126); embolus, median apophysis and conductor not elongate (e.g. Fig. 127) ..... *Dimidamus*

### Females

1. Cribellum and calamistrum present ..... Megadictyninae .. 2
- Cribellum and calamistrum absent ..... Nicodaminae .. 3
- 2(1). Median lobe of epigyne elongate, extending far beyond epigastric furrow (Fig. 197); epigyne without central V-shaped depression (Fig. 197) ..... *Megadictyna*
- Median lobe of epigyne short (Fig. 199); epigyne with central V-shaped depression apparently bearing glandular opening (Figs 199, 200) ..... *Forstertyna*
- 3(1). Copulatory opening anteriorly situated (Figs 169, 176, 182, 190) ..... 4
- Copulatory opening posteriorly, medially or laterally situated (e.g. Figs 46, 129) ..... 5
- 4(3). Copulatory opening on epigynal face (Figs 182, 190); copulatory ducts elongate, extending far in advance of copulatory openings (Figs 183, 191) ..... *Oncodamus*
- Copulatory opening in lateral epigynal fold (Figs 169, 176); copulatory ducts very short (Figs 170, 177) ..... *Novodamus*
- 5(3). Epigyne raised ..... 6
- Epigyne not raised ..... 7
- 6(5). Copulatory openings lateral (Figs 109, 115, 121); copulatory ducts greatly enlarged (Figs 110, 116, 122); sternum dark-brown ..... *Litodamus*
- Copulatory openings mesal (e.g. Figs 47, 130); copulatory ducts not greatly enlarged (Figs 47, 130); sternum red or yellow ..... *Ambicodamus*

- 7(5). Lateral margin of epigyne with deeply idented fold (Fig. 36); spermathecae very small (Fig. 37) . . . . . *Durodamus*  
 Lateral margin of epigyne without deeply idented fold (e.g. Figs 23, 129); spermathecae medium sized (e.g. Figs 23, 129) . . . . . 8
- 8(7). Copulatory openings inconspicuous (Figs 129, 140, 146, 152) . . . . . *Dimidamus*  
 Copulatory openings conspicuous (Figs 23, 30) . . . . . *Nicodamus*

### Subfamily NICODAMINAE Simon

*Nicodamidae* Simon, 1897: 15.

*Nicodaminae* Simon. — Simon, 1898: 221–3.

#### Diagnosis

Ecribellate. Tegular sclerites present. Anterior lateral spinnerets with row of 3–4 stiff, dark setae in an otherwise large bare area. Posterior lateral spinnerets without enlarged spinning fields. Without calamistrum.

#### Remarks

The Nicodaminae are here enlarged to contain seven genera from Australia (including Tasmania), Papua New Guinea and Irian Jaya (Figs 2, 124).

### Genus *Nicodamus* Simon

*Centropelma* L. Koch, 1872: 246. — Keyserling, 1884: 97 (junior homonym of *Centropelma* Slater and Salvin, 1869). Type species: *Centropelma bicolor* L. Koch, 1872 (junior synonym of *Theridion peregrinum* Walckenaer, 1841), by monotypy.

*Nicodamus* Simon, 1887: xciv. — Bonnet, 1958: 3101 (replacement name for *Centropelma* L. Koch).

*Ozaleus* Thorell, 1890: 293. Type species: *Ozaleus tarandus* Thorell, 1890 (junior synonym of *Theridion peregrinum* Walckenaer, 1841), by monotypy. Synonymised by Simon, 1898: 224.

#### Diagnosis

Retrolateral tibial apophysis A hooked.

#### Remarks

*Nicodamus* is here restricted to include those species with a specific male pedipalpal conformation, and includes only two extremely similar species, which are the largest of the Australian nicodamids. It has not been possible to separate females of the two species (see Remarks under *N. mainae*), and distributions are based on proximity to adult males, which are allopatric.

#### Included Species

*Nicodamus mainae*, sp. nov., and *N. peregrinus* (Walckenaer).

### Key to Species of *Nicodamus*

#### Males

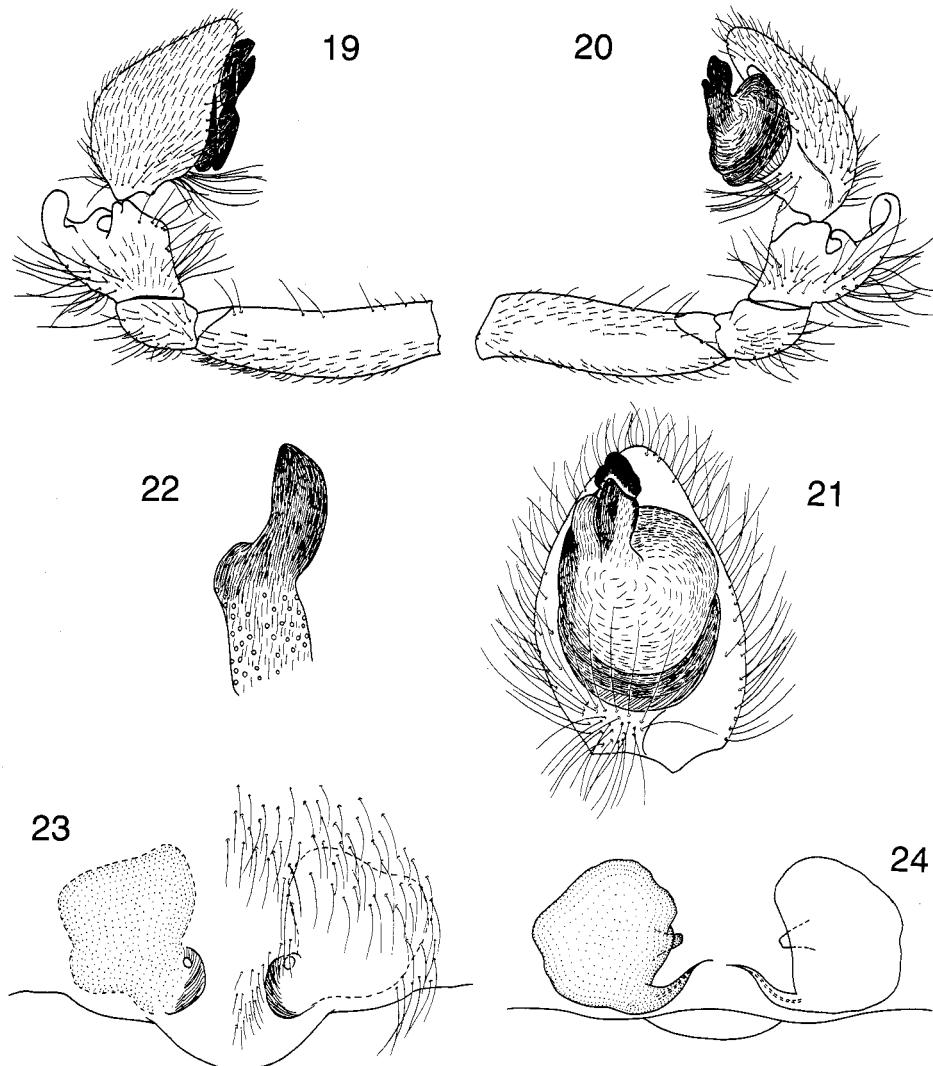
- Pedipalpal retrolateral tibial apophysis with basal flange (Fig. 19); conductor without minute spur (Fig. 20) . . . . . *Nicodamus peregrinus* (Walckenaer)
- Pedipalpal retrolateral tibial apophysis without basal flange (Fig. 26); conductor with minute spur (Fig. 27) . . . . . *Nicodamus mainae*, sp. nov.

*Nicodamus peregrinus* (Walckenaer)

(Figs 19–25)

*Theridion peregrinum* Walckenaer, 1841: 297.*Theridium semiflavum* L. Koch, 1865: 858–9. — L. Koch, 1872: 259–60, plate 21, fig. 6 [misidentification in part, male only; see *Oncodamus bidens* (Karsch)]; Strand, 1907: 461–2; Rack, 1961: 56. **New synonymy.***Centropelma bicolor* L. Koch, 1872: 246–8, plate 20, figs 5–6. — Karsch, 1878: 795. **New synonymy.***Centropelma peregrina* (Walckenaer). — Keyserling, 1884: 97–98, figs 64, 64a–c.*Ozaleus tarandus* Thorell, 1890: 294 (in part, lectotype only). **New synonymy.***Nicodamus bicolor* (L. Koch). — Simon, 1898: fig. 214; Rainbow, 1911: 257; Butler, 1933: 287, plate 17, fig. 3; Roewer, 1942: 429; Bonnet, 1958: 3101; Mascord, 1970: 66, figs 111–12; Davies, 1985: 92; Platnick, 1993: 163.*Nicodamus peregrinus* (Walckenaer). — Simon, 1898: 223, figs 210–12; Roewer, 1942: 429; Bonnet, 1958: 3101; Davies, 1985: 93.*Nicodamus perigrinus* [sic] (Walckenaer). — Rainbow, 1911: 257–8.*Nicodamus semiflavum* [sic] (L. Koch). — Rainbow, 1911: 258.*Nicodamus semiflavus* (L. Koch). — Roewer, 1942: 429; Bonnet, 1958: 3102; Davies, 1985: 93.*Nicodamus tarandus* (Thorell). — Rainbow, 1911: 258; Roewer, 1942: 429; Bonnet, 1958: 3102; Davies, 1985: 93.Not *Nicodamus bicolor* (L. Koch). — Simon, 1909: 180 (misidentification; see *Nicodamus mainae*, sp. nov. and *Ambicodamus marae*, sp. nov.); Rainbow, 1912: 200 (misidentification; see *Oncodamus decipiens*, sp. nov.); Petrunkevitch, 1929: 418 (misidentification; true identity unknown); Hickman, 1967: 74–5, figs 132–4, plate XII fig. 4; Forster, 1970: figs 506–13 (misidentifications; see *Novodamus nodatus* (Karsch) and *Litodamus hickmani*, sp. nov.); Main, 1977: 106 (misidentification; see *Nicodamus mainae*, sp. nov.); Browne, 1979: 121–3 (misidentification; see *N. mainae*, sp. nov.).Not *Nicodamus semiflavus* (L. Koch). — Levi and Levi, 1962: figs 333–4 (misidentification; see *Ambicodamus sororius*, sp. nov.); Mascord, 1970: 66, fig. 114 (misidentification; true identification unknown).*Material Examined**Holotype* of *Theridion peregrinum*. ♂ [stated by Walckenaer to be from Rio de Janeiro, Brazil, but presumably from Australia, collected by Freycinet] (MNHP 3425).*Holotype* of *Theridium semiflavum*. ♀, Wollongong, New South Wales, Australia [34°26'S, 150°53'E] [Graeffe] (ZMH, Museum Godeffroy No. 305).*Paratypes* of *Theridium semiflavum*. 1 juv. ♂, same data as holotype (ZMH); 1 juv., same data as holotype (NMV K1020, Museum Godeffroy No. 305).*Syntypes* of *Centropelma bicolor*. 5 specimens, including 2 ♂, 1 ♀, 1 juv., Australia (as New Holland) (SMNS, destroyed, not seen).*Lectotype* of *Ozaleus tarandus*. ♀ (present designation), unknown locality, V. Hasselt (SMNH 223/1347).*Paralectotype* of *Ozaleus tarandus*. 1 ♂, unknown locality, V. Hasselt (SMNH 223/1347) (see *Ambicodamus southwelli*, sp. nov.).

*Other material.* **Australia: Australian Capital Territory:** 2 juvs, Tharwa [35°31'S, 149°04'E], 18.ix.1934, L. G. Webber (ANIC). **New South Wales:** 1 ♂, 1 ♀, Bathurst [33°25'S, 149°35'E], 16.xii.1914 (MCZ); 3 ♀, 1 juv., Broken Hill [31°58'S, 141°27'E] (MCZ); 1 ♂, 1 ♀, 'Calumet', 26 mi NE of Binnaway [31°14'S, 149°33'E], Nov. 1931, A. Musgrave (AM KS22045); 1 ♀, Coolah Valley [31°50'S, 149°43'E], 1935, J. Lecky (AM KS22056); 1 ♂, Engadine [34°04'S, 151°01'E], 15.xii.1957, C. E. Chadwick (AM KS41171 from HC); 2 juvs, Gosford [33°26'S, 151°20'E], 1.x.1914, W. M. Wheeler (MCZ); 6 ♂, 6 ♀, Griffith [34°17'S, 146°02'E], clustered on pine stump, 21.xi.1961, D. Wallin, E. L. Jones (AM KS22057); 1 ♂, 2 ♀, Hartley Vale [33°32'S, 150°14'E], Nov. 1930, H. W. Stein (AM KS32583); 1 ♂, Ilford [32°58'S, 149°51'E], Nov. 1928, R. M. Wilson (AM KS21998); 1 ♂, 2 ♀, Kurnell [34°00'S, 151°13'E], 12.iii.1966, C. E. Chadwick (AM KS22001); 1 ♂, Malabar [33°58'S, 151°14'E], 2.xii.1942, Lieut. Lindsay (AM KS22043); 1 ♂, Mollymook [35°20'S, 150°29'E], 10.ix.1972, Mr Cangland (AM KS22006); 1 ♂, Moss Vale [34°36'S, 150°31'E], 30.xii.1930, White (AM KS21987); 1 ♂, Mt Hope [32°51'S, 145°53'E], 6.ix.1990 (AM KS23575); 1 ♀, Mudgee



**Figs 19–24.** *Nicodamus peregrinus* (Walckenaer). 19–22, male (Nombinnie Nature Reserve, NSW), left pedipalp: 19, prolateral; 20, retralateral; 21, ventral; 22, tibia, dorsal. 23–24, female (Nombinnie Nature Reserve, NSW), epigyne: 23, ventral; 24, dorsal.

[32°36'S, 149°35'E], R. A. Littlejohn (AM KS28809); 1 ♂, Narrabeen [33°43'S, 151°18'E] (AM KS21983); 1 ♂, Narrowallee, near Ulladulla [35°21'S, 150°29'E], Nov. 1969 (AM KS22058); 1 ♂, 1 ♀, Nombinnie Nature Reserve, 10 km SE of Round Hill on Mt Hope–Lake Cargelligo Rd [33°02'S, 146°13'E], 18–22.x.1989, E. Cameron (AM KS22065); 1 ♂ [Royal] Natl Park [34°08'S, 151°04'E], 2.i.1927, G. M. Goldfinch (AM KS21992); 3 ♂, 1 ♀, Wentworth Falls [33°43'S, 150°22'E], W. M. Wheeler (MCZ); 2 ♂, Wheogo, 12 mi N of Dunedoo [31°59'S, 149°24'E], Dec. 1927, A. Musgrave (AM KS21985). **Queensland:** 1 juv. ♀, Cooloola [26°05'S, 153°07'E], wallum scrub, on ground, 24.viii.1970, E. C. Dahms (QM S15357); 1 ♂, Mackay [21°09'S, 149°11'E] (AM KS17524). **South Australia:** 1 ♂, Aberfoyle Park [35°04'S, 138°36'E], 11.i.1993 (SAM N1994183); 1 ♀, Adelaide [34°56'S, 138°36'E], 1935 (SAM N1989444); 1 ♂, 'Ayliffe Hill', Hog Bay Rd, 2 km E of Min Oil Rd, Kangaroo I., 35°45'35"S, 137°35'05"E, 22.xi.1993, B. Overton *et al.* (SAM N1994187); 1 ♂, 1 ♀, Beyeria Conservation Park, Kangaroo I. [35°46'S, 137°35'E], under dry tree stumps, 1.xi.1991, B. M. Overton (SAM N1994184-5); 1 ♂, 1 ♀, between Blanchetown and Waikerie [c. 34°15'S, 139°50'E], 20.ix.1987, P. Dohne (SAM N1989461-2); 2 ♀, Brookfield Conservation Park,

34°21'S, 139°31'E, under rock, 22.xi.1980, T. P. Morley (SAM N1989466-7); 1 ♂, Calca, 33°02'S, 134°22'E, Oct. 1993, L. Bebbington (SAM N1994196); 1 ♂, Caliph, 34°39'S, 140°17'E, Oct. 1950 (SAM 1989460); 1 ♂, Chance's Line (Hd. of Freeling) [35°14'S, 139°08'E], 27.x.1940, C. E. Rix (SAM N1989459); 1 ♀, Chance's Line Reserve [35°14'S, 139°08'E], 12.x.1938, H. Womersley (SAM N1989458); 1 ♀, 4 km SE of Coombool Swamp, Chowilla [33°56'S, 140°55'E], 10.x.1988, S. Lewer (SAM N1989409); 1 ♂, Cowell, 33°41'S, 136°55'E, late 1971, J. Ramsey (SAM N1989472); 1 ♀, Crower, 37°07'S, 140°17'E, 2.vii.1900, E. Feverhardt (SAM N1989440); 1 ♂, 3 ♀, Flinders Chase, Kangaroo I. [35°52'S, 136°42'E], Dec. 1934 (SAM N1989448-51); 2 ♂, Hambridge Reserve, Eyre Peninsula [33°24'S, 135°55'E], Oct. 1966, C. Jaimes (SAM N1989474-5); 1 ♂, 1 km E of Inila Rock Waters, Yumbara Conservation Park, 31°46'46"S, 133°25'53"E, pitfall, 10-15.x.1987, Yellabina Survey (SAM N1989478); 1 ♀, Innes Natl Park, Yorke Peninsula [35°13'S, 136°51'E], under paperbark logs and bark, 6.xi.1976 (SAM N1989469); 2 ♀, same locality, 31.x.1990, R. H. Fischer (SAM N1994188-9); 5 ♀, Kangaroo I. [c. 35°50'S, 137°15'E], Oct. 1925 (SAM N1989452-6); 1 ♂, same locality, Nov. 1975, D. Seton (SAM N1989457); 1 juv. ♂, 1 ♀, SW corner of Kulliparu Conservation Park [c. 33°00'S, 134°55'E], Sept. 1990, S. Lewer, R. Brundle (SAM N1994195); 1 ♂, 1 ♀, 35 km E of Kimba [33°03'S, 136°46'E], web under log in litter, 13.x.1992, AFL (WAM 93/1954-1955); 1 ♀, just N of Koonibba Mission, 31°47'S, 133°20'E, Feb. 1981, R. Sinclair (WARI); 1 ♂, Kyancutta, 33°08'S, 135°33'E, 15.x.1954, N. B. Tindale (SAM N1989473); 1 ♀, 24 mi W of Kychering Soak, Overland Railway [c. 30°37'S, 133°48'E], 28.viii.1909, Mr Chandler (NMV); 1 ♀, 1 juv., Lake Gilles Conservation Park, c. 32°58'S, 136°45'E, 24-25.ix.1988, D. Hirst (SAM N1989551-2); 1 ♀, Lake Newland Conservation Park, 33°24'S, 134°52'E, 1.x.1991, M. Senn (SAM N1994192); 1 ♀, Mantung [34°35'S, 140°05'E], Nov. 1980, S. A. Austin (WARI); 1 ♂, 1 ♀, Meadows, Mt Lofty Ranges, 35°11'S, 138°45'E, Miss Adcock (SAM N1989442-3); 1 ♂, 4 ♀, numerous spiderlings, 3 km S of Mt Sturt, 32°45'S, 135°24'E, at tree base, 13.xii.1989, D. Hirst, J. A. Forrest (SAM N1989600-4); 1 ♂, Nildottie, 34°41'S, 139°39'E, Oct. 1969 (SAM N1989465); 1 ♂, Orroroo [32°44'S, 138°37'E], predacious on *Chortoicetes terminifera*, 22.ii.1955 (WARI); 3 juv. ♂, 1 ♀, Peebinga [34°36'S, 140°55'E], 6-8.x.1990, Strathalbyn Field Nats (SAM N1994182); 1 ♀, Pine Lodge, 32°27'S, 135°21'E, pitfall, Oct. 1985, K. Jordan, C. MacDonald (SAM N1989476); 1 ♂, Piny outstation, 15 mi from Yardea [c. 32°23'S, 135°31'E], Oct. 1971, A. Fischer (SAM N1989477); 1 juv., Point Davenport, Yorke Peninsula [35°10'S, 137°20'E], Aug. 1978, D. Morgan (WARI); 1 ♂, Port Parham Rd, near Dublin, 34°27'S, 138°21'E, 7.xi.1989, L. Keen (SAM N1989568); 1 ♀, 1 juv., near Renmark, Oct. 1969, A. Fischer (SAM N1989463-4); 1 ♂, 2 ♀, Shackel Rd, Kangaroo I. [c. 35°52'S, 136°44'E], 1.xii.1982, J. Thurmer, B. Guerin, D. Lacis (SAM N1989445-7); 2 ♀, edge of Spider Lake, Yorke Peninsula, c. 35°14'S, 136°55'45"E, 14.xii.1990, P. Hudson (SAM N1994190-1); 1 ♀, 2 km E of Streaky Bay [32°48'S, 134°13'E], on rocky knoll, Nov. 1991, L. Bebbington (SAM N1994197) 1 ♂, Swan Reach, 34°34'S, 139°36'E, 1.xi.1987, S. Barnett (SAM N1989468); 1 juv. ♂, Tintinara, 90 Mile Desert, 35°53'S, 140°04'E, 28.x.1906, J. Ran (SAM N1989441); 2 ♂, 5 km WNW of Venus Bay, 33°13'31"S, 134°36'57"E, 30.xi.-4.xii.1992, D. Armstrong, P. Copley, P. Carty (SAM N1994193-4); 1 ♂, 1 ♀, Victoria Park, Moonta, 34°04'S, 137°35'E, under logs, 2.x.1989, D. Hirst (SAM N1989470-1); 1 ♀, West Bay campsite, Kangaroo I. [35°54'S, 136°32'E], 28.ix.1993, S. Langford (SAM N1994186).  
**Victoria:** 1 ♂, 3 km E of Bacchus Marsh [37°41'S, 144°25'E], 20.xii.1983 (NMV); 1 juv., Coleraine [37°36'S, 141°42'E], 19.x.1964 (NMV); 4 juvs, Eynesbury [37°48'S, 144°34'E], sites E1 and E2, 9.x.1992 (NMV); 1 ♂, Goroke [36°43'S, 141°29'E], M. J. Cole (SAM N1989437); 1 juv. ♂, Harrow [37°10'S, 141°35'E], 28.ix.1989, J. Tod (WAM 93/2867); 1 ♂, Hattah Lakes Natl Park, visitors centre [34°46'S, 142°21'E], 20.ix.1989 (NMV); 1 ♀, Horsham [36°43'S, 142°12'E], 21.x.1946 (NMV); 1 juv., Little Desert [c. 36°35'S, 141°45'E], 22.x.1948 (NMV); 1 juv., same locality, 1.xi.1949, A. Burns (NMV); 3 ♀, 6 juvs, same locality, 17-25.x.1952, E. M. (NMV); 1 ♂, Linga near Ouyen [35°10'S, 141°42'E], 26.xi.1913, R. A. McDonald, Mr Wilson (NMV); 1 ♀, Mildura [34°11'S, 142°10'E], Oct. 1950, N. Favoloro (NMV); 1 ♂, 3-3 km N of Millewa South Bore, 34°45'S, 141°04'E, pitfall trap, Nov. 1985, ALY (NMV); 1 ♂, 1 ♀, 7-1 km N of Millewa South Bore, 34°43'S, 141°04'E, pitfall trap, Nov. 1985, ALY (NMV); 1 ♀, 10.5 km N of Millewa South Bore, 34°41'S, 141°04'E, pitfall trap, Oct. 1986, ALY (NMV); 2 ♂, 1 ♀, 12.8 km N of Millewa South Bore, 34°40'S, 141°04'E, pitfall trap, Nov. 1985, ALY (NMV); 4 ♀, 2 juvs, same data except Oct. 1986 (NMV); 2 ♀, 1 juv., 15.4 km N of Millewa South Bore, 34°38'S, 141°04'E, pitfall trap, Oct. 1986, ALY (NMV); 3 ♂, same data except Nov. 1985 (NMV); 1 juv., 21.6 km N of Millewa South Bore, 34°35'S, 141°03'E, pitfall trap, Oct. 1986, ALY (NMV); 1 ♀, 12.3 km SSW of Murrayville P.O., 35°22'S, 141°09'E, pitfall trap, Nov. 1985, ALY (NMV); 1 juv., 13.6 km SSW of Murrayville, 35°23'S, 141°09'E, pitfall trap, Oct. 1986, ALY (NMV); 1 ♀, 6 juvs, 15.9 km SSW of Murrayville, 35°24'S, 141°09'E, pitfall trap, Oct. 1986, ALY (NMV); 2 juvs, 24.9 km SE of Murrayville, 35°24'S, 141°24'E, pitfall trap, Oct. 1986, ALY (NMV); 1 ♂, Perry Tank, Sunset Country [34°54'S, 141°33'E], 13-15.xii.1983, J. Coventry (NMV); 1 ♂, Sandringham [37°57'S, 145°00'E], Sept.

1892 (NMV); 1 ♀, Stawell [37°03'S, 142°47'E], Sept. 1988, D. Smith (SAM N1989436); 1 ♀, 'Sunset Country', Oct. 1974, R. J. P., B. J. S. (NMV); 3 ♀, 'Western District', Nov. 1884 (NMV); 1 ♂, Wyperfeld Natl Park [c. 35°32'S, 141°58'E], 7.xii.1978, G. Daniels (AM KS2332); 1 ♂, 1 ♀, near Wyperfeld Natl Park, 1.xii.1972, A. F. Lees (SAM N1989438-9); 2 juvs, 'mallee', 1986, B. Harvey (NMV); 1 ♂, no further data (NHW); 1 ♀, no further data, E. Reimoser collection (MCZ); 1 ♀, without precise locality data, J. P. Eckert (SAM N1989435). **Insufficient or questionable data:** 2 ♂, 'B'heath', 13.xii.1946 (NMV); 1 ♀, 'Honeysuckle Ck, Fish River', 22.xi.1900, J. A. Thorpe (AM KS21986); 1 ♀, 'New Guinea' (AM KS21999); 11 ♂, 9 ♀, 1 juv., without data (NMV); 2 ♂, without data (AM KS17590).

### *Diagnosis*

Male: retrolateral tibial apophysis with basal flange (Fig. 19); conductor without minute spur (Fig. 20).

### *Description*

#### *Adults (Nombinnie Nature Reserve, NSW)*

Colour: carapace and sternum orange-red; abdomen dark brown, sigilla red-brown, epigastric region, spinnerets and surrounding region orange-red; chelicerae light red-brown, darker distally; legs orange-red, tarsi and distal half of metatarsi brown; the orange-red fades to yellow in preserved material. Carapace with short, stiff setae medially and laterally; clypeus with longer setae; curved setae on anterior median eye mound; fovea broad. Male pedipalp (Figs 19–22): retrolateral tibial apophysis B excavate forming a flange, apophysis A strongly curved; cymbium basally excavate; prolateral tibial apophysis absent; embolus stout, conductor distally bifurcate, without small basal tubercle, median apophysis small, curved. Legs: long and slender; 4123; with scattered spinules. Abdomen with stiff setae, longer dorsally. Epigyne (Figs 23–24) with copulatory ducts small and somewhat triangular, fertilisation ducts stout, spermathecae large and rounded.

*Dimensions* (mm). ♂ (♀), both Nombinnie Nature Reserve, NSW: total length 10.90 (10.50). Carapace 5.40/4.94 (4.78/4.38). Eyes: AME 0.19 (0.17), ALE 0.17 (0.16), PME 0.12 (0.12), PLE 0.12 (0.17), AME-AME 0.15 (0.13), AME-ALE 0.34 (0.24), PME-PME 0.23 (0.21), PME-PLE 0.40 (0.32), PLE-ALE 0.09 (0.08), eye group width 1.41 (1.30), MOQ front width 0.42 (0.42), MOQ back width 0.45 (0.47), MOQ length 0.40 (0.41). Sternum 2.80/2.70 (2.62/2.50). Abdomen 6.91/4.60 (6.70/5.25). Pedipalp: femur 2.70 (2.00), patella 1.02 (0.95), tibia 1.03 (1.21), tarsus 2.00 (1.90), total 6.75 (6.06). Leg I: femur 6.89 (4.58), patella 2.00 (1.75), tibia 7.10 (4.30), metatarsus 6.75 (4.20), tarsus 1.96 (1.41), total 24.70 (16.24). Leg II: femur 5.80 (4.30), patella 2.00 (1.71), tibia 5.50 (3.80), metatarsus 5.08 (3.68), tarsus 1.73 (1.40), total 20.11 (14.89). Leg III: femur 5.00 (3.66), patella 1.71 (1.50), tibia 4.21 (2.73), metatarsus 6.28 (2.89), tarsus 1.54 (1.38), total 18.74 (12.16). Leg IV: femur 8.33 (4.90), patella 2.18 (1.85), tibia 8.49 (4.09), metatarsus 9.87 (4.58), tarsus 2.50 (1.73), total 31.29 (17.15).

### *Remarks*

The original specimen of *Theridion peregrinum* was putatively collected in Rio de Janeiro, Brazil (Walckenaer 1841; Keyserling 1884) by 'M. Freycinet', presumably by Louis Freycinet (rather than his brother Henri) on one of his journeys to the southern continents. Simon (1898) effectively altered the type locality to Australia, presumably because the only similar species then known were found in Australia. Louis Freycinet went ashore at several places in Australia [South Australia: Gulfs region, Kangaroo I.; Western Australia: Albany, Perth/Fremantle, Shark Bay; and New South Wales: Sydney (Marchant 1982)]. Based on the known records of the species (Fig. 25), the specimen could have been collected from the South Australian Gulfs region, Kangaroo I. or Sydney. This specimen, which is here presumed to be the holotype, is in good condition, and is labelled in Simon's handwriting.

The true identity of *Nicodamus bicolor* has been unknown for many years, and a remarkable number of different species have been labelled *N. bicolor* in museum collections.

The type locality was simply given as New Holland [erroneously altered to New Guinea by Lehtinen (1967)], and the types were destroyed during World War II (Lehtinen 1967). The only modern descriptions and figures of material purported to be *N. bicolor* are by Hickman (1967) and Forster (1970) for a Tasmanian species. The original illustration of the male pedipalp (Koch 1872, fig. 6g) clearly shows the characteristic conductor shape and excavate retrolateral tibial apophysis B of *Nicodamus* spp. (Figs 19–20). However, Koch's figure lacks tibial apophysis A, which is presumably the result of an illustrator's error. I have observed that by rotating a pedipalp slightly from a standard position a conformation not dissimilar from Koch's figure was evident. Koch's description also conforms with both species of *Nicodamus* in the large specimen size, especially males; measurements given in Koch (1872) correspond closely with those reported for *Nicodamus* spp. Hence, the original description could fit either of the two *Nicodamus* species recognised here, and without access to type specimens or knowledge of the type locality, I have nominated that the specimens are the eastern Australian species, *N. peregrinus*. Very few collections available to German scientists had been made in Western Australia prior to 1872, and the specimens are unlikely to represent *N. mainae*. Thus, *Centropelma bicolor* is here treated as a synonym of *N. peregrinus*.

Two further species are here considered synonyms of *N. peregrinus*. The holotype of *Theridium semiflavum* L. Koch is clearly a female of *N. peregrinus*. Thorell (1890) apparently based the description of *Ozaleus tarandus* on two specimens housed in SMNH. The female is in good condition, but the distal segments of four legs and of the pedipalps are detached; the male is in poor condition, with most legs detached or missing. As they each represent different species, the female is here designated as the lectotype, which places this species in synonymy with *Nicodamus peregrinus*. The male paralectotype is treated below under *Ambicodamus southwelli*.

The two males of *Theridium semiflavum* reported by Strand (1907) from Sydney could not be located in Zoologische Schausammlung in Tübingen and are presumed lost during World War II (Dr N. Mickoleit, in litt. via Dr B. Baehr). The identification must be considered suspect as five species of nicodamids are now known from the Sydney region, and Strand's description of the pedipalp lacks sufficient detail for recognition.

*Nicodamus peregrinus* is known from mainland eastern Australia as far north as Mackay, Qld, and as far west as Yumbara Conservation Park, SA (see *N. mainae* for a discussion of identification problems and possible overlap zones). The record of *Nicodamus bicolor* from southern New Guinea by Rainbow (1911) is based upon a specimen (AM KS21999) that appears to have been mislabelled (see also *Oncodamus bidens*).

Adults are primarily present during spring and summer (September to March), with a single female recorded in July.

### *Nicodamus mainae*, sp. nov. (Figs 15, 25–31)

*Nicodamus bicolor* (L. Koch). — Simon, 1909: 180 (misidentification, in part; see *Ambicodamus mariae*, sp. nov.); Main, 1977: 106; Browne, 1979: 121–3 (misidentifications).

#### Material Examined

**Holotype.** ♂, base of Mt Cooke, Western Australia, Australia, 32°25'S, 116°18'E, in small web in *Banksia*, 24.xi.1990, M. S. Harvey (WAM 93/1956).

**Paratypes.** **Australia: Western Australia:** 1 ♂, Applecross [31°57'S, 115°51'E], Nov. 1969, F. H. U. Baker (WAM 93/1961); 1 ♂, Ballajura [31°50'S, 115°53'E], 15.xii.1987, R. G. Smith (WAM 93/1960); 1 ♂, Beechboro [31°52'S, 115°56'E], 31.x.1979, C. van Haeften (WAM 93/1962); 1 ♂, Helena Valley [31°56'S, 116°04'E], 22.xi.1977, I. C. McKay (WAM 93/1963); 1 ♀, Mt Cooke, 32°25'S, 116°18'E, in web under leaf of *Banksia*, 1.x.1990, M. S. Harvey, J. M. Waldock (WAM 93/1957); 1 ♀, Mt Cooke, 32°25'S, 116°18'E, 28.xi.1991, on ground, J. M. Waldock, C. A. Car (WAM 93/1959); 1 ♂, Mt Cooke, 32°25'S, 116°18'E, 20.x.1990, J. M. Waldock (WAM 93/1958).

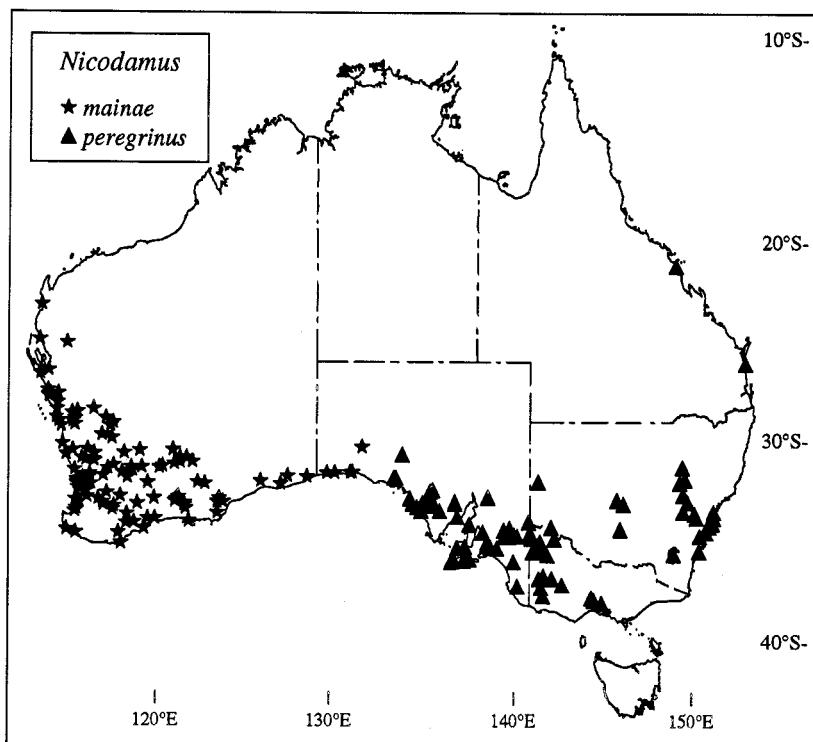


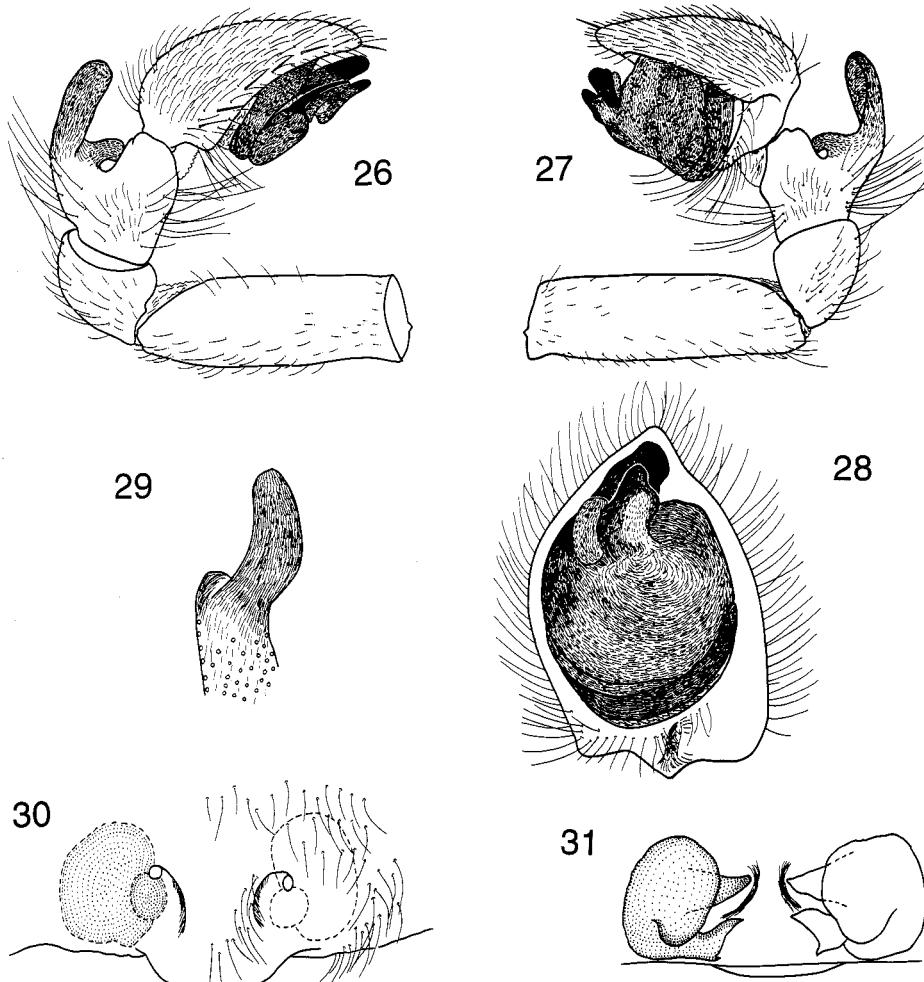
Fig. 25. Australian records of *Nicodamus* species.

*Other material.* **Australia: South Australia:** 1 ♀, Koomla Booka (probably Koomooloobooka Cave, 31°29'S, 129°35'E), 10.i.1960, P. Aitken (SAM N1989488); 1 juv. ♂, Maralinga, 30°12'35"S, 131°31'15"E, pitfall, 10–15.x.1989, Yellabina Survey (SAM N1989479); 1 ♀ (with egg-sac), 80 km W of Nullarbor Station, 31°28'S, 130°02'E, under rock, 10.iii.1979, MRG (AM KS14999); 1 ♂, 1 ♀, Nullarbor Road House [31°27'S, 130°52'E], 25.ix.1993, M. Tio (AM KS37080); 1 ♀, 3 juvs, White Wells Cave, 10 km E of Nullarbor Motel [31°26'S, 130°59'E], under sheets of iron at ruin, 30.viii.1980, J. A. Forrest (SAM N1989480-3); 1 ♂, 3 ♀, 'S.W of S.A.', Jan. 1957, C. E. G. Nullarbor Cave Expedition (SAM N1989484-7). **Western Australia:** 1 ♂, 2.5 km NE of Augusta, 34°18'S, 115°11'E, 28.xi.–2.xii.1985, G. A. Harold (WAM 93/2658); 1 ♀, Australind, 33°17'S, 115°42'E, 31.viii.1992, moulted to maturity 17.ix.1992, M. Templar (WAM 93/2659); 2 ♂, same data except 18.xii.1992 (WAM 93/2663-4); 2 ♂, 1 ♀, same data except 3.xii.1992, KL (WAM 93/2660-2); 1 ♀, Badgingarra [30°24'S, 115°33'E], 9.x.1964, G. E. Lange (WAM 93/2665); 1 ♀, Balcatta [31°53'S, 115°49'E], 29.xii.1926, W. S. Brooks (MCZ); 1 ♂, 1 ♀, 68 km S of Balladonia [c. 32°56'S, 123°50'E], 3.x.1983, B. Guerin (SAM N1994198-9); 1 ♀, Bayswater [31°57'S, 115°51'E], 8.xii.1964, J. Queen (WAM 93/2666); 1 ♂, Binnu [28°02'S, 114°40'E], 15.xii.1964, M. de Graaf (WAM 93/2667); 1 juv., 51 km N of Binnu [c. 27°34'S, 114°42'E], 29.v.1988, M. Peterson (WAM 93/2668); 2 ♂, 13 km ESE of Black Point, 34°27'S, 115°41'E, 3–8.xii.1985, G. A. Harold (WAM 93/2669-70); 1 ♂, Bonnie Rock [30°32'S, 118°22'E], mulga-eucalypt, 4–7.xi.1964, A. Cottrell (MCZ); 1 ♀, 2 juvs, Booanya [32°46'S, 123°36'E], Feb. 1932, A. E. Baessou (NMV); 2 juvs, Boorabbin, 31°13'S, 120°19'E, July 1980, W. F. Humphreys (WAM 93/2671-2); 20 juvs, Boorabbin [31°13'S, 120°19'E] (ZMH); 1 ♂, Bulong, 30°45'S, 121°48'E, 2.xii.1930, Miss Jones (WAM 30/890); 1 ♂, Bunbury, Dec. 1976, C. Howlett (WAM 93/2673); 1 ♂, 1 ♀, Burbanks, 31°02'S, 121°08'E, 5.x.1934, Mr McKenzie (WAM 34/2997-8); 1 ♂, 10 ♀, many spiderlings, Burnerbinmah Station [28°47'S, 117°22'E], 14.x.1968, D. Craven (WAM 93/2674-84); 1 ♂, 8 mi E of Cadge R., A. R. Main (WAM 93/2685); 2 juv. ♀, Canning Well, July 1988, B. Harvey (NMV); 1 ♂, Carlisle [31°59'S, 115°54'E], 13.xi.1929, P. Wroth (WAM 29/1391); 1 ♀, Carnarvon [24°53'S, 113°40'E], 11.x.1978, J. Geary (WAM 93/2686); 2 ♂, Carnarvon, 24°53'S, 113°40'E, from plantation, 16.viii.1993, M. Mahoney (WAM 93/2688-9); 1 ♂, Carnarvon area

[c. 24°53'S, 113°40'E], 20.ix.1991, per Dept. of Agriculture (WAM 93/2687); 1 ♂, Charles Gardner Reserve, 16 km S of Tammin [31°18'S, 117°29'E], 18.ix.1984, F. H. U. Baker (WAM 93/2690); 1 juv., Clackline Nature Reserve [31°43'S, 116°30'E], 8.ix.1985, O. Mueller (WAM 93/2691); 1 juv., Cloverdale [32°57'S, 117°12'E], 27.ix.1964, R. Castle (WAM 93/2692); 1 ♂, 1 ♀, Coalseam Natl Park, 28°58'S, 115°32'E, 25.x.1990, AFL (WAM 93/2693-4); 1 ♀, 9 mi S of Cocklebiddy [31°53'S, 125°54'E], under rock, 3.i.1972, MRG (AM KS22000); 1 ♂, Coolbellup [32°05'S, 115°49'E], 24.xi.1982, D. J. Dewar (WAM 93/2695); 1 juv., 11 km W of Coolgardie, 28.ix.1993, R. Edwards (WAM 93/2698); 1 ♀, Coragine Rock, 32°55'S, 123°30'E, under granite slabs in open exfoliated slopes, 7.x.1994, I. Johnson (WAM 94/1924); 2 juvs, Coral Bay, 23°08'S, 113°46'E, 12.v.1990, AFL (WAM 93/2699-700); 1 ♂, same data except under log in dunes, 24.vii.1994 (moulted ix.1994) (WAM 94/1931); 2 ♀, Culcurdo Dam [27°25'S, 114°08'E], 29.xi.1968, Hale School (WAM 93/2696-7); 1 ♀, Cunderdin [31°39'S, 117°14'E], 21–24.ix.1974, A. M. and M. J. Douglas (WAM 93/2701); 1 ♂, Damboring Lake, 30°33'S, 116°43'E, 9.ix.1989, D. Mead-Hunter (WAM 93/2702); 1 ♀, Darkin R., 1 km E of Yarra Rd, 32°04'S, 116°26'E, under rock, 4.x.1992, matured 6.x.1992, JMW (WAM 93/2704); 1 ♂, Darlington [31°55'S, 116°04'E], 1968, G. H. Lowe (WAM 93/2705); 1 ♀, same data except 8.x.1976, S. Crawford (WAM 93/2706); 1 juv. ♀, same data except 450 ft [= 137 m], 5.ix.[19]62, ESR, DQC (CAS); 1 juv., Dongolocking Reserve [33°09'S, 117°47'E], 12.viii.1975, B. R. Wilson (WAM 93/2707); 1 ♀, Dryandra, 32°47'S, 116°55'E, at base of tree, 24.x.1987, JMW (WAM 93/2708); 1 ♂, Dumbleyung, 33°19'S, 117°44'E, 1.xii.1934, G. James (WAM 34/3481); 1 ♂, Esperance [33°52'S, 121°54'E], 11.xi.1987, AFL (WAM 93/2710); 1 ♂, same data except 5.xii.1990, B. Grieves (WAM 93/2711); 1 juv., same data except 9.ix.1984, D. Mead-Hunter (WAM 93/2709); 1 ♀, Floreat Park [31°57'S, 115°51'E], 11.xi.1968, R. B. Humphries (WAM 93/2712); 1 ♂, Forrestfield [32°00'S, 115°58'E], 27.xi.1972, Agriculture Protection Board (WAM 93/2713); 1 ♂, Fossil Cliff, Irwin River district [28°58'S, 115°32'E], 11.x.1970, P. G. Kendrick (WAM 93/2714); 1 juv., Fowlers Gully, Wongan Hills [30°51'S, 116°38'E], 21.ix.1974, B. Y. Main (WAM 94/1915); 1 ♂, Fraser Ranges [32°02'S, 122°48'E], Elder Explor. Expedition (BMNH 1924.III.1-855); 1 ♀, Fraser Ranges [32°02'S, 122°48'E], Elder Expedition (SAM N1989489); 1 ♂, Gelorup [33°23'S, 115°39'E], KL (WAM 93/2715); 1 ♂, Geraldton, 28°46'S, 114°37'E, 18.x.1934, E. Clarkson (WAM 34/3205); 1 ♂, same data except 23.x.1968, B. Schleicher (WAM 93/2716); 1 ♂, same data except 27.x.1992, M. Canfield (WAM 93/2720); 1 ♂, 4 ♀, 1 juv., same data except 2.x.1899, A. M. Lea (AM KS22012); 1 ♂, same data except 8.x.1931, Darlington (MCZ); 1 ♂, 1 ♀, 1 juv., Geraldton [28°46'S, 114°37'E] (MCZ); 1 ♀, 2 juvs, Geraldton, Spalding Park, 28°46'S, 114°37'E, 3–5.ix.1992, K. Aplin (WAM 93/2717-9); 1 ♂, Gidgegannup [31°48'S, 116°11'E], 24.x.1976, R. D. Royce (WAM 93/2721); 2 juvs, Gosnells [32°05'S, 116°00'E], 26.ix.1925, D. L. Madigan (WAM 25/726-7); 1 ♂, Grasspatch [33°14'S, 121°44'E], April 1984, AFL (WAM 93/2722); 1 ♂, same data except 13.xi.1991, V. J. Longbottom (WAM 93/2723); 1 ♂, same data except 9.xii.1992, AFL (WAM 93/2724); 1 juv., Great Eastern Hwy at 301 mi peg [c. 31°10'S, 120°28'E], 11.vi.1963, G. F. Mees (WAM 93/2725); 1 juv., 10 km E of Greenhead, 30°04'S, 114°58'E, 31.viii.1982, R. P. McMillan (WAM 93/2726); 4 juvs, Greenough, 28°57'S, 114°44'E, 25–31.viii.1979, R. P. McMillan (WAM 93/2730-3); 1 ♀, 2 juvs, Greenough Crossing, Gascoyne Junction [25°03'S, 115°13'E], 27.viii.1966, R. Humphries (WAM 93/2727-9); 1 ♂, 12 km E of Guilderton [31°21'S, 115°38'E], 25.xi.1985, V. R. Sinclair (WAM 93/2738); 1 juv., Hamelin Pool [26°25'S, 114°10'E], 30.viii.1976, T. Crawford (WAM 93/2772); 1 ♂, Highbury [33°04'S, 117°14'E], under granite rock, 17.ix.1974, G. Warren (WAM 93/2773); 1 ♂, Jerramungup [33°57'S, 118°54'E], 18.ix.1988, R. Cox (WAM 93/2775); 1 juv., N of Jerramungup [c. 33°57'S, 118°54'E], 9.vii.1963, A. Robinson (WAM 93/2774); 1 ♀, John Forrest Natl Park [c. 31°54'S, 116°07'E], G. H. Lowe (WAM 93/2776); 1 ♂, Kalbarri, 27°43'S, 114°10'E, in motel, 24.x.1992, E. D. Edwards, E. S. Nielsen (ANIC); 1 ♀, 1 juv., Kalbarri area, c. 27°43'S, 114°10'E, 5–17.ix.1977, L. E. Koch (WAM 93/2781-2); 1 juv., same data except 1–8.ix.1976 (WAM 93/2779); 1 ♂, same data except 10–17.xii.1976 (WAM 93/2780); 1 ♀, same data except 6–13.ix.1980 (WAM 93/2783); 1 ♂, Kalbarri Natl Park, toll on loop road, 27°41'S, 114°16'E, 25.x.1992, E. D. Edwards, E. S. Nielsen (WAM 93/2784); 1 ♂, Kalgoorlie [30°45'S, 121°28'E], 1974, T. Crawford (WAM 93/2769); 2 ♂, 20 km S of Kalgoorlie, 30°58'S, 121°28'E, Oct. 1991, G. Harold (WAM 94/369-370); 1 juv., 80 km W of Kalgoorlie, c. 30°56'S, 122°08'E, June 1992, N. Creswell (WAM 93/2768); 2 ♂, 2 ♀, 1 juv., Kulin, 32°40'S, 118°09'E, Aug. 1971, Mrs Giles (WAM 89/459-463); 1 juv., Lake Clifton [32°49'S, 115°41'E], 25.ix.1982, T. Annear (WAM 93/2770); 1 ♂, between Lake Cronin and Parker Range [c. 32°00'S, 119°40'E], running on surface before rain storm, 6.xi.1979, BYM (WAM 93/2771); 1 ♀, c. 10 km SW of Little Darkin Swamp, 32°07'S, 116°20'E, in web beside rock, 29.ix.1991, JMW (WAM 93/2703); 4 juvs, Lucy Beach, Greenough [28°56'S, 114°44'E], 27.ix.1979, R. P. McMillan (WAM 93/2734-7); 1 ♀, about 17 mi N of scarp and 25 mi E of Madura [c. 31°39'S, 127°25'E], under rocks, 5.xii.1969, M. Archer, B. Muir (WAM 93/2801); 1 ♂, Mahogany Ck [31°54'S, 116°08'E], 17.xi.1980, S. Podmore (WAM 93/2802); 1 juv., McDermid Rock, 32°45'S, 120°01'E, July 1979, R. A.

How (WAM 93/2803); 1 juv., Merredin [31°29'S, 118°16'E], 9.vi.1969, L. E. Koch, D. D. Giuliani (WAM 93/2804); 7 ♀, 10 mi N of Miling [30°21'S, 116°22'E], under log, 23.xi.1974, A. Page (WAM 93/2805-11); 1 ♂, NE of Mingenew, near Nanekine Rd, 29°07'S, 115°38'E, 28.ix.1992, JMW (WAM 93/2812); 1 ♀, c. 15 km S of Moora [30°46'S, 116°02'E], 21.ix.1994, moulting to adulthood Oct. 1994, J. McRae (WAM 94/1932); 1 ♀, base of Mt Cooke, 32°25'S, 116°18'E, 29.ix.1990, JMW (WAM 93/2815); 1 juv., same data except 14.ix.1990 (WAM 93/2814); 1 ♂, c. 30 km NE of Mt Dale, 32°03'S, 116°33'E, under granite rock, 3.x.1992, moulting 25.x.1992, JMW (WAM 93/2816); 1 ♀, 3 mi SW of Mt Gibson turnoff on Wubin/Paynes Find Rd, 29°37'S, 117°08'E, 4.ix.1967, BYM (WAM 94/9); 1 juv., Mt Jackson, 30°24'S, 119°13'E, Sept. 1979, R. A. How (WAM 93/2817); 1 ♀, Mt Ragged [33°27'S, 123°29'E], 21.x.1968, S. B. Bennet (WAM 93/2818); 1 ♀, 5 km NW of Mt Wells, 32°42'S, 116°20'E, 1.x.1989, J. Crawford (WAM 93/2819); 1 ♂, Mt Yokine [31°54'S, 115°51'E], 22.v.1968, W. Lynch (WAM 93/2820); 1 ♀, Mullamullang, 24.x.1966, J. Lowry (WAM 93/2785); 3 juvs, same data except 28.viii.-2.ix.1966 (WAM 93/2786-8); 1 ♀, Mullewa [28°32'S, 115°30'E], F. May (SAM N1989490); 2 ♀, 1 juv., same data except 15.ix.[19]31, R. Ellis (MCZ); 1 juv. ♂, 3 ♀, Mundaring [31°54'S, 116°10'E], 1971, J. Springett (AM KS22026); 1 juv., Mundijong [32°18'S, 115°59'E], Stat. 127, 21.ix.1905, Michaelsen and Hartmeyer (WAM 11/4310); 1 ♂, 1 ♀, Muntadgin [31°45'S, 118°33'E], 19.x.1964, J. Hore (WAM 93/2789-90); 1 ♂, Murchison House Station, 27°38'S, 114°15'E, 5.x.1993, K. Brimmell (WAM 93/2793); 1 ♂, Murchison House Station, Tutula Paddock, 27°37'44"S, 114°11'10"E, in fox skull, 7.viii.1994 (moulting to maturity Sept. 1994), A. Baynes, S. Wellington (WAM 94/1930); 1 ♂, 1 ♀, 1 juv. ♂, Murchison House Station, slopes 1 km NW of Thirnidine Point, 27°36'17"S, 114°14'16"E, 8.viii.1994, A. Baynes (WAM 94/1927-9); 2 juv. ♂, valley of Murchison R., 6 km upstream of Murchison Homestead [27°37'S, 114°17'E], 17.vii.1992, G. W. Kendrick (WAM 93/2791-2); 1 ♂, 12 km NE of Newdegate, 33°00'S, 119°06'E, 22.viii.1992, matured 10.x.1992, G. A. Harold (WAM 93/2794); 1 juv., 7 mi N of New Norcia [30°52'S, 116°15'E], 10.vii.1965, R. Humphries (WAM 93/2795); 1 ♂, Nollamara [31°53'S, 115°51'E], 22.xi.1967, S. Dennis (WAM 93/2796); 1 juv., 116 km E of Norseman [33°04'S, 121°40'E], 10.ix.1984, D. Mead-Hunter (WAM 93/2868); 1 ♂, North Beach [31°52'S, 115°45'E], 24.xi.1976, B. Cowdry (WAM 93/2797); 1 ♂, North Fremantle, 32°02'S, 115°45'E, 19.xii.1935, M. Paton (WAM 35/3368); 1 ♂, 1 juv. ♂, Northampton [28°21'S, 114°38'E], 15.x.1957, V. M. Reilly (AM KS41170 from HC); 2 juvs, North Irwin R. [c. 28°50'S, 115°38'E], 13-14.vii.1968, L. V. Shields (WAM 93/2798-9); 1 juv. ♂, Nullarbor area, Cave 6N-747, Fern Cave doline, on web on floor of doline, 2.x.1994, R. Foulds (WAM 94/1926); 1 juv., Nullarbor area, Cave 6N-3, Abrakurrie Cave [31°40'S, 128°28'E], under rock in doline, twilight zone, 30.ix.1994, R. Foulds (WAM 94/1925); 1 juv., S of Nurina Cave (6N-46) [c. 32°02'S, 127°01'E], beneath rocks, 3.ix.1985, B. Knott (WAM 93/2800); 1 ♀, Ongerup, 33°58'S, 118°29'E, in wheat bin, 29.v.1991, T. MacMahon (WAM 93/2821); 1 juv. ♀, Ora Banda, 30°22'S, 121°03'E, 19.vii.1993, L. E. Anderson (WAM 93/2822); 1 juv., Orelia [32°14'S, 115°49'E], 20.ix.1978, P. Langford (WAM 93/2823); 1 ♂, Parkerville [31°53'S, 116°08'E], Sept. 1975-Jan. 1976, R. Browne (WAM 93/2825); 1 ♀, 8 mi from Paynes Find on Yalgoo Rd [29°10'S, 117°37'E], 3.ix.1967, BYM (WAM 93/2824); 1 ♀, 17 mi N of Paynes Find [c. 29°02'S, 117°45'E], 400 m, 3.x.1962, ESR, DQC (CAS); 1 ♀, 46 mi S of Paynes [Find] [c. 29°48'S, 117°42'E], 29.ix.1972, F. H. U. Baker (WAM 93/2826); 1 ♂, Peak Charles, 32°53'S, 121°10'E, 27.xi.1986, BYM (WAM 94/371); 1 ♂, 8 km N of Peak Charles turnoff, 8.5 km SW of Moir Rock [32°42'S, 121°21'E], pitfall trap, 19-27.xi.1986, BYM (WAM 94/372); 1 ♂, 12.9 km NE of Peak Charles [32°47'S, 121°15'E], pitfall trap, 27.xi.1986, BYM (WAM 94/373); 1 ♂, Perth, 31°57'S, 115°51'E, Nov. 1930, A. Lewis (WAM 30/834); 1 ♀, Phillips R., 12 km W of Ravensthorpe, 17.i.1977, G. Barron (WAM 93/2827); 1 ♀, Pindar [28°29'S, 115°47'E] (WAM 26/641); 1 juv., Pingrup [33°32'S, 118°31'E], 11.x.1988, J. Vann (WAM 93/2828); 1 ♂, northern edge of the Pinnacles Desert, 30°36'S, 115°10'E, 25.viii.1991, matured 24.ix.1991, JMW (WAM 93/2829); 1 ♂, 18 km S of Ravensthorpe [33°45'S, 120°03'E], 4.xi.1993, G. Harold (WAM 94/1509); 1 juv. ♂, 1 ♀, 50 mi E of Ravensthorpe [c. 33°45'S, 119°40'E], 70 m, 23.ix.1962, ESR, CQC (CAS); 2 juvs, Red Bluff, Kalbarri [27°44'S, 114°14'E], 21.viii.1971, B. Bellairs (WAM 93/2777-8); 1 ♂, Rossmoyne [32°02'S, 115°46'E], 31.x.1969, J. Fleay (WAM 93/2830); 1 ♂, Salmon Gums, 32°59'S, 121°39'E, 12.xii.1934, A. K. Brown (WAM 34/3703); 1 ♂, same data except 3.xi.1984, AFL (WAM 93/2831); 2 ♂, Sanford Rocks [31°14'S, 118°46'E], 6.ix.1975, BYM (WAM 93/2832-3); 1 ♂, 2 ♀, 1 km inland of Seven Mile Beach, 29°11'S, 114°53'E, 9.xi.1991, K. Aplin (WAM 91/1599-1601); 1 ♂, Southern Cross [31°14'S, 119°19'E], 21.x.1974, T. J. McManus (WAM 93/2834); 2 ♂, 3 ♀, 30 mi E of Southern Cross [c. 31°23'S, 118°50'E], 350 m, 16.ix.1962, ESR, DQC (CAS); 1 ♂, South Perth [31°59'S, 115°52'E], 26.xi.1980, C. Chambers (WAM 93/2835); 1 ♂, Stoneville, Hawdon Rd, 31°53'S, 116°10'E, 15.xii.1990, H. Saeger (WAM 93/2836); 2 ♀, Swan R. [c. 31°45'S, 116°04'E], 2.x.1899, A. M. Lea (AM KS22011); 1 ♂, 10 km N of Tamala Homestead [c. 26°36'S, 113°43'E], 3.x.1988, D. Knowles (WAM 93/2837); 1 juv., Toodyay [31°33'S, 116°28'E], 4.ix.1963, G. Riley, M. Walters (WAM 93/2838); 2 ♂, 10 km S of Toolbrunup, Stirling Ranges Natl Park, 34°28'S, 118°02'E, 29.xi.1990, G.

Friend, G. Hall, D. Mitchell (WAM 93/2839-40); 1 ♂, same data except 30.xi.1991 (WAM 93/2841); 1 ♂, Toolonga Hill, Murchison House Station [27°35'S, 114°15'E], 5–9.x.1993, A. Baynes, K. Brimmell (WAM 93/2842); 1 ♂, Trayning [31°07'S, 117°47'E], Oct. 1975, J. H. Riley (WAM 93/2843); 1 juv., same data except 20.viii.1989, A. Dugand (WAM 93/2844); 1 ♀, same data except July 1992 (WAM 93/2845); 1 ♂, Two Peoples Bay [34°57'S, 118°11'E], G. Smith (WAM 93/2850); 1 ♂, Tutanning Nature Reserve, 32°31'S, 117°23'E, 22.ii.1989, G. Friend, D. Mitchell (WAM 93/2847); 1 ♂, same data except 15.xi.1990 (WAM 93/2848); 1 ♂, same data except 24.xi.1987 (WAM 93/2846); 1 ♂, same data except 7.xi.1991 (WAM 93/2849); 1 ♂, Wembley [31°56'S, 115°48'E], 14.xi.1964, B. J. Hogan (WAM 93/2851); 1 ♀, West Mt Barren [34°13'S, 119°26'E], 15.x.1974, B. Wilson (WAM 93/2813); 1 ♂, Wireless Hill, 33°53'S, 121°54'E, 2.xii.1990, A. E. de Jong (WAM 93/2852); 1 juv., Wongan Hills region [c. 30°54'S, 116°43'E], 5.vi.1977, R. Mercer (WAM 94/1916); 3 ♂, Woodline, 31°57'S, 122°24'E, 11–17.xi.1978, WAM Biol. Survey (WAM 93/2856-8); 8 juvs, same data except Aug. 1980, W. F. Humphreys *et al.* (WAM 93/2859-66); 3 ♂, same data except WAM Biol. Survey (WAM 93/2853-5); 2 ♂, Yalgoo, 28°21'S, 116°41'E, 28.x.1932, V. Walker (WAM 32/2293-4); 1 ♂, Yarloop [32°57'S, 115°54'E] (WAM 26/762).



**Figs 26–31.** *Nicodamus mainae*, sp. nov. 26–29, male holotype, left pedipalp: 26, prolateral; 27, retrolateral; 28, ventral; 29, tibia, dorsal. 30–31, female paratype (Mt Cooke, WA), epigyne: 30, ventral; 31, dorsal.

### *Diagnosis*

Male: retrolateral tibial apophysis without basal flange (Fig. 26); conductor with small spur (Fig. 27).

### *Description*

#### *Adult (Mt Cooke, WA)*

Colour: carapace and sternum orange-red; abdomen dark brown, sigilla red-brown, epigastric region, spinnerets and surrounding region orange-red; chelicerae light red-brown, darker distally; legs orange-red, tarsi and distal half of metatarsi brown; the orange-red fades to yellow in preserved material. Carapace with short, stiff setae medially and laterally; clypeus with longer setae; curved setae on anterior median eye mound; fovea broad. Male pedipalp (Figs 26–29): retrolateral tibial apophysis B excavate, without basal flange, apophysis A strongly curved; cymbium basally excavate; prolateral tibial apophysis absent; embolus stout, conductor distally bifurcate, with small basal tubercle, median apophysis small, curved. Legs: long and slender; 4123; with scattered spinules. Abdomen with stiff setae, longer dorsally. Epigyne (Figs 30–31) with copulatory ducts somewhat triangular, fertilisation ducts stout, spermathecae large and rounded.

*Dimensions (mm).* Holotype ♂ (paratype ♀ Mt Cooke, WA): total length 8.91 (10.15). Carapace 4.20/3.79 (4.68/4.32). Eyes: AME 0.15 (0.14), ALE 0.12 (0.16), PME 0.10 (0.11), PLE 0.13 (0.13), AME–AME 0.10 (0.15), AME–ALE 0.29 (0.32), PME–PME 0.15 (0.20), PME–PLE 0.34 (0.40), PLE–ALE 0.07 (0.09), eye group width 1.19 (1.39), MOQ front width 0.35 (0.41), MOQ back width 0.38 (0.41), MOQ length 0.36 (0.37). Sternum 2.33/2.08 (2.60/2.40). Abdomen 5.30/3.71 (7.38/4.98). Pedipalp: femur 2.20 (1.92), patella 0.91 (0.98), tibia 0.80 (1.31), tarsus 1.69 (1.87), total 5.60 (6.08). Leg I: femur 5.22 (4.30), patella 1.52 (1.68), tibia 5.49 (4.09), metatarsus 5.31 (3.78), tarsus 1.68 (1.30), total 19.22 (15.15). Leg II: femur 4.35 (4.03), patella 1.49 (1.61), tibia 4.10 (3.52), metatarsus 3.96 (3.41), tarsus 1.33 (1.47), total 15.23 (14.04). Leg III: femur 6.08 (3.35), patella 1.64 (1.48), tibia 3.04 (2.70), metatarsus 3.08 (2.88), tarsus 1.25 (1.25), total 15.09 (11.66). Leg IV: femur 6.10 (4.52), patella 1.60 (1.68), tibia 6.01 (3.78), metatarsus 7.00 (4.30), tarsus 1.89 (1.58), total 22.60 (15.86).

### *Remarks*

*Nicodamus mainae* is very similar to *N. peregrinus*, but males differ in the shape of the retrolateral tibial apophysis and in the presence of a conductor spur. Specimens from Western Australia attributed to *N. bicolor* by Simon (1909) clearly belong to this species.

*Nicodamus mainae* is widespread in Western Australia from Coral Bay in the north, and east to the Nullarbor Plain. As females and juveniles of *N. mainae* and *N. peregrinus* are indistinguishable, caution must be exercised in deducing full distributions of each species which approach each other on the Nullarbor Plain (Fig. 25). Female and juvenile specimens were considered conspecific if found in localities adjacent to or situated between conspecific male-based records. Males of *N. peregrinus* are currently known from as far west as Yumbara Conservation Park, SA, while those of *N. mainae* have been found east to Nullarbor Road House, SA. These two localities are about 270 km apart, and the detailed analysis of any overlap zone between these two species on the Nullarbor Plain may provide important data on speciation patterns within the family.

Adults have been collected mostly during spring and summer (September to February), with sporadic records from several other months. A male was found feeding on emerging castniid moths in Kalbarri Natl Park (E. S. Nielsen, personal communication).

### *Etymology*

This species is named for Barbara York Main in recognition of her distinguished contributions to arachnology.

### Genus *Durodamus*, gen. nov.

Type species: *Durodamus yeni*, sp. nov.

#### *Diagnosis*

Male: abdomen with punctate dorsal scute; median apophysis lamellate; apophyses of tibial apophysis B slender. Female: epigyne with lateral indentations; copulatory opening on externo-median face, somewhat posterior; copulatory ducts straight, postero-medially directed.

#### *Remarks*

This monotypic genus possesses a number of autapomorphies that clearly separate it from all other nicodamids, including the male dorsal scute, the nature of the median apophysis, and the lateral indentations of the epigyne.

#### *Etymology*

The generic name refers to the male dorsal scute (*duro* Latin, hardened) and *Nicodamus*. Gender: masculine.

#### *Included Species*

*Durodamus yeni*, sp. nov.

### *Durodamus yeni*, sp. nov.

(Figs 32–38)

#### *Material Examined*

**Holotype.** ♂, 10.4 km NW of junction of Murray Valley Hwy and Annuello Rd, Victoria, Australia, 34°46'S, 142°31'E, pitfall trap, Oct. 1985, A. L. Yen (NMV K3079).

**Paratypes.** **Australia: Victoria:** 12 ♂, 2 ♀, same data as holotype (NMV K3079); 4 ♂, 1 ♀, same data as holotype (WAM 93/1879-1883); 13 ♂, 1 ♀, same data except Sept. 1986 (NMV K3080); 21 ♂, 2 ♀, 9.7 km NW of junction of Murray Valley Hwy and Annuello Rd, 34°46'S, 142°32'E, pitfall trap, Oct. 1985, A. L. Yen (NMV K3081); 3 ♂, same data except May 1986 (NMV K3082); 20 ♂, same data except Sept. 1986 (NMV K3083); 4 ♂, same data (WAM 93/1875-1878).

**Other material.** **Australia: Queensland:** 2 ♀, Dulacca [26°39'S, 149°46'E], 6.viii.1939, R. Young (QM S19722); 3 ♂, 1 ♀, Rosebank Station, 7 km S of Longreach [23°30'S, 144°15'E], under rocks, Mitchell grass plain, 15.vii.1988, L. N Nicolson (SAM N1989564-7). **South Australia:** 1 ♂, 1 ♀, 5.5 km WSW of Balcanoona Homestead, Gammon Ranges 30°34'S, 139°15'E, 22.ix.1989, NCS Survey (SAM N1994175, N1994203); 1 ♀, Cannuwaikaninna Bore, Etadunna Station 28°48'S, 138°33'E, 13–14.x.1972, M. Archer, M. Woodbourne (WAM 93/1949); 1 ♀, Chowilla [34°01'S, 140°50'E], southern edge of gum flat, 10.x.1988, S. Lewer (SAM N1988408); 1 ♀, Coopers Ck between Kirrakirinna Waterhole and Lake Warrawarrinna [28°32'S, 138°50'E], 3–6.x.1989, ANZSES Survey (SAM N1994173); 1 ♂, adjacent to Embarbia Swamp, Coopers Ck, 27°43'S, 140°08'E, Sept. 1983, B. Guerin (SAM N1994172); 1 ♂, Etadunna Airstrip, 28°43'S, 138°38'E, 5.x.1989, J. Reynolds (SAM N1994174). **Victoria:** 1 ♀, 8.2 km N of Cullulleraine, 34°12'S, 141°36'E, pitfall trap, Nov. 1985, ALY (NMV); 6 ♂, 1 juv., same data except June 1986 (NMV); 9 ♂, 5 ♀, same data except Oct. 1986 (NMV); 1 ♂, 8.8 km N of Cullulleraine, 34°12'S, 141°35'E, pitfall trap, Nov. 1985, ALY (NMV); 1 ♂, 1 ♀, same data except June 1986 (NMV); 1 ♂, same data except Oct. 1986 (NMV); 1 ♀, 3.4 km SSE of confluence of Lindsay R. and Mullaroo Ck, 34°09'S, 141°08'E, pitfall trap, Oct. 1987, ALY (NMV); 7 ♂, 7.7 km ENE of confluence of Lindsay R. and Mullaroo Ck, 34°07'S, 141°12'E, pitfall trap, June 1986, ALY (NMV); 1 ♀, 9.2 km SSE of confluence of Lindsay R. and Mullaroo Ck, 34°12'S, 141°10'E, pitfall trap, Oct. 1986, ALY (NMV); 1 ♀, 12.1 km ESE of confluence of Lindsay R. and Mullaroo Ck, 34°09'S, 141°15'E, pitfall trap, Nov. 1985, ALY (NMV); 1 ♂, same data except Oct. 1986 (NMV); 1 juv., 3.2 km ESE of Meringur, 34°24'S, 141°22'E, pitfall trap, June 1986, ALY (NMV); 1 juv. ♂, 10.4 km NW of junction of Murray Valley Hwy and Annuello Rd, 34°46'S, 142°31'E, pitfall trap, Jan. 1986, ALY (NMV).

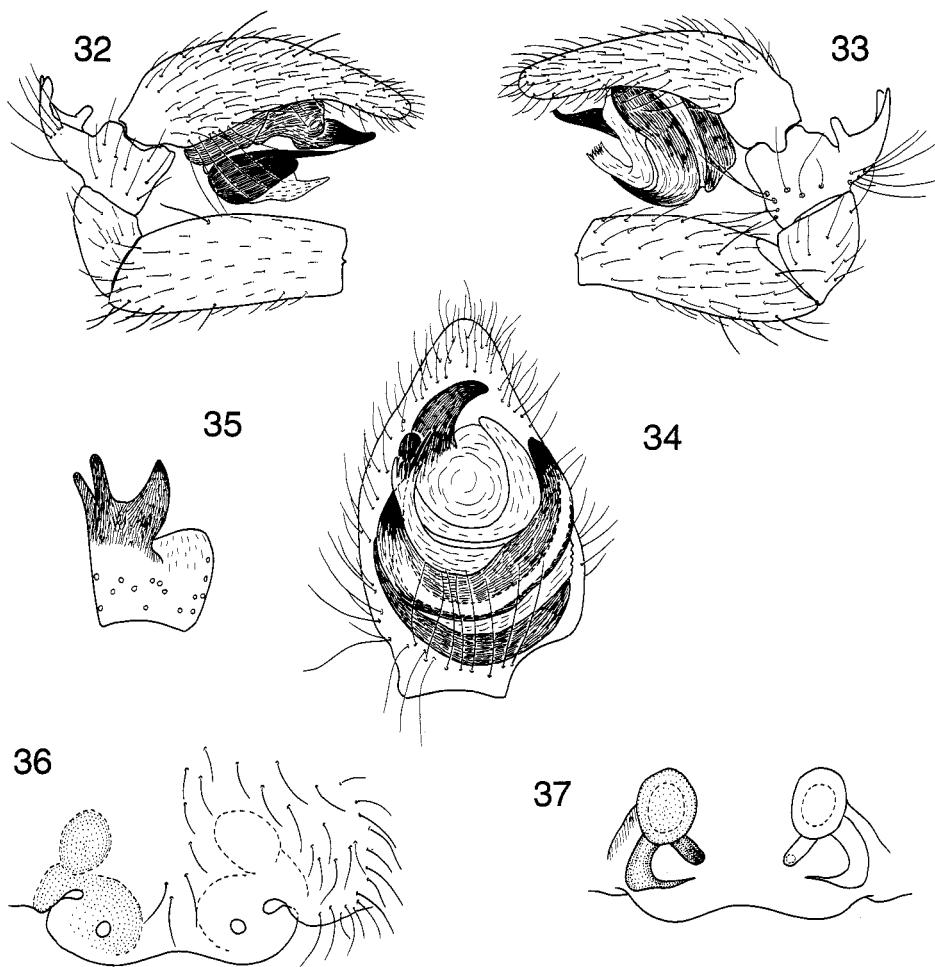
*Diagnosis*

As for genus.

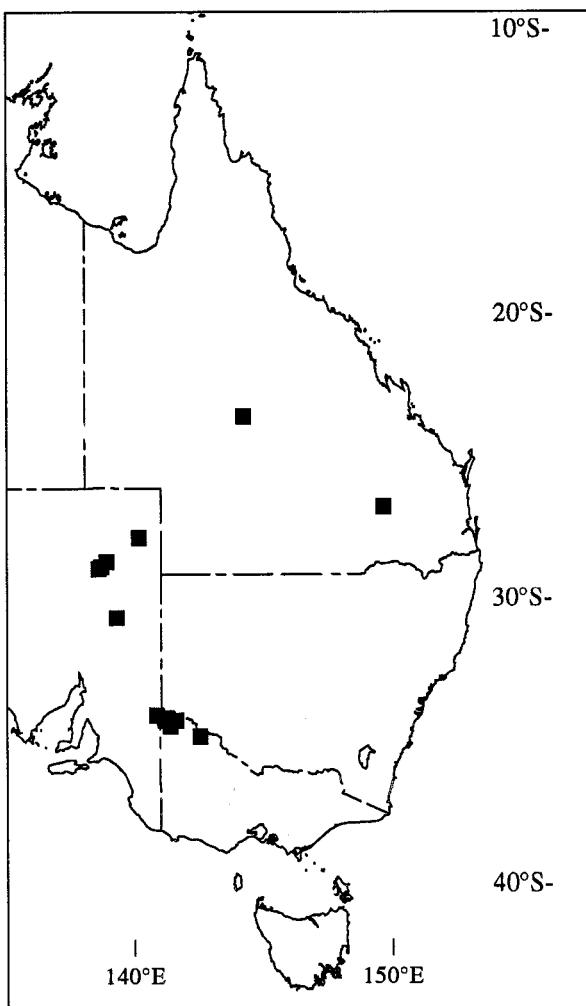
*Description*

*Adult (10.4 km NW of junction of Murray Valley Highway and Annuello Rd, Vic.)*

Colour: carapace and sternum red-yellow; abdomen of ♂ dark brown, scute nearly black, with tinges of iridescent blue, of ♀ dark brown, sigilla of ♀ red-brown, epigastric region, spinnerets and surrounding region red-yellow; chelicerae light yellow brown, darker distally; tibiae, metatarsi and tarsi of legs dark brown, other segments yellow. Carapace with scattered bristles between fovea and eyes, clypeus with several bristles; fovea a broad pit. Male pedipalp (Figs 32–35): retrolateral tibial apophysis B with slender distal apophyses, apophysis B1 blunt, apophysis B2 pointed, apophysis A somewhat rectangular; prolateral tibial apophysis absent; embolus slender, arising from a thick tegulum, conductor broadly falcate, with basal rounded projection arising from a mesal ridge, median apophysis lamellate, with jagged extremity. Legs: slender; 4123; ♂ with spines, ♀ with scattered spinules. Abdomen of ♂ covered with punctate dorsal scute, slender seta c. 0.20–0.25 mm arising from each punctuation; of ♀ without scute, with slender setae c. 0.20–0.25 mm.



**Figs 32–37.** *Durodamus yeni*, sp. nov. 32–35, male holotype, left pedipalp: 32, prolateral; 33, retrolateral; 34, ventral; 35, tibia, dorsal. 36–37, female paratype (10.4 km NW of junction of Murray Valley Highway and Annuello Rd, Victoria), epigyne: 36, ventral; 37, dorsal.



**Fig. 38.** South-eastern Australian records of *Durodamus yeni*.

Epigyne (Figs 36–37) with sinuate posterior margin and lateral indentations; copulatory opening on extero-median face, somewhat posterior; copulatory ducts straight, postero-medially directed; spermathecae small and ovoid.

**Dimensions (mm).** Holotype ♂ (paratype ♀ 10·4 km NW of junction of Murray Valley Highway and Annuello Rd, Vic.): total length 3·40 (4·40). Carapace 1·68/1·54 (1·85/1·72). Eyes: AME 0·09 (0·08), ALE 0·12 (0·11), PME 0·08 (0·08), PLE 0·12 (0·12), AME–AME 0·06 (0·06), AME–ALE 0·04 (0·04), PME–PME 0·09 (0·12), PME–PLE 0·07 (0·08), PLE–ALE 0·00 (0·00), eye group width 0·50 (0·54), MOQ front width 0·23 (0·24), MOQ back width 0·26 (0·27), MOQ length 0·23 (0·26). Sternum 0·88/0·94 (1·02/1·06). Abdomen 2·79/1·89 (3·39/2·61). Pedipalp: femur 0·67 (0·78), patella 0·35 (0·30), tibia 0·25 (0·47), tarsus 0·82 (0·80), total 2·09 (2·35). Leg I: femur 1·57 (1·69), patella 0·60 (0·65), tibia 1·40 (1·48), metatarsus 1·36 (1·42), tarsus 0·71 (0·77), total 5·64 (6·01). Leg II: femur 1·50 (1·57), patella 0·58 (0·63), tibia 1·29 (1·31), metatarsus 1·20 (1·30), tarsus 0·69 (0·71), total 5·26 (5·52). Leg III: femur 1·23 (1·32), patella 0·60 (0·56), tibia 1·00 (0·97), metatarsus 1·08 (1·09), tarsus 0·60 (0·60), total 4·51 (4·54). Leg IV: femur 1·69 (1·80), patella 0·62 (0·70), tibia 1·48 (1·42), metatarsus 1·50 (1·45), tarsus 0·71 (0·78), total 6·00 (6·15).

### Remarks

The Queensland specimens of *D. anuello* are larger than those from Victoria and South Australia (e.g. ♂ femur IV 2·1 mm in length), but the form of the male pedipalp and the female genitalia are identical, and are hence deemed conspecific.

Adults have been collected during winter, spring and early summer (May–November).

### Etymology

This species is named for Alan L. Yen, coordinator of the invertebrate survey which yielded many specimens of this species, as well as other nicodamids.

## Genus *Ambicodamus*, gen. nov.

Type species: *Ambicodamus marae*, sp. nov.

### Diagnosis

Conductor deeply excavate. Male with prolateral tibial apophysis. Abdominal seta of male with slender curved setae, half as long as those of female. Epigyne somewhat protuberant.

### Remarks

This speciose genus is most diverse to southern Australia, including Tasmania, although the distribution of *A. audax* extends to north Queensland. The genus is easily diagnosed by the form of the male abdominal setae and the nature of the male pedipalp. It appears to represent the sister-genus to *Litodamus*, as females of both genera possess enlarged, raised epigynes.

Although there are marked differences among females of the different *Ambicodamus* spp., construction of a workable key proved to be somewhat difficult. Identification can best be achieved by comparison of material with the figures.

### Etymology

The generic name is derived from the cup-shaped conductor (*ambikos* Greek, cup, beaker) and from *Nicodamus*. Gender: masculine.

### Included Species

*Ambicodamus audax*, sp. nov., *A. crinitus* (L. Koch), *A. dale*, sp. nov., *A. darlingtoni*, sp. nov., *A. emu*, sp. nov., *A. kochi*, sp. nov., *A. leei*, sp. nov., *A. marae*, sp. nov., *A. sororius*, sp. nov., *A. southwelli*, sp. nov., and *A. urbanus*, sp. nov.

## Key to Species of *Ambicodamus*

### Males

1. Median apophysis broad, basally sclerotised (Figs 90, 96, 102); prolateral margin of bulb expanded dorsally (Figs 88, 94, 100) ..... 2
- Median apophysis narrow, not basally sclerotised (e.g. Figs 44, 84); prolateral margin of bulb not expanded dorsally (e.g. Figs 42, 82) ..... 4
- 2(1). Conductor with a long dorsal apophysis, and a shorter ventral apophysis (Fig. 95); median apophysis triangular (Fig. 96) ..... *Ambicodamus urbanus*, sp. nov.
- Conductor without such apophyses (Figs 89, 101); median apophysis rounded (Figs 90, 102) .. 3
- 3(2). Conductor with smooth lateral margin (Fig. 90) ..... *Ambicodamus crinitus* (L. Koch)
- Conductor with serrate lateral margin (Fig. 102) ..... *Ambicodamus darlingtoni*, sp. nov.

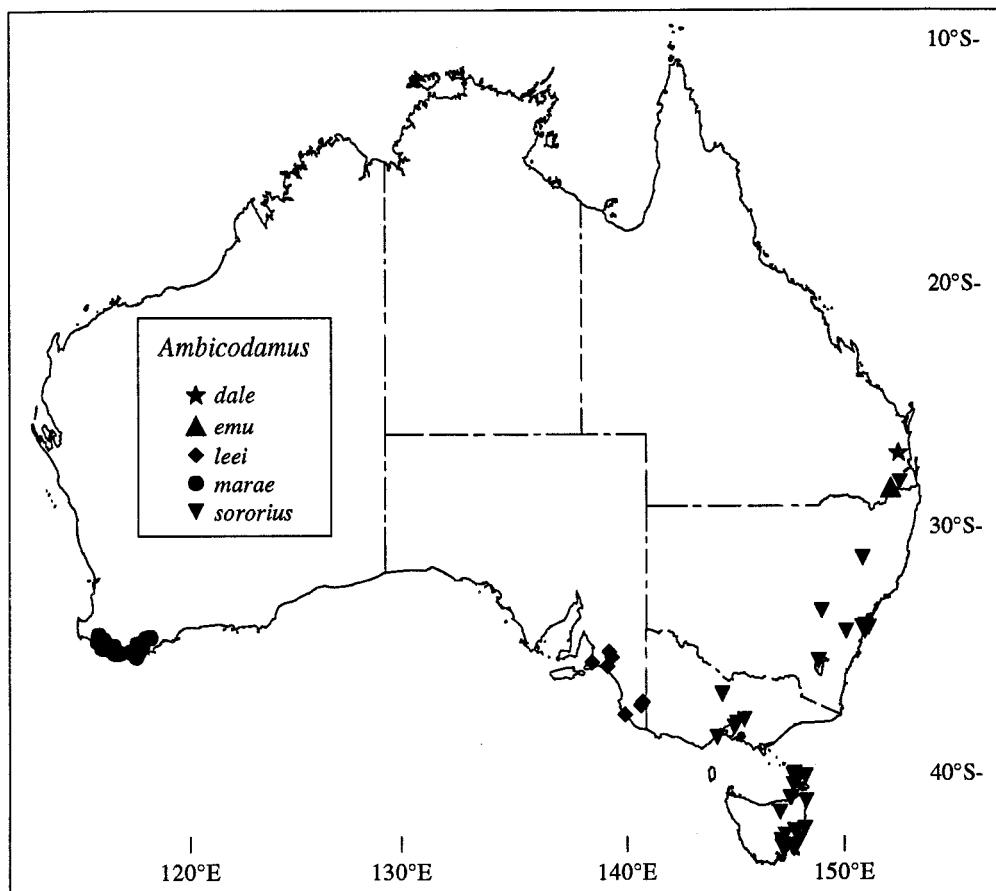


Fig. 39. Australian records of some *Ambicodamus* species.

- 4(1). Embolus very thick (Figs 56, 62); tibial apophysis B terminating broadly (Figs 59, 65) ..... 5  
 Embolus thick (e.g. Figs 42, 82); tibial apophysis B terminating in dull point (e.g. Figs 45, 85) 6
- 5(4). Conductor with basal flange (Fig. 58) ..... *Ambicodamus kochi*, sp. nov.  
 Conductor without basal flange (Fig. 64) ..... *Ambicodamus audax*, sp. nov.
- 6(4). Embolar base with lateral process (reduced in some males from mainland eastern Australia) (Figs 42, 50) ..... 7  
 Embolar base without lateral process (e.g. Figs 72, 82) ..... 8
- 7(6). Conductor with several evenly sized retrolateral serrations (Fig. 44) .....  
 ..... ..... *Ambicodamus marae*, sp. nov.  
 Conductor with two large and several small retrolateral serrations (Fig. 52) .....  
 ..... ..... *Ambicodamus sororius*, sp. nov.
- 8(6). Retrolateral margin of conductor smooth (Figs 78, 84) ..... 9  
 Retrolateral margin of conductor not smooth (Figs 70, 74) ..... 10
- 9(8). Margin of embolar base evenly tapering (Fig. 76) ..... *Ambicodamus leei*, sp. nov.  
 Margin of embolar base distinctly offset from embolus (Fig. 82) .....  
 ..... ..... *Ambicodamus southwelli*, sp. nov.
- 10(8). Conductor with large rounded retrolateral swelling (Fig. 74) ..... *Ambicodamus emu*, sp. nov.  
 Conductor with two blunt retrolateral ridges (Fig. 70) ..... *Ambicodamus dale*, sp. nov.

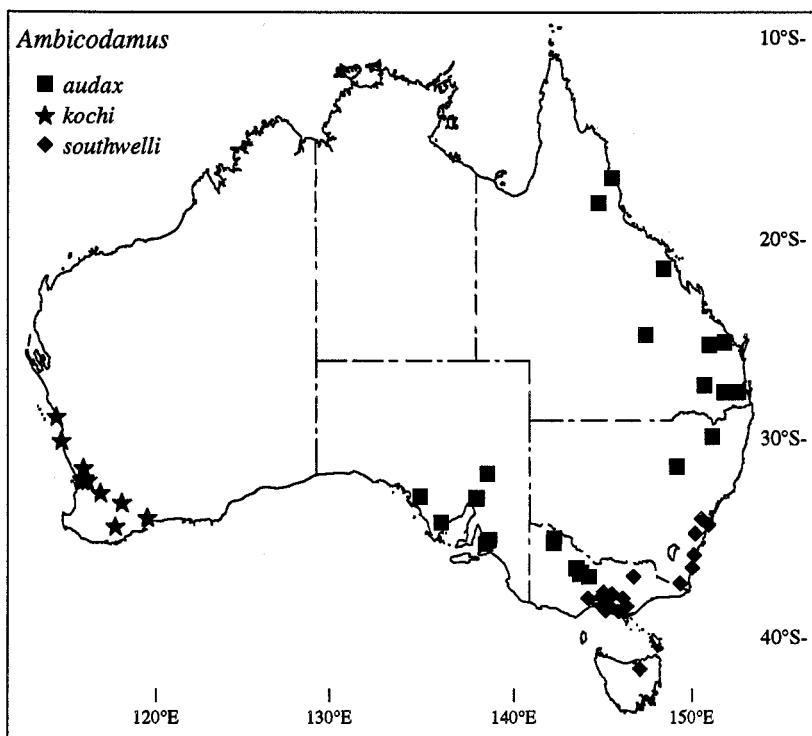


Fig. 40. Australian records of some *Ambicodamus* species.

*Ambicodamus marae*, sp. nov.

(Figs 3–14, 17–18, 39, 42–49)

*Nicodamus bicolor* (L. Koch). — Simon, 1909: 180 (misidentification, in part; see *Nicodamus mainae*, sp. nov.).

*Material Examined*

*Holotype.* ♂, Shannon R. at Nelson Rd, Western Australia, Australia, 34°43'S, 116°21'E, under bark of *Eucalyptus diversicolor*, 16–18.ii.1990, matured in captivity 13.iii.1990, M. S. Harvey, M. E. Blosfelds (WAM 93/1914).

*Paratypes.* **Australia: Western Australia:** 2 ♂, same data as holotype, matured, 27.ii.1990, 8.iii.1990, 19.iii.1990 (WAM 93/1915–1916, 93/1980); 1 ♂, The Cascades [34°30'S, 116°00'E], 13.vii.1974, N. Poulter (WAM 93/1981); 1 ♂, 4 ♀, The Cascades, 8 km SSW of Pemberton, 34°30'S, 116°00'E, under bark of *Eucalyptus diversicolor*, 3.v.1990, M. S. Harvey, J. M. Walcock (WAM 93/1982–1986); 2 ♂, same data except 20.vii.1991, C. A. Car (WAM 93/1987–1988); 1 ♂, 1 ♀, 2 juvs, Dog Pool on Shannon R., 20 km S of Shannon [34°46'S, 116°22'E], under bark of *Eucalyptus diversicolor*, 29.viii.1987, M. S. Harvey, J. D. Blyth (WAM 93/1917–1920); 7 ♂, 17 ♀, 2 juvs, same data except 27–30.iv.1990, M. S. Harvey, J. M. Walcock (WAM 90/1116–1117, 93/1921–1944).

*Other material.* **Australia: Western Australia:** 1 ♀, Beedelup, Karri Valley Resort, 34°25'S, 115°55'E, 20–21.vii.1991, C. A. Car (WAM 93/1989); 1 ♂, Beedelup S.F. [34°25'S, 115°55'E], 5.iii.1994, GBM, Janetski (QM S21982); 1 ♂, Bluff Knoll, Stirling Ranges Natl Park [34°22'S, 118°15'E], wandering on S facing bank, 4.xii.1991, K. Gaull (WAM 93/1990); 1 ♀, 1–2 km W of Buckle Rd on Weld Rd [34°42'S, 116°37'E], under bark of *Eucalyptus diversicolor*, 24.v.1991, BYM (WAM 93/1991); 1 ♂, 1 ♀, Croweia, 34°28'S, 116°10'E, pitfall traps, 26.xi.1976, S. J. Curry (WAM 93/1992–1993); 1 ♂, same data except 21.xi.1980 (WAM 93/1994); 1 ♂, same data except 6.xii.1979 (WAM 93/1995); 1 juv. ♂, Deep R. crossing, near Walpole [34°59'S, 116°38'E], 14.i.1990,

BYM (WAM 93/1996); 1 juv., near junction of Deeside Coast Rd and Chesapeake Rd [34°48'S, 116°17'E], 1.iii.1989, MSH, MEB (WAM 93/1997); 5 juvs, Dog Pool on Shannon R. [34°46'S, 116°22'E], under bark of *Eucalyptus diversicolor*, 2.iii.1989, MSH, MEB (WAM 93/1998-2002); 1 ♂, same data except 27–30.iv.1990, MSH, JMW (WAM 90/1116-1117, 91/608, 93/1921-1944); 5 ♂, 5 ♀, same data except 23.iii.1993, MSH, JMW (WAM 94/375-381, 94/384-386); 1 ♀, same data except 24.iii.1993 (WAM 94/1614); 1 ♀, 1 juv., Geraldton [28°46'S, 114°37'E] (locality doubtful, see below under Remarks) (ZMH); 1 ♀, 2 km NE of Lake Yeagarup on Ritter Rd, 34°31'S, 115°53'E, under Karri [*Eucalyptus diversicolor*] bark, 2.v.1990, MSH, JMW (WAM 93/2003); 1 ♂, 2 ♀, same data except under Marri [*Eucalyptus calophylla*] bark (WAM 93/2004-2006); 1 ♀, 4 juvs, 12 mi W of Manjimup [34°15'S, 115°56'E], 11.iii.1971, H. Butler (WAM 93/2007-2011); 1 ♀, Moons Crossing, Warren R., 34°30'S, 116°09'E, under Karri [*Eucalyptus diversicolor*] bark, 27.i.1986, G. Harold (WAM 93/2012); 1 juv., Mt Barker, 34°38'S, 117°40'E, in garden, 9.xii.1992, P. J. Mann (WAM 93/2013); 3 ♂, 3 ♀, Mt Chudalup, 34°46'S, 116°05'E, under Karri [*Eucalyptus diversicolor*] bark, 1.v.1990, MSH, JMW (WAM 93/2014-2019); 2 juvs, Mt Clare [34°59'S, 116°39'E], 14.i.1990, BYM (WAM 93/2020-2021); 1 ♂, Mt Cooke [32°25'S, 116°18'E] (locality doubtful, see below under Remarks), 18.x.1969, L. E. Koch, D. D. Giuliani (WAM 93/2022); 1 ♂, Nornalup Natl Park, 34°58'S, 116°46'E, under bark, Karri [*Eucalyptus diversicolor*] forest, 3.v.1979, MRG (AM KS5998); 4 ♀, 1 juv., near Pedro's, Dingo Flat Rd, Walpole-Nornalup Natl Park [34°58'S, 116°50'E], under bark, 13.v.1989, BYM (WAM 93/2023-2027); 2 ♀, Pemberton [34°27'S, 116°02'E], 1971, J. Springett (AM KS22028-9); 1 juv., Pemberton, 34°27'S, 116°02'E, pitfall traps, 17.xi.1977, S. J. Curry (WAM 93/2028); 1 ♀, Pemberton Youth Hostel [34°24'S, 115°58'E], 2.v.1990, JMW, MSH (WAM 93/2029); 1 juv., Porongorup Natl Park, S end of Millinup Pass, 34°42'S, 117°54'E, 30.iii.1993, MSH, JMW (WAM 94/374); 35 juvs, Shannon R. at Nelson Rd, 34°43'S, 116°21'E, under Karri [*Eucalyptus diversicolor*]

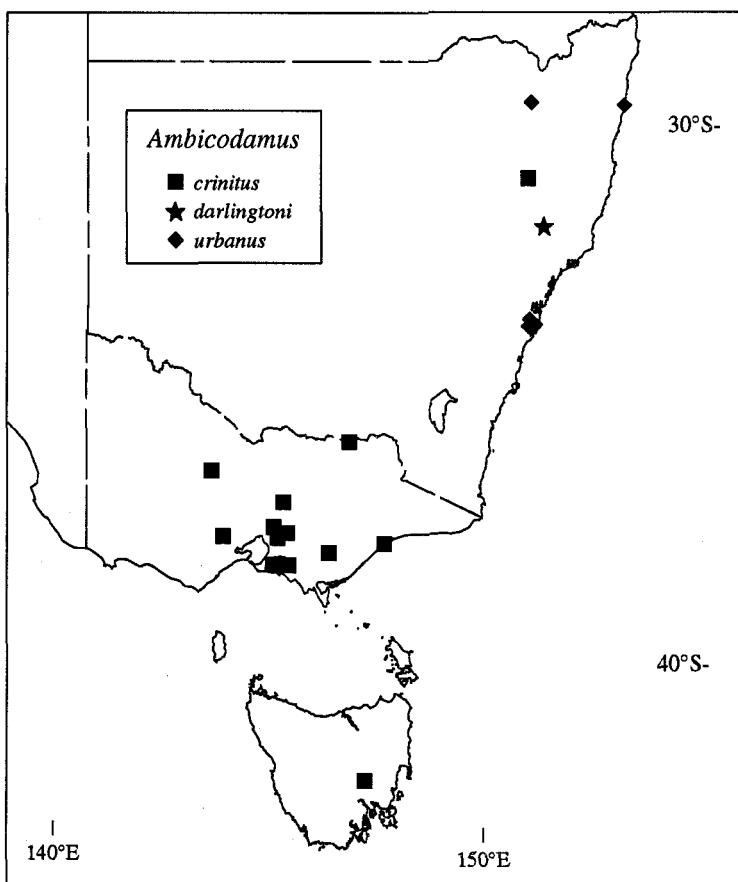


Fig. 41. Eastern Australian records of some *Ambicodamus* species.

bark, 16–18.ii.1990, MSH, MEB (WAM 93/2030–2064); 2 juvs, Shedley Drive, Walpole Natl Park [35°00'S, 116°39'E], fungi and bark litter, 22.vi.1980, S. and J. Peck (WAM 93/2065–2066); 1 ♂, 7 km N of South Coast Hwy, 34°56'S, 117°22'E, under bark of *Eucalyptus diversicolor*, 26.iv.1990, MSH, JMW (WAM 93/2067); 1 ♀, Stirling Ranges, north end of Isongerup Track [34°22'S, 118°17'E], 16.v.1975, S. Slack-Smith (WAM 93/2068); 1 ♀, Stirling Range Natl Park, Toolbrunup Peak Track, 34°24'S, 118°04'E, under rocks on scree slope, 31.iii.1993, MSH, JMW (WAM 94/382); 1 ♂, same data except wet pitfalls, 10.vi.–21.xii.1993, A. Sampey, A. Rose, JMW (WAM 94/1615); 1 juv. ♂, Torbay Head [35°08'S, 117°38'E], 24.iv.1977, BYM (WAM 93/2069); 1 ♂, Valley of the Giants, Nornalup [34°59'S, 116°54'E], 11.x.1984, JMW (WAM 93/2070); 1 ♂, 1 juv., Valley of the Giants, Walpole [34°59'S, 116°54'E], 24.ix.1983, W. McKenzie (QM S15404); 1 juv., Valley of the Giants, 34°59'S, 116°54'E, 14.i.1990, BYM (WAM 93/2071); 1 ♂, Walpole [34°59'S, 116°44'E], 25.x.1987, H. Webster (WAM 93/2072); 1 ♂, Walpole, 34°59'S, 116°44'E, 19.xi.1977, pitfall traps, S. J. Curry (WAM 93/2073); 3 ♂, Warren Natl Park [34°31'S, 115°59'E], flight intercept/trough trap, 24.x.–2.xi.1984, J. and N. Lawrence (ANIC); 1 ♀, Warren R. Natl Park, 34°31'S, 115°59'E, 3.v.1990, MSH, JMW (WAM 93/2074).

### *Diagnosis*

Male: embolar base with lateral process; conductor with several evenly sized retrolateral serrations. Female: ovoid spermatheca; copulatory ducts thickened, copulatory opening facing laterally.

### *Description*

#### *Adult (Shannon R., W.A.)*

Colour: carapace and sternum red-yellow; abdomen dark brown, sigilla red-brown, epigastric region and spinnerets red-yellow; chelicerae with distal half dark brown and basal half red-yellow; femora and patellae of legs mostly red-yellow (femora occasionally with indistinct subdistal annulation), tibiae red-yellow mesally, dark brown basally and distally, metatarsi and tarsi of legs dark red-yellow, tending darker distally. Carapace with scattered bristles, and single upturned seta between AMEs; fovea a broad shallow depression, slightly deeper in ♂. Male pedipalp (Figs 42–45): retrolateral tibial apophysis B thick, apophysis A gently sinuate; prolateral tibial apophysis present; embolus stout and scarcely curved, base of embolus with lateral process, conductor deeply excavate with serrate lateral margin, median apophysis slender, very pale. Legs: long and slender; 4:1:2:3; with scattered spinules. Abdomen of ♂ with short, slender, curved setae, c. 0.15 mm in length; of ♀ with long setae, not particularly stiff, c. 0.4 mm in length. Epigyne (Figs 46–47) with ovoid spermatheca; copulatory ducts thickened, copulatory opening facing laterally.

*Dimensions* (mm). Holotype ♂ (paratype ♀ Shannon R., WA): total length 5.75 (5.02). Carapace 2.80/2.50 (2.30/2.04). Eyes: AME 0.09 (0.09), ALE 0.12 (0.13), PME 0.08 (0.11), PLE 0.14 (0.13), AME–AME 0.12 (0.12), AME–ALE 0.12 (0.10), PME–PME 0.15 (0.12), PME–PLE 0.20 (0.15), PLE–ALE 0.02 (0.01), eye group width 0.78 (0.73), MOQ front width 0.29 (0.27), MOQ back width 0.31 (0.32), MOQ length 0.26 (0.24). Sternum 1.49/1.35 (1.30/1.10). Abdomen 3.40/2.18 (3.30/2.38). Pedipalp: femur 1.18 (0.91), patella 0.52 (0.49), tibia 0.53 (0.55), tarsus 1.39 (0.80), total 3.62 (2.75). Leg I: femur 2.39 (1.88), patella 0.90 (0.75), tibia 2.36 (1.72), metatarsus 1.98 (1.50), tarsus 0.83 (0.75), total 8.46 (6.60). Leg II: femur 2.18 (1.76), patella 0.80 (0.74), tibia 2.06 (1.55), metatarsus 1.73 (1.35), tarsus 0.81 (0.70), total 7.58 (6.10). Leg III: femur 1.88 (1.45), patella 0.78 (0.68), tibia 1.50 (1.17), metatarsus 1.31 (1.10), tarsus 0.77 (0.60), total 6.24 (5.00). Leg IV: femur 2.50 (1.81), patella 0.93 (0.88), tibia 2.35 (1.77), metatarsus 2.15 (1.50), tarsus 0.85 (0.71), total 8.78 (6.67).

### *Remarks*

*Ambicodamus marae* bears great resemblance to *A. sororius* (see that species for further discussion), and the two species appear to represent sibling species.

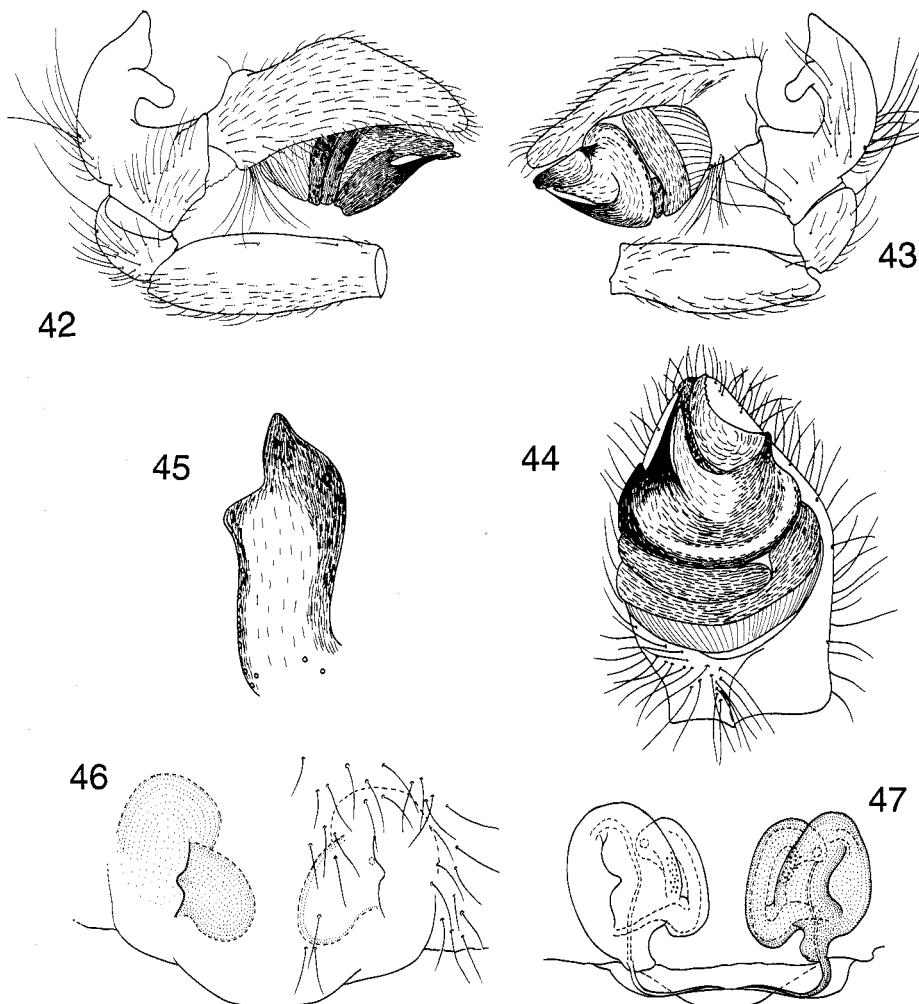
Apart from the two specimens listed above from Geraldton, this species is known only from the moist southern forests of south-western Australia extending as far west as the edge

of the Darling Plateau. The Geraldton record must be treated with caution, and has not been included on the map (Fig. 39). The specimens may be mislabelled, and may originate from a vial in ZMH that is labelled Subiaco (collected during the 'Hamburger Südwest-Australischen Forschungsreise') and 'Hill country, Upp. Blackwood Dist. (J. Whistler)' (i.e. Upper Blackwood District). The former locality is a suburb of Perth, and unlike the latter, is well outside the known distribution of *A. marae*. The specimen in the Subiaco/Blackwood vial is a juvenile theridiid, possibly *Steatoda grossa* (C. L. Koch). The male from Mt Cooke is possibly also a locality error, as frequent trips to this locality have failed to disclose any further material of *A. marae*. It too has been excluded from the map (Fig. 39).

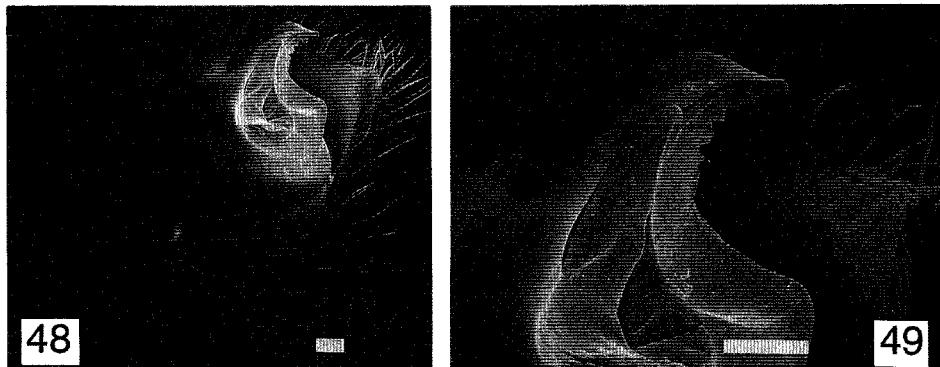
Adults have been collected over most of the year, with males taken in all months except January and June, and females mostly in autumn and late winter.

#### *Etymology*

This species is named for Mara Blosfelds, who enthusiastically assisted in the collection of several type specimens.



Figs 42–47. *Ambicodamus marae*, sp. nov. 42–45, male holotype, left pedipalp: 42, prolateral; 43, retrolateral; 44, ventral; 45, tibia, dorsal. 46–47, female paratype (Shannon R., WA), epigyne: 46, ventral; 47, dorsal.



**Figs 48–49.** *Ambicodamus marae*, sp. nov., scanning electron micrographs, male, left pedipalp: 48, cymbium and bulb; 49, detail of tip of bulb.

### *Ambicodamus sororius*, sp. nov.

(Figs 39, 50–55)

*Nicodamus semiflavus* (L. Koch). — Levi and Levi, 1962: figs 333–4 (misidentification).

*Nicodamus melanozanthus* (Urquhart). — Churchill, 1993: 477 (misidentification)

#### Material Examined

**Holotype.** ♂, Risdon, Tasmania, Australia [42°49'S, 147°21'E], March 1967, V. V. H[ickman] (AM KS41213 from HC).

**Paratypes.** **Australia: Tasmania:** 1 ♂, Bream Ck [42°49'S, 147°50'E], 7.v.1977, P. Jackson (TM J1202); 1 ♂, Claremont [42°48'S, 147°16'E], in cubby house, 7.v.1992, E. Turner (TM J3095); 2 ♀, East Risdon [42°50'S, 147°19'E], under stones, 12.vi.1957, JLH (AM KS41197 from HC); 2 ♂, same data except raised from eggs laid 18.x.1967, matured Jan. 1969, VVH (AM KS41196 from HC); 1 ♂, Hobart [42°53'S, 147°19'E], 6.iii.1947, D. C. Pearse (TM J2869); 2 ♂, 1 ♀, near Hobart [c. 42°53'S, 147°19'E], April–May 1948 (AM KS41195 from HC); 1 ♂, Risdon [42°49'S, 147°21'E], grass tussocks, 19.v.1957, VVH (AM KS41187 from HC); 7 ♀, Risdon [42°49'S, 147°21'E], 1–4.vi.1945 (AM KS41212 from HC); 1 ♀, same data (WAM 93/2871); 1 ♂, Risdon Vale, Hobart [42°49'S, 147°21'E], May 1964 (TM J416).

**Other material.** **Australia: Australian Capital Territory:** 1 ♀, 2 juvs, Cotter Dam [35°19'S, 148°56'E], 500 m, 8.xii.1962, ESR, DQC (CAS). **New South Wales:** 1 ♂, Canley Vale [33°57'S, 150°56'E], April 1928, M. A. Campbell (AM KS21984); 1 ♂, Coolong Station, near Yerranderie [34°07'S, 150°13'E], Oct. 1928, J. H. C. Wright (AM KS21988); 4 ♂, 1 ♀, 4 juvs, Enfield [33°54'S, 151°06'E], 1904, G. P. Ramsay (AM KS40940); 1 ♂, 2 ♀, 1 juv., Malabar [33°58'S, 151°14'E], 28.ix.1966, R. E. Mascord (AM KS22042); 1 ♀, Nemingha [31°07'S, 150°59'E], 9.ix.1956, K. C. Dodd (AM KS 22059); 1 ♂, Port Hacking, Jibbon Ocean Beach [34°05'S, 151°06'E], Oct. 1928, F. H. Rodda (AM KS21990); 1 ♂, Royal Natl Park [34°08'S, 151°04'E], Nov. 1965, R. E. Mascord (AM KS40954); 1 ♀ [Royal] Natl Park [34°08'S, 151°04'E], 22.viii.[19]31, N. M. W. (MCZ); 1 ♀, 'Springside', S of Orange [c. 33°17'S, 149°06'E], in subsoil, 20.ix.1972, L. C. Delwood (AM KS22041). **Queensland:** 1 ♀, Burnett Ck, Boonah [28°00'S, 152°41'E], 21.iv.1973, G. May (QM S15363). **Tasmania:** 1 ♂, 1 juv., Babel Is, Furneaux Group [39°57'S, 148°20'E], 29.i.–5.ii.1967 (NMV); 1 ♀, Bagdad [42°37'S, 147°13'E], 7.xii.1937 (TM J3148); 1 ♀, same data (TM J189); 2 ♀, same data except School (TM J191); 1 ♀, 1 juv., Barilla Bay [42°49'S, 147°29'E], in grass, 11.v.1974, R. Mesibov (TM J950); 1 ♀, numerous spiderlings, Cambridge [42°50'S, 147°26'E], Nov. 1965, E. Aves (TM J537); 1 ♀ (with egg-sac), 2 juvs, 'Charlton', 26 km SE of Ross [c. 42°13'S, 147°50'E], 28.xi.–3.xii.1975, H. D. Barker *et al.* (TM J1081); 1 ♀, near Darlington, Maria I. [42°35'S, 148°04'E], under stone, 14.iv.1968, A. J. Dartnall (TM J815); 3 ♂, Eddystone Point, Mt William Natl Park, site 3, 40°59'S, 148°21'E, pitfall traps, April 1987, T. Churchill (QVM); 1 ♀, Flinders I. [c.

40°00'S, 148°00'E], 26.xi.1972 (NMV); 2 ♀, 3 juvs, Hobart [42°53'S, 147°19'E], 1901, Pull. (MNHP 21524); 1 ♂, Howrah, Hobart [42°54'S, 147°24'E], 26.iii.1972, Mrs Badcock (TM J793); 1 ♀, Inner Pasco I., Furneaux Group [39°56'S, 147°47'E], 1.iv.1976, J. S. Whinray (TM J1146); 1 juv. ♀, Killiecrankie Bay, Flinders I. [39°49'S, 147°50'E], 5.ii.1980, J. S. Whinray (TM J1556); 1 ♂, Kingston [42°59'S, 147°18'E], 7.v.1974, D. Gregg (TM J942); 1 ♂, Kingston [42°59'S, 147°18'E], 30.iv.1977 (TM J1203); 1 ♀, Launceston [41°27'S, 147°10'E], Simson (MNHP 4686); 1 ♂, Launceston [41°27'S, 147°10'E], 18.iv.1980, Mrs Faulkner (QVM); 1 ♀, Launceston [41°27'S, 147°10'E], under stones, 27.iv.1923, VVH (ISNB); 2 ♀, Launceston [41°27'S, 147°10'E], Nov. 1938, Trevallyn School (TM J192); 2 ♀, Launceston, Cataract Gorge, Cataract Lookout, 41°27'S, 147°10'E, 18.xi.1986, MSH, P. K. Lillywhite (WAM 93/1887-1888); 1 ♂, Lindisfarne [42°51'S, 147°21'E], 30.iii.1952, M. B. (TM J193); 1 ♂, 2 ♀, Little Goose I., Furneaux Group [40°18'S, 147°47'E], 18.ii.1978, J. S. Whinray (TM J1303); 1 ♀, 9 juvs, Mile I., Furneaux Group [40°08'S, 147°55'E], 9 m, under tussock grass leaves (*Poa* sp.), 28.v.1975, J. S. Whinray (TM J1029); 2 ♀, Mt Wellington, 42°54'S, 147°14'E, 12.ii.1903 (AM KS22061); 1 ♀, Pelican Flats, Coles Bay [42°08'S, 148°18'E], 23-27.ix.1986, M. Houston (TM J2074); 3 ♀, Risdon [42°49'S, 147°21'E], 14.vi.1947, VVH (AMNH); 2 ♂, Risdon [42°49'S, 147°21'E], 3.iii.1945, VVH (MCZ); 2 ♀, Risdon [42°49'S, 147°21'E], June 1947, VVH (AM KS41182 from HC); 5 ♀, Roydon I., Furneaux Group [39°54'S, 147°46'E], 1.iv.1976, J. S. Whinray (TM J1136); 1 ♀, Stonor [42°24'S, 147°23'E], 17.ii.1945 (AM KS41198 from HC); 2 ♂, Trevallyn [41°27'S, 147°10'E], under stones, 7.iii.1928, VVH (AM KS41175 from HC); 2 ♀, Trevallyn [41°27'S, 147°10'E], May 1931, VVH (AM KS41193 from HC); 1 ♂, Trevallyn [41°27'S, 147°10'E], 7.iii.1959, VVH (AM KS41186 from HC); 5 ♂, 1 ♀, Waterhouse Point, site 1, 40°49'S, 147°41'E, pitfall traps, April 1987, T. Churchill (QVM); 14 ♂, Waterhouse Point, site 2, 40°51'S, 147°38'E, pitfall traps, March 1987, T. Churchill (QVM); 1 ♂, 'northern Tas.', 19.iv.1982 (QVM); 1 ♂, no exact locality, March-May 1901, English (BMNH). **Victoria:** 1 ♂, Beaumaris [37°59'S, 145°02'E], 18.iv.1925, A. S. Cudmore (NMV); 1 ♂, 2 juvs, Blackburn [37°49'S, 145°09'E], 4.v.1958, A. McEyey (NMV); 1 ♀, Coranderrik Reserve, Healesville [37°41'S, 145°30'E], under bark, 5-9.iii.1979, MSH (WAM 94/31); 1 ♂, Ironbark Basin, 6 km NE of Anglesea on Point Addis Rd [38°24'S, 144°15'E], 10.iii.1982, P. Palma (WAM 93/1886); 1 ♂, Longforest, site L5, 36°39'S, 144°30'E, pitfall trap, 13-19.iii.1992, B. Van Pragh, P. Lillywhite (NMV); 1 ♀, 1 juv., same data except site L3, 36°39'S, 144°30'E (NMV); 1 ♂, 1 juv., same data except site L2, 36°40'S, 144°30'E (NMV); 1 ♀, same data except site L1, 36°40'S, 144°30'E, direct search, 5.xi.1992, B. Van Pragh, A. Cobelt (NMV). **Without locality data:** 1 ♀ (QVM).

### Diagnosis

Male: embolus base with lateral process; conductor with two large and several small retrolateral serrations. Female: ovoid spermatheca; copulatory ducts thickened, copulatory opening in small shallow sulcus, facing laterally.

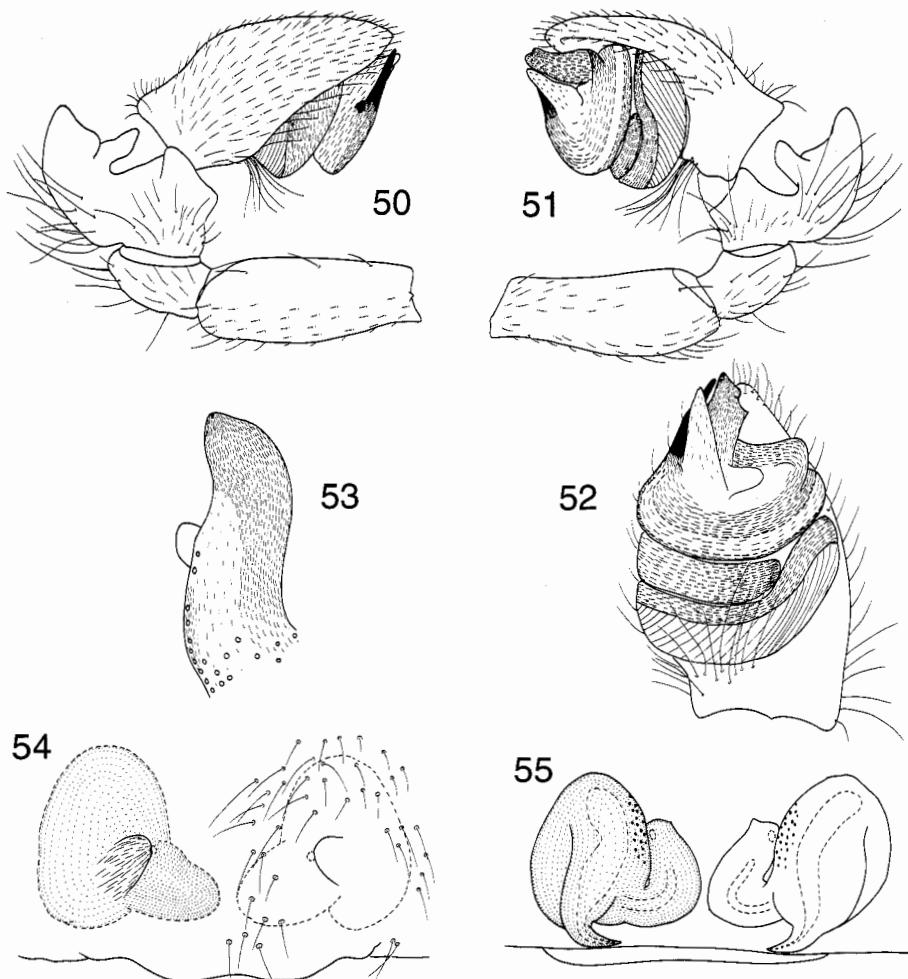
### Description

#### Adult (*Risdon* and *East Risdon*, Tas.)

Colour: carapace and sternum red-yellow; abdomen dark brown, with metallic blue tinge in ♂ sigilla red-brown, epigastric region, spinnerets and surrounding region red-yellow; chelicerae with basal half red-yellow, distal half dark brown; femora and patellae of ♂ legs red-yellow, with occasional smudges of light yellow-brown, tibiae, metatarsi and tarsi dark brown; femora of ♀ legs light brown basally, remainder red-yellow, patellae red-yellow, tibiae I-III dark brown, tibia IV dark brown basally and distally, red-yellow medially, metatarsi and tarsi dark brown. Carapace with scattered bristles and 1 upturned seta between AMEs; fovea a broad, shallow depression. Male pedipalp (Figs 50-53): retrolateral tibial apophysis B thick, apophysis A gently upturned; prolateral tibial apophysis present; embolus straight, of medium thickness, conductor with retrolateral extrusions, median apophysis somewhat conical. Legs: long and slender; 4123; with scattered spines and spinules. Abdomen of ♂ with small, slender, curved setae, c. 0.1-0.2 mm in length; of ♀ with long setae, c. 0.4-0.5 mm in length. Epigyne (Figs 54-55) with ovoid spermatheca; copulatory ducts thickened, copulatory opening in small shallow sulcus, facing laterally.

**Dimensions (mm).** Holotype ♂ (paratype ♀ East Risdon, Tas.): total length 5.34 (5.25). Carapace 2.75/2.56 (2.65/2.28). Eyes: AME 0.11 (0.10), ALE 0.14 (0.14), PME 0.11 (0.10), PLE 0.15 (0.13), AME-AME 0.09 (0.12), AME-ALE 0.12 (0.12), PME-PME 0.12 (0.13),

PME-PLE 0.17 (0.15), PLE-ALE 0.00 (0.00), eye group width 0.79 (0.76), MOQ front width 0.28 (0.29), MOQ back width 0.32 (0.32), MOQ length 0.26 (0.26). Sternum 1.48/1.36 (1.41/1.27). Abdomen 3.40/2.42 (3.71/2.85). Pedipalp: femur 1.19 (1.00), patella 0.52 (0.52), tibia 0.51 (0.63), tarsus 1.23 (0.91), total 3.45 (3.06). Leg I: femur 2.40 (1.90), patella 0.89 (0.81), tibia 2.28 (1.71), metatarsus 1.98 (1.51), tarsus 0.79 (0.74), total 8.34 (6.67). Leg II: femur 2.11 (1.79), patella 0.89 (0.80), tibia 1.99 (1.49), metatarsus 1.80 (1.35), tarsus 0.75 (0.66), total 7.54 (6.09). Leg III: femur 1.77 (1.41), patella 0.80 (0.71), tibia 1.48 (1.07), metatarsus 1.41 (1.11), tarsus 0.70 (0.67), total 6.16 (4.97). Leg IV: femur 2.46 (2.00), patella 0.92 (0.92), tibia 2.28 (1.65), metatarsus 2.31 (1.54), tarsus 0.86 (0.76), total 8.83 (6.87).



Figs 50–55. *Ambicodamus sororius*, sp. nov. 50–53, male holotype, left pedipalp: 50, prolateral; 51, retrolateral; 52, ventral; 53, tibia, dorsal. 54–55, female paratype (East Risdon, Tas.), epigyne: 54, ventral; 55, dorsal.

#### Remarks

The male of *A. sororius* resembles that of *A. marae* in having a lateral process on the embolar base, and the two appear to be sister-species. The lateral process is reduced in some males, particularly in some from Victoria, but are identical in all other elements of the

pedipalp, and are thus deemed to represent the same species. The distribution of *A. sororius* extends from south-eastern Queensland to southern Tasmania (Fig. 39).

Adults have been collected over much of the year, with males active primarily in spring, summer and autumn (September to May), and females collected in every month except January and July. Churchill (1993) reported this species as *Nicodamus melanozanthus* based upon identifications I made prior to the completion of this study. That identification is here emended.

#### *Etymology*

The specific epithet refers to the sister-group relationship with *A. marae* (*sororius*, Latin, sisterly).

#### *Ambicodamus kochi*, sp. nov.

(Figs 40, 56–61)

#### *Material Examined*

*Holotype.* ♂, Darlington, Western Australia, Australia [31°55'S, 116°04'E], 1969, G. H. Lowe (WAM 93/1897).

*Paratypes.* Australia: Western Australia: 1 ♂, Darlington [31°55'S, 116°04'E], Sept. 1925, L. Glauert (WAM 25/713); 1 ♂, Gidgegannup [31°48'S, 116°11'E], 30.vi.1978, P. Griffen (WAM 93/1898); 1 ♀, 8 km SW of Gidgegannup, 31°20'S, 116°09'E, 6.v.1989, W. A. Arachnology Group (WAM 93/1899); 1 ♀, Leeman [29°59'S, 114°56'E], swamp, 29.viii.1982, R. P. McMillan (WAM 93/1900); 1 ♀, Mundaring [31°54'S, 116°10'E], 22.ix.1912, W. B. Alexander (WAM 12/5806); 1 ♂, Rocky Pool, Darling Range [31°52'S, 116°05'E], 20.vi.1965, C. Bowen (WAM 93/1901); 1 ♀, Yetar Springs, 31°56'S, 116°21'E, 10.viii.1991, matured 6.x.1991, M. Peterson (WAM 93/1902).

*Other material.* Australia: Western Australia: 2 ♀, Cheepanup Lake, NW side, 34°12'S, 117°55'E, under rocks in mallee, 26.vii.1992, J. Pas (WAM 93/1903–1904); 1 ♂, Geraldton, Solomon Circle, 28°47'S, 114°38'E, 18.vii.1992, J. Green (WAM 93/1905); 7 juvs, Leeman, 29°59'S, 114°56'E, swamp, 29.viii.1982, R. P. McMillan (WAM 93/1906–1912); 1 ♀, North Tarin Rock Reserve, 10 mi N of Tarin Rock Siding [33°00'S, 118°15'E], 19.v.1971, D. Kitchener, L. Smith, K. Youngson (WAM 93/1913); 1 juv. ♂, Pingelly [32°32'S, 117°05'E], A. Fyson (BMNH); 1 ♀, 50 mi E of Ravensthorpe [c. 33°45'S, 119°40'E], 70 m, 23.ix.1962, ESR, DQC (CAS).

#### *Diagnosis*

Male: embolus very thick; conductor with retrolateral basal flange. Female: copulatory ducts enlarged, nearly touching in mid-line.

#### *Description*

##### *Adult (Darlington, and Leeman, W.A.)*

Colour: carapace and sternum red-yellow; abdomen blue-black, sigillae red-brown, epigastric region, spinnerets and surrounding region red-yellow; distal third of chelicerae dark brown, basal portion red-yellow; tibiae, metatarsi and tarsi of legs brown, basal segments yellow. Carapace with scattered bristles, and 1 upturned seta between AMEs; fovea a broad depression. Chelicerae with distal third brown, basal two-thirds red-yellow. Male pedipalp (Figs 56–59): retrolateral tibial apophysis B with crenulate distal margin, apophysis A sinuate; prolateral tibial apophysis present; embolus short, stout, gently curved; median apophysis slender, curved; conductor truncate distally, with deep medial depression. Legs: long and slender; 4123; with scattered spines and spinules. Abdomen of ♂ with small, inconspicuous setae, 0.1 mm in length; of ♀ with stiff setae, c. 0.5–0.6 mm in length. Epigyne (Figs 60–61) with ovoid spermathecae; copulatory ducts greatly inflated, nearly touching in mid-line; copulatory openings laterally facing, with large lateral grooves.

*Dimensions (mm).* Holotype ♂ (paratype ♀ Leeman, WA): total length 6.84 (5.10). Carapace 3.72/3.39 (2.45/2.20). Eyes: AME 0.12 (0.09), ALE 0.14 (0.14), PME 0.11 (0.09),

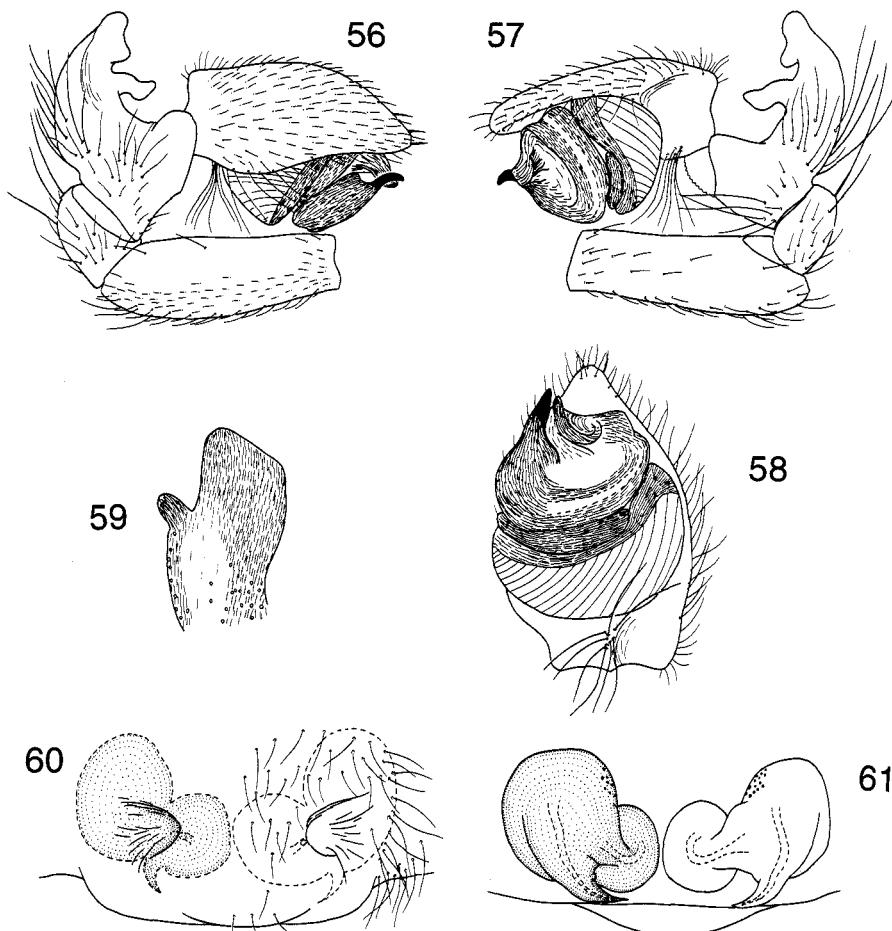
PLE 0.14 (0.12), AME-AME 0.12 (0.10), AME-ALE 0.14 (0.10), PME-PME 0.14 (0.12), PME-PLE 0.24 (0.17), PLE-ALE 0.03 (0.01), eye group width 1.00 (0.77), MOQ front width 0.32 (0.28), MOQ back width 0.36 (0.31), MOQ length 0.24 (0.24). Sternum 2.08/1.70 (1.41/1.30). Abdomen 4.37/3.00 (3.75/2.50). Pedipalp: femur 1.63 (0.97), patella 0.65 (0.51), tibia 0.89 (0.63), tarsus 1.62 (0.83), total 4.79 (2.94). Leg I: femur 3.22 (2.07), patella 1.20 (0.80), tibia 3.27 (1.92), metatarsus 2.77 (1.61), tarsus 1.06 (0.84), total 11.52 (7.24). Leg II: femur 3.00 (1.92), patella 1.20 (0.77), tibia 2.79 (1.70), metatarsus 2.32 (1.50), tarsus 0.94 (0.78), total 10.25 (6.67). Leg III: femur 2.51 (1.59), patella 0.99 (0.77), tibia 2.00 (1.28), metatarsus 1.80 (1.12), tarsus 0.89 (0.75), total 8.19 (5.51). Leg IV: femur 3.30 (2.11), patella 1.27 (0.88), tibia 3.18 (1.83), metatarsus 2.80 (1.64), tarsus 1.04 (0.84), total 11.69 (7.30).

#### Remarks

*Ambicodamus kochi* is known primarily from the Darling Range, but has been found east to Fitzgerald River region, and north to Geraldton (Fig. 40). This species represents the western vicariant of *A. audax* (see below); and adults have been collected in winter and spring (May to October).

#### Etymology

This species is named for Lucien E. Koch, formerly of the Western Australian Museum.



Figs 56-61. *Ambicodamus kochi*, sp. nov. 56-59, male holotype, left pedipalp: 56, prolateral; 57, retrolatral; 58, ventral; 59, tibia, dorsal. 60-61, female paratype (Leeman, WA), epigyne: 60, ventral; 61, dorsal.

*Ambicodamus audax*, sp. nov.

(Figs 40, 62–67)

*Material Examined*

**Holotype.** ♂, Braemar State Forest, Queensland, Australia, 27°13'S, 150°50'E, under logs, cypress forest, 15–19.x.1979, R. Raven (QM S15380).

**Paratypes.** **Australia: Queensland:** 1 ♀, same data as holotype (QM S19715); 2 ♀, 1 juv., Braemar State Forest [27°13'S, 150°50'E], 15.x.1979, G. Monteith (QM S15329); 1 ♂, 4 ♀, 5 juvs, 40 Mile Scrub, SW Mt Garnet [18°05'S, 144°51'E], 10–14.iv.1978, RJR, VED (QM S15368); 1 ♂, 1 ♀, same data (WAM 93/2869–70); 1 ♀, 2 juvs, 40 Mile Scrub, campsite [18°05'S, 144°51'E], open forest, 9–14.iv.1978, VED, RJR (QM S15367); 1 ♂, Tivoli, Ipswich [27°35'S, 152°47'E], 3.x.1983, Mr Boilead (QM S15401).

**Other material.** **Australia: New South Wales:** 1 ♀, Coonabarabran, near Timor Peak, 31°16'S, 149°17'E, damp litter, 9.ix.1992, AFL (WAM 93/1885); 1 ♀, Elsmore, 29°48'S, 151°17'E, in litter amongst rocks, 25.viii.1992, AFL (WAM 93/1889). **Queensland:** 2 ♀, 16 mi N of Eidsvold [c. 25°13'S, 151°08'E], 200 m, 22.xi.1962, ESR, DQC (CAS); 1 ♀, 1 juv., Goodnight Scrub, Burnett R. [25°05'S, 152°00'E], W. Horton (QM S15318); 1 ♀, Homevale [21°24'S, 148°33'E], 31.iii.–7.iv.1975, VED, R. Kohout (QM S15323); 1 ♂, Kuranda [16°49'S, 145°38'E], F. P. Dodd (SAM N1989553); 1 ♀, near Toowoomba [c. 27°34'S, 151°57'E], 500 m, 23.xi.1962, ESR, DQC (CAS); 2 ♂, Yandaburra, 125 km SW of Springsure [24°42'S, 147°30'E], 7–16.v.1986, C. Fearnley (QM S15375). **South Australia:** 1 ♂, Eyre Peninsula [c. 34°00'S, 136°00'E], Sept., J. Sutton (SAM N1989549); 7 ♂, 10 ♀, 4 juvs, Hallett Cove [35°05'S, 138°30'E], on *Beyeria*, 10.x.1968, N. McFarland (SAM N1989522–42); 1 ♀, Hallett Cove [35°05'S, 138°30'E], 7.x.1967, N. McFarland (SAM N1989521); 1 ♀, S of Hallett Cove [c. 35°05'S, 138°30'E], coastal cliffs, 13.ix.1967, H. M. Cooper (SAM N1989520); 1 ♂, Mambray Ck, Mt Remarkable Natl Park [32°50'S, 137°59'E], 20.v.1981, G. J. and A. Holloway (AM KS7703); 1 ♂, 5 km N of Mambray Ck railway siding [32°47'S, 137°59'E], 12.x.1986, N. McShane (SAM N1989543); 1 ♂, Moonarie Gap, 31°36'S, 138°37'E, 29.iv.1992, D. Churches (SAM N1994181); 1 ♂, Morialta [34°55'S, 138°42'E], 8.x.1939, J. S. W. (SAM N1989519); 1 ♂, Poochera, 32°43'S, 134°50'E, burnt out of spinifex, 14.vi.1956, G. F. Gross (SAM N1989550); 1 ♂, 1 ♀, Sandy's Gully, Burnside [34°56'S, 138°38'E], 12.viii.1934, H. Womersley (SAM N1989516–7); 4 ♂, 1 juv., 2.1 km NE of Sugar Gum Lookout, Mt Remarkable Natl Park [32°48'S, 138°04'E], 13.x.1982, G. Coombe (SAM N1989544–8); 1 ♀, Torrens Gorge [34°52'S, 138°44'E], 19.vi.1938, J. S. W. (SAM N1989518). **Victoria:** 1 ♂, Bendigo [36°46'S, 144°17'E], ex poultry farm, August 1993, T. E. Quinlan (NMV); 1 ♂, 9.0 km ESE of Hattah, 34°48'S, 142°22'E, pitfall trap, Sept. 1986, ALY (NMV); 1 ♂, 1.6 km NNW of Inglewood [36°33'S, 143°51'E], site 2, 10–15.x.1989, ISD (NMV); 5 ♂, 4.0 km N of Inglewood [36°32'S, 143°51'E], site 9, 10–15.x.1989, ISD (NMV); 1 ♂, 5.0 km N of Inglewood [36°31'S, 143°51'E], site 10, 10–15.x.1989, ISD (NMV); 3 ♂, 5.3 km E of Kingower, site 8 [36°37'S, 143°48'E], 10–15.x.1989, ISD (NMV); 1 ♂, 7.0 km E of Kingower [36°35'S, 143°49'E], site 1, 10–15.x.1989, ISD (NMV); 1 ♂, 7.5 km E of Kingower [36°35'S, 143°50'E], site 2, 10–15.x.1989, ISD (NMV); 1 ♂, same data (WAM 94/30); 1 ♂, 7.0 km E of Kingower [36°37'S, 143°49'E], site 13, 10–15.x.1989, ISD (NMV); 1 ♂, 'mallee', 23.ii.1915, C. French (NMV); 1 ♀, Ouyen [35°04'S, 142°19'E], 22.vi.1912, Mr Hall (NMV); 1 ♂, 8.0 km S of Wychitella [36°20'S, 143°36'E], site 1, 10–15.x.1989, ISD (NMV); 1 ♂, 3.2 km S of Wychitella [36°18'S, 143°35'E], site 4, 10–15.x.1989, ISD (NMV); 2 ♂, 3.4 km S of Wychitella [36°18'S, 143°35'E], site 5, 10–15.x.1989, ISD (NMV); 4 ♂, 3.8 km S of Wychitella [36°18'S, 143°36'E], site 6, 10–15.x.1989, ISD (NMV); 2 ♂, 4.3 km S of Wychitella [36°18'S, 143°36'E], site 7, 10–15.x.1989, ISD (NMV); 3 ♂, near Wychitella [c. 36°20'S, 143°35'E], 10–15.x.1989, ISD (NMV).

*Diagnosis*

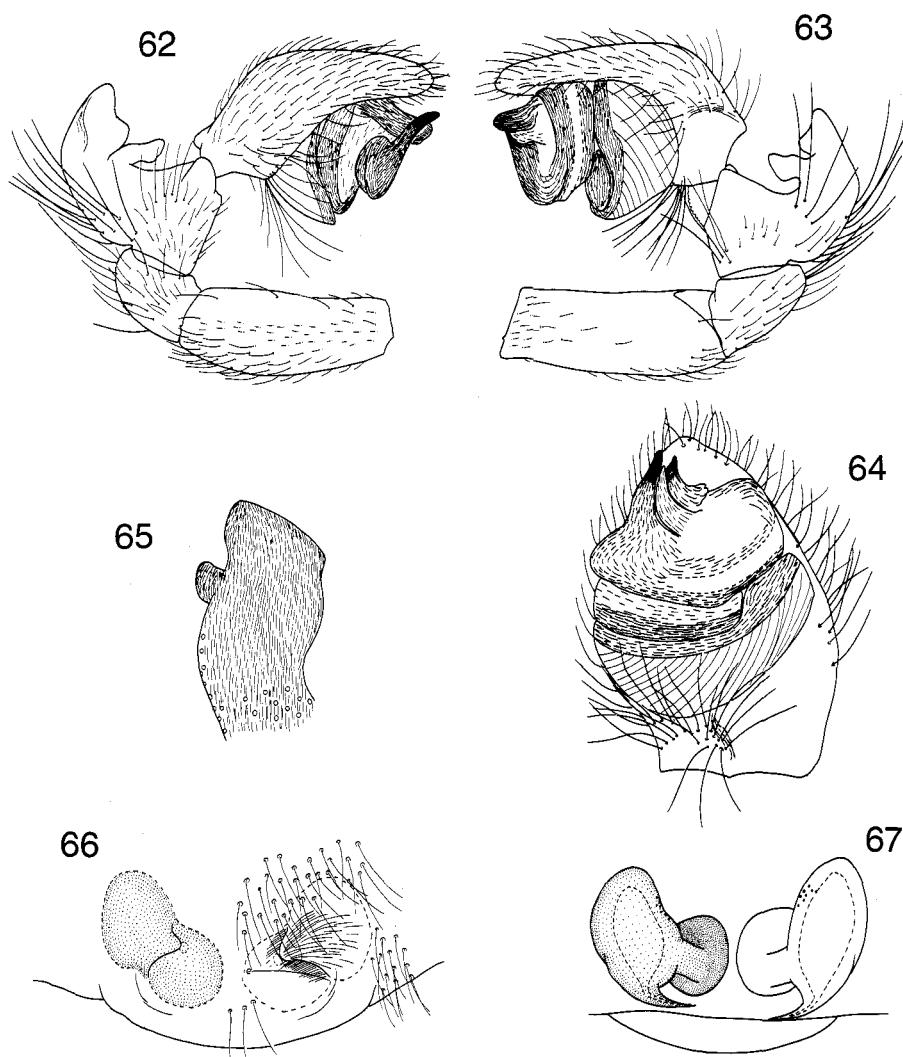
Male: embolus very thick; conductor without retrolateral basal flange. Female: copulatory opening facing anterolaterally on prominent anteriorly facing ledge.

*Description**Adult (Braemar State Forest, Qld)*

Colour: carapace and sternum red-yellow; abdomen dark brown, with metallic blue tinge in ♂ sigilla red-brown, epigastric region, spinnerets and region immediately surrounding spinnerets red-yellow; chelicerae with distal third brown, basal two-thirds red-yellow;

femora and patellae of legs red-yellow, tibiae, metatarsi and tarsi brown, although tibiae of some specimens, especially ♀ with yellow areas. Carapace with scattered bristles near fovea and ocular region, and 1 upturned seta between AMEs; fovea of ♂ a deep longitudinal depression, of ♀ a broad, shallow depression. Male pedipalp (Figs 62–65): retrolateral tibial apophysis B very thick, apophysis A sinuate with somewhat pointed apex; prolateral tibial apophysis present; embolus very thick, gently sinuate; conductor excavate, basally with 3–4 small denticles; median apophysis not sclerotised, slightly curved. Legs: long and slender; 4123 or rarely 4213; with scattered spines and spinules. Abdomen with slender curved setae, c. 0.10–0.15 (♂), 0.20–0.32 (♀) mm in length. Epigyne (Figs 66–67) with ovoid spermathecae; greatly thickened copulatory ducts, nearly touching mesally; copulatory opening facing anterolaterally on prominent anteriorly facing ledge.

*Dimensions (mm).* Holotype ♂ (paratype ♀ Braemar State Forest, Qld): total length 5.61 (5.60). Carapace 2.70/2.53 (2.42/2.29). Eyes: AME 0.10 (0.12), ALE 0.12 (0.15), PME



Figs 62–67. *Ambicodamus audax*, sp. nov. 62–65, male (5.3 km E of Kingower, Vic.), left pedipalp: 62, prolateral; 63, retrolateral; 64, ventral; 65, tibia, dorsal. 66–67, female paratype (Braemar State Forest, Qld), epigyne: 66, ventral; 67, dorsal.

0.08 (0.12), PLE 0.15 (0.15), AME-AME 0.12 (0.09), AME-ALE 0.11 (0.12), PME-PME 0.11 (0.15), PME-PLE 0.18 (0.20), PLE-ALE 0.01 (0.03), eye group width 0.78 (0.80), MOQ front width 0.28 (0.30), MOQ back width 0.29 (0.31), MOQ length 0.24 (0.29). Sternum 1.48/1.40 (1.47/1.22). Abdomen 3.28/2.31 (3.40/2.90). Pedipalp: femur 1.18 (1.05), patella 0.53 (0.53), tibia 0.60 (0.69), tarsus 1.37 (0.93), total 3.68 (3.20). Leg I: femur 2.52 (2.25), patella 0.87 (0.83), tibia 1.53 (2.10), metatarsus 2.28 (1.86), tarsus 0.90 (0.79), total 8.10 (7.80). Leg II: femur 2.26 (2.10), patella 0.83 (0.80), tibia 2.21 (1.85), metatarsus 1.98 (1.68), tarsus 0.83 (0.80), total 8.11 (7.23). Leg III: femur 1.91 (1.73), patella 0.80 (0.76), tibia 2.01 (1.28), metatarsus 1.42 (1.27), tarsus 0.70 (0.73), total 6.84 (5.77). Leg IV: femur 2.62 (2.34), patella 0.90 (0.93), tibia 2.47 (1.88), metatarsus 2.48 (1.86), tarsus 0.91 (0.90), total 9.38 (7.91).

#### Remarks

*Ambicodamus audax* shares with *A. kochi* a greatly thickened embolus, similar conductor shape and tibial apophysis shape. *A. audax* differs in lacking a retrolateral basal flange on the conductor. *A. audax* is widely distributed in eastern Australia from Kuranda, north-eastern Queensland to western Victoria and eastern South Australia (Fig. 40). Records of adult specimens range over many months, but are generally not taken in December or January.

#### Etymology

The specific epithet refers to the striking colours and widespread distribution of this species (*audax*, Latin, daring).

### *Ambicodamus dale*, sp. nov.

(Figs 39, 68–71)

#### Material Examined

*Holotype.* ♂, Conondale Range, Queensland, Australia [26°45'S, 152°37'E], 17.iii.1979, A. Rozefelds (QM S15373).

#### Diagnosis

Male: conductor with separate distal and subdistal blunt protuberances; embolus not thick; conductor cone-shaped.

#### Description

##### Adult male (Conondale Range, Qld)

Colour: carapace and sternum red-yellow; abdomen nearly black, with traces of metallic blue, sigilla red-brown, epigastric region, spinnerets and surrounding region red-yellow; chelicerae with distal third dark brown, and basal 2/3 red-yellow; tibiae, metatarsi and tarsi of legs dark brown, femora and patellae red-yellow. Carapace with scattered bristles and 1 upturned seta between AMEs; fovea a deep, somewhat longitudinal depression. Male pedipalp (Figs 68–71): retrolateral tibial apophysis B fairly slender, apophysis A slender and fairly straight; prolateral tibial apophysis present; embolus medium-sized, straight, conductor with separate distal and subdistal blunt protuberances, median apophysis slender, cone-shaped. Legs: long and slender; 4123; with scattered spines and spinules. Abdomen with slender, inconspicuous setae, c. 0.2 mm in length.

*Dimensions (mm).* Holotype ♂: total length 4.91. Carapace 2.58/2.30. Eyes: AME 0.09, ALE 0.14, PME 0.11, PLE 0.15, AME-AME 0.04, AME-ALE 0.06, PME-PME 0.12, PME-PLE 0.11, PLE-ALE 0.00, eye group width 0.64, MOQ front width 0.23, MOQ back width 0.32, MOQ length 0.26. Sternum 1.36/1.38. Abdomen 3.08/2.21. Pedipalp: femur

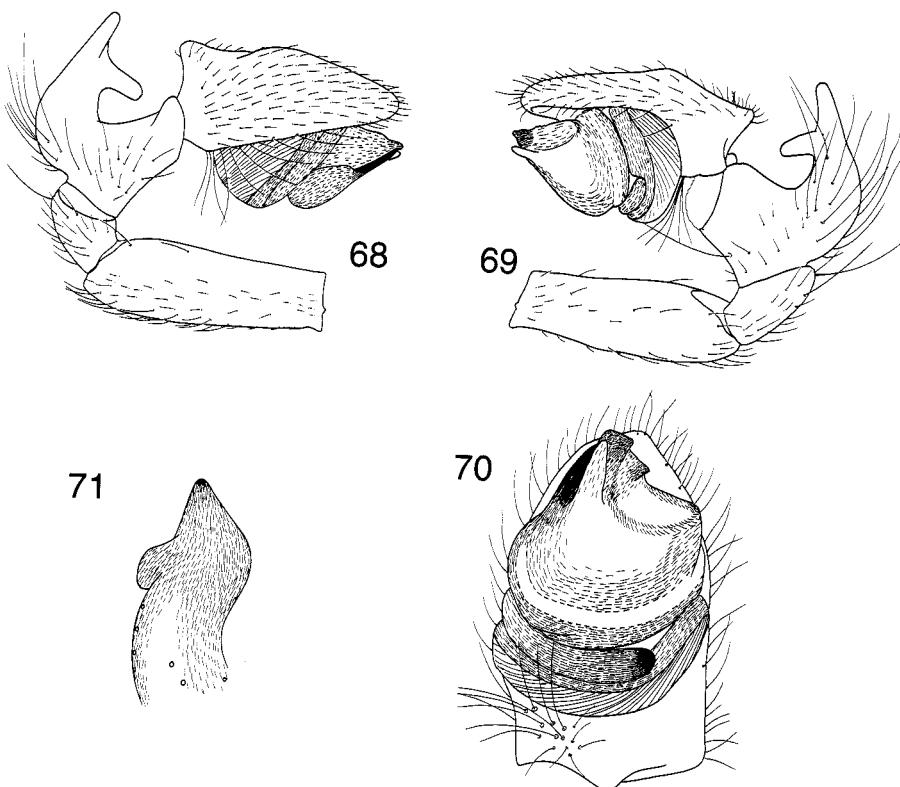
1.21, patella 0.48, tibia 0.54, tarsus 1.19, total 3.42. Leg I: femur 2.47, patella 0.81, tibia 2.30, metatarsus 2.24, tarsus 0.79, total 8.61. Leg II: femur 2.29, patella 0.81, tibia 2.20, metatarsus 2.00, tarsus 0.75, total 8.05. Leg III: femur 1.91, patella 0.72, tibia 1.62, metatarsus 1.53, tarsus 0.65, total 6.43. Leg IV: femur 2.57, patella 0.86, tibia 2.56, metatarsus 2.51, tarsus 0.78, total 9.28.

#### Remarks

This unusual species is only known from a single specimen collected in the Conondale Range, Queensland. See under *A. emu* for suspected relationships.

#### Etymology

The specific epithet is a noun in apposition derived from the type locality.



Figs 68–71. *Ambicodamus dale*, sp. nov., male holotype, left pedipalp: 68, prolaternal; 69, retrolateral; 70, ventral; 71, tibia, dorsal.

#### *Ambicodamus emu*, sp. nov. (Figs 39, 72–75)

#### Material Examined

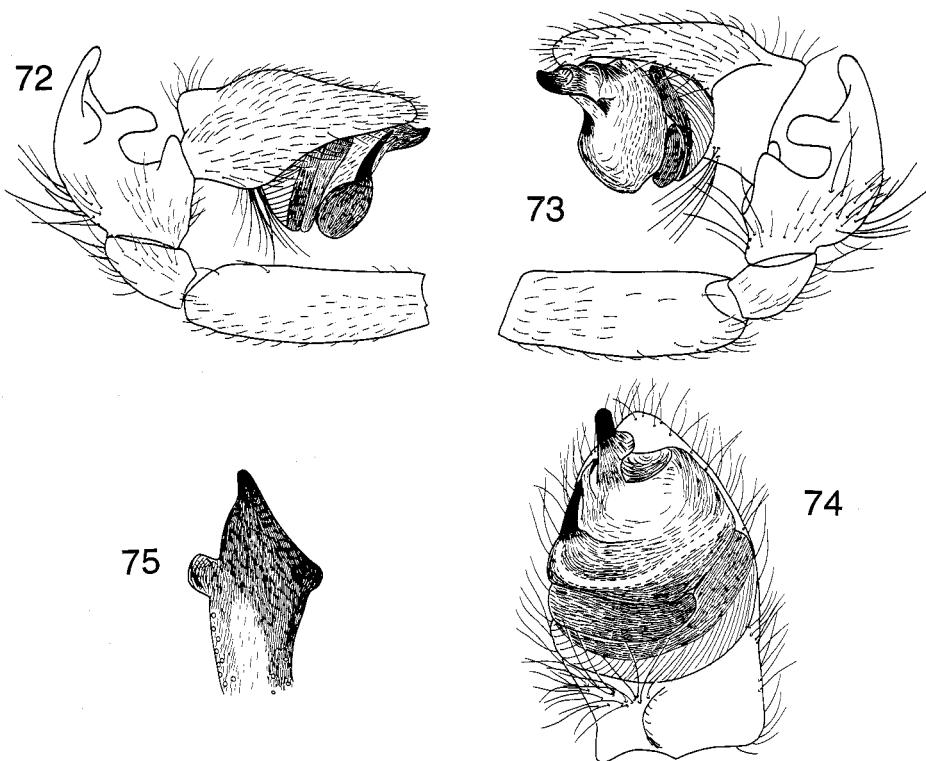
*Holotype.* ♂, Emu Vale, Queensland, Australia [28°14'S, 152°15'E], 1.vi.1953, E. Siddle (QM S15390).

#### Diagnosis

Male: conductor with large retrolateral swelling, with 3 ridges.

*Description**Adult (Emu Vale, Qld)*

Colour: carapace and sternum red-yellow; abdomen very dark brown, sigilla red-brown, epigastric region, spinnerets and surrounding region red-yellow; chelicerae with basal two-thirds red-yellow, distal third red-brown; femora and patellae of legs red-yellow, tibiae, metatarsi and tarsi of legs brown. Carapace with scattered bristles, and 1 upturned seta between AMEs; fovea a very broad depression. Male pedipalp (Figs 72–75): retrolateral tibial apophysis B with rounded apex, apophysis A blunt, slightly curved; prolateral tibial apophysis present; embolus stout; conductor with large retrolateral swelling; median apophysis not sclerotised. Legs: long and slender; 4123; with scattered spinules. Abdomen with slender, curved, inconspicuous setae, c. 0.15 mm in length.



**Figs 72–75.** *Ambicodamus emu*, sp. nov., male holotype, left pedipalp: 72, prolateral; 73, retrolateral; 74, ventral; 75, tibia, dorsal.

*Dimensions (mm).* Holotype ♂: total length 5.52. Carapace 2.97/2.80. Eyes: AME 0.11, ALE 0.15, PME 0.09, PLE 0.12, AME–AME 0.04, AME–ALE 0.08, PME–PME 0.15, PME–PLE 0.15, PLE–ALE 0.01, eye group width 0.74, MOQ front width 0.26, MOQ back width 0.34, MOQ length 0.23. Sternum 1.70/1.49. Abdomen 3.31/2.24. Pedipalp: femur 1.48, patella 0.65, tibia 0.59, tarsus 1.40, total 4.12. Leg I: femur 2.80, patella 1.02, tibia 2.90, metatarsus 2.61, tarsus 0.86, total 10.19. Leg II: femur 2.18, patella 1.00, tibia 2.48, metatarsus 2.32, tarsus 0.80, total 8.78. Leg III: femur 2.19, patella 0.92, tibia 1.88, metatarsus 1.80, tarsus 0.70, total 7.49. Leg IV: femur 3.03, patella 1.10, tibia 2.98, metatarsus 2.90, tarsus 0.99, total 11.00.

### Remarks

*Ambicodamus emu* appears to represent the sister-group to *A. dale* based upon the modified retrolateral margin of the conductor. Males of *A. emu* differ from those of all other species of the genus by the unusual swelling on the conductor (Fig. 74).

### Etymology

The specific epithet is a noun in apposition taken from the type locality.

### *Ambicodamus leei*, sp. nov.

(Figs 39, 76–81)

### Material Examined

**Holotype.** ♂, Bool Lagoon Conservation Reserve, South Australia, Australia, 37°06'S, 140°44'E, amongst grass, 23.iv.1979, D. C. Lee (SAM N1989497).

**Paratypes.** **Australia: South Australia:** 1 ♀, Beachport, 37°29'S, 140°00'E, Jan. 1906, J. C. Verov (SAM N1989498); 1 ♂, Monteith, near R. Murray, 35°11'S, 139°23'E, on lawn, 22.xi.1987, K. Beasley (SAM N1989492); 1 ♂, 2 ♀, Myponga, Mt Lofty Ranges, 35°23'S, 138°28'E, in roadside swamp, 26.xi.1947, G. F. Gross (SAM N1989493–5); 1 ♀, 5 mi E of Naracoorte [36°58'S, 140°50'E], swamp vegetation, 29.x.1958, G. F. Gross (SAM N1989496); 3 ♂, 2 ♀, 5 km SE of Narrung, 35°33'25"S, 139°10'55"E, 4–8.xi.1991, NPWS Murray Valley Survey (SAM N1994176–80); 1 ♀, left bank of R. Murray opposite Caloote Landing, 34°58'S, 139°16'E, crawling on sand under *Eucalyptus*, 6.i.1971, J. J. and M. L. Szent-Ivany (SAM N1989491).

### Diagnosis

Male: embolus short, tapering; retrolateral tibial apophysis B tapering to a fine point. Female: ovoid spermathecae; greatly thickened copulatory ducts, not touching mesally; copulatory opening facing laterally via semi-circular cavity on epigyne.

### Description

#### Adult (Bool Lagoon Conservation Reserve, and Caloote Landing, SA)

Colour: carapace and sternum red-yellow; abdomen dark brown with metallic blue tinges, sigilla red-brown, epigastric region, spinnerets and surrounding region red-yellow; chelicerae with distal half dark brown, basal half red-yellow; ♂ all segments of legs I–II dark brown, tibiae, metatarsi and tarsi of legs III–IV dark brown, femora and patellae III–IV red-yellow. Carapace with scattered bristles, and 1 upturned seta between AMEs; fovea a broad depression. Male pedipalp (Figs 76–79): retrolateral tibial apophysis B tapering to a fine point, apophysis A stout, slightly curved; prolateral tibial apophysis present; embolus short, tapering; conductor basally excavate; median apophysis long, triangular. Legs: long and slender; 4:1:2:3; with scattered spines and spinules. Abdomen of ♂ with small, curved, inconspicuous setae, c. 0.1 mm in length; of ♀ unknown (all available specimens have setae rubbed off). Epigyne (Figs 80–81) with ovoid spermathecae; greatly thickened copulatory ducts, not touching mesally; copulatory opening facing laterally via semi-circular cavity on epigyne.

**Dimensions (mm).** Holotype ♂ (paratype ♀ Caloote Landing, SA): total length 6.00 (6.80). Carapace 3.10/2.62 (2.61/2.42). Eyes: AME 0.09 (0.12), ALE 0.15 (0.15), PME 0.09 (0.10), PLE 0.12 (0.12), AME–AME 0.12 (0.10), AME–ALE 0.09 (0.09), PME–PME 0.13 (0.11), PME–PLE 0.17 (0.15), PLE–ALE 0.03 (0.00), eye group width 0.78 (0.75), MOQ front width 0.31 (0.29), MOQ back width 0.32 (0.31), MOQ length 0.26 (0.26). Sternum 1.71/1.48 (1.51/1.43). Abdomen 3.92/2.67 (5.28/4.00). Pedipalp: femur 1.37 (1.13), patella 0.57 (0.58), tibia 0.46 (0.65), tarsus 1.38 (1.18), total 3.78 (3.54). Leg I: femur 2.75 (2.40), patella 1.04 (0.96), tibia 2.62 (2.28), metatarsus 2.21 (2.00), tarsus 0.97 (0.91), total 9.59

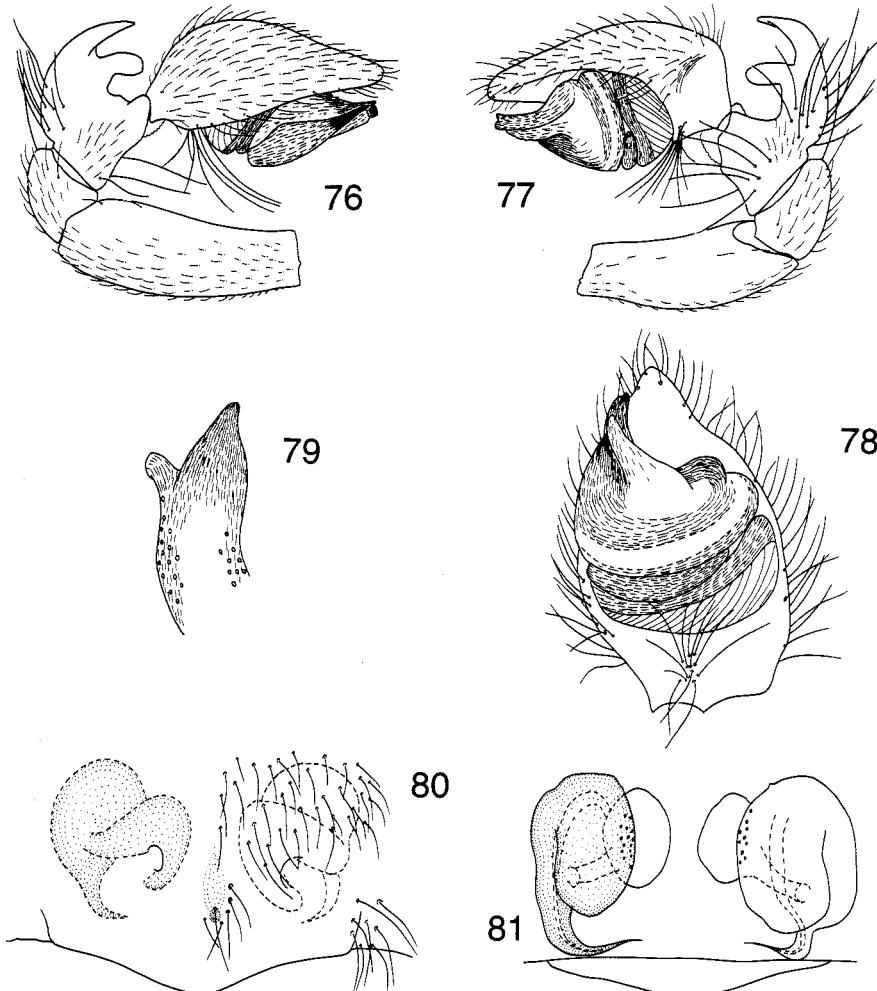
(8.55). Leg II: femur 2.60 (2.28), patella 1.03 (0.94), tibia 2.40 (2.01), metatarsus 2.07 (1.80), tarsus 0.88 (0.89), total 8.98 (7.92). Leg III: femur 2.19 (1.85), patella 0.96 (0.89), tibia 1.76 (1.50), metatarsus 1.73 (1.42), tarsus 0.80 (0.80), total 7.44 (6.46). Leg IV: femur 2.98 (2.51), patella 1.05 (1.06), tibia 2.85 (2.28), metatarsus 2.72 (2.11), tarsus 0.94 (0.93), total 10.54 (8.89).

#### Remarks

*Ambicodamus leei* differs from all of its congeners by the short, tapering embolus, and by the central epigynal depression. It has been collected only in south-eastern South Australia (Fig. 39). Few adults are held in museum collections, with males collected in April and November, and females in January, October and November.

#### Etymology

This species is named for the collector of the holotype and former curator of arachnids at the South Australian Museum, the late David C. Lee.



Figs 76–81. *Ambicodamus leei*, sp. nov. 76–79, male holotype, left pedipalp: 76, prolateral; 77, retrolateral; 78, ventral; 79, tibia, dorsal. 80–81, female paratype (Caloote Landing, SA), epigyne: 80, ventral; 81, dorsal.

*Ambicodamus southwelli*, sp. nov.

(Figs 40, 82–87)

*Ozaleus tarandus* Thorell, 1890: 294 (misidentification in part, ♂ paralectotype only).*Material Examined*

**Holotype.** ♂, Yan Yean [37°34'S, 145°06'E], Victoria, Australia, 9.xi.[19]08, J. A. K. (NMV K3084).

**Paratypes.** **Australia: Victoria:** 1 ♀, same data as holotype (NMV K3085); 1 ♂, 1 ♀, 1 juv., 4.5 km SSE of Cowes, Phillip I. [38°30'S, 145°14'E], under bark of *Eucalyptus* sp., 21.vii.1985, M. S. Harvey (WAM 93/1890–1892); 1 ♂, Croydon [37°48'S, 145°17'E], 19.xi.1957, S. A. Cherrill (NMV K3086); 1 ♂, 1 ♀, 4 km by road E of Healesville, 37°39'S, 145°34'E, 200 m, 30.ix.1986, M. S. Harvey (WAM 93/1893–1894); 2 ♂, 1 ♀, Heathmont [37°50'S, 145°15'E], 28.vii.1948, R. Boswell (NMV K3087); 1 ♂, Melbourne [37°49'S, 144°58'E], 31.x.1968 (NMV K3088); 1 ♂, Mt Dandenong [37°50'S, 145°21'E] (NMV K3089); 1 ♂, 1 ♀, Scoresby [37°54'S, 145°14'E], 1.x.1953, L. S. G. Butler (NMV K3090); 1 ♂, Woori Yallock area [c. 37°47'S, 145°32'E], Oct. 1989, K. J. Ballantyne (NMV K3091); 1 ♂, 1 juv., Wonga Rd, Warranwood, 37°46'S, 145°14'E, under bark of *Eucalyptus* sp., 14.x.1978, M. S. Harvey, G. H. Southwell (WAM 93/1895–1896).

**Other material.** **Australia: New South Wales:** 1 ♂, Benandarah State Forest, 8 km N of Bateman's Bay, 35°40'S, 150°14'E, 21.ix.1979, C. Horseman (AM KS40941); 1 ♂, 2 ♀, 1 juv., 28 km SW of Bombala, 37°06'S, 149°28'E, 5.xii.1984, MSH, RJR, G. Dyne (ANIC); 2 ♂, 3 ♀, 6 juvs, Jenolan [Caves] [33°50'S, 150°40'E] [23.x.1901, Y. Wiburd] (AM KS21994); 1 ♂, Jenolan Caves [33°50'S, 150°40'E] (NHMW); 1 ♂, 10 km S of Narooma [36°18'S, 150°08'E], 9.xi.1985, D. Bickel (AM KS40942); 1 ♀ [Royal] Natl Park [34°08'S, 151°04'E], 6.viii.1922, A. Musgrave (AM KS28752); 1 ♂, Sutton Forest [34°34'S, 150°19'E], 5.xi.1901, M. Mouse (AM KS21997). **Tasmania:** 1 ♂, Launceston [41°27'S, 147°10'E], Simson (MNHP 4686); 1 ♀, no further data, Pulleine Collection (SAM N1989505). **Victoria:** 2 ♂, 1 ♀, 3 juv. ♂, 1 km NW of Anakie Junction, Brisbane Ranges, 37°53'S, 144°15'E, under bark, 3.vi.1989, D. Hirst (SAM N1989558–62, N1989569); 1 ♂, 1 ♀, Churchill, 38°18'S, 146°25'E, 120 m, ex colony under bark on stringybark, 8.xi.1992, R. de Souza-Daw (SAM N1994200–1); 7 ♀, 1 juv., 10 km N of Gaffney's Ck. [c. 37°53'S, 146°12'E], 21.xii.[19]77, E. I. Schlinger (CAS); 1 ♂, Heathmont [37°50'S, 145°15'E], 10.x.1991, H. Kennedy (NMV); 2 ♂, 1 ♀, Melbourne [37°49'S, 144°58'E], 1867, F. Mueller (MCZ); 3 ♀, Mt Buffalo, E base [36°46'S, 146°47'E], 250 m, 12.xii.1962, ESR, DQC (CAS); 1 ♀, Mt Martha [38°18'S, 145°00'E], 18.vi.1989, D. Hirst (SAM N1989563); 1 ♂, 1 ♀, Mulgrave [37°55'S, 145°11'E], Aug. [19]00, T. K. (NMV); 1 ♂, reserve on Tarwin R., Koonwarra [38°33'S, 145°57'E], under bark, 18.vi.1989, D. Hirst (SAM N1989557); 1 ♂, Tooradin [38°13'S, 145°23'E], 9.ix.1991, J. Rundle (NMV); 1 ♂, 1 ♀, no further data, 6.iii.[18]83, M. Dubouley (NMV). **Without data:** 1 paralectotype ♂, of *Ozaleus tarandus*, van Hasselt (SMNH 223/1347).

*Diagnosis*

Male: margin of embolar base distinctly offset from embolus; embolus stout; retro-lateral margin of conductor smooth. Female: enlarged, ovoid spermathecae; long, curved copulatory ducts; and copulatory openings directed laterally.

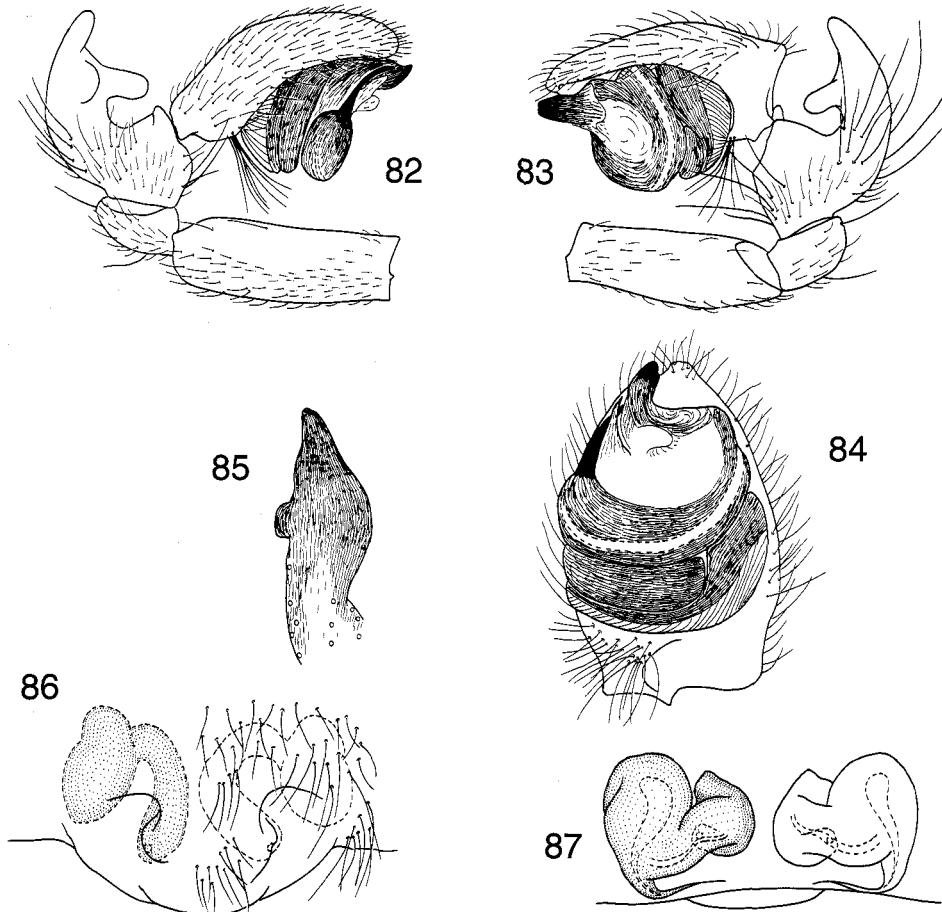
*Description**Adult (Yan Yean, Vic.)*

Colour: carapace and sternum red-yellow; abdomen dark brown with tinges of metallic blue, sigilla red-brown, epigastric region, spinnerets and surrounding region red-yellow; chelicerae red-yellow in basal half, dark brown in distal half; tibiae, metatarsi and tarsi of legs dark brown, patellae and femora light yellow-brown; ♀ with paler tibiae and metatarsi III–IV than ♂. Carapace with scattered bristles and 1 upturned setae between AMEs; fovea a broad depression. Male pedipalp (Figs 82–85): retro-lateral tibial apophysis B distally rounded with large subbasal swelling, apophysis A straight; prolateral tibial apophysis present; embolus stout, slightly curved; conductor deeply excavate, and with smooth retro-lateral margin; median apophysis narrow, not sclerotised. Legs: long and slender; 4123; with scattered spinules. Abdomen of ♂ with short, slender, curved setae, c. 0.15 mm in length; of ♀ with slender setae, c. 0.4 mm in length. Epigyne (Figs 86–87) with enlarged, ovoid spermathecae; long, curved copulatory ducts; and copulatory openings directed laterally.

**Dimensions (mm).** Holotype ♂ (paratype ♀ Yan Yean, Vic.): total length 5.60 (6.70). Carapace 2.81/2.71 (2.80/2.55). Eyes: AME 0.10 (0.10), ALE 0.11 (0.12), PME 0.11 (0.11), PLE 0.12 (0.13), AME-AME 0.06 (0.07), AME-ALE 0.06 (0.09), PME-PME 0.12 (0.12), PME-PLE 0.13 (0.13), PLE-ALE 0.02 (0.02), eye group width 0.70 (0.71), MOQ front width 0.26 (0.29), MOQ back width 0.33 (0.35), MOQ length 0.24 (0.30). Sternum 1.67/1.49 (1.51/1.42). Abdomen 3.40/2.35 (4.92/4.00). Pedipalp: femur 1.39 (1.12), patella 0.59 (0.58), tibia 0.65 (0.69), tarsus 1.45 (0.98), total 4.08 (3.37). Leg I: femur 2.70 (2.20), patella 0.98 (0.91), tibia 2.71 (2.09), metatarsus 2.45 (1.84), tarsus 0.90 (0.82), total 9.74 (7.86). Leg II: femur 2.44 (2.02), patella 1.00 (0.95), tibia 2.41 (1.88), metatarsus 2.09 (1.63), tarsus 0.82 (0.80), total 8.76 (7.28). Leg III: femur 2.00 (1.65), patella 0.91 (0.88), tibia 1.73 (1.40), metatarsus 1.60 (1.35), tarsus 0.80 (0.72), total 7.04 (6.00). Leg IV: femur 2.67 (2.30), patella 1.08 (1.09), tibia 2.73 (2.09), metatarsus 2.56 (1.90), tarsus 0.84 (0.89), total 9.88 (8.27).

#### Remarks

*Ambicodamus southwelli* occurs in the forests of south-eastern Australia, from Jenolan Caves, New South Wales to Launceston, Tasmania (Fig. 40). Adults of both sexes have been collected from June to December, and one record in March.



**Figs 82–87.** *Ambicodamus southwelli*, sp. nov. 82–85, male holotype, left pedipalp: 82, prolateral; 83, retrolateral; 84, ventral; 85, tibia, dorsal. 86–87, female paratype (Yan Yean, Vic.), epigyne: 86, ventral; 87, dorsal.

### *Etymology*

This species is named for Geoff Southwell, who assisted in the collection of some of the type specimens.

### *Ambicodamus crinitus* (L. Koch), comb. nov.

(Figs 41, 88–93)

*Theridium crinitum* L. Koch, 1872: 271–273, plate 22 figs 8, 8a. — Bonnet, 1959: 4463.

*Theridion crinitum* L. Koch. — Roewer, 1942: 485.

### *Material Examined*

*Holotype.* ♀, Australia (as Neuholland) (SMNH 107/325).

*Other material.* **Australia:** **New South Wales:** 1 ♂, Piallamore, via Tamworth [31°10'S, 151°03'E], 5.x.1980, C. Easton (AM KS5970). **Tasmania:** 1 ♂, 1 juv. ♂, 1 juv. ♀, Jericho [42°23'S, 147°17'E], 29–31.i.1966, M. Davies (TM J538). **Victoria:** 1 ♂, near Albury [c. 36°05'S, 146°56'E], 1.i.1974, A. R. Haller (MCZ); 1 ♂, Crib Point [38°22'S, 145°12'E], 24.v.1978, R. Easton (WAM 93/1874); 3 ♀, 7 juvs, Ferntree Gully [37°53'S, 145°18'E], Jan. 1937, H. Womersley (SAM N1989506–15); 1 ♂, 3 km N of Grantville [38°23'S, 145°33'E], beach area, 17.xii.[19]77, E. I. Schlinger (CAS); 2 ♀, Kangaroo Ground [37°41'S, 145°13'E], 18.xii.[19]54, Neboiss (NMV); 1 juv. ♂, 1 ♀, same data except 15.iv.1956 (NMV); 1 ♀, 5.3 km E of Kingower, site 8 [36°37'S, 143°48'E], 10–15.x.1989, ISD (NMV); 1 ♀, Meredith [37°51'S, 144°04'E], 11.viii.[19]55, Neboiss (NMV); 1 ♂, Rotamah I., 20 km SE of Bairnsdale, 37°59'S, 147°43'E, 4.xi.1985, D. C. F. Rentz, R. Chiang (ANIC); 1 ♀, Tyers [38°09'S, 146°28'E], 2.vii.1925, J. Galbraith (NMV); 1 ♀, same data except 23.ix.1925 (NMV); 1 ♀, Woori Yallock [37°47'S, 145°32'E], 19.xii.1956, Neboiss (NMV); 1 ♂, Yea [37°13'S, 145°26'E], 2.iv.1978, N. Douglas (NMV).

### *Diagnosis*

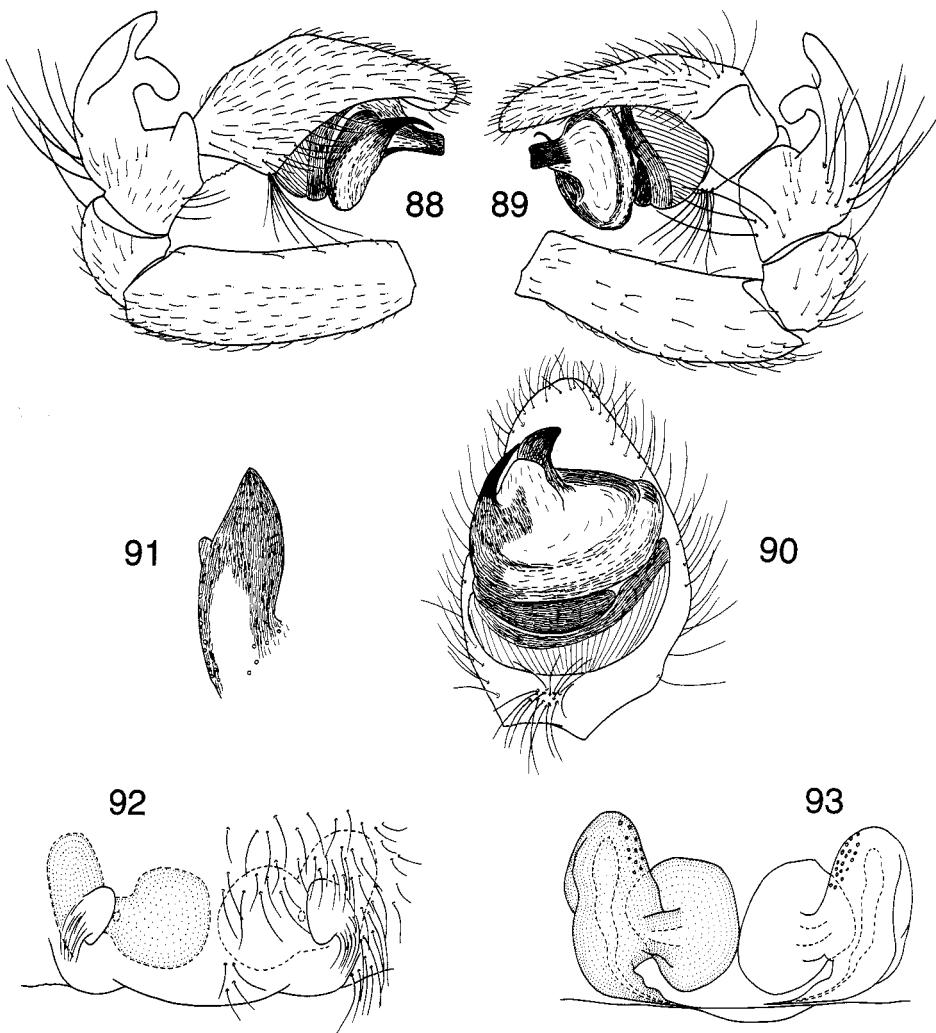
Male: median apophysis broad, basally sclerotised; conductor with smooth lateral margins. Female: ovoid spermathecae; greatly thickened copulatory ducts, nearly touching mesally; copulatory opening facing laterally via large semi-circular cavity on epigyne with posteriorly directed groove.

### *Description*

*Adult (Piallamore, NSW, and 5.3 km E of Kingower, Vic.)*

Colour: carapace and sternum red-yellow; abdomen dark brown, with tinges of metallic blue, sigilla red-brown, epigastric region, spinnerets and surrounding region red-yellow; chelicerae with basal third red-yellow, distal two-thirds brown; legs I–II completely brown; femora and patellae of legs III–IV red-yellow, tibia, metatarsi and tarsi III–IV brown. Carapace with scattered bristles, and 1 upturned seta between AMEs; fovea a broad shallow depression. Male pedipalp (Figs 88–91): retrolateral tibial apophysis B with gently tapering apex, apophysis A slightly hooked; prolateral tibial apophysis present; embolus short, stout, curved; conductor somewhat rectangular in lateral view, nearly triangular in ventral view; median apophysis broad, base sclerotised. Legs: long and slender; 4123; with scattered spinules. Abdomen with slender, curved, inconspicuous setae, c. 0.10–0.15 (♂), 0.35–0.40 (♀) mm in length. Epigyne (Figs 92–93) with ovoid spermathecae; greatly thickened copulatory ducts, nearly touching mesally; copulatory opening facing laterally via large semi-circular cavity on epigyne with posteriorly directed groove.

*Dimensions (mm).* ♂, Piallamore, NSW (♀, 5.3 km E of Kingower, Vic.): total length 4.80 (6.30). Carapace 2.68/2.44 (2.78/2.41). Eyes: AME 0.12 (0.12), ALE 0.14 (0.16), PME 0.08 (0.09), PLE 0.15 (0.14), AME–AME 0.13 (0.09), AME–ALE 0.10 (0.09), PME–PME 0.12 (0.11), PME–PLE 0.15 (0.17), PLE–ALE 0.01 (0.00), eye group width 0.73 (0.78), MOQ front width 0.31 (0.28), MOQ back width 0.29 (0.29), MOQ length 0.24 (0.24).



Figs 88-93. *Ambicodamus crinitus* (L. Koch). 88-91, male, left pedipalp: 88, pro-lateral; 89, retro-lateral; 90, ventral; 91, tibia, dorsal. 92-93, female (5.3 km E. of Kingower, Vic.), epigyne: 92, ventral; 93, dorsal.

Sternum 1.48/1.40 (1.51/1.35). Abdomen 2.70/1.80 (shrivelled) (4.22/3.38). Pedipalp: femur 1.22 (1.07), patella 0.50 (0.54), tibia 0.43 (0.63), tarsus 1.15 (1.00), total 3.30 (3.24). Leg I: femur 2.61 (2.17), patella 0.89 (0.90), tibia 2.51 (1.97), metatarsus 2.25 (1.70), tarsus 0.94 (0.83), total 9.20 (7.57). Leg II: femur 2.47 (2.02), patella 0.91 (0.85), tibia 2.29 (1.73), metatarsus 2.08 (1.52), tarsus 0.90 (0.81), total 8.65 (6.93). Leg III: femur 2.08 (1.62), patella 0.86 (0.80), tibia 1.72 (1.31), metatarsus 1.62 (1.23), tarsus 0.81 (0.80), total 7.09 (5.76). Leg IV: femur 2.85 (2.27), patella 1.00 (0.93), tibia 2.62 (1.96), metatarsus 2.58 (1.73), tarsus 0.93 (0.90), total 9.98 (7.79).

#### Remarks

Males of *A. crinitus* differ from those of the similar *A. urbanus* by the shape of the conductor and median apophysis (see that species for further details). The MOQ front width of the male from Piallamore is greater than MOQ back width, whereas in other males of *A. crinitus* the front width is either equal to the back width or slightly smaller.

*Ambicodamus crinitus* is found in eastern Australia from northern NSW to Tasmania (Fig. 41), where it occupies many habitats including moist forest and beach areas. Most adults were collected from winter to summer (July to January), as well as April and May.

*Ambicodamus urbanus*, sp. nov.

(Figs 41, 94–99)

*Material Examined*

*Holotype.* ♂, Penshurst, New South Wales, Australia [33°47'S, 151°05'E], 1908, E. Cheel (AM KS21996).

*Paratypes.* **Australia: New South Wales:** 1 ♀, same data as holotype (AM KS21996); 1 ♀, Bankstown [33°55'S, 151°03'E], 22.iv.1956, R. Witchard (AM KS22055); 1 ♂, Epping [33°46'S, 151°05'E], 4.v.1959, J. R. Kinghorn (AM KS22046); 1 ♂, Ryde [33°48'S, 151°06'E], 12.vi.1903, P. R. Young (AM KS21993); 1 ♂, Sydney [33°53'S, 151°13'E], Sept. 1903, G. P. Ramsay (AM KS22003).

*Other material.* **Australia: New South Wales:** 1 ♀, Digger's Camp, 4 mi N of Wooli [29°49'S, 153°17'E], on sanddune, 14.viii.1972, H. Posamentier (AM KS22032); 1 ♂, Inverell [29°46'S, 151°07'E], 26.vii.1897, H. Deane (AM KS21991).

*Diagnosis*

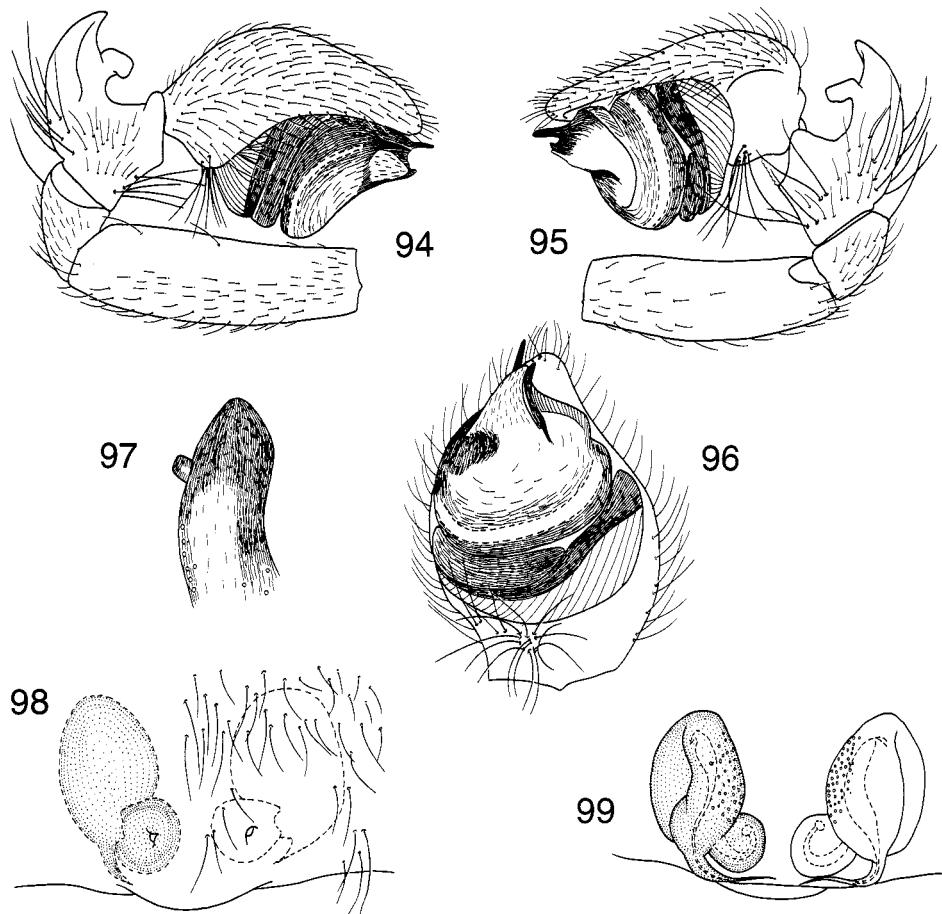
Male: median apophysis broad, basally sclerotised; conductor with a long, slender dorsal apophysis and a short, curved ventral apophysis. Female: ovoid spermathecae; copulatory ducts rounded, somewhat coiled; copulatory openings very small.

*Description*

*Adult (Penshurst, NSW)*

Colour: carapace and sternum red-yellow; abdomen dark brown, sigilla red-brown, epigastric region, spinnerets and surrounding region red-yellow; chelicerae with basal third red-yellow, distal two-thirds brown; femora and patellae of legs red-yellow, tibiae, metatarsi and tarsi brown. Carapace with scattered bristles and 1 upturned seta between AMEs; fovea a broad, shallow depression. Male pedipalp (Figs 94–97): retrolateral tibial apophysis B with blunt apex, apophysis A curved; prolateral tibial apophysis present; embolus short, stout; conductor with a long, slender dorsal apophysis and a short, curved ventral apophysis; median apophysis triangular, with sclerotised base. Legs: long and slender; 4:1:2:3; with scattered spines and spinules. Abdomen of ♂ with short, slender curved setae, c. 0.15 mm in length; of ♀ with longer, curved setae, c. 0.4–0.5 mm in length. Epigyne (Figs 98–99) with ovoid spermathecae; copulatory ducts rounded, somewhat coiled; copulatory openings very small.

*Dimensions (mm).* Holotype ♂ (paratype ♀ Penshurst, NSW): total length 4.55 (5.22). Carapace 2.55/2.31 (2.48/2.15). Eyes: AME 0.09 (0.09), ALE 0.12 (0.12), PME 0.08 (0.09), PLE 0.12 (0.12), AME–AME 0.12 (0.10), AME–ALE 0.09 (0.10), PME–PME 0.13 (0.10), PME–PLE 0.16 (0.15), PLE–ALE 0.02 (0.02), eye group width 0.69 (0.69), MOQ front width 0.26 (0.26), MOQ back width 0.29 (0.28), MOQ length 0.22 (0.26). Sternum 1.40/1.29 (1.40/1.22). Abdomen 2.68/1.71 (3.60/2.55). Pedipalp: femur 1.09 (0.91), patella 0.47 (0.50), tibia 0.40 (0.58), tarsus 1.06 (0.90), total 3.02 (2.89). Leg I: femur 2.26 (2.00), patella 0.80 (0.81), tibia 2.10 (1.80), metatarsus 1.86 (1.55), tarsus 0.77 (0.71), total 7.79 (6.87). Leg II: femur 2.10 (1.84), patella 0.82 (0.81), tibia 1.88 (1.60), metatarsus 1.73 (1.40), tarsus 0.72 (0.68), total 7.25 (6.33). Leg III: femur 1.80 (1.53), patella 0.79 (0.79), tibia 1.48 (1.12), metatarsus 1.35 (1.12), tarsus 0.61 (0.60), total 6.03 (5.27). Leg IV: femur 2.48 (2.09), patella 0.90 (0.88), tibia 2.15 (1.69), metatarsus 2.12 (1.50), tarsus 0.75 (0.72), total 8.40 (6.88).



**Figs 94–99.** *Ambicodamus urbanus*, sp. nov.: 94–97, male holotype, left pedipalp: 94, prolateral; 95, retrolateral; 96, ventral; 97, tibia, dorsal; 98–99, female paratype (Penshurst, NSW), epigyne: 98, ventral; 99, dorsal.

#### Remarks

The male pedipalp of *A. urbanus* resembles that of *A. crinitus* in having a broad median apophysis, with the basal portion lightly sclerotised (the sclerotisation extending from the embolus base). They differ in the shape of the conductor, which is complete in *A. crinitus* but with two apophyses in *A. urbanus*.

Specimens have been collected from the Sydney metropolitan region, Inverell and Wooli, New South Wales (Fig. 41) in all months from April to September.

#### Etymology

The specific epithet refers to the occurrence of this species in the Sydney metropolitan region (*urbanus*, Latin, of the city).

*Ambicodamus darlingtoni*, sp. nov.

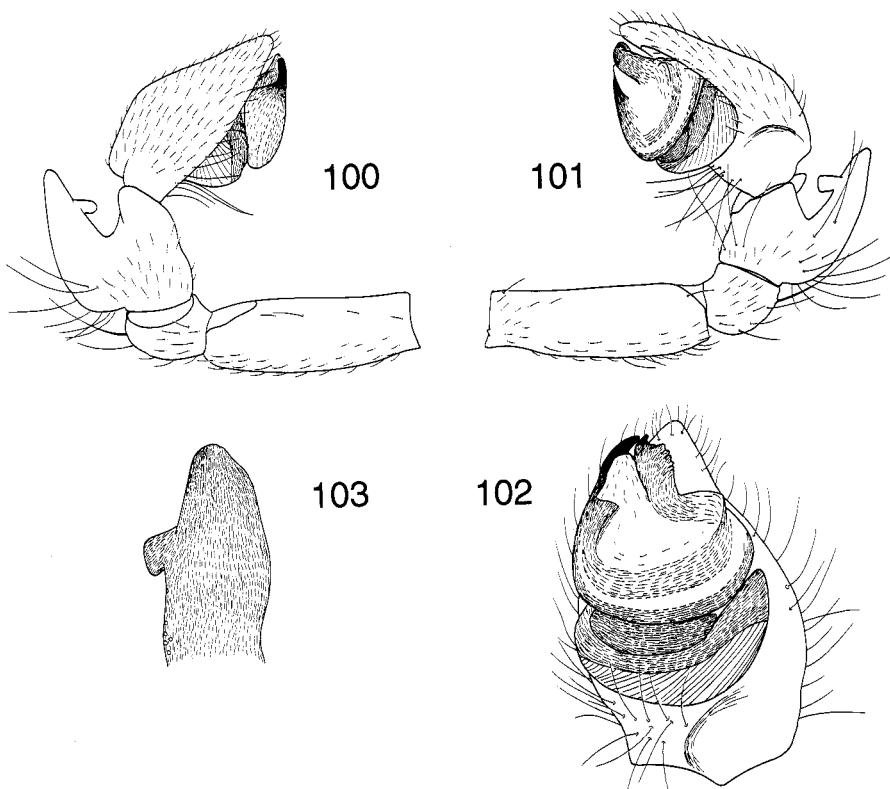
(Figs 41, 100–103)

*Material Examined*

*Holotype.* ♂, Barrington Tops, New South Wales, Australia [32°02'S, 151°24'E], 5000 ft [= 1524 m], 10.ii.[19]32, [P. J.] Darlington (MCZ).

*Diagnosis*

Male: median apophysis broad, basally sclerotised; conductor with serrate lateral margin.



Figs 100–103. *Ambicodamus darlingtoni*, sp. nov., male holotype, left pedipalp: 100, prolateral; 101, retrolateral; 102, ventral; 103, tibia, dorsal.

*Description**Adult male (Barrington Tops, NSW)*

Colour: carapace and sternum red-yellow; abdomen dark brown, nearly black, sigilla red-brown, epigastric region, spinnerets and surrounding region red-yellow; distal third of chelicerae dark brown, basal 2/3 red-yellow; tibiae, metatarsi and tarsi of legs dark brown, femora and patellae red-yellow. Carapace with scattered bristles, and 1 upturned seta between AMEs; fovea a broad, shallow depression. Male pedipalp (Figs 100–103): retrolateral tibial apophysis B gently tapering to blunt tip, apophysis A small; prolateral

tibial apophysis present; embolus thick, strongly curved, conductor with several subdistal serrations, median apophysis broad, somewhat triangular. Legs: long and slender; 4123; with scattered spines and spinules. Abdomen with stiff setae, c. 0.15–0.2 mm in length.

*Dimensions (mm).* Holotype ♂: total length >3.92 (abdomen shrivelled). Carapace 2.30/2.07. Eyes: AME 0.09, ALE 0.12, PME 0.09, PLE 0.12, AME–AME 0.12, AME–ALE 0.09, PME–PME 0.12, PME–PLE 0.15, PLE–ALE 0.01, eye group width 0.66, MOQ front width 0.26, MOQ back width 0.29, MOQ length 0.23. Sternum 1.26/1.28. Abdomen – (shrivelled). Pedipalp: femur 1.19, patella 0.42, tibia 0.60, tarsus 1.33, total 3.54. Leg I: femur 2.38, patella 0.75, tibia 2.32, metatarsus 2.04, tarsus 0.84, total 8.33. Leg II: femur 2.15, patella 0.73, tibia 2.09, metatarsus 1.90, tarsus 0.63, total 7.50. Leg III: femur 1.79, patella 0.77, tibia 1.53, metatarsus 1.41, tarsus 0.76, total 6.26. Leg IV: femur 2.48, patella 0.80, tibia 2.32, metatarsus 2.31, tarsus 0.90, total 8.81.

#### Remarks

The only known specimen of *Ambicodamus darlingtoni* is poorly preserved, and may have dried out since collection. *A. darlingtoni* is known only from near the summit of Barrington Tops, New South Wales (Fig. 41).

#### Etymology

This species is named for the late P. J. Darlington, Jr, collector of the holotype.

### Genus *Litodamus*, gen. nov.

Type species: *Litodamus hickmani*, sp. nov.

#### Diagnosis

Male: retrolateral tibial apophysis A absent, or small and poorly desclerotised. Female: copulatory ducts large and rounded, nearly touching in mid-line; copulatory openings inconspicuous, laterally located. Sternum dark red-brown, much darker than coxae.

#### Remarks

The small size or the complete absence of retrolateral tibial apophysis A, the inflated copulatory ducts, and the dark red-brown sternum of *Litodamus* spp. are unique within the Nicodamidae, and clearly separate these three species from all others. As discussed above, *Litodamus* appears most similar to *Ambicodamus*.

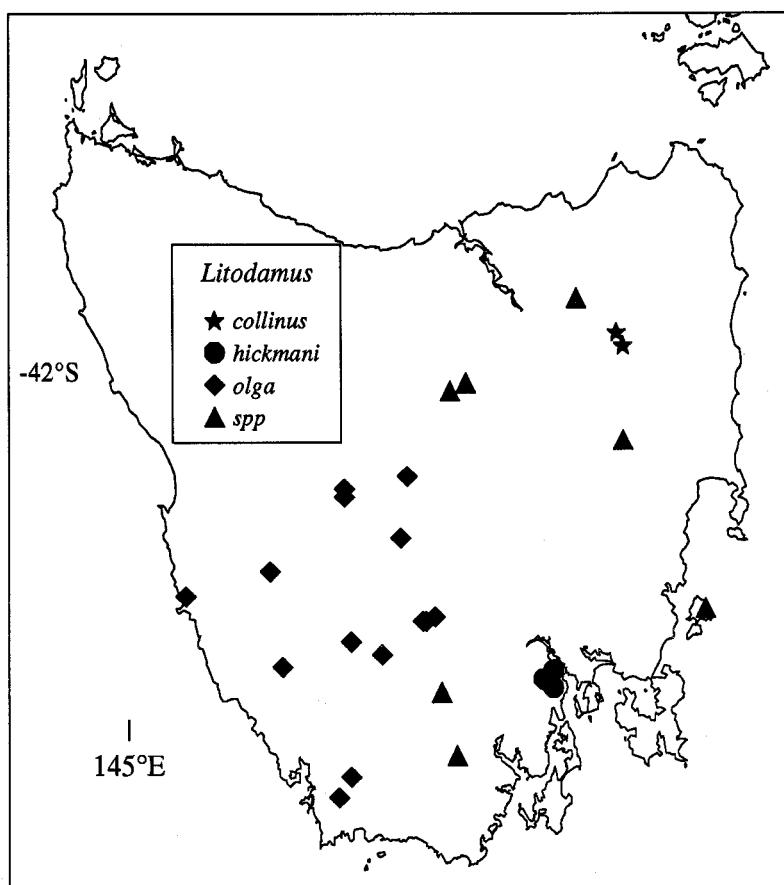
*Litodamus hickmani* and *L. olga* are extremely similar and, although males are easily distinguished, the separation of females is virtually impossible. The dark colouration of the sternum is present even in the smallest juveniles examined.

The genus is known only from Tasmania (Fig. 104) where extensive speciation appears to have occurred. The three recognised species are largely allopatric and confined mainly to montane regions, with *L. hickmani* in the Hobart region, *L. olga* in the south-western massif, and *L. collinus* on Ben Lomond in the north-west. As discussed below, isolated females from other localities cannot be assigned to the three species described here, and may represent further undescribed species.

Differences between the species recognised here are slight. However, a preliminary cladistic analysis suggests that *L. collinus*, males of which retain tibial apophysis A, is the sister-group to *L. hickmani* plus *L. olga*, males of which lack the apophysis.

#### Etymology

The generic name refers to the simple male pedipalp (*litos* Greek, plain, simple) and *Nicodamus*. Gender: masculine.



**Fig. 104.** Tasmanian records of *Litodamus* species.

#### *Included Species*

*Litodamus hickmani*, sp. nov., *L. collinus*, sp. nov., and *L. olga*, sp. nov.

#### **Key to Species of *Litodamus***

##### **Males**

1. Retrolateral tibial apophysis A small and poorly sclerotised (Fig. 117) ..... *Litodamus collinus*, sp. nov.
- Retrolateral tibial apophysis A absent (Figs 105, 111)2
- 2(1). Tip of retrolateral tibial apophysis B bifurcate (Fig. 111); median apophysis with rounded tip and sinuate anterolateral edge (Fig. 113) ..... *Litodamus olga*, sp. nov.
- Tip of retrolateral tibial apophysis B not bifurcate (Fig. 105); median apophysis somewhat triangular, with straight anterolateral edge (Fig. 107) ..... *Litodamus hickmani*, sp. nov.

### Females

1. Receptaculum directed posterolaterally (Fig. 122) ..... *Litodamus collinus*, sp. nov.  
 Receptaculum directed laterally (Figs 110, 116) .....  
 ..... *Litodamus hickmani* sp. nov., *Litodamus olga*, sp. nov.

### *Litodamus hickmani*, sp. nov.

(Figs 104–110)

*Nicodamus bicolor* (L. Koch). — Homann, 1952: 348; Hickman, 1967: 74–5, figs 132–34, plate XII fig. 4 [misidentification, in part; see also *Novodamus nodatus* (Karsch)]; Forster, 1970: figs 506–13 (misidentification); Coddington, 1990a: fig. 30 (misidentification).

#### Material Examined

**Holotype.** ♂, Fern Tree, Tasmania, Australia [42°55'S, 147°16'E], under stone, 27.iv.1964, V. V. H[ickman] (AM KS41217 from HC).

**Paratypes.** **Australia: Tasmania:** 1 ♂, same data as holotype (AM KS41174 from HC); 1 ♂, same data as holotype (WAM 93/1950); 1 ♀, same data except 10.i.1967, V. V. H[ickman] (AM KS41210 from HC); 3 ♂, same data except 7.iv.1969, J. L. H[ickman] (AM KS41209 from HC); 1 ♂, 1 ♀, same data except 25.viii.1947, no collectors name (AM KS41177 from HC); 1 ♂, 3 juvs, same data except 28.v.1957, no collectors name (AM KS41176 from HC); 2 ♂, 5 ♀, 1 juv., same data except from moss, May 1971, no collectors name (AM KS23089); 30 ♀, Mt Wellington [42°54'S, 147°14'E], 14.xi.1945, V. V. Hickman (AM KS41220 from HC); 3 ♀, same data (WAM 93/1951–1953); 2 ♂, 3 ♀, same data except 19.viii.1947, no collectors name (AM KS41215 from HC); 6 ♀, same data except summit 25.xi.1949, V. V. H[ickman] (AM KS41208 from HC); 4 ♀, same data except near summit, under a stone, 28.xi.1963, V. V. H[ickman] (AM KS41173 from HC).

**Other material.** **Australia: Tasmania:** 1 ♂, 1 ♀, Fern Tree [42°55'S, 147°16'E], VVH (AMNH); 6 juvs, same data except 25.xi.1967, no collectors name (AM KS41179 from HC); 6 juvs, same data except 12.xii.1967, no collectors name (AM KS41206 from HC); 1 ♂, 1 ♀, 1 juv., Lenah Valley [42°52'S, 147°17'E], under stones, 24.vi.1957, JLH (AM KS41223 from HC); 1 ♀, Mt Wellington, 42°54'S, 147°14'E, 12.ii.1903 (AM KS40943); 1 ♂, same data except 25.xi.1949, VVH (MCZ); 4 ♂, 10 ♀, Organ Pipe Track [42°54'S, 147°14'E], 4.xi.1957, JLH (AM KS41216 from HC); 3 ♂, 2 ♀, near Organ Pipes [42°54'S, 147°14'E], under logs, 2.ix.1957, JLH (AM KS41222 from HC); 2 ♀, 1 juv., Ridgeway [42°56'S, 147°17'E], Oct. 1958, C. Oke (NMV); 2 ♂, 2 ♀, 1 juv., Shoobridge Track [42°54'S, 147°15'E], 4.vii.1957, JLH (AM KS41178 from HC); 8 ♂, 5 ♀, 2 juvs, Springs Track, Lenah Valley [42°52'S, 147°17'E], under logs, 15.viii.1957, JLH (AM KS41225 from HC).

#### Diagnosis

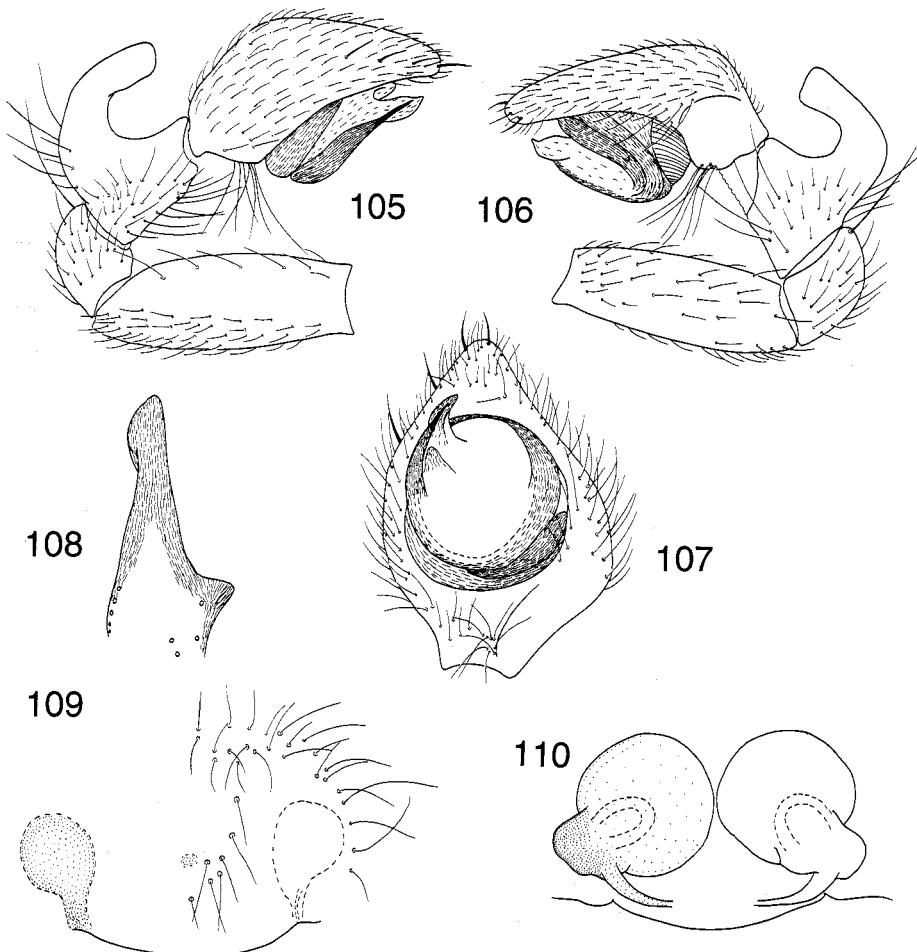
Male: retrolateral tibial apophysis B not bifurcate; median apophysis somewhat triangular, with straight anterolateral edge. Female: receptaculum directed laterally.

#### Description

##### Adult (Fern Tree, Tas.)

Colour: carapace dusky red-yellow, with dark, indistinct bands between eye group and fovea; sternum and labium dark red-brown, much darker than coxae; abdomen dark brown with tinges of metallic blue, sigilla red-brown, epigastric region, spinnerets and surrounding region red-yellow; chelicerae dusky red-brown; tarsi of legs very light yellow-brown, basal segments red-yellow. Carapace with several small bristles, 1 large seta between AME; fovea a broad pit. Male pedipalp (Figs 105–108): retrolateral tibial apophysis A absent, apophysis B quite broad with small, blunt mesal protuberance; prolateral tibial apophysis absent; embolus slender, conductor broad and very pale; median apophysis small and somewhat triangular. Legs: long and slender; 4123. Leg with scattered spinules. Abdomen with stiff setae c. 0.30–0.35 mm in length. Epigyne (Figs 109–110) with central ‘spot’ on external face; spermathecae large and round, nearly touching, receptaculum directed laterally.

*Dimensions (mm).* Holotype ♂ (paratype ♀ Fern Tree, Tas.): total length 5.20 (4.63). Carapace 2.40/2.14 (2.40/2.02). Eyes: AME 0.09 (0.07), ALE 0.15 (0.15), PME 0.08 (0.10), PLE 0.12 (0.16), AME-AME 0.09 (0.16), AME-ALE 0.12 (0.11), PME-PME 0.15 (0.10), PME-PLE 0.17 (0.13), PLE-ALE 0.01 (0.01), eye group width 0.74 (0.72), MOQ front width 0.29 (0.27), MOQ back width 0.32 (0.29), MOQ length 0.27 (0.27). Sternum 1.43/1.26 (1.40/1.23). Abdomen 3.50/2.41 (3.30/2.03). Pedipalp: femur 1.07 (1.00), patella 0.52 (0.53), tibia 0.55 (0.60), tarsus 1.10 (0.90), total 3.24 (3.03). Leg I: femur 2.52 (2.08), patella 0.87 (0.82), tibia 2.55 (1.90), metatarsus 2.28 (1.69), tarsus 0.90 (0.80), total 9.12 (7.29). Leg II: femur 2.32 (1.93), patella 0.80 (0.79), tibia 2.28 (1.70), metatarsus 2.00 (1.50), tarsus 0.81 (0.78), total 8.21 (6.70). Leg III: femur 1.90 (1.69), patella 0.80 (0.72), tibia 1.71 (1.35), metatarsus 1.57 (1.19), tarsus 0.79 (0.63), total 6.77 (5.58). Leg IV: femur 2.60 (2.19), patella 0.89 (0.93), tibia 2.49 (1.96), metatarsus 2.36 (1.70), tarsus 0.96 (0.83), total 9.30 (7.61).



Figs 105–110. *Litodamus hickmani*, sp. nov. 105–108, male holotype, left pedipalp: 105, prolateral; 106, retrolateral; 107, ventral; 108, tibia, dorsal. 109–110, female paratype (Fern Tree, Tas.), epigyne: 109, ventral; 110, dorsal.

### Remarks

*Litodamus hickmani* is known only from the Hobart region (Fig. 104), where it appears to be relatively common in wet sclerophyll forests. Females of *L. hickmani* are indistinguishable from those of *L. olga*. Adults have been collected in most months.

V. V. Hickman evidently confused more than one species under the name *Nicodamus bicolor*. Material here placed in *L. hickmani* was figured by Hickman (1967) and Forster (1970) as *N. bicolor*, as was the material utilised by Homann (1952) for his studies of eye morphology (based on a label included with the AMNH specimens).

### Etymology

This species is named for the late Dr V. V. Hickman who provided the first illustrations.

### *Litodamus olga*, sp. nov.

(Figs 104, 111–116)

### Material Examined

**Holotype.** ♂, Wayatinah-Tarraleah Rd, Tasmania, Australia [c. 42°20'S, 146°28'E], 16.iv.1959, J. L. H[ickman] (AM KS41211 from HC).

**Paratypes.** **Australia: Tasmania:** 1 ♂, 5 juvs, same data as holotype (AM KS41219 from HC); 1 ♂, same data (WAM 93/1945); 1 ♂, 1 ♀, Olga R. [42°51'S, 145°50'E], under logs, 19.ii.1976, J. L. Hickman *et al.* (TM J1458); 1 ♂, Scott's Peak Rd [42°48'S, 146°22'E], 4.v.1973, J. L. Hickman (AM KS30755).

**Other material.** **Australia: Tasmania:** 1 ♂, Claytons, Bathurst Harbour, 43°22'S, 146°08'E, 27.xi.1991, E. S. Nielsen, G. Clarke (ANIC); 5 ♀, Franklin R., 42°28'S, 145°46'E, 9.i.1983, ANZSES Expedition (QM S15397); 1 ♀, 1 juv., N end of Hibbs Lagoon beach [42°34'S, 145°19'E], dogwood litter, 8.i.1987, S. J. Smith (TM J2266, J2269); 3 ♀, 1 juv. ♂, Lake Fenton, Mt Field Natl Park, 42°40'S, 146°35'E, 1300 m, low heath, 23.i.1987, RJR, J. Gallon (QM S11366); 1 ♀, Marlborough Hwy [c. 42°05'S, 146°30'E], 26.v.1954 (AM KS41218 from HC); 1 ♀, Mt Field [42°39'S, 146°39'E], 3300–4300 ft [= 1006–1311 m], Jan. 1957, P. J. Darlington (MCZ); 1 ♂, 1 ♀, Mt Rufus track, Lake St Clair, 42°08'S, 146°10'E, 700–1200 m, heath, *Nothofagus* and *Eucalyptus*, 30.i.1987, RJR, J. Gallon (QM S5677); 1 ♀ (and egg-sac), Norold Ck, Bathurst Harbour, Port Davey [43°17'S, 146°12'E], 400 m, rotting log, 13.ii.1987, S. J. Smith (TM J3150); 1 ♀, Twin Ck [c. 42°10'S, 146°10'E], rotting log, 10.ii.1987, S. J. Smith (TM J3149); 1 ♀, Wedge R., Gordon Rd [42°45'S, 146°12'E], 21.iii.1972, A. P. A., H. D. B. (TM J791); 3 ♀, Wombat Moor [42°40'S, 146°36'E], 17.xii.1958, JLH (AM KS41224 from HC).

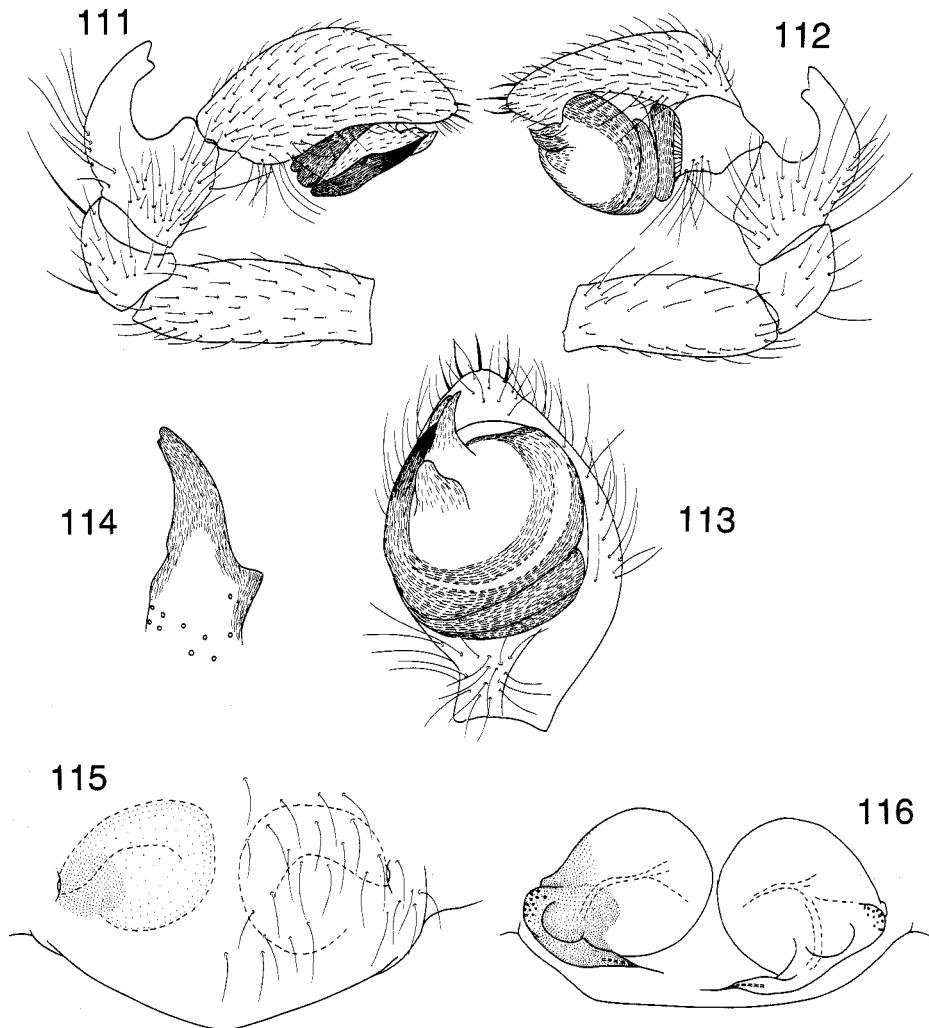
### Diagnosis

Male: retrolateral tibial apophysis B bifurcate; median apophysis with rounded tip and sinuate anterolateral edge. Female: receptaculum directed laterally.

### Description

#### Adult (Wayatinah–Tarraleah Rd, and Olga River, Tas.)

Colour: carapace dusky yellow, with dark, indistinct bands between eye group and fovea; sternum and labium dark red-brown, much darker than coxae; abdomen dark brown with tinges of metallic blue, sigilla red-brown, epigastric region, spinnerets and surrounding region yellow; chelicerae dusky red-brown; tibiae, metatarsi and tarsi of legs brown, other segments yellow. Carapace with several small bristles, 1 large seta between AME; fovea a broad pit. Male pedipalp (Figs 111–114): retrolateral tibial apophysis A absent, apophysis B bifurcate, quite broad with small, blunt mesal protuberance; prolateral tibial apophysis absent; embolus slender, conductor broad and very pale, median apophysis small, somewhat triangular, with rounded tip and sinuate anterolateral edge. Legs: long and slender; 4123; with scattered spinules. Abdomen with stiff setae, c. 0.30–0.40 mm in length. Epigyne (Figs 115–116) with spermathecae large and round, nearly touching, receptaculum directed laterally.



Figs 111–116. *Litodamus olga*, sp. nov. 111–114, male holotype, left pedipalp: 111, prolateral; 112, retrolateral; 113, ventral; 114, tibia, dorsal. 115–116, female paratype (Olga R., Tas.), epigyne: 115, ventral; 116, dorsal.

**Dimensions (mm).** Holotype ♂ (paratype ♀ Olga River, Tas.): total length 5.20 (4.70), Carapace 2.41/2.23 (2.20/1.72). Eyes: AME 0.10 (0.11), ALE 0.15 (0.15), PME 0.09 (0.09), PLE 0.15 (0.15), AME-AME 0.12 (0.12), AME-ALE 0.09 (0.12), PME-PME 0.11 (0.11), PME-PLE 0.14 (0.13), PLE-ALE 0.02 (0.02), eye group width 0.73 (0.73), MOQ front width 0.29 (0.24), MOQ back width 0.30 (0.32), MOQ length 0.26 (0.29). Sternum 1.42/1.38 (1.15/1.12). Abdomen 3.32/2.32 (3.25/2.40). Pedipalp: femur 1.05 (0.90), patella 0.50 (0.49), tibia 0.46 (0.55), tarsus 1.06 (0.84), total 3.07 (2.78). Leg I: femur 2.46 (2.00), patella 0.80 (0.60), tibia 2.40 (1.91), metatarsus 2.19 (1.50), tarsus 0.93 (0.86), total 8.78 (6.87). Leg II: femur 2.30 (1.81), patella 0.88 (0.72), tibia 2.11 (1.70), metatarsus 2.00 (1.30), tarsus 0.94 (0.80), total 8.23 (6.33). Leg III: femur 1.97 (1.46), patella 0.59 (0.71), tibia 1.70 (1.21), metatarsus 1.58 (1.10), tarsus 0.81 (0.70), total 6.65 (5.18). Leg IV: femur 2.61 (2.04), patella 0.90 (0.79), tibia 2.47 (1.80), metatarsus 2.28 (1.60), tarsus 1.02 (0.91), total 9.28 (7.14).

### Remarks

Females of *L. olga* are indistinguishable from those of *L. hickmani*, and only those records which include males (from Lake St Clair south to Bathurst Harbour, south-western Tasmania) are unequivocally regarded as *L. olga*. Locality points based solely on females were included if they were collected within a reasonable distance from a male-based record, which extends the records north to Great Lake (Fig. 104). The male from Lake St Clair differs from other males in the shape of retrolateral tibial apophysis B which is distally pointed.

Adults have been collected during summer and autumn (December–May).

### Etymology

The specific epithet is a noun in apposition taken from one of the collection localities.

### *Litodamus collinus*, sp. nov.

(Figs 104, 117–122)

#### Material Examined

**Holotype.** ♂, Ben Lomond Natl Park, Tasmania, Australia [41°30'S, 147°38'E], 1000 m, open forest, general collection, 5.ii.1987, J. Gallon (QM S11629).

**Paratypes.** **Australia: Tasmania:** 3 ♂, 4 ♀, same data as holotype (QM S19716); 1 ♀, Ben Lomond [41°33'S, 147°40'E], 27.xi.1958, J. L. H[ickman] (AM KS41207 from HC).

**Other material.** **Australia: Tasmania:** 17 juvs, same data as holotype (QM S19717).

### Diagnosis

Male: retrolateral tibial apophysis A present, very small; retrolateral tibial apophysis B not bifurcate; embolus distally truncate; median apophysis with rounded tip and sinuate anterolateral edge. Female: receptaculum directed posterolaterally.

### Description

#### Adult (Ben Lomond Natl Park, Tas.)

Colour: carapace red-yellow; sternum dark yellow-brown, much darker than coxae; abdomen dark brown, sigilla red-brown, epigastric region, spinnerets and surrounding region yellow; chelicerae dark yellow-brown, slightly paler proximally; femora and patella of legs red-yellow, tibiae, metatarsi and tarsi brown. Carapace with scattered bristles, and single upturned seta between AMEs; fovea a broad depression. Male pedipalp (Figs 117–120): retrolateral tibial apophysis B not bifurcate, apophysis A present, very small; prolateral tibial apophysis absent; embolus distally truncate, conductor very broad, terminally truncate, median apophysis with rounded tip and sinuate anterolateral edge. Legs: long and slender; 4:1:2:3; with scattered spinules. Abdomen with long, stiff setae, c. 0.25–0.42 (♂), 0.29–0.43 (♀) mm in length. Epigyne (Figs 121–122) spermathecae large and round, nearly touching, receptaculum directed posterolaterally.

**Dimensions (mm).** Holotype ♂ (paratype ♀ Ben Lomond Natl Park, Tas.): total length 5.29 (4.86). Carapace 2.31/2.15 (2.22/1.90). Eyes: AME 0.09 (0.09), ALE 0.15 (0.14), PME 0.08 (0.10), PLE 0.12 (0.13), AME–AME 0.14 (0.12), AME–ALE 0.10 (0.10), PME–PME 0.12 (0.12), PME–PLE 0.16 (0.15), PLE–ALE 0.02 (0.02), eye group width 0.70 (0.70), MOQ front width 0.27 (0.27), MOQ back width 0.28 (0.31), MOQ length 0.30 (0.28). Sternum 1.47/1.32 (1.30/1.23). Abdomen 3.25/2.00 (3.65/2.30). Pedipalp: femur 1.18 (1.00), patella 0.49 (0.49), tibia 0.40 (0.61), tarsus 1.04 (0.98), total 3.11 (3.08). Leg I: femur 2.69 (2.18), patella 0.90 (0.80), tibia 2.67 (2.08), metatarsus 2.39 (1.86), tarsus 0.92 (0.88), total 9.57 (7.80). Leg II: femur 2.51 (2.03), patella 0.92 (0.80), tibia 2.42 (1.87), metatarsus 2.19

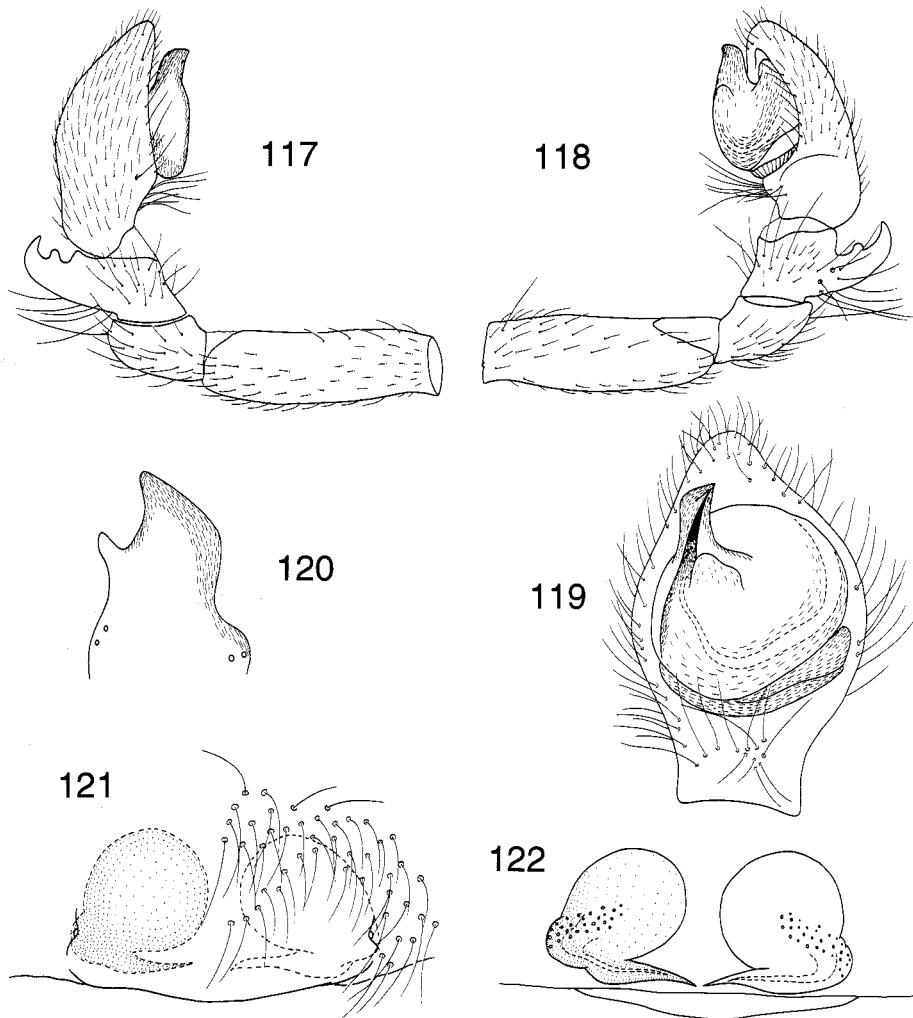
(1.69), tarsus 0.80 (0.79), total 8.84 (7.18). Leg III: femur 2.18 (1.70), patella 0.86 (0.77), tibia 1.96 (1.40), metatarsus 1.76 (1.33), tarsus 0.75 (0.72), total 7.51 (5.92). Leg IV: femur 2.90 (2.27), patella 0.98 (0.86), tibia 2.83 (2.12), metatarsus 2.60 (1.96), tarsus 0.90 (0.89), total 10.21 (8.10).

#### Remarks

This species is presently known from Ben Lomond in north-western Tasmania, and appears to represent the sister-species to *L. hickmani* plus *L. olga* (Fig. 104).

#### Etymology

The specific epithet refers to the montane type locality (*collinus*, Latin, on a hill).



**Figs 117–122.** *Litodamus collinus*, sp. nov. 117–120, male holotype, left pedipalp: 117, prolateral; 118, retrolateral; 119, ventral; 120, tibia, dorsal. 121–122, female paratype (Ben Lomond Natl Park, Tas.), epigyne: 121, ventral; 122, dorsal.

*Litodamus* spp.

(Fig. 104)

*Material Examined*

**Australia: Tasmania:** 2 ♀, Dry's Bluff [41°42'S, 146°49'E], 4125 ft [= 1257 m], under stones on summit, 31.xii.1929 (AM KS41172 from HC); 2 ♀, Hartz Mtns Natl Park, c. 43°12'S, 146°46'E, 1100 m, open forest, 23.i.1987, RJR, J. Gallon, T. Churchill (QM S11657); 8 ♀, track to Lake Skinner, Huon [c. 42°57'S, 146°41'E], 3.i.1969, JLH (AM KS41221 from HC); 5 ♀, 3 juvs, near Liffey Forest Reserve [41°44'S, 146°44'E], 31.i.1987, RJR, J. Gallon (QM S15405); 1 ♀, 1 juv., Maria I., Mt Maria [42°27'S, 148°07'E], lower summit, under stones, 6.iii.1990, E. Turner (TM J2945); 2 ♀, Mt Barrow summit, 41°22'S, 147°25'E, heath plain, 5.ii.1987, RJR, T. Churchill (QM S11682); 1 ♀, 1 juv., Pelion Hut, 3 km S of Mt Oakleigh, 41°50'S, 146°03'E, sifted *Poa*, 30.xi.1990, I. D. Naumann (ANIC); 1 ♀, 1 juv., E of Windfalls, about 13 mi E of Campbell Town [c. 41°56'S, 147°40'E], 1.x.1975, R. Barnett, D. Barker, et al. (TM J1059).

*Remarks*

Several females and juveniles have been taken without males from localities which are remote from other species of *Litodamus*, and sympatric males are needed from all of these localities to identify these specimens. The genitalia of most of these females resembles either *L. hickmani* or *L. olga*.

Genus *Dimidamus*, gen. nov.

Type species: *Nicodamus dimidiatus* Simon, 1897.

*Diagnosis*

Male: median apophysis broad and curved. Female: copulatory ducts long and slender; copulatory opening posterior.

*Remarks*

Three distinct abdominal colour patterns are apparent amongst *Dimidamus* spp. The first includes two species, *D. simoni* and *D. arau*, which possess a unicoloured abdomen lacking any significant areas of red. The second includes *D. dimidiatus* where the posteriodorsal portion of the abdomen is red (Fig. 158). The third includes *D. leopoldi*, *D. enaro* and *D. sero* in which the red colouration extends over most of the dorsum (Figs 159–161) and venter of the abdomen. While I had intuitively considered that the third group was monophyletic, all computational analyses divided *D. leopoldi* from *D. enaro* + *D. sero*, with the former placed as the sister-group to *D. dimidiatus* (Fig. 1). *D. simoni* was placed as the sister-group to *D. dimidiatus* + *D. leopoldi*, with *D. arau* basal to this group. The discovery of further species of *Dimidamus*, and of the female of *D. simoni* and *D. sero* may help resolve the relationships within this complex genus.

*Dimidamus* has a disjunct distribution: four species occur in montane rainforests of Papua New Guinea and Irian Jaya (Fig. 124), and two species occur in rainforests of mainland eastern Australia (Fig. 123).

*Etymology*

The generic name is an arbitrary combination of letters, based upon a contraction and reorganisation of *Nicodamus dimidiatus*. Gender: masculine.

*Included Species*

*Dimidamus arau*, sp. nov., *D. enaro*, sp. nov., *D. dimidiatus* (Simon), *D. leopoldi* (Roewer), *D. sero*, sp. nov., and *D. simoni*, sp. nov.

### Key to Species of *Dimidamus*

#### Males

1. Abdomen entirely black, with occasional faint striations ..... 2
- Abdomen distinctly bicoloured, with large expanses of red in addition to black areas (Figs 158–161) ..... 3
- 2(1). Median apophysis very narrow, strongly curved (Fig. 133); conductor not falcate (Fig. 133) ..... *Dimidamus simoni*, sp. nov.
- Median apophysis broad, slightly curved (Figs 137, 139); conductor falcate (Fig. 137, 139) ..... *Dimidamus arau*, sp. nov.
- 3(1). Abdomen red in posterior half (Fig. 158); retrolateral tibial apophysis B small (Figs 125, 126) .. *Dimidamus dimidiatus* (Simon)
- Abdomen red over most of dorsum and venter (Figs 159–161); retrolateral tibial apophysis B large (e.g. Figs 142–143) ..... 4

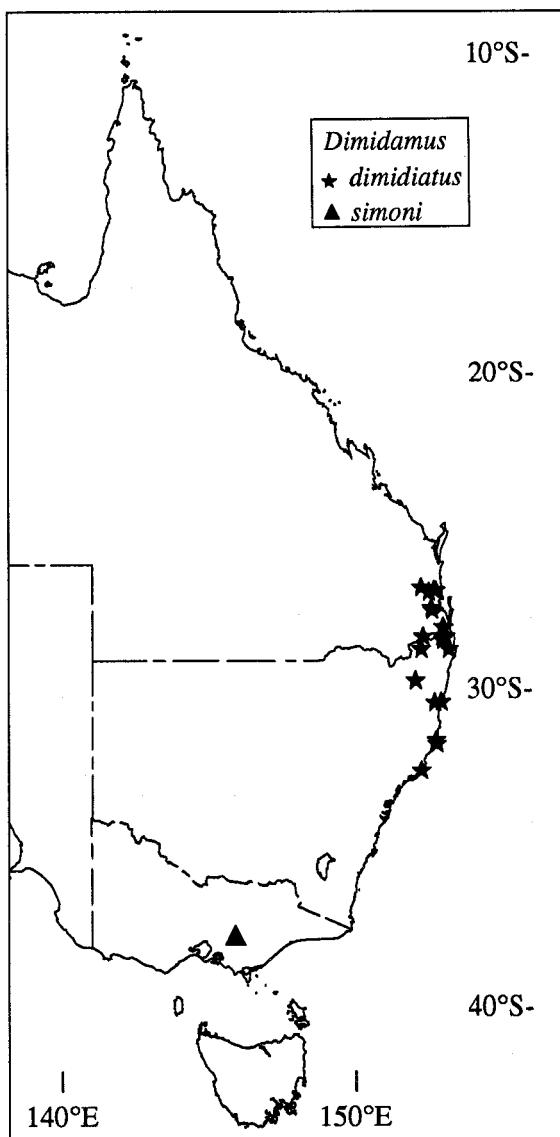


Fig. 123. Eastern Australian records of some *Dimidamus* species.

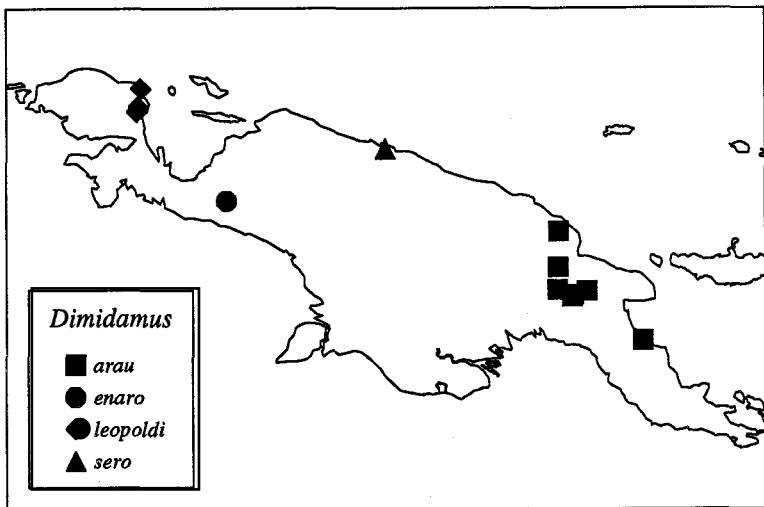


Fig. 124. New Guinean records of some *Dimidamus* species.

- 4(3). Median apophysis very broad (Fig. 144); conductor with ventral ridge (Fig. 144) ..... *Dimidamus leopoldi* (Roewer)  
   Median apophysis not very broad (Figs 150, 156); conductor without ventral ridge (Figs 150,  
   156) ..... 5
- 5(4). Retrolateral tibial apophysis B enlarged (Figs 148, 149); conductor with distal notch (Fig. 150) .  
   Retrolateral tibial apophysis B not enlarged (Figs 154–155); conductor without distal notch (Fig.  
   156) ..... *Dimidamus enaro*, sp. nov.  
   *Dimidamus sero*, sp. nov.

### Females

(those of *Dimidamus simoni* and *D. sero* not known)

1. Copulatory ducts extending far forward of spermathecae, sinuate (Fig. 130); posterior half of dorsum of abdomen red, anterior half dark (Fig. 158) ..... *D. dimidiatus* (Simon)  
   Copulatory ducts never extending past spermathecae, not sinuate (Figs 141, 147, 153); abdomen either completely dark (with faint posterior, pale striations), or dark laterally and pale mesally (Figs 159–160) ..... 2
- 2(1). Dorsum and venter of abdomen completely dark, with faint posterior, pale striations .....  
   *Dimidamus arau*, sp. nov.  
   Abdomen with pale medial regions extending dorsally and ventrally (Figs 159–160) ..... 3
- 3(2). Copulatory ducts inflated (Fig. 153); spermathecal head inflated mesally (Fig. 153); copulatory duct opening broad (Fig. 152) ..... *Dimidamus enaro*, sp. nov.  
   Copulatory ducts not inflated (Fig. 147); spermathecal head not inflated mesally (Fig. 147); copulatory duct opening narrow (Fig. 146) ..... *Dimidamus leopoldi* (Roewer)

### *Dimidamus dimidiatus* (Simon), comb. nov.

(Figs 123, 125–130, 158)

*Nicodamus dimidiatus* Simon, 1897: 15–16. — Simon, 1898: 223, fig. 213; Rainbow, 1911: 257;  
   Roewer, 1942: 429; Bonnet, 1958: 3101; Davies, 1985: 92.  
   Not *Nicodamus dimidiatus* Simon. — Mascord, 1970: 66, fig. 113 (misidentification; probably  
   *Oncodamus* sp.).

### Material Examined

*Lectotype.* ♂ (present designation), Station 96, New South Wales, Australia (MNHP 18065).

*Paralectotype.* 1 ♀, same data as lectotype (MNHP 18065).

*Other material.* **Australia:** **New South Wales:** 1 ♀, Border Ranges [c. 28°20'S, 153°10'E], 30.ix.1991, M. Tio (AM KS30312); 3 ♂, Brooklana, E of Dorrigo [30°16'S, 152°53'E], July 1929, W. Heron (AM KS21981); 1 ♀, Bruxner Park Flora Reserve, 30°15'S, 153°06'E, on tree trunk, 25–26.v.1988, D. Hirst (SAM N198955); 1 juv., Gibraltar Range Natl Park, 29°35'S, 152°13'E, rainforest, 10.xi.1980, RJR (QM S19718); 1 ♀, Lorne State Forest, near Lorne, 31°35'S, 152°57'E, pitfall trap, 4.xi.1979, D. Milledge (AM KS5629); 1 ♂, Myall Lakes, Booloolayt [or Boolambayte?] [32°26'S, 152°24'E], Sept. 1922, A. Musgrave (AM KS22009); 1 ♀, Nixon's Fire Rd, Whian Whian State Forest, 28°37'S, 153°23'E, 19.xi.1983, MSH, D. C. F. Rentz (ANIC); 1 ♂, Port Macquarie [31°27'S, 152°55'E], 26.ix.1969, A. Speechley (AM KS22018); 1 ♂, Tooloom Scrub, via Woodenbong [28°37'S, 152°25'E], 30.x.1982, GBM (QM S15340). **Queensland:** 1 ♀, Conondale Range [26°50'S, 152°41'E], sweeping, 31.viii.1974, RJR, G. Ingram (QM S19719); 1 ♀, Jimna State Forest [26°42'S, 152°24'E], 4.vii.1978, closed vine forest, K. McDonald (QM S15342); 2 ♂, Lamington Natl Park [28°12'S, 153°10'E], 27.iv.1953, C. Oke (AM KS32486); 1 juv., same locality, 9–10.viii.1977, RJR (QM S15339); 1 ♀, Macpherson Range [c. 28°20'S, 153°10'E], J. H. Clarke (QM S15355); 1 ♂, Maleny [26°46'S, 152°51'E], 1000 ft [= 305 m], rainforest, 23.ix.1964, A. Cottrell (MCZ); 1 ♂, 7 km SE of Maleny [26°47'S, 152°55'E], Mary Cairncross Park, c. 900 m, rainforest, 18.vi.–15.viii.1982, S. and J. Peck (AMNH); 2 ♂, Mt Glorious [27°20'S, 152°46'E], malaise trap, Sept. 1978, A. Hiller (QM S15381); 1 ♂, same data except 10.viii.–13.xi.1983 (QM S15384); 2 ♂, Mt Nebo [27°24'S, 152°47'E], malaise trap, 14.iii.1978, T. Hiller (QM S15382); 1 ♂, Mt Nebo [27°24'S, 152°47'E], 25.ix.1988, K. Hiller (QM S15317); 1 ♂, Mt Superbus [28°14'S, 152°29'E], walking over leaf litter, 15.xi.1978, A. Rozefelds (QM S15356); 1 ♂, Mt Tamborine [27°56'S, 153°12'E], 23.xii.1912, H. Hacker (QM S15337); 3 juvs, same locality, under logs and beating, 10.vii.1974, C. L. W., VED, RJR (QM S15377); 1 ♀, same locality, 1912 (SAM N1989554); 1 ♂, O'Reilly's, Lamington Natl Park [28°14'S, 153°08'E], 24–25.ix.1986, RJR, J. Gallon (QM S15394); 2 juvs, same locality, 4.ii.1986, VED (QM S15365); 2 ♂, Springbrook [28°14'S, 153°16'E], 2.x.1953, A. C. Calwill (QM S15396).

### Diagnosis

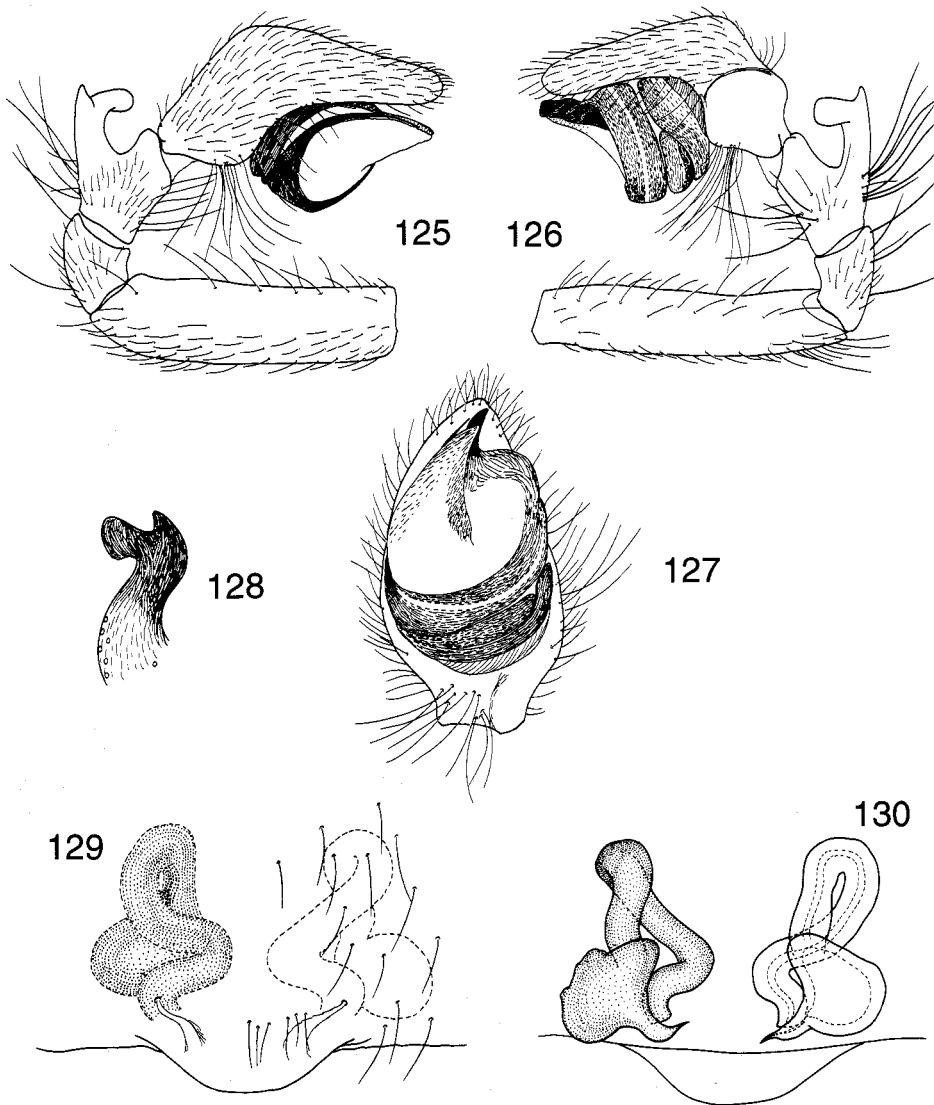
Dorsum of abdomen dark in anterior half and red-yellow in posterior half. Male: dorsal margin of conductor serrate; median apophysis large and thick; retrolateral tibial apophysis B small. Female: copulatory ducts elongate, sinuate.

### Description

#### Adult (*Mt Superbus*, and *MacPherson Range*, Qld)

Colour: carapace and sternum red-yellow; anterior 55–60% of abdomen dark brown, posterior portion, epigastric region and spinnerets red-yellow, sigilla red-brown (Fig. 158); chelicerae light red-brown, slightly darker distally; metatarsi and tarsi of legs red-brown, other segments slightly paler. Carapace with scattered bristles, and 1 upturned seta between AMEs; fovea a broad shallow depression. Male pedipalp (Figs 125–128): retrolateral tibial apophysis B extremely small, apophysis A bulbous, truncate; prolateral tibial apophysis absent; embolus extremely long and slender, conductor tapering in ventral view (Fig. 127), truncate in lateral view (Fig. 126), median apophysis large, very broad, gently curved. Legs: long and slender; 1423; with scattered spines and spinules. Abdomen with long, slender setae, c. 0.5–0.7 mm in length. Epigyne (Figs 129–130) with elongate, sinuate copulatory ducts which open onto external face of the epigyne posteriorly; epigyne with shallow depression leading into copulatory opening; fertilisation ducts opening mesally; spermathecae swollen.

*Dimensions (mm).* ♂ *Mt Superbus*, Qld (♀ *MacPherson Range*, Qld): total length 4.95 (5.70). Carapace 2.12/1.94 (2.10/1.90). Eyes: AME 0.09 (0.10), ALE 0.14 (0.12), PME 0.09 (0.08), PLE 0.12 (0.09), AME–AME 0.06 (0.11), AME–ALE 0.11 (0.10), PME–PME 0.12 (0.15), PME–PLE 0.13 (0.15), PLE–ALE 0.01 (0.03), eye group width 0.67 (0.68), MOQ front width 0.21 (0.26), MOQ back width 0.27 (0.31), MOQ length 0.24 (0.21). Sternum 1.25/1.19 (1.16/1.11). Abdomen 3.02/1.97 (4.39/2.53). Pedipalp: femur 1.21 (1.00), patella



Figs 125–130. *Dimidamus dimidiatus* (Simon). 125–128, male (Mt Superbus, Qld), left pedipalp: 125, prolateral; 126, retrolateral; 127, ventral; 128, tibia, dorsal. 129–130, female (MacPherson Range, Qld), epigyne: 129, ventral; 130, dorsal.

0.43 (0.41), tibia 0.50 (0.62), tarsus 1.10 (0.95), total 3.24 (2.98). Leg I: femur 3.97 (2.79), patella 0.75 (0.70), tibia 3.51 (2.48), metatarsus 3.48 (2.40), tarsus 1.06 (0.82), total 12.77 (9.19). Leg II: femur 3.62 (2.56), patella 0.75 (0.67), tibia 3.18 (2.28), metatarsus 3.10 (2.20), tarsus 1.06 (0.80), total 11.71 (8.51). Leg III: femur 2.72 (2.00), patella 0.66 (0.65), tibia 2.18 (1.52), metatarsus 2.15 (1.53), tarsus 0.90 (0.72), total 8.61 (6.42). Leg IV: femur 3.99 (2.77), patella 0.80 (0.72), tibia 3.47 (2.47), metatarsus 3.42 (2.40), tarsus 1.06 (0.80), total 12.74 (9.16).

### Remarks

*Dimidamus dimidiatus* occurs as far north as Jimna State Forest, Queensland, and as far south as Myall Lakes, New South Wales (Fig. 123). The female from Whian Whian State Forest was collected from an irregular sheet-web under a large leaf of an unidentified rainforest shrub. Adults have been collected mostly from July to December, with fewer records from March to June.

### *Dimidamus simoni*, sp. nov.

(Figs 123, 131–134)

### Material Examined

*Holotype.* ♂, Warburton to Woods Point track [37°45'S, 145°42'E to 37°34'S, 146°15'E], Victoria, Australia, Jan. [19]02, S. W. Fulton (NMV K3092).

### Diagnosis

Abdomen completely dark. Male: dorsal margin of conductor serrate; retrolateral tibial apophysis B small; median apophysis very long and slender.

### Description

#### Adult male (Warburton to Woods Point track, Vic.)

Colour: carapace and sternum red-yellow; abdomen dark brown, sigilla red-brown, epigastric region, spinnerets and surrounding region yellow; proximal half of chelicerae light yellow-brown, distal half dark red-brown; pedal femora and patellae light yellow, tibiae, metatarsi and tarsi dark red-brown. Carapace with scattered bristles, and 1 large, upturned seta between AMEs; fovea a large depression. Male pedipalp (Figs 131–134): retrolateral tibial apophysis B long, tapered, apophysis A small and rounded; prolateral tibial apophysis absent; embolus very long and slender, conductor with serrate dorsal margin, tapering in ventral view (Fig. 133), distally rounded in lateral view (Fig. 132), median apophysis very long and narrow, gently curved. Legs: 4123; with scattered spinules. Abdomen with long setae, c. 0.4–0.5 mm in length.

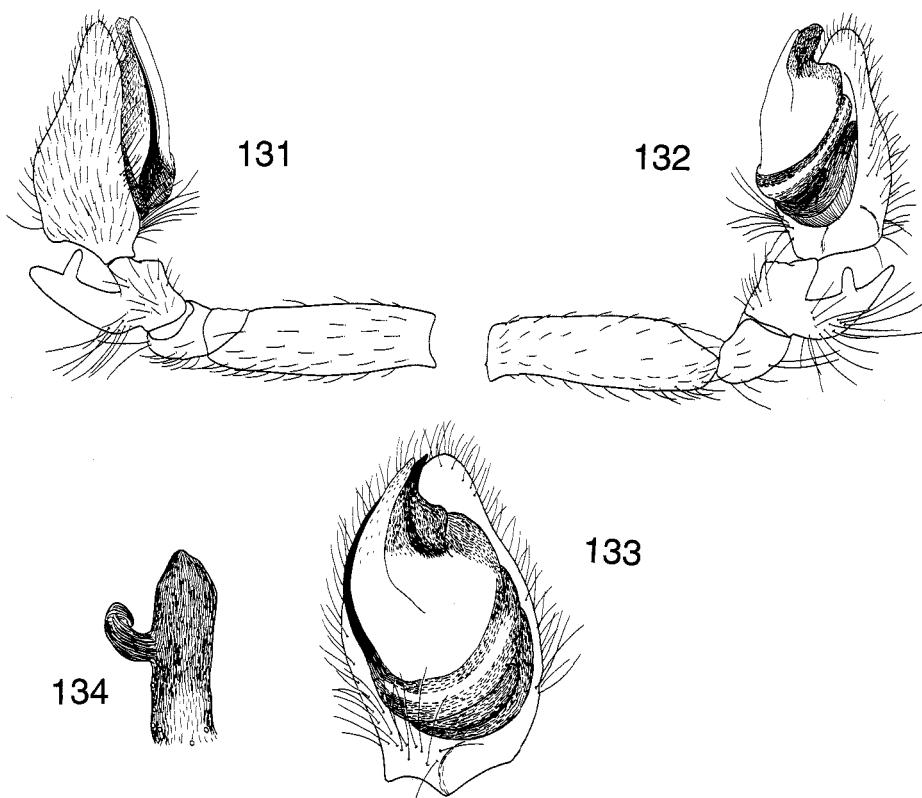
*Dimensions (mm).* Holotype ♂: total length 4.82. Carapace 2.41/2.00. Eyes: AME 0.09, ALE 0.12, PME 0.09, PLE 0.10, AME–AME 0.11, AME–ALE 0.09, PME–PME 0.10, PME–PLE 0.16, PLE–ALE 0.02, eye group width 0.68, MOQ front width 0.24, MOQ back width 0.26, MOQ length 0.23. Sternum 1.30/1.24. Abdomen 2.72/1.99. Pedipalp: femur 1.10, patella 0.41, tibia 0.49, tarsus 1.10, total 3.10. Leg I: femur 2.10, patella 0.70, tibia 2.00, metatarsus 1.81, tarsus 0.80, total 7.41. Leg II: femur 2.11, patella 0.65, tibia 1.81, metatarsus 1.64, tarsus 0.71, total 6.92. Leg III: femur 1.53, patella 0.67, tibia 1.36, metatarsus 1.30, tarsus 0.70, total 5.56. Leg IV: femur 2.21, patella 0.71, tibia 2.08, metatarsus 1.98, tarsus 0.79, total 7.77.

### Remarks

*Dimidamus simoni* differs from *D. dimidiatus* and congeners in the shape of the embolus and of the retrolateral tibial apophyses. It also possesses relatively shorter legs than other *Dimidamus* spp., which may indicate a difference in web placement and prey capture. Despite the intensity of collecting in Victoria, it is perplexing that only a single male of this species has been collected. The possibility exists that it has been mislabelled.

### Etymology

This species is named for the late Eugene Simon, for his substantial contributions to the study of spiders.



Figs 131–134. *Dimidamus simoni*, sp. nov., male holotype, left pedipalp: 131, prolaternal; 132, retrolateral; 133, ventral; 134, tibia, dorsal.

#### *Dimidamus arau*, sp. nov.

(Figs 124, 135–141)

#### Material Examined

**Holotype.** ♂, Arau, Eastern Highlands, Papua New Guinea [6°24'S, 146°02'E], 4600 ft [= 1400 m], 5–25.x.1959, J. Gunn (AMNH).

**Paratypes.** Papua New Guinea: Eastern Highlands: 1 ♂, 1 ♀, same data as holotype (AMNH); 1 ♂, 1 ♀, Okapa [6°30'S, 145°40'E], 1800–2000 m, 17.i.1966, J. Sedlacek (BPBM); 1 ♂, Purosa-Okapa area, camp 10 [6°34'S, 145°38'E], 6400 ft [= 1950 m], 18.ix.–2.x.1958, J. Gunn (AMNH); 1 ♂, Gono, west slopes of Mt Michael [6°22'S, 145°14'E], camp 8, 24–29.viii.1959, L. J. Brass (AMNH).

**Other material.** Papua New Guinea: Morobe: 1 ♂, below Sim Airstrip [S of Garaina, c. 7°53'S, 147°08'E], 1100 m, 30.xi.1979, L. Gressitt (BPBM). Madang: 1 ♂, Adelbert Range, Mt Mengam, ridge NW of Abasakur No. 1 village [4°45'S, 145°16'E], 1480–1600 m, 11–12.iv.1989, D. H. Kavanaugh, G. E. Ball, N. D. Penny (CAS); 1 ♀, Bundi, 5°45'S, 145°15'E, 5.v.1988, W. J. Pulawski (CAS).

#### Diagnosis

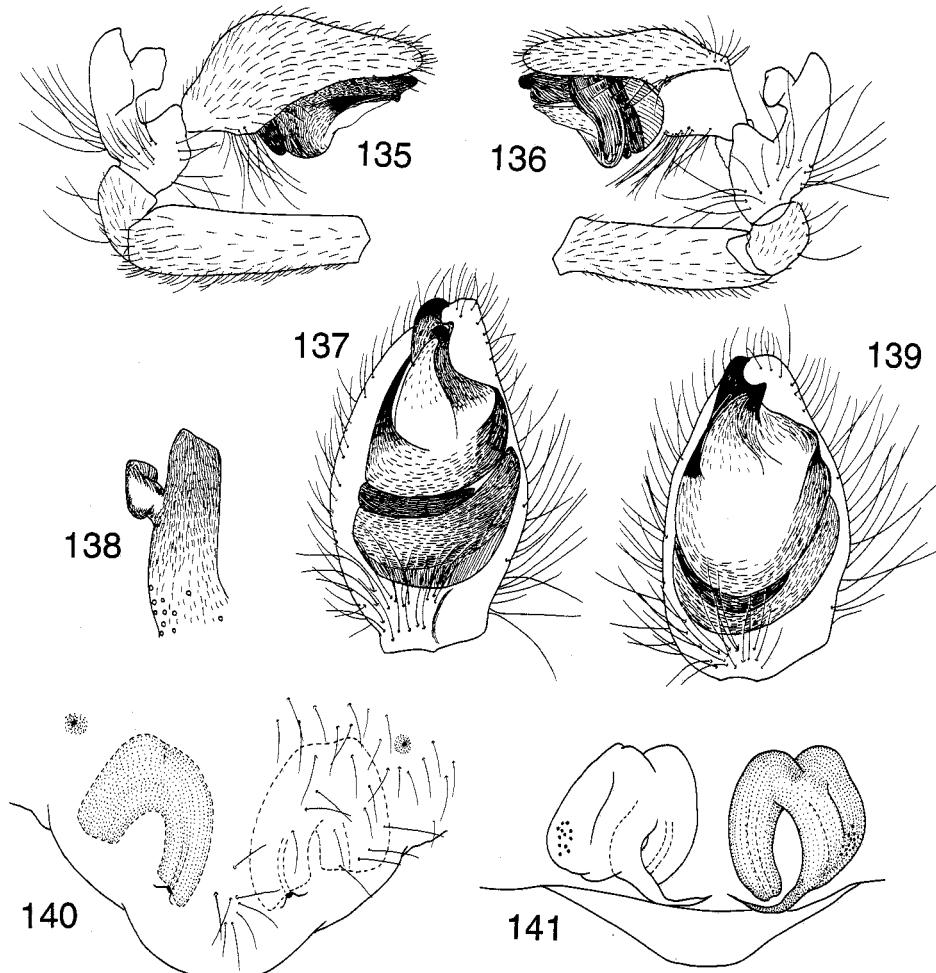
Abdomen completely dark, with indistinct, pale striations posteriorly. Male: conductor falcate. Female: copulatory ducts gently curved; spermathecal head not inflated mesally.

### Description

#### Adult (*Arau*, Papua New Guinea)

Colour: carapace and sternum red-brown; abdomen mostly dark blue-black, posterior portion red-yellow, sigilla red-brown, epigastric region, spinnerets and surrounding region and posterior spiracle red-yellow; chelicerae light red-brown, evenly coloured; femora III and IV and all patellae light red-yellow, other segments dark red-brown. Carapace with scattered bristles, and 1 slender, upturned seta between AME; fovea a large shallow depression. Male pedipalp (Figs 135–139): retrolateral tibial apophysis B thick, apophysis A thick and curved; prolateral tibial apophysis absent; embolus slender, conductor falcate, median apophysis moderately sclerotised. Legs: very long and slender; 4123; with scattered spinules. Abdomen with long, thin setae, c. 0.4–0.5 mm long. Epigyne (Figs 140–141) with inconspicuous copulatory openings; copulatory ducts gently curved, not extending past spermathecae; spermathecal head not inflated mesally; epigyne with lateral apodemes.

**Dimensions (mm).** Holotype ♂ (paratype ♀ Arau, Papua New Guinea): total length 6.70 (6.40). Carapace 2.81/2.79 (2.51/2.60). Eyes: AME 0.09 (0.11), ALE 0.12 (0.12), PME 0.08 (0.09), PLE 0.10 (0.12), AME–AME 0.13 (0.11), AME–ALE 0.15 (0.18), PME–PME



**Figs 135–141.** *Dimidamus arau*, sp. nov. 135–138, male holotype, left pedipalp: 135, prolateral; 136, retrolateral; 137, ventral; 138, tibia, dorsal. 139, left pedipalp, ventral, male (below Sim Airstrip, Papua New Guinea); 140–141, female paratype (Arau, Papua New Guinea), epigyne: 140, ventral; 141, dorsal.

0.13 (0.12), PME–PLE 0.23 (0.23), PLE–ALE 0.03 (0.03), eye group width 0.88 (0.88), MOQ front width 0.28 (0.27), MOQ back width 0.30 (0.32), MOQ length 0.26 (0.29). Sternum 1.56/1.58 (1.54/1.67). Abdomen 4.68/2.69 (2.51/2.60). Pedipalp: femur 1.52 (1.38), patella 0.57 (0.60), tibia 0.63 (0.84), tarsus 1.60 (1.70), total 4.32 (4.52). Leg I: femur 4.04 (3.43), patella 1.02 (1.01), tibia 3.71 (3.21), metatarsus 3.80 (3.18), tarsus 1.42 (1.20), total 13.99 (12.03). Leg II: femur 3.81 (3.50), patella 1.03 (1.03), tibia 3.48 (2.93), metatarsus 3.53 (2.91), tarsus 1.36 (1.12), total 13.21 (11.49). Leg III: femur 3.01 (2.88), patella 1.10 (0.92), tibia 3.82 (2.13), metatarsus 4.12 (2.10), tarsus 1.36 (1.10), total 10.15 (9.13). Leg IV: femur 4.20 (3.80), patella 1.10 (1.19), tibia 3.82 (3.13), metatarsus 4.12 (3.28), tarsus 1.36 (1.31), total 14.60 (12.71).

### Remarks

This large species is known from several montane localities in the Eastern Highlands, some of which are documented by Brass (1964). The male from Sim Airstrip is slightly different from those collected at the type locality in the shape of the conductor (Figs 137, 139) and of the tibial apophysis, but these differences are not considered sufficient to distinguish a separate species. Adults have been collected at various times of the year, with no obvious pattern. 'Sim Airstrip' could not be located on any maps or gazetteers at my disposal (including the 1:100 000 series), and the coordinates presented are those of Garaina, which is situated north of Sim Airstrip (S. Swift, in litt.).

### Etymology

The specific epithet is a noun in apposition taken from the type locality.

### *Dimidamus leopoldi* (Roewer), comb. nov.

(Figs 124, 142–147, 159)

*Nicodamus leopoldi* Roewer, 1938: 23–5, figs 12a–b, 13a–c, 14. — Roewer, 1942: 429; Bonnet, 1958: 3101.

### Material Examined

**Lectotype.** ♂ (present designation), Angi–Gita Meer [= Anggi Gita Lake], Irian Jaya, Indonesia [1°25'S, 133°58'E], 10.iii.1929, S. A. R. le Prince Leopold (ISBN 9223; and SMF 13293, one pedipalp).

**Paratypes.** **Indonesia: Irian Jaya:** 1 ♀, same data as lectotype (ISBN 9223; and SMF 13292, epigyne); 2 juvs, same data as lectotype (ISBN 9223); 1 ♀, Siwi [1°33'S, 133°55'E], 6.iii.1929, S. A. R. le Prince Leopold (ISBN 9223); 1 juv., Sakoemi [0°56'S, 134°02'E], 11.iii.1929, S. A. R. le Prince Leopold (ISBN 9223).

### Diagnosis

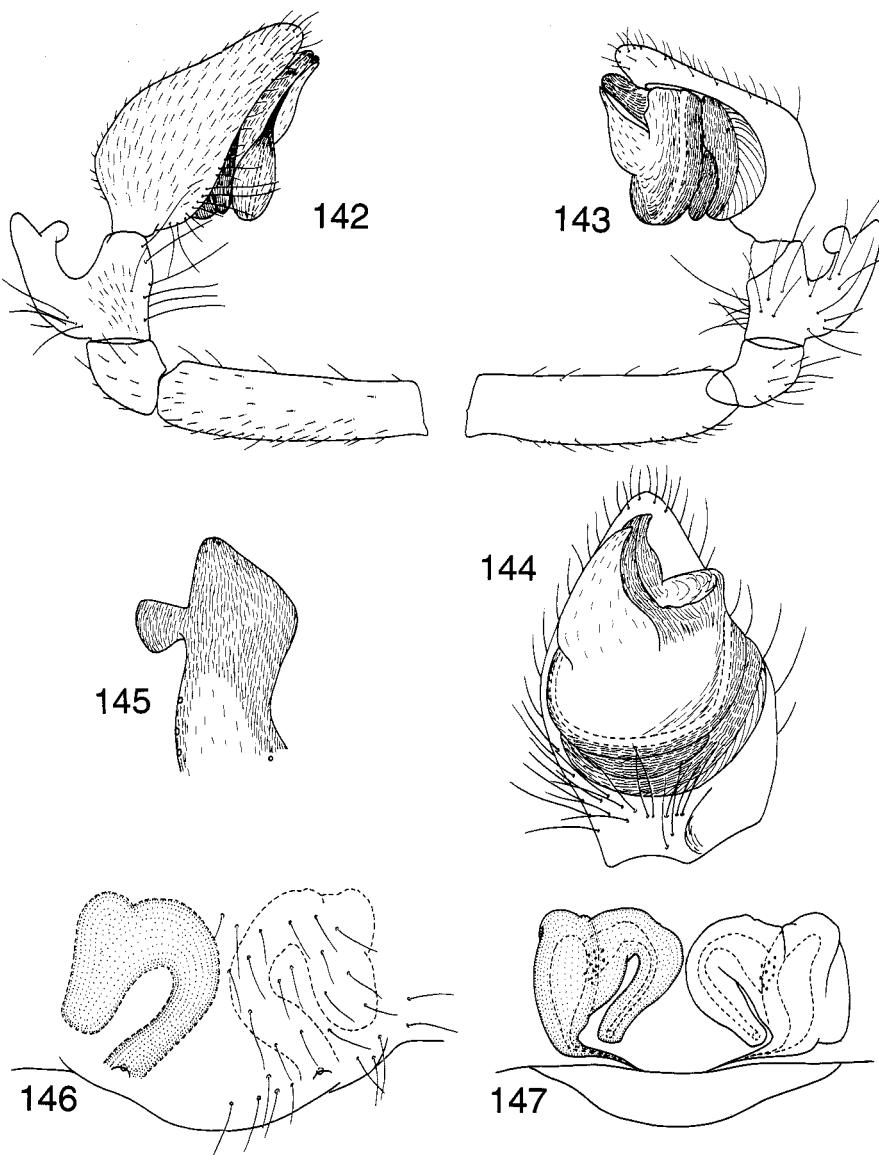
Abdomen with pale medial regions extending dorsally and ventrally. Male: median apophysis very broad; conductor with ventral ridge. Female: copulatory ducts gently curved, not sinuate; copulatory duct opening small, inconspicuous; spermathecal head not inflated.

### Description

#### Adult (Siwi, Irian Jaya)

Colour: carapace and sternum red-yellow; abdomen dark brown laterally, and pale dorso-mesally; ventral surface pale, including epigastric region and spinnerets; sigilla red-brown; chelicerae red-yellow, slightly darker distally; tarsi of legs light brown, other segments red-yellow. Carapace with scattered bristles and 1 upturned seta between AMEs; fovea a broad shallow depression. Male pedipalp (Figs 142–145): retrolateral tibial apophysis B tapering distally, apophysis A rounded; prolateral tibial apophysis absent; embolus moderately long and slender, conductor with serrate dorsal margin and ventral ridge extending posteriorly to

near base of median apophysis, median apophysis large, triangular, somewhat curved, poorly sclerotised. Legs: long and slender, extremely slender in ♂; 4123; with scattered spinules. Abdomen with long, slender setae, c. 0.5 mm in length. Epigyne (Figs 146–147) with copulatory opening small and inconspicuous, copulatory ducts gently curved, nearly touching medially.



Figs 142–147. *Dimidamus leopoldi* (Roewer). 142–145, male lectotype, left pedipalp: 142, prolateral; 143, retrolateral; 144, ventral; 145, tibia, dorsal. 146–147, female paralectotype (Siwi, Irian Jaya), epigyne: 146, ventral; 147, dorsal.

**Dimensions (mm).** Lectotype ♂ (paralectotype ♀): total length 5.20 (5.50). Carapace 2.53/2.39 (2.46/2.20). Eyes: AME 0.12 (0.10), ALE 0.15 (0.13), PME 0.12 (0.10), PLE 0.11 (0.15), AME–AME 0.06 (0.13), AME–ALE 0.12 (0.13), PME–PME 0.09 (0.09), PME–PLE

0.09 (0.13), PLE-ALE 0.01 (0.01), eye group width 0.74 (0.75), MOQ front width 0.26 (0.26), MOQ back width 0.32 (0.32), MOQ length 0.24 (0.29). Sternum 1.38/1.37 (1.31/1.27). Abdomen 3.11/1.90 (4.01/2.41). Pedipalp: femur 1.31 (1.09), patella 0.51 (1.01), tibia 0.55 (0.69), tarsus 1.22 (1.10), total 3.59 (3.89). Leg I: femur 3.72 (2.65), patella 0.82 (0.80), tibia 3.50 (2.40), metatarsus 3.50 (2.28), tarsus 1.02 (1.00), total 12.56 (9.13). Leg II: femur 3.50 (2.55), patella 0.78 (0.80), tibia 3.10 (2.12), metatarsus 3.04 (2.10), tarsus 1.09 (0.94), total 11.51 (8.51). Leg III: femur 2.71 (1.98), patella 0.86 (0.73), tibia 2.15 (1.58), metatarsus 2.20 (1.70), tarsus 0.94 (0.81), total 8.86 (6.80). Leg IV: femur 3.88 (2.77), patella 0.90 (0.90), tibia 3.38 (2.28), metatarsus 3.50 (-), tarsus 1.13 (-), total 12.79 (-).

#### Remarks

*Dimidamus leopoldi* is most similar in colour pattern to *D. sero* and *D. enaro*, all from montane Irian Jaya, and bears the strongest resemblance to *D. sero*. *D. leopoldi* possesses a smaller tibial apophysis B. The known localities are discussed by Straelen (1933). Roewer (1938) did not designate a hence a lectotype is designated here. Three slides deposited in SMF bear a pedipalp of the lectotype, the epigyne of the female from Angi-Gita and a leg IV from an unspecified specimen.

#### *Dimidamus enaro*, sp. nov.

(Figs 124, 148–153, 160)

#### Material Examined

*Holotype.* ♂, Enarotali [as Enarotadi, sic], Wisselmeren, Irian Jaya, Indonesia [3°55'S, 136°21'E], 1800–1900 m, 1–9.viii.1962, J. Sedlacek (BPBM).

*Paratypes.* Indonesia: Irian Jaya: 1 ♀, Enarotali, Wisselmeren [3°55'S, 136°21'E], 1750 m, 6.viii.1955 (BPBM); 1 ♂, Enarotali [3°55'S, 136°21'E], 1900 m, 13.vii.1962, J. Sedlacek (BPBM).

*Other material.* Indonesia: Irian Jaya: 1 juv. ♂, 1 juv. ♀, same data as holotype (BPBM).

#### Diagnosis

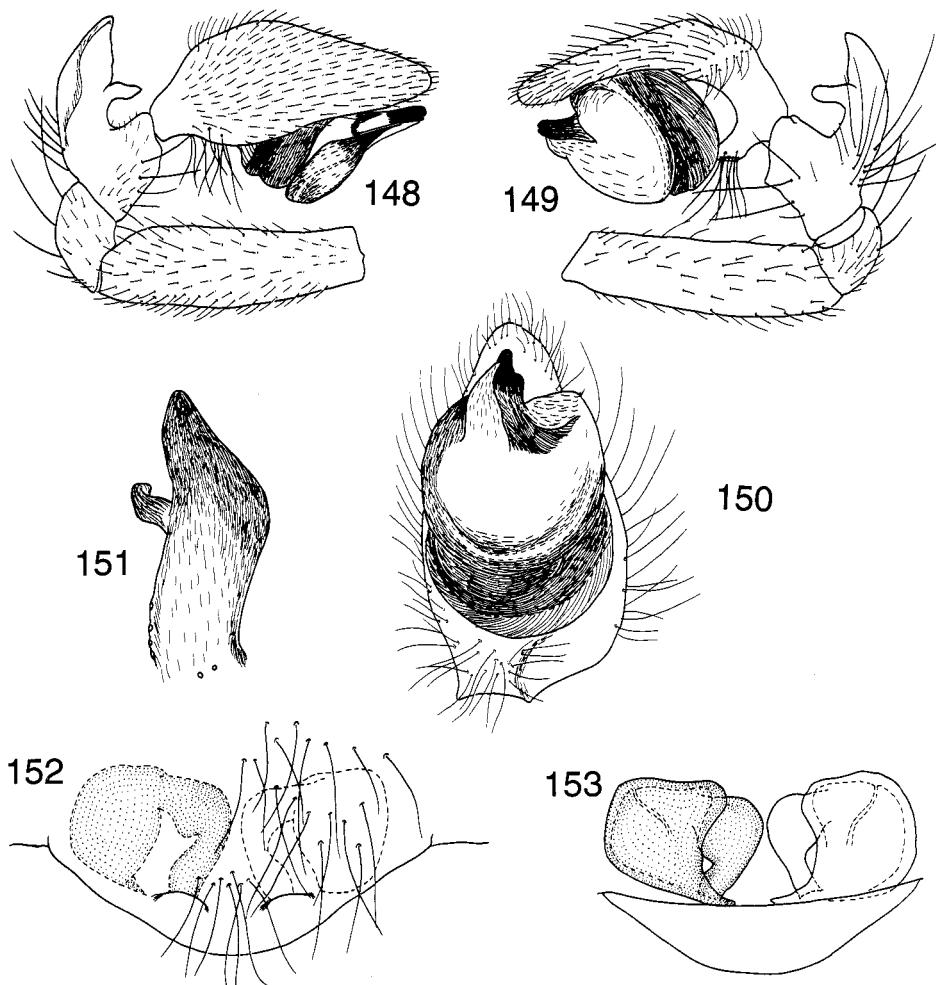
Abdomen with pale medial regions extending dorsally and ventrally. Male: conductor with retrolateral swelling. Female: copulatory ducts inflated; spermathecal head inflated mesally; copulatory duct opening broad.

#### Description

##### Adult (Enarotali, Irian Jaya)

Colour: carapace, sternum, chelicerae and legs red-brown; abdomen dark grey laterally, with broad median pale stripe, sigilla red-brown, epigastric region, spinnerets and surrounding region red-yellow. Carapace with bristles on dorsum and on clypeus; fovea deep and broad. Male pedipalp (Figs 148–151): retrolateral tibial apophysis A narrow, apophysis B thick and tapered; prolateral tibial apophysis absent; embolus medium length and slender, conductor with distal notch and retrolateral swelling, median apophysis slightly curved. Legs: long and slender; 4:1:2:3; with scattered spinules. Abdomen with stiff black setae c. 0.6–0.7 mm in length; sigilla elongate. Epigyne (Figs 152–153) with copulatory ducts very thick, opening onto face near posterior margin, without distinct circular openings; spermathecae with mesal swelling; epigyne covered by very long setae.

*Dimensions (mm).* Holotype ♂ (paratype ♀ Enarotali, Irian Jaya): total length 6.45 (6.90). Carapace 3.88/2.78 (2.53/2.39). Eyes: AME 0.10 (0.12), ALE 0.15 (0.17), PME 0.11 (0.12), PLE 0.14 (0.12), AME-AME 0.15 (0.11), AME-ALE 0.15 (0.10), PME-PME 0.15 (0.13), PME-PLE 0.20 (0.15), PLE-ALE 0.03 (0.01), eye group width 0.87 (0.80), MOQ



Figs 148–153. *Dimidamus enaro*, sp. nov. 148–151, male holotype, left pedipalp: 148, prolateral; 149, retrolateral; 150, ventral; 151, tibia, dorsal. 152–153, female paratype (Enarotali, Irian Jaya), epigyne: 152, ventral; 153, dorsal.

front width 0.33 (0.32), MOQ back width 0.36 (0.38), MOQ length 0.32 (0.30). Sternum 1.62/1.60 (1.50/1.50). Abdomen 4.13/2.40 (5.18/3.02). Pedipalp: femur 1.46 (1.22), patella 0.58 (0.55), tibia 0.62 (0.70), tarsus 1.46 (1.15), total 4.12 (3.62). Leg I: femur 4.45 (2.80), patella 1.08 (–), tibia 4.05 (–), metatarsus 4.26 (–), tarsus 1.40 (–), total 15.24 (–). Leg II: femur 4.10 (2.84), patella 1.09 (–), tibia 3.76 (–), metatarsus 3.74 (–), tarsus 1.38 (–), total 14.07 (–). Leg III: femur 3.40 (2.29), patella 1.00 (0.87), tibia 2.63 (–), metatarsus 2.74 (–), tarsus 1.10 (–), total 10.87 (–). Leg IV: femur 4.62 (3.10), patella 1.10 (0.97), tibia 4.20 (2.61), metatarsus 4.41 (2.60), tarsus 1.48 (1.10), total 15.81 (10.38).

#### Remarks

*Dimidamus enaro* differs from *D. leopoldi* and *D. sero* in the notched conductor, and the enlarged tibial apophysis B.

### *Etymology*

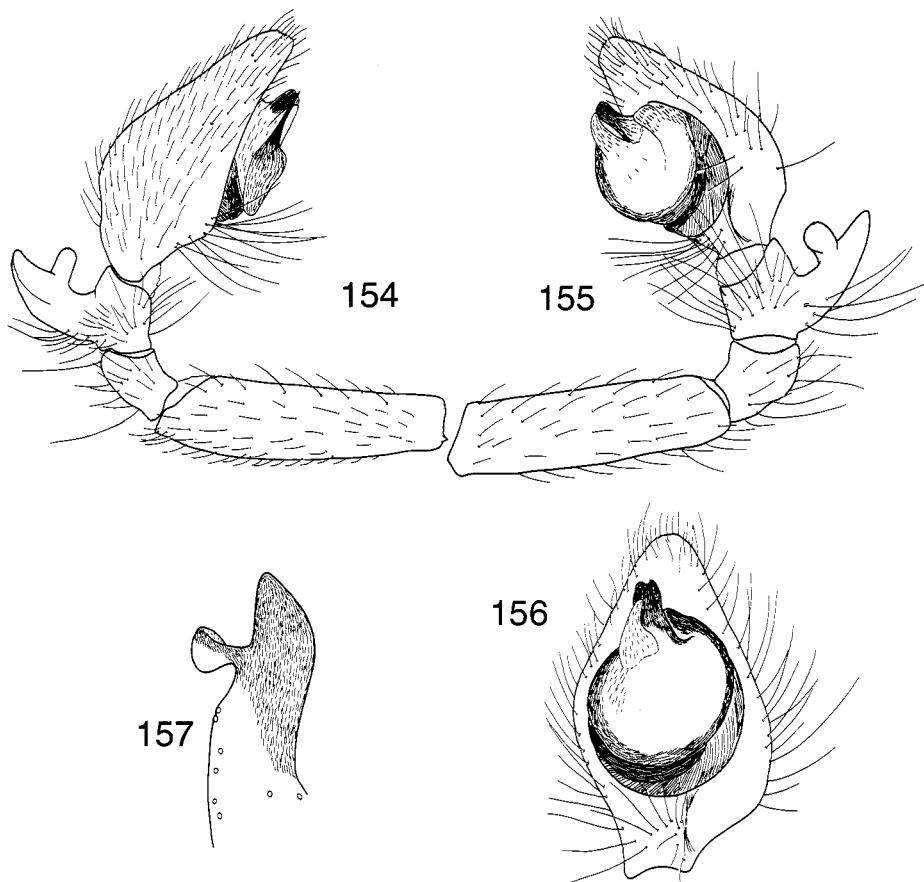
The specific epithet is an arbitrary combination of letters, and is a noun in apposition.

### *Dimidamus sero*, sp. nov.

(Figs 124, 154–157, 160)

### *Material Examined*

*Holotype.* ♂, Mt Dafansero, Cyclops Mountains, Irian Jaya, Indonesia [c. 2°32'S, 140°36'E], 4700 ft [= 1430 m], 22.iv.1945, G. G. Jewett, Jr. (AMNH).



Figs 154–157. *Dimidamus sero*, sp. nov., male holotype, left pedipalp: 154, prolateral; 155, retrolateral; 156, ventral; 157, tibia, dorsal.

### *Diagnosis*

Abdomen with pale medial regions extending dorsally and ventrally. Male: conductor with distal notch.

### Description

#### *Adult male (Mt Dafansero, Irian Jaya)*

Colour: carapace and sternum red-yellow; abdomen red-yellow dorsally, with dark brown lateral and ventral surfaces, somewhat striate, sigilla red-brown, epigastric region, spinnerets and surrounding region red-yellow; chelicerae red-yellow, darker distally; legs dark brown, except for basal half of femora which are dark red-yellow. Carapace with short bristles and 1 long seta between AMEs, fovea recurved. Pedipalp (Figs 154–157): retrolateral tibial apophysis A thick and rounded, apophysis B shallowly excavate; prolateral tibial apophysis absent; embolus stout, conductor cup-shaped and dorsally excavate, median apophysis slightly curved. Legs: long and slender; 1423; with scattered spinules. Abdomen with stiff dark setae, dorsal setae c. 0.5–0.6 mm in length.

**Dimensions (mm).** Holotype ♂: total length 5.40. Carapace 2.38/2.12. Eyes: AME 0.10, ALE 0.12, PME 0.10, PLE 0.12, AME–AME 0.08, AME–ALE 0.13, PME–PME 0.12, PME–PLE 0.16, PLE–ALE 0.02, eye group width 0.74, MOQ front width 0.26, MOQ back width 0.29, MOQ length 0.24. Sternum 1.15/1.28. Abdomen 3.52/1.75. Pedipalp: femur 1.33, patella 0.43, tibia 0.54, tarsus 1.16, total 3.46. Leg I: femur 3.75, patella 0.82, tibia 3.50, metatarsus 3.41, tarsus 1.20, total 12.68. Leg II: femur 3.47, patella 0.85, tibia 3.08, metatarsus 3.13, tarsus 1.16, total 11.69. Leg III: femur 2.88, patella 0.81, tibia 2.10, metatarsus 2.32, tarsus 0.90, total 9.01. Leg IV: femur 3.95, patella 0.98, tibia 3.31, metatarsus 3.22, tarsus 1.04, total 12.50.

### Remarks

*Dimidamus sero* differs from *D. leopoldi* in the longer tibial apophysis B.

### Etymology

The specific epithet is a noun in apposition derived from the type locality.

## Genus *Novodamus*, gen. nov.

Type species: *Centropelma nodata* Karsch, 1878.

### Diagnosis

Male pedipalpal femur thickened, with swelling on retrolateral face. Embolus and conductor fused. Epigyne with openings on lateral margin.

### Remarks

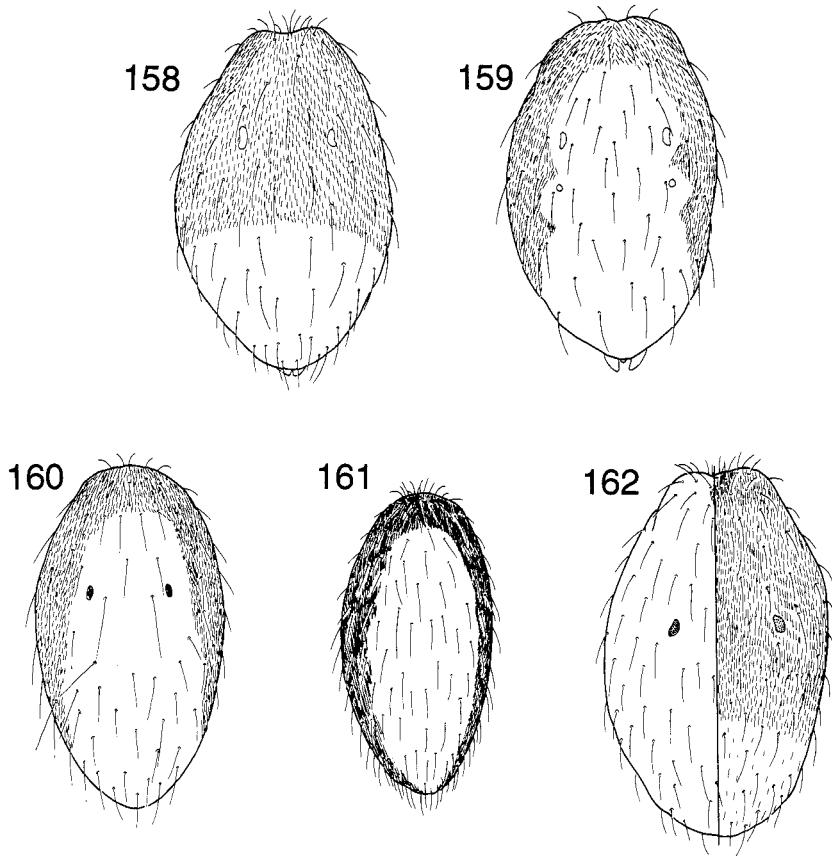
The two included species share the form of the male pedipalpal femur and of the pedipalpal bulb, and the shape of the epigyne. Members of this genus are found in the moist forests of south-eastern Australia from the Blue Mtns, NSW to southern Tasmania, and furthest west at the Grampians, Vic.

### Etymology

The generic name is derived from *novus* (Latin, new) and *Nicodamus*. Gender: masculine.

### Included Species

*Novodamus nodatus* (Karsch) and *N. supernus*, sp. nov.



**Figs 158–162.** Abdomen, dorsal, showing colour pattern, blank areas are red: 158, *Dimidamus dimidiatus* (Simon), male (Mt Superbus, Queensland); 159, *D. leopoldi* (Roewer), male lectotype; 160, *D. enaro*, sp. nov., male holotype; 161, *D. sero*, sp. nov., male holotype; 162, *Oncodamus decipiens*, sp. nov. (bicoloured form), male holotype.

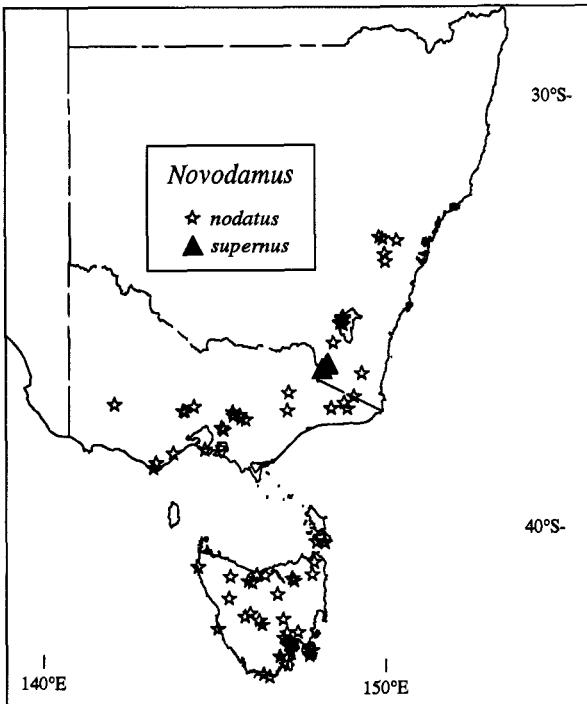
#### Key to Species of *Novodamus*

##### Males

1. Retrolateral tibial apophysis A without basal constriction (Fig. 164); retrolateral tibial apophysis B deeply excavate on prolateral margin (Fig. 167); bulb not elongate, prolateral margin with swelling (Fig. 166) .... *Novodamus nodatus* (Karsch)
- Retrolateral tibial apophysis A with basal constriction (Fig. 171); retrolateral tibial apophysis B smooth on prolateral margin (Fig. 174); bulb somewhat elongate, prolateral margin smooth (Fig. 173) .... *Novodamus supernus*, sp. nov.

##### Females

1. Copulatory duct long (Fig. 170) .... *Novodamus nodatus* (Karsch)
- Copulatory duct short (Fig. 177) .... *Novodamus supernus*, sp. nov.



**Fig. 163.** Eastern Australian records of *Novodamus* species.

*Novodamus nodatus* (Karsch), comb. nov.

(Figs 163–170)

*Centropelma nodata* Karsch, 1878: 815–6.

*Linyphia melanozantha* Urquhart, 1893: 103 (in part; male only); Roewer, 1942: 586. **New synonymy.**

*Linyphia meloxantha* [sic] Urquhart. — Rainbow, 1911: 164; Bonnet, 1957: 2515.

*Nicodamus nodatus* (Karsch). — Roewer, 1942: 429; Bonnet, 1958: 3101; Davies, 1985: 92.

*Nicodamus bicolor* (L. Koch). — Hickman, 1967: 74–5 (misidentification, in part; see also *Litodamus hickmani*, sp. nov.).

*Nicodamus* sp. — Forster, 1970: 177, figs 514–517.

*Material Examined*

*Holotype* of *Centropelma nodata*. ♂, Tasmania (as Van Diemen's Land), Australia, Scheyer (ZMB 2119).

*Syntypes* of *Linyphia melanozantha*. Numerous ♂, ♀, juvs, Tasmania, Australia (formerly CMNZ, lost, not examined).

*Other material.* **Australia: Australian Capital Territory:** 2 ♂, Blundells Ck, 3 km E of Piccadilly Circus, 35°22'S, 148°50'E, 850 m, April 1984, Weir, Lawrence, Johnson (ANIC); 2 ♂, same data except March 1984 (ANIC); 5 ♂, same data except May 1985 (ANIC); 1 ♀, Brindabella Range [*c.* 35°27'S, 148°46'E], 3700 ft [= 1128 m], dry sclerophyll forest, 18.x.1964, A. Cottrell (MCZ); 1 ♂, Condor Ch [35°19'S, 148°50'E], 27.ii.1978, P. C. E. Bailey (WARI); 1 ♀, 1 juv., Lees Ck [35°21'S, 148°51'E], 23.xi.1978 (ANIC); 12 ♂, same data except 10.iii.1979 (ANIC); 1 ♂, 3 km N of Mt Aggie [35°26'S, 148°48'E], 1–21.xi.1979, D. Rentz (ANIC); 1 ♂, 2·4 mi N of Piccadilly Circus [35°20'S, 148°49'E], 1.iii.1965, BYM (WAM 93/1965); 5 ♂, 1 ♀, 1 juv., Tidbinbillia Nature Reserve, 35°28'S, 148°52'E, pitfall trap, 9.iii.1978, P. Ormay (AM KS13831); 15 ♂, 1 ♀, same data (AM KS13839); 1 ♂, 3 juvs, same data (AM KS13886); 2 ♂, 1 ♀, same data (AM KS13889); 1 ♂, Wombat Ck, 6 km NE of Piccadilly Circus, 35°19'S, 148°51'E, 750 m, March 1984, Weir, Lawrence, Johnson (ANIC). **New South Wales:** 1 ♂, Bondi State Forest, S of Bombala, 37°08'S, 149°09'E, 15.x.1980, G. Gowling, et al. (AM KS11369); 1 ♀, Boyd Plateau [34°00'S, 150°03'E], 3.iii.1973, MRG (AM

KS40944); 1 ♀, Boyd Plateau [34°00'S, 150°03'E], 1971, MRG (AM KS23623); 1 ♀, Boyd Plateau [34°00'S, 150°03'E], in log, Oct. 1969, MRG (AM KS23624); 1 ♂, Brown Mt [36°36'S, 149°23'E], in leaf litter, 30.iii.1967, P. W. (ANIC); 1 ♂, Jenolan, 33°49'S, 150°02'E, 19.ii.1990, A. Baynes (WAM 93/1966); 1 ♀, Kanangra-Boyd Natl Park, Blood Filly Ck nr Jenolan Caves [c. 33°49'S, 150°02'E], 27.iii.1976, MRG, GSH, J. McDougall (AM KS40945); 1 ♂, Mt Brown, near Bega [36°36'S, 149°23'E], in rotting log, 23.iii.1970, MRG (AM KS22051); 2 ♀, Mt Edwards, Boyd Plateau, 34°00'S, 150°03'E, in logs, 26.xi.1974, MRG (AM KS40946); 1 ♀, Mt Kosciusko [36°27'S, 148°16'E], 5000–6000 ft [= 1524–1829 m], Dec. 1931, Darlington (MCZ); 1 ♂, Mt Wilson, Cathedral of Ferns area, 33°30'S, 150°23'E, pitfall trap, Feb. 1978, MRG (AM KS1355); 2 ♂, same data except 16.ii.1978, C. Horseman (AM KS1452); 1 ♂, same data except 28.i.1979, C. Horseman (AM KS2641); 2 ♂, Mt Wilson, waterfall picnic area, 33°30'S, 150°23'E, 28.i.1979, pitfall trap, C. Horseman (AM KS2627); 1 ♀, Mt Wilson, Waterfall Picnic Area Trail, 33°30'S, 150°23'E, pitfall trap, 3.xi.1979, C. Horseman (AM KS5581); 2 ♀, Mt Lambie, 33°27'S, 149°59'E, ex litter, 13.xi.1988, GSH, et al. (AM KS29933); 1 ♂, Sawyers Hill, Kosciusko Natl Park [35°54'S, 148°34'E], March 1987, J. Disney (AM KS17232); 3 ♀, 2 juvs, Sunny Corner State Forest, 33°24'S, 149°53'E, under logs in pine forest, 13.xi.1972, J. Disney (AM KS22031); 1 ♀, Thredbo Ck camping ground [36°30'S, 148°19'E], on twig with egg sac, Jan. 1984, B. Guerin (SAM N1994202). Tasmania: 2 ♂, Arthur R. mouth [41°03'S, 144°40'E], March 1953, A. G. Lyne (AM KS41184 from HC); 1 ♀, Bagdad [42°37'S, 147°13'E], 7.xii.1937 (TM J188); 2 ♀, between Birthday Bay to Hibbs Lagoon [c. 42°30'S, 145°15'E], Jan. 1983, ANZSES Expedition (QM S15398); 1 ♀, 10 mi from Bothwell to Interlaken [c. 42°16'S, 147°06'E], under log, 3.xii.1958, JLH (AM KS41199 from HC); 4 ♀, Cascades [42°54'S, 147°17'E], under stones, 29.v.1929, VVH (AM KS41181 from HC); 1 ♀, Cemetery Point, New Town [42°51'S, 147°19'E], in grass tufts, 23.viii.1968, VVH (AM KS41189 from HC); 1 ♂, Cornelian Bay [42°52'S, 147°20'E], on cliff, 17.ii.1961, VVH (AM KS41192 from HC); 1 ♀, 6 juvs, same data except 25.iii.1961 (AM KS41201 from HC); 2 ♂, 2 ♀, Fern Tree [42°55'S, 147°16'E], under stones, 20.iv.1959, VVH (AM KS41202 from HC); 2 ♂, same data except from shrubs, 4.iii.1964 (AM KS41185 from HC); 2 ♀, Forth Falls [41°24'S, 146°13'E], 28.xii.1926 (AM KS41190 from HC); 1 ♀, 1 juv., Franklin [43°10'S, 147°00'E], 8–9.vi.1974, R. Mesibov (TM J1993); 1 ♂, NE point of Forsyth I., Furneaux Group [40°30'S, 148°18'E], 30.iv.1985, J. S. Whinray (TM J1999); 1 juv., 5 km SE of Harford, 41°15'S, 146°36'E, Banksia litter, 19.i.1983, I. D. Naumann, J. C. Cardale (ANIC); 1 ♀, Hellyer R. [41°16'S, 145°36'E], 20.xi.1986, MSH, P. K. Lillywhite (WAM 93/1967); 4 ♀, Hobart [42°53'S, 147°19'E], 1901, Pull. (MNHP 21524); 1 ♂, Ile du Golfe [43°35'S, 146°32'E], 5.ii.1987, S. J. Smith (TM J2263); 1 ♂, 5 ♀, Lake St Clair, 42°08'S, 146°10'E, 700 m, lake edge, under logs and rocks, 29.i.1987, RJR, J. Gallon (QM S5640); 1 ♀, Lake St Clair, 42°08'S, 146°10'E, 700 m, heath and forest, night collection, 29–30.i.1987, RJR, J. Gallon (QM S5612); 1 ♀, Lake St Clair, 42°08'S, 146°10'E, 700 m, heath and forest, night collection, 29–30.i.1987, RJR, J. Gallon (QM S5573); 1 ♂, 6 ♀, Lenah Valley [42°52'S, 147°17'E], under bark of Eucalyptus, 4.vi.1957, JLH, VVH (AM KS41183 from HC); 12 ♀, Lenah Valley [42°52'S, 147°17'E], under bark on dead wattle, 1.vi.1948 (AM KS41214 from HC); 5 ♀, Lenah Valley [42°52'S, 147°17'E], 4.vii.1945 (AM KS41200 from HC); 2 ♀, 2 juvs, Lenah Valley [42°52'S, 147°17'E], 24.vi.1957, JLH (AM KS41188 from HC); 1 ♀, Lenah Valley [42°52'S, 147°17'E], 14.xi.1984, J. Daniels (TM J1954); 3 ♂, 2 ♀, Lenah Valley [42°52'S, 147°17'E], 25.iv.1946, VVH (AMNH); 1 ♂, Liffey R. [c. 41°40'S, 146°56'E], C. C. Lawrence (QVM); 1 ♀, Lindisfarne [42°51'S, 147°21'E], in garden, 16.ix.1967, L. Jones (AM KS41205 from HC); 2 ♂, Lindisfarne [42°51'S, 147°21'E], inside house, 25.i.1990, A. Adams (TM J2917); 1 ♂, Lyell Hwy at Franklin R., 55 km ESE of Queenstown [42°13'S, 146°01'E], 400 m, on and under wet rocks in stream, 19–20.ii.1980, A. Newton, M. Thayer (AMNH); 1 ♂, same data except carrion trap (AMNH); 1 ♂, Melaleuca, Bathurst Harbour, 43°25'S, 146°10'E, 12–17.ii.1990, I. D. Naumann (ANIC); 1 ♂, same data except 11–15.iv.1991, J. A. Berry (ANIC); 4 ♂, Mt Barrow Rd [c. 41°23'S, 147°25'E], 570 m, pitfall traps, 15–17.ii.1980, A. Newton, M. Thayer (AMNH); 2 ♀, Mt Barrow [41°23'S, 147°25'E], 8.vii.1957, JLH (AM KS41203 from HC); 4 ♀, Mt Brown, 42°36'S, 147°32'E, 22.iv.1973, JLH (AM KS30756); 2 ♀, Mt Dromedary [42°43'S, 147°07'E], 12.xi.1957, JLH, VVH (AM KS41204 from HC); 4 ♀, 3 juvs, Mt Wellington, 42°54'S, 147°14'E, 12.ii.1903 (AM KS40947); 1 ♂, Penzance, Eaglehawk Neck [43°02'S, 147°55'E], on outside wall (AM KS41191 from HC); 1 ♀, Port Arthur, 43°09'S, 147°51'E, above littoral zone, 10.i.1981, A. Rozefelds (QM S15406); 1 ♀, Preservation I., Furneaux Group [40°29'S, 148°04'E], 27.v.1976, J. S. Whinray (TM J1144); 1 ♀, 1 juv., Ridgeway [42°56'S, 147°17'E], Oct. 1958, C. Oke (NMV); 1 ♂, 1 ♀, Ringarooma R., near Mutual Rd, 40°57'S, 148°00'E, 18.ii.1992, AFL (WAM 93/1968–1969); 1 ♂, Rosebery, 41°47'S, 145°34'E, cemetery headstone, 2.iii.1992, AFL (WAM 93/1970); 1 ♂, South Cape [43°38'S, 146°42'E], 29.ii.1976, R. Burnett (TM J1102); 1 ♂, South Hobart [42°54'S, 147°19'E], in toilet, 12.iii.1992, J. Gibson (TM J3060); 1 ♀, Spreyton [41°14'S, 146°21'E], Nov. 1937, School (TM J849); 1 ♀, Targa [41°19'S, 147°22'E], 18.ii.[19]76, Griffiths (QVM); 1 ♀, Tarraleah, 42°18'S, 146°26'E, 24.xii.1956, VVH (AM KS28790); 2 ♀, Tarraleah, 42°18'S, 146°26'E,

1.i.1957, VVH (AM KS28791); 1 ♂, Wayatinah Hydro-Electric Camp, 42°24'S, 146°30'E, on wall of ablation block, 21.ii.1991, AFL (WAM 93/1971); 4 juvs, 4 km SE of Weldborough, 41°14'S, 147°56'E, ex pantrap, 13.i.-7.ii.1983, I. D. Naumann, J. C. Cardale (ANIC); 1 ♀, Wilmot R. [41°23'S, 146°07'E], Dec. 1964, R. Mawbey (TM J466); 3 ♀, 1 juv. ♀, no further data (SAM N1989501-4). **Victoria:** 1 ♂, Acheron R., 3.5 km ESE of Narbethong [37°35'S, 145°42'E], 16.iii.1982, L. A. Barmuta (WAM 93/1973); 1 ♀, Acheron R., at Old Coach Rd, 37°30'S, 145°41'E, under bark of *Eucalyptus* sp., MSH (WAM 93/1972); 1 ♀, Beech Forest, Otway Ranges, 38°27'S, 143°58'E, on bark, 7.iv.1973, MRG (AM KS22062); 1 ♀, Blackwood, Loam Ck along Lerderderg Rd, 37°29'S, 144°19'E, under ribbon bark, 10.ix.1977, H. Parnaby (AM KS19796); 1 ♀, Butterfield Reserve, c. 3 km from Emerald on Monbulk Rd [37°55'S, 145°26'E], 12.vi.1989, D. Hirst (SAM N1989570); 1 ♀, 1 juv., Cobon Forest Management Block 513-04 [37°25'S, 148°58'E], pitfall trap, 5-11.v.1992, R. Coy (NMV); 1 ♀, 1 juv., Cumberland Falls, 37°34'S, 145°53'E, under bark of *Eucalyptus regnans*, 27.v.1991, MSH, MEB (WAM 93/1974-1975); 1 ♂, Dinosaur Cove [38°47'S, 143°24'E], Feb. 1991, H. Ogleby (NMV); 1 ♀, Goonmirk Rocks, 13 km N of Errinundra [37°17'S, 148°53'E], under bark of *Eucalyptus* sp., 8.iv.1985, MSH (WAM 93/1976); 1 ♀, Gow Plains, N of Dargo, 37°28'S, 147°15'E, damp litter, under logs, 22.iii.1992, AFL (WAM 93/1977); 1 ♀, 1 juv., Grampians, 50 m from top of 'The Fortress' [37°19'S, 142°18'E], in moss, 24.iv.1973, F. Aslin (SAM N1989499-500); 1 ♀, Lerderderg R., 4.8 km WNW of Blackwood [37°28'S, 144°16'E], under bark of *Eucalyptus rubida*, 13.ix.1982, MSH (WAM 93/1978); 2 juv. ♂, 2 ♀, 13 mi SE of Mt Hotham [c. 37°03'S, 147°18'E], 1250 m, 13.xii.[19]62, ESR, DQC (CAS); 1 ♀, 1 juv., Mt Macedon [37°23'S, 144°35'E], 13.vii.1980, RJR (QM S15364); 1 ♂, 1 ♀, 1 juv., Philips Track, Young's Ck Crossing, 0.5 km N of Triplet Falls, Otway Ranges, 38°40'S, 143°29'E, *Nothofagus cunninghamii*, 20.ii.1992, G. Milledge (NMV); 1 ♀, 4 juvs, same data except 17.iii.1992 (NMV); 1 ♂, Rosebud [38°22'S, 144°52'E], 26.ii.1981, J. C. Le Souef (NMV); 1 ♂, Sardine Forest Management Block site 513-04 [37°25'S, 148°31'E], pitfall trap, 9-15.iv.1992, R. Coy (NMV); 1 ♂, same data except site 513-06 [37°24'S, 148°31'E], pitfall trap, 10-15.v.1992, R. Coy (NMV); 1 ♀, Sassafras [37°52'S, 145°22'E], 8.xi.1981, N Wentworth (WAM 93/1979); 1 ♀, 1 juv., Upper Yarra, site UY6 [37°39'S, 145°56'E], pitfall trap, 28.xi.-2.xii.1988, L. Lumsden (NMV); 2 ♀, Upper Yarra, site UY3 [37°40'S, 146°03'E], pitfall trap, Nov. 1988, L. Lumsden (NMV); 1 ♂, 'mallee scrub, West. District', Nov. [18]94 (NMV). **Without locality data:** 20 ♀, (TM J3151).

### Diagnosis

**Male:** retrolateral tibial apophysis A without basal constriction; retrolateral tibial apophysis B deeply excavate on prolateral margin; bulb not elongate, prolateral margin with swelling. **Female:** copulatory duct long.

### Description

#### Adult (Mt Wilson and Boyd Plateau, NSW)

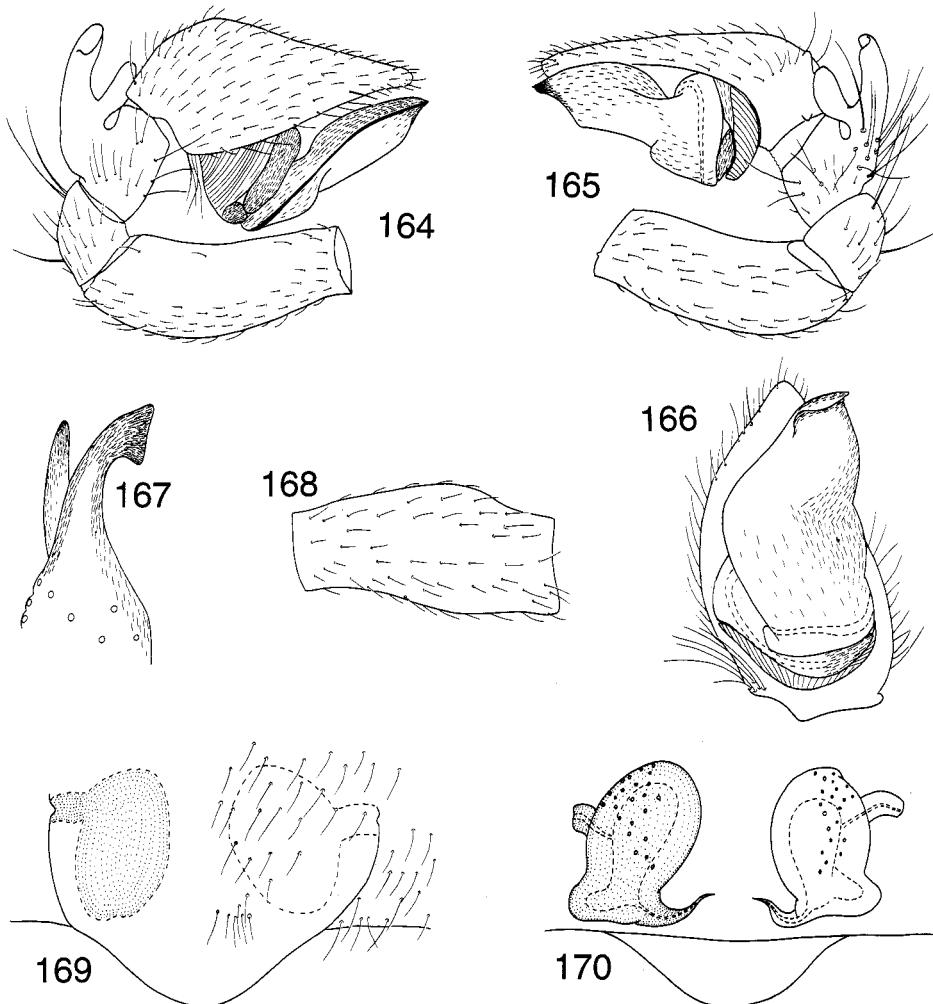
Colour: carapace and sternum red-yellow; abdomen black, with metallic blue tinges, sigilla red-brown, epigastric region, spinnerets and surrounding region yellow; chelicerae with basal half red-yellow, distal half dark brown; pedal femora and patella red-yellow, femora of ♂ light brown, tibiae, metatarsi and tarsi dark brown. Carapace with scattered bristles near ocular region and anterior to fovea, and 1 upturned seta between AMEs; fovea a broad depression, more longitudinal in ♂. Male pedipalp (Figs 164-168): femur thickened, with large swelling on retrolateral face; retrolateral tibial apophysis B deeply excavate on prolateral margin, apophysis A without basal constriction; prolateral tibial apophysis absent; embolus, conductor and median apophysis fused, bulb not elongate, prolateral margin with swelling. Legs: long and slender; 4123; with scattered spinules. Abdomen with coarse, stiff setae, c. 0.20-0.25 (♂), 0.30-0.35 (♀) mm in length. Epigyne (Figs 169-170) with rounded, projecting posterior margin; copulatory duct long; copulatory duct opening at anterior end of epigynal plate; spermatheca rounded, with basal rounded projection.

**Dimensions (mm).** ♂ Mt Wilson, NSW (♀ Boyd Plateau, NSW): total length 4.00 (5.18). Carapace 2.00/1.89 (2.40/2.20). Eyes: AME 0.09 (0.10), ALE 0.15 (0.15), PME 0.08 (0.09), PLE 0.10 (0.12), AME-AME 0.09 (0.08), AME-ALE 0.07 (0.12), PME-PME 0.10 (0.13), PME-PLE 0.12 (0.17), PLE-ALE 0.00 (0.01), eye group width 0.57 (0.75), MOQ front width 0.22 (0.30), MOQ back width 0.25 (0.32), MOQ length 0.21 (0.26). Sternum 1.10/1.09 (1.53/1.35). Abdomen 2.60/1.71 (3.40/2.48). Pedipalp: femur 1.03 (1.02), patella

0.40 (0.50), tibia 0.32 (0.69), tarsus 1.04 (1.00), total 2.79 (3.21). Leg I: femur 2.08 (2.10), patella 0.69 (0.80), tibia 2.03 (1.95), metatarsus 1.76 (1.73), tarsus 0.78 (0.80), total 7.34 (7.38). Leg II: femur 2.07 (1.98), patella 0.67 (0.80), tibia 1.89 (1.78), metatarsus 1.60 (1.50), tarsus 0.71 (0.71), total 6.94 (6.77). Leg III: femur 1.60 (1.63), patella 0.62 (0.76), tibia 1.30 (1.27), metatarsus 1.20 (1.20), tarsus 0.63 (0.70), total 5.35 (5.56). Leg IV: femur 2.22 (2.20), patella 0.72 (0.82), tibia 2.10 (1.83), metatarsus 1.98 (1.70), tarsus 0.73 (0.88), total 7.75 (7.43).

#### Remarks

Two forms of retrolateral tibial apophysis are apparent within males of this species. The first has a distinctly pointed tip to apophysis B, and is found in all known males from ACT, southern NSW, Victoria and north-eastern Tasmania (Forsyth I., Mt Barrow and Ringarooma R.). The second has the tip of apophysis B folded over and somewhat rounded [as described for *L. melanozantha* by Urquhart (1893)], and occurs in males from the Blue Mtns, west of Sydney, NSW, and southern and western Tasmania. An intermediate



Figs 164–170. *Novodamus nodatus* (Karsch). 164–168, male (Mt Wilson, NSW), left pedipalp: 164, prolateral; 165, retrolateral; 166, ventral; 167, tibia, dorsal; 168, femur, dorsal. 169–170, female (Boyd Plateau, NSW), epigyne: 169, ventral; 170, dorsal.

apophysis shape occurs in a single male from Liffey R., Tasmania. No other differences could be found in the male pedipalp, and all specimens are considered to represent a single species.

The identity of *Linyphia melanozantha*, originally described from Tasmania, has been obscured because the type specimens (along with all other Urquhart's Tasmanian specimens), which may have originally been lodged in CMNZ, are lost. However, Urquhart (1893) gives adequate data to recognise that he had at least two different species. The female refers to a species of *Litodamus*, easily identified by the colour of the sternum, said to be 'deep chestnut-brown'. The male refers to a species of *Novodamus*, as Urquhart's description of the pedipalpal femur ('pars humeralis') as 'incrassated forwards' clearly refers to the thickened swelling found in *Novodamus*, and he appears to correctly describe the basal cymbial process of the genus. Therefore, *Linyphia melanozantha* is here transferred to *Novodamus*, and considered a junior synonym of *N. nodatus*, the only known species of the genus from Tasmania.

*Novodamus nodatus* is found in the wet forests of south-eastern Australia, from near Lithgow, NSW to southern Tasmania (Fig. 163). Adult females have been collected in all months, and males have been found during spring, summer and early winter.

#### *Novodamus supernus*, sp. nov.

(Figs 163, 171–177)

#### *Material Examined*

*Holotype.* ♂, Betts Ck, Kosciusko Natl Park, New South Wales, Australia [36°25'S, 148°23'E], 1740 m, Feb. 1982, K. Green (ANIC).

*Paratypes.* **Australia: New South Wales:** 6 ♂, 2 ♀, same data as holotype (ANIC); 1 ♀, Rock Ck, Kosciusko [Natl Park] [36°24'S, 148°25'E], 5550 ft [= 1690 m], 25.xi.1952, A. Musgrave (AM KS22048); 13 ♂, South Ramshead [36°31'S, 148°15'E], 2000 m, ex pitfall trap, Feb. 1982, K. Green (ANIC); 3 ♂, same data except March 1982 (ANIC); 4 ♂, same data except Feb. 1983 (ANIC); 36 ♂, South Ramshead [36°31'S, 148°15'E], 1850 m, ex pitfall trap, Feb. 1982, K. Green (ANIC); 10 ♂, same data (WAM 93/1864–1873); 1 ♂, same data except March 1982 (ANIC); 1 ♀, same data except Nov. 1982 (ANIC); 30 ♂, same data except Feb. 1983 (ANIC).

#### *Diagnosis*

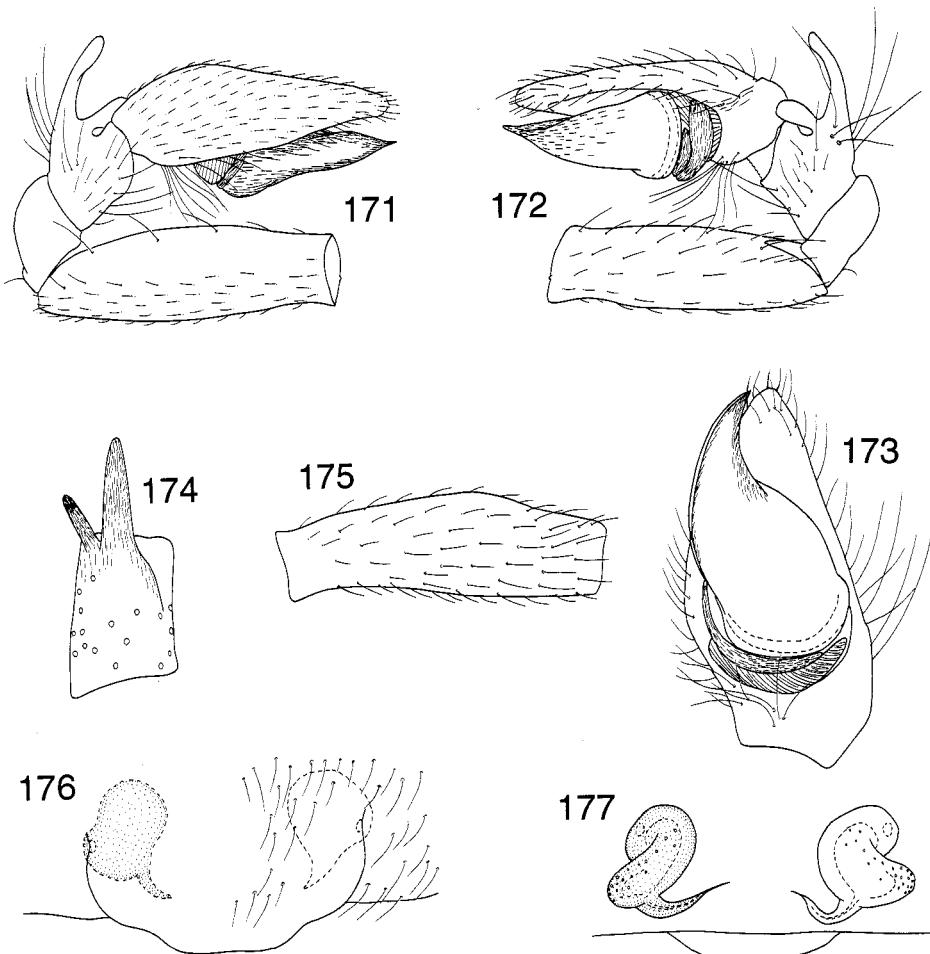
Male: retrolateral tibial apophysis A with basal constriction; retrolateral tibial apophysis B smooth on prolateral margin; bulb somewhat elongate, prolateral margin smooth. Female: copulatory duct short.

#### *Description*

##### *Adult (Betts Ck, NSW)*

Colour: carapace and sternum red-yellow; abdomen black, sigilla red-brown, epigastric region, spinnerets and surrounding region red-yellow; chelicerae with basal half red-yellow, distal half dark brown; pedal femora and patella red-yellow, tibiae, metatarsi and tarsi brown. Carapace with scattered bristles anterior to fovea and around ocular region, and 1 upturned seta between AMEs; fovea a broad depression. Male pedipalp (Figs 171–175): femur slightly thickened, with small swelling on retrolateral face; retrolateral tibial apophysis B smooth on prolateral margin, tapering to fine point, apophysis A with basal constriction; prolateral tibial apophysis absent; embolus, conductor and median apophysis fused, bulb somewhat elongate, prolateral margin smooth. Legs: long and slender; 4123; with scattered spinules. Abdomen with coarse, stiff setae, c. 0.20–0.30 (♂ ♀) mm in length. Epigyne (Figs 176–177) copulatory duct short.

*Dimensions (mm).* Holotype ♂ (paratype ♀ Betts Ck, NSW): total length 4.00 (6.40). Carapace 1.88/1.71 (2.14/1.98). Eyes: AME 0.06 (0.10), ALE 0.12 (0.15), PME 0.09 (0.11),



Figs 171–177. *Novodamus supernus*, sp. nov. 171–175, male holotype, left pedipalp: 171, prolateral; 172, retrolateral; 173, ventral; 174, tibia, dorsal; 175, femur, dorsal. 176–177, female paratype (Betts Cr, NSW), epigyne: 176, ventral; 177, dorsal.

PLE 0.13 (0.15), AME–AME 0.08 (0.14), AME–ALE 0.09 (0.10), PME–PME 0.10 (0.16), PME–PLE 0.09 (0.17), PLE–ALE 0.00 (0.00), eye group width 0.57 (0.78), MOQ front width 0.23 (0.29), MOQ back width 0.26 (0.33), MOQ length 0.20 (0.27). Sternum 1.10/1.05 (1.32/1.28). Abdomen 2.25/1.92 (4.72/3.65). Pedipalp: femur 0.83 (0.98), patella 0.30 (0.44), tibia 0.29 (0.55), tarsus 0.79 (0.90), total 2.21 (2.87). Leg I: femur 1.67 (1.88), patella 0.63 (0.67), tibia 1.58 (1.68), metatarsus 1.42 (1.48), tarsus 0.68 (0.76), total 5.98 (6.47). Leg II: femur 1.63 (1.81), patella 0.62 (0.64), tibia 1.48 (1.53), metatarsus 1.31 (1.40), tarsus 0.71 (0.73), total 5.75 (6.11). Leg III: femur 1.34 (1.60), patella 0.60 (0.65), tibia 1.10 (1.21), metatarsus 1.10 (1.19), tarsus 0.57 (0.66), total 4.71 (5.31). Leg IV: femur 1.80 (1.92), patella 0.69 (0.76), tibia 1.63 (1.70), metatarsus 1.50 (1.60), tarsus 0.65 (0.80), total 6.27 (6.78).

#### Remarks

*Novodamus supernus* is a small species that is known only from three locations within the Snowy Mtns, NSW (Fig. 163) at altitudes over 1600 m, which is above the snow-line. In contrast, the only other species of *Novodamus*, *N. nodatus*, is found below the snow-line and

is much more widespread (Fig. 163). Adults have been collected during late spring and summer (November to March), which may simply reflect collecting bias favoured towards equitable climates.

#### *Etymology*

The specific epithet refers to the occurrence of this species on the highest peaks in Australia (*supernus*, Latin, above, on high).

### Genus *Oncodamus*, gen. nov.

Type species: *Centropelma bidens* Karsch, 1878.

#### *Diagnosis*

Male: cymbium with basal hook; conductor with lateral margin serrate. Female: copulatory ducts elongate and curved, extending far in advance of copulatory openings, which open onto external face of epigynum, anteriorly.

#### *Remarks*

This distinctive genus is easily distinguished by the form of the male pedipalp and the female copulatory ducts and openings.

The two species here recognised are vicariously distributed in rainforests or moist forests of eastern Australia. *O. bidens* occurs south of the Cassilis Gap from Newcastle to Batemans Bay, while *O. decipiens* occurs north of the Gap from Singleton, NSW to north-eastern Qld (Fig. 184).

#### *Etymology*

The generic name is derived from *oncos* (Greek, hook) and *Nicodamus*, and refers to the cymbial hook. Gender: masculine.

#### *Included Species*

*Oncodamus bidens* (Karsch) and *O. decipiens*, sp. nov.

### Key to Species of *Oncodamus*

#### Males

1. Base of median apophysis with small heavily sclerotised lobe (Fig. 180) ..... *Oncodamus bidens* (Karsch)
- Base of median apophysis without sclerotised lobe (Fig. 188) ... *Oncodamus decipiens*, sp. nov.

### *Oncodamus bidens* (Karsch), comb. nov. (Figs 178–184)

*Theridion semiflavum* L. Koch. — L. Koch, 1872: 259–60, plate 21, figs 6a, 7 [misidentification in part, females from Sydney only; see *Nicodamus peregrinus* (Walckenaer)].

*Centropelma bidens* Karsch, 1878: 815.

*Nicodamus bidens* (Karsch). — Roewer, 1942: 429; Bonnet, 1958: 3101; Davies, 1985: 92.

### Material Examined

**Syntypes.** 2 ♂, New South Wales, Australia, Daemel (ZMB 2118).

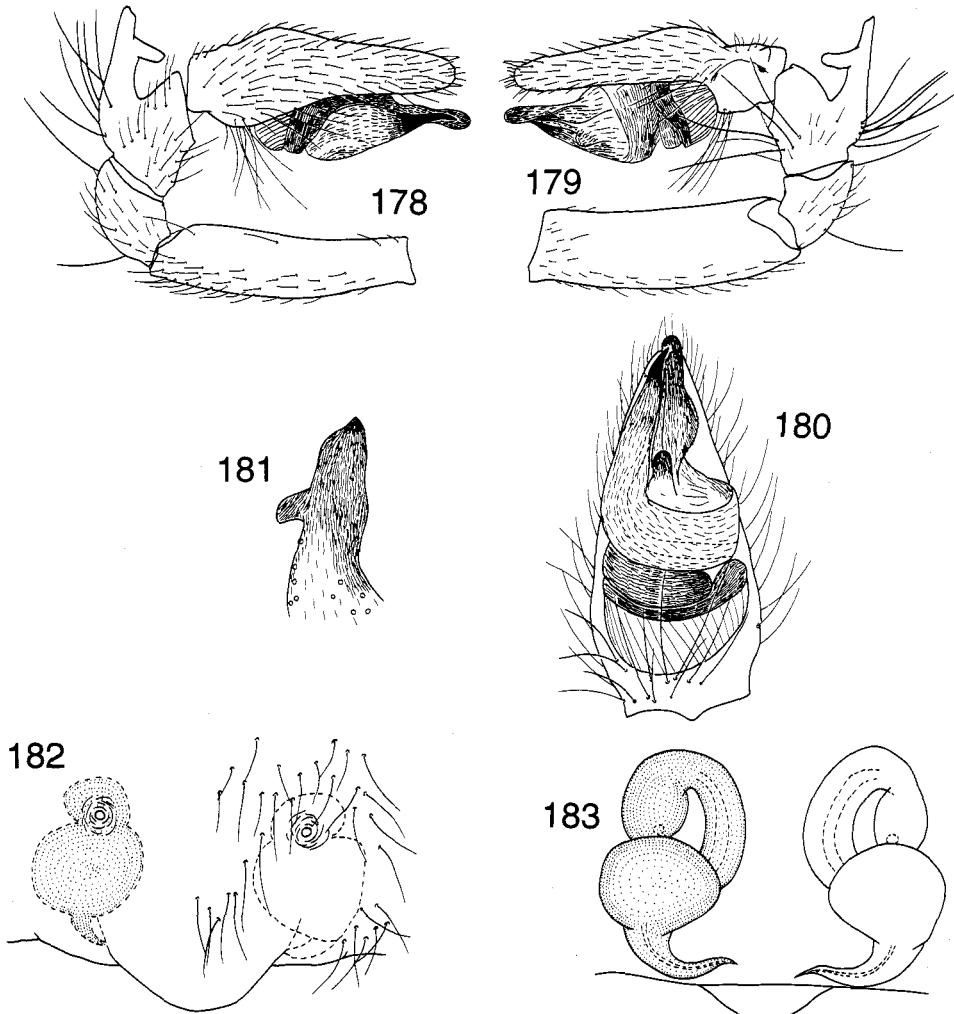
**Other material.** **Australia: New South Wales:** 1 ♂, Benandarah State Forest, 8 km N of Bateman's Bay, 35°40'S, 150°14'E, pitfall trap, 21.ix.1978, C. Horseman (AM KS1964); 2 ♂, 1 juv. ♀, same data except 19.x.1978 (AM KS2041); 2 ♂, same data except 21.ix.1979 (AM KS3937); 1 ♀, Blue Gum Forest, junction Grose Rd, Blue Gum Rd, 34°12'S, 150°58'E, 21.iv.1956, R. Witchard (AM KS22044); 1 ♂, Boyd Plateau [34°00'S, 150°03'E], 3.iii.1973, MRG (AM KS22038); 1 ♀, Boyd Plateau [34°00'S, 150°03'E], in logs, 13.x.1984, C. Horseman, A. Johnson (AM KS15378); 1 ♀, Boyd Plateau [34°00'S, 150°03'E], under log, 21.vii.1970, GSH (AM KS22050); 2 ♂, Boyd Mt Swamp, Boyd Plateau, pit trap, 4.iii.1973, G. Gray (AM KS22040); 1 ♀, Budthingeroo, Kanangra Walls Rd [33°54'S, 150°02'E], 3.vi.1970, T. W. and M. C. Davies (CAS); 1 ♂, Carrington Falls, Robertson [34°38'S, 150°39'E], 23.ix.1967, R. E. Mascord (AM KS22021); 1 ♀, Clyde Mt [35°33'S, 149°57'E], 2.ix.1984, RJR (QM S15399); 1 ♂, Curl Curl, near Manly [33°46'S, 151°18'E], Aug. 1927, L. E. Shaw (AM KS22007); 1 ♀, same locality, 1923, C. Close (AM KS22008); 1 ♂, East Kangaloon [34°33'S, 150°35'E], 15.xi.1989, B. Day, D. K. McAlpine (AM KS22066); 5 ♂, 13 ♀, 6 juvs, Enfield [33°54'S, 151°06'E], 1904, G. P. Ramsay (AM KS22005); 1 ♀, 8 juvs, same data (AM KS21980); 1 ♂, Gordon, 33°44'S, 151°09'E, pitfall trap, 4.iii.1983, C. Horseman (AM KS10872); 1 ♂, same data except 20.x.1982 (AM KS10277); 1 ♂, Hornsby [33°42'S, 151°06'E], 30.xi.1914, W. M. Wheeler (MCZ); 1 ♀, Jenolan, 33°50'S, 150°04'E, Oct. 1969, MRG (AM KS22052); 1 ♂, Kanangra-Boyd Natl Park, Blood Filly Ck nr Jenolan Caves [c. 33°49'S, 150°02'E], 27.iii.1976, MRG, GSH, J. McDougall (AM KS29886); 1 ♂, 2 juvs, same data (AM KS29881); 1 ♂, 6 ♀, 1 juv., same data (AM KS29885); 2 ♂, 4 ♀, 6 juvs, same data (AM KS29856); 1 ♀, same data (AM KS29979); 2 ♀, 1 juv., same data (AM KS29992); 4 ♀, same data (AM KS30000); 6 ♀, same data (AM KS29848); 1 ♂, 1 ♀, Kanangra-Boyd Natl Park, Empress Fire Trail [33°59'S, 150°08'E], 27.iii.1976, MRG, GSH, J. McDougall (AM KS29496); 1 ♀, Katoomba [33°43'S, 150°19'E], 25.ix.1985, D. Mead-Hunter (WAM 93/1964); 6 ♂, Kioloa State Forest Drive, 15 km N of Bateman's Bay, 35°37'S, 150°16'E, pitfall trap, 17.x.1979, C. Horseman (AM KS5556); 1 ♂, Kurrajong Heights [33°32'S, 150°38'E], M. Blunden (AM KS21995); 4 ♀, Lake Burrill [35°22'S, 150°26'E], 1.vii.1935, Mr Cribb (AM KS28754); 1 ♂, 1 ♀, Lake Conjola [35°16'S, 150°30'E], April 1979, R. Mascord (AM KS22020); 1 ♂, Lake Munmorah Recreation Reserve, Geebung [33°13'S, 151°34'E], in litter, 30.x.1987, MRG (AM KS17803); 1 ♀, Lane Cove [33°47'S, 151°08'E], 2.vi.1976, G. Ford (AM KS22034); 1 ♂, same locality, 25.iv.1971 (ANIC); 1 ♀, Malabar, 33°58'S, 151°14'E, Nov. 1965, R. E. Mascord (AM KS22014); 1 ♀, 1 juv., same locality, 26.vi.1966, R. E. Mascord (AM KS22016); 2 ♀, 7 juvs, McKeown's Valley, near Jenolan, 33°49'S, 150°02'E, under logs, rocks, Dec. 1979 (AM KS10024); 2 ♀, 1 egg-sac, 8 mi SW of Moss Vale [c. 34°36'S, 150°14'E], 700 m, 8.xii.1962, ESR, DQC (CAS); 1 ♀, Mt Edwards, Boyd Plateau, 34°00'S, 150°03'E, in logs, 26.xi.1974, MRG (AM KS22039); 2 ♀, 1 juv., Mt Myall, Wattagan Mtns, 32°52'S, 151°25'E, litter, 7.v.1990, GSH (AM KS23469); 1 ♀, 27 km W of Moruya, 35°50'S, 149°57'E, under log, 11.xii.1977, MRG, C. Horseman (AM KS1497); 1 ♂, 1 ♀, Mountain Lagoon [33°30'S, 150°31'E], 7.x.1967, C. E. C[hadwick] (AM KS22060); 1 ♂, Mt Keira Fauna Reserve, 34°24'S, 150°51'E, 3.i.1979, C. Horseman (AM KS2384); 1 ♀, with egg-sac, 1 juv., Narrambeen [33°43'S, 151°18'E] (AM KS21982); 1 ♂, 10 km S of Narooma [36°18'S, 150°08'E], 9.xi.1985, D. Bickel (AM KS32198); 1 ♂, North Ryde [33°48'S, 151°06'E], 24.v.1967, R. E. Mascord (AM KS22019); 1 juv. ♂, 1 ♀, Nowra [34°53'S, 150°36'E], under bark, June 1924, F. A. Rodway (BMNH 1928.IV.26.4-5); 1 ♂, Pymble [33°45'S, 151°09'E], 16.v.1954, W. Black (AM KS22047); 1 ♂, Rosedale [35°49'S, 150°13'E], under log, 10.ix.1983 (ANIC); 5 ♂, Royal Natl Park [34°08'S, 151°04'E], Nov. 1965 (AM KS22015); 1 ♀ [Royal] Natl Park [34°08'S, 151°04'E], 27.ix.1914 (MCZ); 2 ♀, Sydney [as Sidney], 1860 (NHW), 1 ♂, Sydney [33°53'S, 151°13'E], A. M. Lea (SAM N1989556); 1 ♀, Terrace Ck, near Jenolan, 33°49'S, 150°02'E, under rock, Dec. 1979 (AM KS10013); 1 ♂, Wahroonga [33°43'S, 151°07'E], 30.ix.1973 (ANIC); 1 ♀, Waterfall [34°08'S, 151°00'E], 4.xii.1961, J. Walsh, R. Wilkinson (AM KS22054); 1 ♀, Wentworth Falls [33°43'S, 150°22'E], W. M. Wheeler (MCZ); 1 ♀, same locality, 15.v.1966, M. Nitikin (AM KS22017); 1 ♂, 'Wirraminna', Paynes Crossing via Wollombi, 32°55'S, 151°00'E, on rock, 27.v.1990, GSH (AM KS23084); 1 ♂, 1 juv. ♂, without further data, 1882 (NHW, Museum Goddefroy 305); 1 ♂, without further data, 3.ii.1921, N. Cayley (NMV). **Data questionable:** 1 ♂, 'New Guinea' (AM KS40948).

### Diagnosis

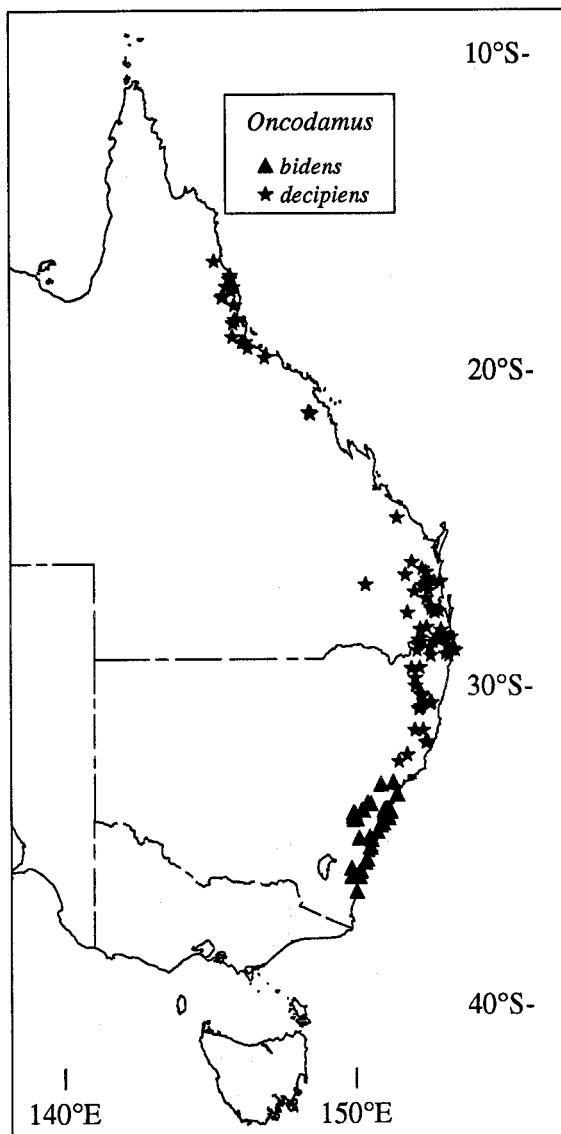
Male: base of median apophysis with small heavily sclerotised lobe.

*Description**Adult (Boyd Plateau, and Katoomba, NSW)*

Colour: carapace and sternum red-yellow; abdomen dark brown-black, sigilla red-brown, epigastric region, spinnerets and surrounding region reddish, extending slightly onto dorsal surface; chelicerae light brown, darker distally; femora and patellae of legs red-yellow, tibiae, metatarsi and tarsi dark brown. Carapace with scattered bristles, including many small bristles on lateral margins, and 1 upturned seta between AMEs; fovea a broad shallow depression. Male pedipalp (Figs 178–181): retrolateral tibial apophysis B slender, apophysis A not curved; prolateral tibial apophysis absent; embolus stout, tightly appressed against conductor tip, conductor thick, somewhat excavate, lateral margin serrate, median apophysis long and slender, base of median apophysis with small rounded, heavily sclerotised lobe. Legs: long and slender; 4123 (♂), 1423 (♀); with scattered spinules. Abdomen with stiff setae, c. 0.25–0.4 mm in length. Epigyne (Figs 182–183) with posteriorly produced posterior margin; copulatory openings anterior, not situated in lateral fold; copulatory ducts elongate, curved; spermathecae globular.



Figs 178–183. *Oncodamus bidens* (Karsch). 178–181, male (Boyd Plateau, NSW), left pedipalp: 178, prolateral; 179, retrolateral; 180, ventral; 181, tibia, dorsal. 182–183, female (Katoomba, NSW), epigyne: 182, ventral; 183, dorsal.



**Fig. 184.** Eastern Australian records of *Oncodamus* species.

**Dimensions (mm).** ♂ Boyd Plateau, NSW (♀ Katoomba, NSW): total length 4.02 (5.16). Carapace 2.14/1.98 (2.25/2.10). Eyes: AME 0.09 (0.09), ALE 0.13 (0.10), PME 0.09 (0.07), PLE 0.12 (0.14), AME-AME 0.06 (0.11), AME-ALE 0.09 (0.09), PME-PME 0.12 (0.11), PME-PLE 0.15 (0.16), PLE-ALE 0.00 (0.00), eye group width 0.67 (0.69), MOQ front width 0.24 (0.25), MOQ back width 0.28 (0.28), MOQ length 0.26 (0.24). Sternum 1.31/1.18 (1.40/1.36). Abdomen 2.33/1.56 (3.52/2.81). Pedipalp: femur 1.12 (1.03), patella 0.42 (0.49), tibia 0.49 (0.70), tarsus 1.12 (0.96), total 3.15 (3.18). Leg I: femur 2.74 (2.48), patella 0.79 (0.84), tibia 2.68 (2.30), metatarsus 2.54 (2.02), tarsus 0.97 (0.91), total 9.72 (8.55). Leg II: femur 2.42 (2.22), patella 0.76 (0.80), tibia 2.33 (2.00), metatarsus 2.25 (1.81), tarsus 0.90 (0.89), total 8.66 (7.72). Leg III: femur 2.10 (1.80), patella 0.70 (0.78), tibia 1.73 (1.40), metatarsus 1.70 (1.43), tarsus 0.79 (0.72), total 7.02 (6.13). Leg IV: femur 3.00 (2.47), patella 0.80 (0.89), tibia 2.84 (2.11), metatarsus 2.81 (2.00), tarsus 1.00 (0.92), total 10.45 (8.39).

### Remarks

*Oncodamus bidens* is very similar to *O. decipiens* from which it differs by males having a sclerotised lobe at the base of the median apophysis. *O. bidens* is known only from rainforest patches south of the Cassilis Gap in eastern New South Wales from near Newcastle south to Batemans Bay (Fig. 184). The single record from New Guinea (AM KS40948) is clearly mislabelled. Some specimens from N of Batemans Bay have a reduced median apophysis lobe which is barely sclerotised, thus more resembling *O. decipiens*.

Adults have been collected throughout the year, although males have not been taken in early winter (June, July) and females from summer (January, February).

The two females from Sydney lodged in NHMW were misidentified by L. Koch (1872) as *Theridion semiflavum*.

### *Oncodamus decipiens*, sp. nov.

(Figs 162, 184–191)

*Nicodamus bicolor* (L. Koch). — Rainbow, 1912: 200 (misidentification).

### Material Examined

**Holotype.** ♂, Upper Brookfield [27°30'S, 152°55'E], Queensland, Australia, litter, 14.viii.–1.ix.1981, R. Raven, V. Davies (QM S15325) (bicoloured morph).

**Paratypes.** Bicoloured morph: **Australia: Queensland:** 1 ♂, 1 ♀, same data as holotype (QM S19720); 1 ♀, same data as holotype (WAM 93/1948); 14 ♂, 1 ♀, 1 juv., same locality, pittraps, rainforest, 1.ix.–6.x.1981, R. Raven (QM S15388); 2 ♂, same data (WAM 93/1946–1947); 2 ♂, same data except 5.x.–11.xi.1981 (QM S15326); 2 ♀, same data except 30.x.1980, V. Davies, R. Raven (QM S15330); 2 ♂, 1 ♀, 2 juvs, same locality, pittraps and litter, rainforest, 2–17.vi.1981, V. Davies, R. Raven (QM S15335).

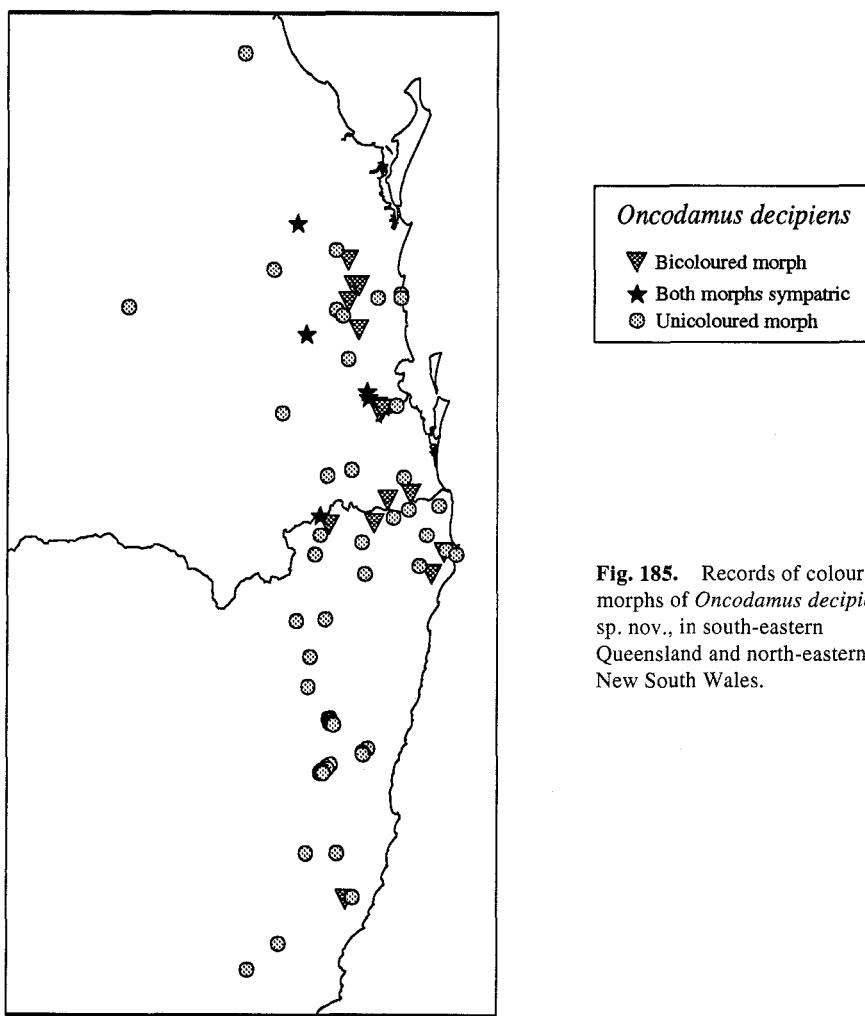
**Other material.** Bicoloured morph: **Australia: New South Wales:** 1 ♂, Beaury State Forest, 1.9 km along Tucker Box Rd, 28°28'S, 152°24'E, 760 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37059); 1 ♂, 1 juv., Kerewong State Forest, 31°36'S, 152°34'E, pitfall trap, 20.xi.1978, D. Milledge (AM KS16164); 3 ♂, same data (AM KS16145); 1 ♂, 2 ♀, same data (AM KS16181); 2 ♂, same data (AM KS16200); 1 ♂, Toonumbar State Forest, via Grevillea [28°27'S, 152°50'E], 610 m, rainforest pittraps, 31.iii.–2.viii.1975, GBM, SRM (QM S15308); 1 ♂, 1 ♀, same data except 18.viii.–17.ix.1974 (QM S15288); 1 juv., Victoria Park, via Alstonville [28°53'S, 153°23'E], rainforest pitfall, 23.iii.–3.viii.1975, GBM, SRM (QM S15282); 1 ♂, same locality, 215 m, rainforest pittraps, 3.viii.–16.xi.1975, GBM, SRM (QM S15289); 4 ♂, same data (QM S15310); 1 ♂, 7 ♀, without exact locality data (MNHP 18664). **Queensland:** 1 ♀, Ballanjui Falls, Lamington Natl Park [28°42'S, 153°30'E], 4.iv.1976, M. Bishop, N. Hall (QM S15392); 1 ♀, 1 juv., Binna Burra, Orchid Bower, 28°12'S, 153°11'E, 7.iv.1976, M. Bishop, N. Hall (QM S15358); 1 ♂, base of Blackbutt Range, via Benarkin [26°52'S, 152°11'E], rainforest pittraps, 10.xi.1974–11.i.1975, GBM, SRM (QM S15285); 1 ♂, same data except 29.iii.–1.vi.1975 (QM S15314); 1 juv. ♂, foot of Blackbutt Range, via Benarkin [26°52'S, 152°11'E], rainforest, 25.viii.1979, RJR (QM S15353; see also unicoloured morph); 1 ♂, Boombana Natl Park [27°24'S, 152°47'E], July 1976, M. J. Bishop (QM S15389); 3 ♂, Burnett Range, via Tansey [25°56'S, 152°06'E], 400 m, 29.viii.–13.xii.1976, rainforest pittraps, GBM, SRM (QM S15306); 1 ♂, Casey Ck, via Imbil [26°28'S, 152°41'E], 90 m, rainforest pittraps, 27.iii.–16.vi.1975, GBM, SRM (QM S15292); 1 ♂, Conondale Ranges [26°50'S, 152°41'E], found wandering, 31.viii.1974, RJR, G. Ingram (QM S15336); 1 ♂, The Head, via Killarney [28°23'S, 152°19'E], 760 m, rainforest pitfalls, 17.xi.–27.xii.1974, GBM, SRM (QM S15315; see also unicoloured morph); 2 ♂, The Head, via Killarney [28°23'S, 152°19'E], 760 m, rainforest pittraps, 31.iii.–2.viii.1975, GBM, SRM (QM S15279); 5 ♂, 1 ♀, same data (QM S15286); 1 ♀, Imbil [26°28'S, 152°38'E], 9.iv.1953, Dept of Primary Industries (QM S15372); 1 ♂, Lamington [28°15'S, 152°58'E], 31.xii.1973, D. Smyth (QM 15393); 2 ♂, Little Yabba Ck, via Kenilworth [26°36'S, 152°35'E], 150 m, rainforest pittraps, 10.viii.–9.xi.1974, GBM, SRM (QM S15281); 1 ♂, same data except 27.iii.–16.vi.1975 (QM S15316); 1 ♂, same data except 10.viii.–9.xi.1974 (QM S15290); 1 ♂, Marys Ck [26°15'S, 152°35'E], 180 m, rainforest pittraps, 28.iii.–16.vi.1975, GBM, SRM (QM S15280); 1 ♀, 1 juv., same data except 11.viii.–10.xi.1974 (QM S15287); 2 ♂, Mt Glorious [27°21'S, 152°46'E], 25.iii.–13.iv.1983, malaise

trap, A. Hiller (QM S15328); 2 ♂, same data except 18–21.x.1982 (QM S15338); 4 ♂, same data except 22.vi.–18.x.1982 (QM S15332); 1 ♂, same data except July–Aug. 1977 (QM S15385); 2 ♂, same data except 21.x.1983 (QM S15383); 1 ♀, same locality, 14.x.1973, RJR (QM S15386); 2 ♂, Mt Nebo [27°24'S, 152°47'E], pitfall trap, 16.x.1978, A. Rozefelds (QM S15370); 2 juvs, Upper Brookfield [27°30'S, 152°55'E], litter, 14.viii.–1.ix.1981, RJR, VED (QM S19721); 1 ♀, 1 juv., same locality, 15.x.1980, VED, RJR (QM S15403); 2 juvs, same locality, rainforest litter, 19.iii.1982, RJR (QM S15387); 2 ♀, same locality, rainforest pitfall, 9.xi.1975–27.ii.1976, GBM, SRM (QM S15284); 2 ♂, same locality, 110 m, rainforest pittraps, 20.viii.–9.xi.1975, GBM, SRM (QM S15309); 2 juvs, same locality, 110 m, rainforest pitfall, 27.ii.–20.v.1976, GBM, SRM (QM S15296); 2 ♂, same locality, 110 m, rainforest pittraps, 20.viii.–9.xi.1975, GBM, SRM (QM S15304).

*Unicoloured morph.* **Australia: New South Wales:** 3 ♂, Barrengarry Mt, 24 km SE of Moss Vale, c. 600 m, 9.vi.–29.viii.1982, scarp rainforest, S. and J. Peck (AMNH); 1 ♂, Barrington Tops Natl Park, 1 km S of Barrington House, 31°59'S, 151°55'E, 23.iv.1983, B. Duckworth (AM KS10990); 1 ♂, Beaury State Forest, Rocky Waterholes Rd, 28°33'S, 152°19'E, 630 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37060); 1 ♂, Beaury State Forest, SW end of Rocky Waterhole Rd, 28°33'S, 152°19'E, 530 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37064); 1 ♂, Bellangry State Forest, Wilson R. Flora Reserve, 31°13'S, 152°29'E, 8.xii.1981, MRG *et al.* (AM KS9701); 1 ♂, Border Ranges [c. 28°20'S, 153°10'E], 30.ix.1991, M. Tio (AM KS40949); 1 ♂, Border Ranges Natl Park, Tweed Range Rd, 28°24'S, 153°01'E, 530 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37073); 1 ♂, 1 ♀, Broken Head, via Byron Bay [28°43'S, 153°37'E], 30 m, rainforest pittraps, 13.vi.–7.xi.1976, GBM, SRM (QM S15302); 1 ♂, same data except 1975–1976 (QM S20764); 1 juv., same data except 13.vi.–7.xi.1976 (QM S15298); 1 ♂, Cherry Tree State Forest, via Mallanganee [28°53'S, 152°45'E], 2.x.1978–22.ii.1979, GBM (QM S15345); 1 ♂, Cobcroft Ck, Werrikimbe Natl Park [31°13'S, 152°11'E], 6.xii.1986, D. Bickel (AM KS32199); 1 ♀, Coolum [26°32'S, 153°05'E], Jan. 1956, G. Lambert (NMV); 2 ♂, 1 ♀, Dorrigo Natl Park, Dome Rd, 30°21'S, 152°47'E, 710 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37061); 1 ♀, Dorrigo Natl Park, off Dorrigo Bellingen Rd, 30°23'S, 152°44'E, 410 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37063); 3 ♀, Gibraltar Range Natl Park, 29°35'S, 152°13'E, rainforest, 10.xi.1980, RJR (QM S15343); 2 ♂, 'The Glade', Dorrigo [30°24'S, 152°44'E], 800 m, 12.xi.1980–16.iii.1981, GBM (QM S15334); 2 ♂, same data (QM S15297); 1 ♀, Hayters Hill, S of Bangalow, 28°41'S, 153°31'E, leaf litter, 7.x.1979, P. H. Colman (AM KS3690); 1 juv. ♀, London Bridge State Forest, 0.95 km W of Henry Rd, London Bridge Rd, 29°50'S, 152°12'E, 990 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37057); 3 ♀, Lorne State Forest, near Lorne, 31°35'S, 152°38'E pitfall trap, 14.xi.1978, D. Milledge (AM KS16074); 2 ♂, Marengo State Forest, 30°08'S, 152°25'E, 1290 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37075); 2 ♂, same locality, 30°06'S, 152°25'E, 1090 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37076); 2 ♂, same locality, 30°06'S, 152°24'E, 1120 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37077); 1 ♂, 1 ♀, 2 juv. ♂, same locality, 30°07'S, 152°25'E, 920 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37079); 2 ♂, Mt Hyland Nature Res., 0.9 km S on Chaelundi Rd from Big Bull Rd, 30°09'S, 152°27'E, 1080 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37074); 6 ♂, 1 ♀, 1 juv. ♀, Mt Hyland Nature Res., 1.9 km N on Chaelundi Rd from Big Bull Rd, 30°08'S, 152°26'E, 1160 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37078); 1 ♀, New England Natl Park, Lookout, 30°29'S, 152°25'E, under log, 28.viii.1969, GSH (AM KS22049); 1 ♀, New England Natl Park [c. 30°29'S, 152°25'E], under log, 3.xii.1973, RJR (QM S15333); 36 ♂, 4 ♀, New England Natl Park, Cliffs Trail, 30°30'S, 152°23'E, 1300 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37067); 1 ♂, New England Natl Park and Styx R. State Forest border, 3 km S of Point Lookout, 30°31'15"S, 152°23'E, 1350 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37066); 3 ♂, Point Lookout, New England Natl Park, 30°29'S, 152°25'E, 12.ii.1984, I. D. Naumann (ANIC); 1 ♀, Nightcap Natl Park [28°33'S, 153°20'E], 22.xii.1991, M. Tio (AM KS30845); 1 ♀, Richmond Range State Forest, Mt Brown Rd, 28°37'S, 152°43'E, 480 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37072); 1 ♂, Rotary Park, Lismore [28°49'S, 153°16'E], pitfall trap, 3.viii.–16.xi.1975, GBM, SRM (QM S15303); 1 ♀, 4 juvs, 58 km NW of Singleton [c. 32°12'S, 151°37'E], Jan. 1977, MRG (AM KS22035); 12 ♂, 1 juv. ♀, Spirabo State Forest, 29°17'S, 152°05'E, 1180 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37058); 8 ♂, 2 ♀, Styx R. State Forest, 30°33'S, 152°19'E, 950 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37065); 28 ♂, 3 ♀, 1 juv. ♀, Styx R. State Forest, Cliffs Trail, 30°33'S, 152°21'E, 1130 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37068); 18 ♂, 1 ♀, 1 juv. ♀, Styx R. State Forest, Cliffs Trail, 30°33'S, 152°20'E, 1080 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37069); 46 ♂, 2 ♀, Styx R. State Forest, off Cunnawarra Trail, 30°32'S, 152°20'E, 1130 m, pitfall trap, 4.ii.–9.iv.1993, MRG, GC (AM KS37070); 1 ♀, Tweed R. region [c. 28°18'S, 153°27'E], 20–22.xi. 1978, RJR (QM S15379); 1 ♀, Walshpool State Forest, along Moongem Rd, 29°16'S, 152°22'E, under log, 10.ii.1982, C. Horseman (AM KS9251). **Queensland:** 1 ♂, Bald Mt area, via Emu Vale [28°43'S, 152°16'E], 1200 m,

21–22.iv.1984, GBM (QM S15350); 2 juvs, Bellenden Ker Range, Cable Tower 3, 17°16'S, 145°52'E, rainforest, stick brushing, 12.iv.1979, GBM (QM S15411); 2 juvs, same data except 1054 m, 17–24.x.1981, Earthwatch/Queensland Museum (QM S15412); 3 juvs, same data except 1054 m, 25–31.x.1981, Earthwatch/Queensland Museum (QM S15413); 1 ♀, 1 juv., Bellenden Ker Range, summit TV Station [17°16'S, 145°51'E], 1560 m, 17–24.x.1981, Earthwatch/Queensland Museum (QM S15415); 3 juvs, same data except 25–31.x.1981 (QM S15414); 1 juv., same data except 1–7.xi.1981 (QM S15416); 1 ♀, Blackall Ranges [26°34'S, 152°52'E], C. J. Wild (QM W2144); 1 ♀, base of Blackbutt Range, via Benarkin [26°52'S, 152°11'E], rainforest pittraps, 1.vi.–17.viii.1975, GBM (QM S15295); 1 ♀, base of Blackbutt Range, Benarkin, 26°52'S, 152°11'E, 1.vi.–17.viii.1975, rainforest, pitfall, GSM (QM S15295); 1 ♀, 1 juv., foot of Blackbutt Range, via Benarkin [26°52'S, 152°11'E], rainforest, 25.viii.1979, RJR (QM S15353; see also bicoloured morph); 1 ♀, Bluewater Range [19°10'S, 146°23'E], 600–700 m, rainforest, 6–8.xii.1986, GBM, Thompson, Hamlet (QM S18717); 1 ♂, Brooyar Fire Tower, via Glastonbury [26°10'S, 152°28'E], 460 m, rainforest pittraps, 23.viii.1975–29.ii.1976, GSM (QM S15313); 2 ♂, 1 ♀, 6 juvs, Bulburin State Forest [24°30'S, 151°35'E], 19.iii.1975, R. Monroe, VED (QM S15352); 3 juvs, Bulburin State Forest [24°30'S, 151°35'E], rainforest, 25–28.iii.1977, VED, RJR (QM S15369); 1 ♂, 2 ♀, Burnett Range, via Tansey [25°56'S, 152°06'E], 400 m, rainforest pittraps, 26.iii.–5.ix.1977, GBM, SRM (QM S15294); 1 ♀, Cairns [16°55'S, 145°46'E], 5.x.1969, N. C. Coleman (AM KS22023); 4 ♂, Crediton [21°13'S, 148°34'E], 14–21.iv.1975, R. Kohout, VED (QM S15361); 3 ♂, Curtis Farm, Canungra [28°04'S, 153°07'E], Araucaria rainforest pittraps, 13.viii.–2.xii.1977, GBM, SRM (QM S15305); 1 ♂, same data except 19.iii.–13.viii.1977 (QM S15311); 3 ♀, same data (QM S15291); 1 ♀, same data except 13.viii.–2.xii.1977 (QM S15293); 1 ♂, 1 juv., Dingo Ck, via Traveston [26°20'S, 151°52'E], 30 m, rainforest pittraps, 27.iii.–13.viii.1975, GBM, SRM (QM S15312); 1 ♂, Edmonton [17°01'S, 145°45'E], 28.viii.1970, R. E. Mascord (AM KS22022); 1 ♂, same locality, 5.vii.1978, R. Mascord (AM KS4158); 1 ♀, Eungella, schoolhouse, rainforest, 11–15.ii.1986, RJR, J. Gallon (QM S15378); 3 ♂, Eungella Natl Park [21°11'S, 148°31'E], c. 700 m, notophyll vine forest, May 1991, K. R. McDonald (QM S18852); 9 ♂, 3 ♀, Eungella Natl Park, Broken R., 21°10'S, 148°30'E, 24.iv.1993, MSH, B. J. Scott (WAM 94/1602–13); 1 ♀, Eungella Natl Park, Wishing Pool, 21°12'S, 148°32'E, 25.iv.1993, MSH, B. J. Scott (WAM 94/1601); 1 ♂, The Head, via Killarney [28°23'S, 152°19'E], 760 m, rainforest pitfalls, 17.xi.–27.xii.1974, GBM, SRM (QM S15315; see also bicoloured morph); 1 ♂, Jimna State Forest [26°39'S, 150°28'E], 4.iv.1986, RJR (QM S6322); 1 ♀, Lake Barrine [17°15'S, 145°38'E], 8.x.1980, 760 m, rainforest, sieved litter, GBM (QM S15331); 1 juv., same locality, 10.vii.1986, MSH, P. J. Vaughan (WAM 93/1884); 1 ♀, Moss Gardens, near The Head [28°23'S, 152°19'E], 17.iv.1983, A. Rozefelds (QM S15400); 1 ♀, [Mt] Bartle-Frere, NW to Centre Peak [17°23'S, 145°48'E], 1400–1500 m, 24.ix.1981, GBM, D. Cook (QM S15349); 3 ♀, same data except 1400–1600 m, 7–8.xi.1981, Earthwatch/Queensland Museum (QM S15409); 1 ♀, Mt Bartle-Frere, NW Peak summit [17°23'S, 145°48'E], 1440 m, 7.x.1980, GBM, SRM (QM S15408); 9 ♀, 2 juvs, Mt Bartle-Frere, South Peak summit [17°24'S, 145°49'E], 1620 m, 6–8.xi.1981, Earthwatch/Queensland Museum (QM S15410); 1 ♀, Mt Bartle-Frere, base of mountain [17°23'S, 145°48'E], 6–8.xi.1981, Earthwatch/Queensland Museum (QM S15407); 1 ♂, 1 ♀, Mt Brisbane, near Somerset Dam [27°05'S, 152°35'E], 6.x.1976, RJR (QM S15391); 1 ♂, Mt Coohen [26°34'S, 153°05'E], Jan. 1984, B. R. Jahnke, pitfall trap (QM S15374); 1 ♂, Mt Cordeaux, Cunninghams Gap [28°03'S, 152°23'E], 3000 ft [= 914 m], 1.v.1962, R. W. Taylor (MCZ); 1 juv., Mt Elliot Natl Park, Upper North Ck [19°29'S, 146°58'E], 1000 m, rainforest, 2–5.xii.1986, GBM, Thompson and Hamlet (QM S15322); 1 ♂, Mt Fox Rd, Seaview Range [18°50'S, 145°50'E], 600 m, rainforest, 15.xii.1986, GBM, Thompson and Hamlet (QM S15327); 2 ♂, Mt French, 28°00'S, 152°37'E, rainforest pitfall, 5.x.1975–22.ii.1976, GBM, SRM (QM S15283); 1 ♀, same data except 25.viii.–10.x.1976 (QM S15301); 1 juv., same data except 22.ii.–8.v.1976 (QM S15300); 1 ♀, same data except 245 m, 8.v.–25.vii.1976 (QM S15299); 2 ♀, 1 juv., Mt Glorious [27°21'S, 152°46'E], under stone, 13.v.1962, R. W. Taylor (MCZ); 1 ♂, Mt Graham, 8 km N of Abergowrie [18°24'S, 145°52'E], 600–700 m, rainforest, 26–30.xii.1986, S. Hamlet (QM S18712); 2 ♂, 3 ♀, 1 juv., Mt Macalister, Cardwell Range [18°18'S, 145°56'E], 800–900 m, 13–16.i.1987, S. Hamlet (QM S15320); 1 ♀, same locality 900–1000 m, rainforest, 18–19.xii.1986, GBM, Thompson, Hamlet (QM S18718); 2 ♂, Mt Nebo [27°24'S, 152°47'E], pitfall trap, 19.xi.1978, A. Rozefelds (QM S15344); 1 ♀, Mt Spec, Paluma [19°00'S, 146°12'E], 4.i.1973, N. C. Coleman (AM KS22024); 2 ♂, 1.5 km SW of Mt Spurgeon [16°27'S, 145°12'E], 1100 m, open forest, flight intercept [trap], 21.xii.1988–5.i.1989, GBM, Thompson, ANZSES (QM S26013); 1 ♂, Paluma [19°00'S, 146°12'E], 4.i.1973, N. C. Coleman (AM KS22025); 1 ♂, same locality, 2900ft, 11.xi.1962, ESR, DQC (CAS); 10 ♂, Paluma Dam Rd [19°00'S, 146°10'E], 850 m, site 5, pitfall trap, 17.xi.–8.xii.1990, GBM, Seymour (QM S20765); 2 ♀, 5 mi E of Paluma [19°00'S, 146°17'E], 475 m, 12.xi.1962, ESR, DQC (CAS); 1 ♀, Ravenshoe [17°36'S, 145°29'E], 3000 ft [= 914 m], April 1932, Darlington (MCZ); 1 ♀, 7 mi NE of Ravenshoe [c.

17°33'S, 145°31'E], 975 m, 7.xi.[19]62, ESR, DQC (CAS); 2 juvs, Rochedale State Forest [27°28'S, 153°03'E], litter, 12.vi.1980, VED, RJR (QM S15324); 1 ♀, Sunday Ck, Jimna Range [26°43'S, 152°32'E], 15.vi.1974, G. May (QM S15376); 1 ♂, 5 juvs, Table Top Mt, Toowoomba [27°32'S, 151°57'E], under stones, rainforest, 14.iii.1973, R. Hobson (QM S15359); 1 ♂, Tungi Ck, Jimna [26°40'S, 152°28'E], 550 m, rainforest pitfalls, 29.iii.-16.vi.1975, GBM, SRM (QM S15307); 1 ♀, Upper Boulder Ck via Tully [17°50'S, 145°54'E], 900 m, 25-27.x.1983, GBM, Yeates, Thompson (QM S15347); 1 juv., same data except 26.x.1983, Pyrethrum knockdown in rainforest (QM S15346); 1 juv., same data except sieved litter, 27.x.1983 (QM S15319); 1 ♀, same locality, 1000 m, pitfall traps, 17-18.xi.1984, VED, GBM, Gallon, Cook, Thompson (QM S15402); 1 ♀, Upper Boulder Ck, 11 km NNW of Tully [17°50'S, 145°54'E], 1000 m, 16-19.xi.1984, Cook, GBM, Thompson (QM S15348); 2 ♀, same data (QM S15321); 1 ♂, Upper Farm Ck, Bald Mt [28°43'S, 152°16'E], 21.iv.1984, R. Leggett (QM S15362).



**Fig. 185.** Records of colour morphs of *Oncodamus decipiens*, sp. nov., in south-eastern Queensland and north-eastern New South Wales.

#### Diagnosis

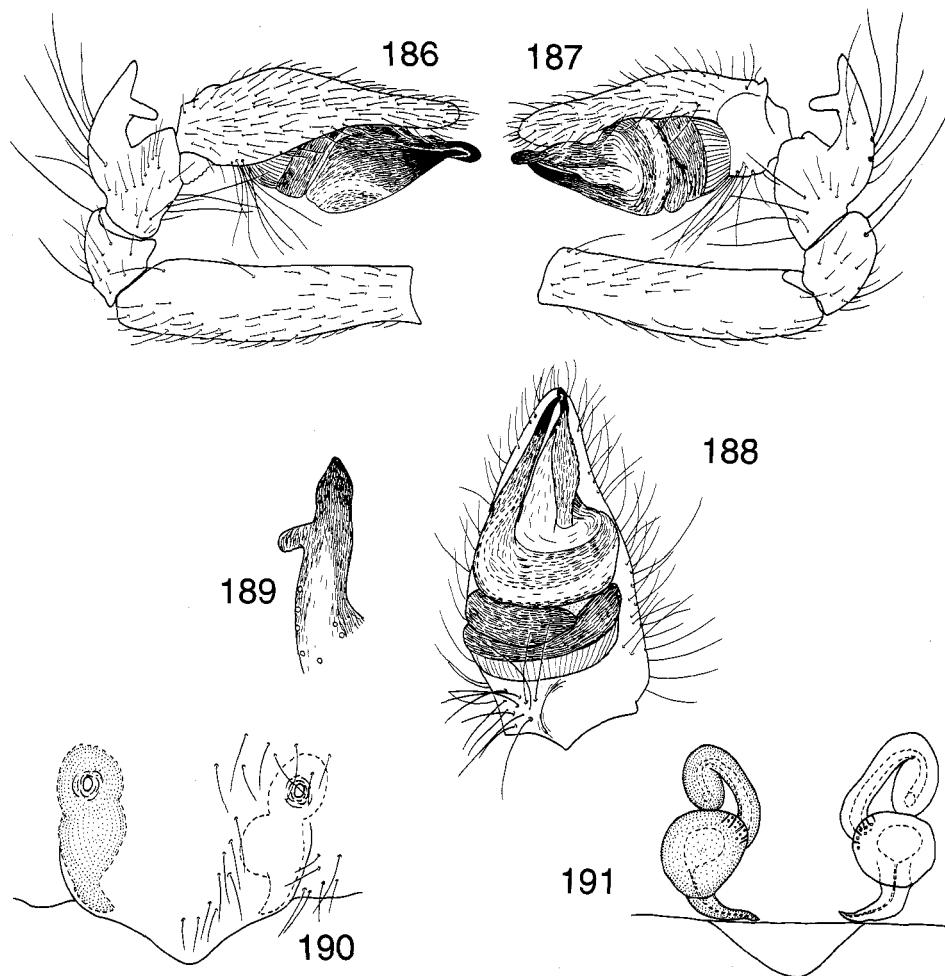
Male: base of median apophysis without sclerotised lobe.

#### Description

*Adult (Upper Brookfield, Qld)*

Colour: carapace and sternum red-yellow; abdomen either dark brown with small reddish

area anterior to spinnerets (unicoloured morph), or with large reddish patch extending over dorsum nearly approaching sigilla (bicoloured morph) (Fig. 162), sigilla red-brown, epigastric region, spinnerets and surrounding region red-yellow; chelicerae light yellow-brown basally, becoming brown distally; leg segments yellow-brown. Carapace with scattered bristles, including many small bristles on lateral margins, and 1 upturned setae between AMEs; fovea a broad, shallow depression. Male pedipalp (Figs 186–189): retrolateral tibial apophysis B slender, apophysis A not curved; stout, tightly appressed against conductor tip, conductor thick, somewhat excavate, lateral margin serrate, median apophysis long and slender, base of median apophysis without sclerotised lobe. Legs: long and slender; 4:1.23; with scattered spines and spinules (more prominent in ♂). Abdomen with long, stiff setae, c. 0.3–0.4 mm in length. Epigyne (Figs 190–191) with posteriorly produced posterior margin; copulatory openings anterior, not situated in lateral fold; copulatory ducts elongate, curved; spermathecae globular.



**Figs 186–191.** *Oncodamus decipiens*, sp. nov. 186–189, male holotype, left pedipalp: 186, prolateral; 187, retrolateral; 188, ventral; 189, tibia, dorsal. 190–191, female (Upper Brookfield, Qld), epigyne: 190, ventral; 191, dorsal.

**Dimensions (mm).** Holotype ♂ (paratype ♀ Upper Brookfield, Qld): total length 4.12 (5.36). Carapace 1.93/1.78 (1.90/1.75). Eyes: AME 0.10 (0.08), ALE 0.10 (0.12), PME 0.09 (0.08), PLE 0.12 (0.12), AME-AME 0.09 (0.10), AME-ALE 0.10 (0.10), PME-PME 0.10 (0.09), PME-PLE 0.12 (0.13), PLE-ALE 0.01 (0.02), eye group width 0.62 (0.62), MOQ front width 0.23 (0.23), MOQ back width 0.26 (0.26), MOQ length 0.24 (0.24). Sternum 1.20/1.17 (1.12/1.13). Abdomen 2.56/1.63 (3.88/2.90). Pedipalp: femur 1.09 (0.92), patella 0.37 (0.45), tibia 0.38 (0.51), tarsus 1/02 (0.84), total 2.86 (2.72). Leg I: femur 2.98 (2.09), patella 0.70 (0.68), tibia 3.00 (2.00), metatarsus 2.80 (1.79), tarsus 0.91 (0.79), total 10.39 (7.35). Leg II: femur 2.71 (1.98), patella 0.70 (0.63), tibia 2.69 (1.78), metatarsus 2.50 (1.61), tarsus 0.83 (0.79), total 9.43 (6.79). Leg III: femur 2.17 (1.59), patella 0.68 (0.60), tibia 1.87 (1.20), metatarsus 1.75 (1.21), tarsus 0.71 (0.70), total 7.18 (5.30). Leg IV: femur 3.20 (2.19), patella 0.75 (0.72), tibia 3.00 (1.96), metatarsus 3.00 (1.76), tarsus 0.90 (0.82), total 10.85 (7.45).

### Remarks

*Oncodamus decipiens* occurs in the rainforests of eastern Australia, from Mt Spurgeon in north-eastern Queensland south to Barrington Tops Natl Park, New South Wales (Fig. 184). Two distinct colour morphs are represented in this species. The first possesses a uniformly dark dorsal region of the abdomen, with a very small reddish patch slightly anterior to the spinnerets, and is here termed the 'unicoloured morph'. The second (including the types) possesses a distinctly bicoloured abdomen with a dark anterior portion and a reddish posterior portion which never reaches the sigilla (Fig. 162), and is here termed the 'bicoloured morph'. There are no detectable differences in male and female genitalia, and specimens of either morph may occur sympatrically (e.g. Lorne, NSW, Blackbutt Range, and The Head, Qld). The bicoloured morph is more restricted in distribution and occurs only in south-eastern Qld and north-eastern NSW, with an isolated population from Kerewong State Forest, NSW (Fig. 185). The uncoloured morph is more widespread and has been recorded over most of the range of the species (Fig. 184).

Rainbow (1912) misidentified a female from Blackall Ranges, Queensland (QM W2144) as *Nicodamus bicolor*.

### Etymology

The specific epithet refers to the similarity of this species to *O. bidens* (*decipiens* Latin, deceitful).

## Subfamily MEGADICTYNINAE Lehtinen, stat. nov.

Megadictynidae Lehtinen, 1967: 296.

### Diagnosis

Cribellum and calamistrum present. Posterior lateral spinnerets with enlarged spinning fields. Epigyne with copulatory duct openings posteriorly directed, situated above posterior epigynal margin.

### Remarks

This subfamily is the sister-group of the Nicodaminae, and is known only from New Zealand. Two synapomorphies support the monophyly of the group: enlarged spinning fields on the posterior lateral spinnerets, and the dorsal location of the copulatory duct openings of the epigyne. Males are not yet known for *Forstertyna*, and are necessary before subfamilial male autapomorphies can be documented. The synapomorphic character states for male *Megadictyna* (see below) may also be subfamilial.

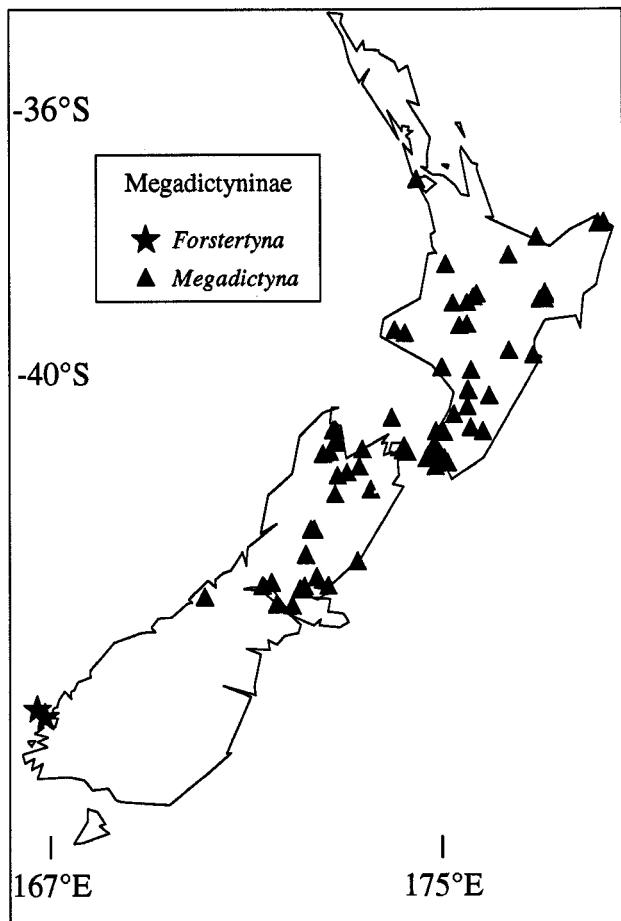


Fig. 192. New Zealand records of Megadictyninae.

#### Genus *Megadictyna* Dahl

*Megadictyna* Dahl, 1906: 62–3. — Bonnet, 1957: 2748; Lehtinen, 1967: 247; Forster, 1970: 178 (in part). Type species: *Megadictyna thilenii* Dahl, 1906, by monotypy.

*Ihurakius* Marples, 1959: 359. Type species: *Ihurakius forsteri* Marples, 1959 (junior synonym of *Megadictyna thilenii* Dahl, 1906), by original designation. Synonymised by Lehtinen, 1967: 247 and Forster, 1970: 178.

#### Diagnosis

Male: tegular sclerites reduced, conductor absent; pedipalpal patella with dorsal apophysis. Female: epigyne with elongate median lobe, which is completely covered with long setae.

#### Remarks

In his revision of *Megadictyna*, Forster (1970) recognised two species, *M. thilenii* and *M. marplesi*; based on female genitalic characters, *M. marplesi* is here transferred to the new genus *Forstertyna*. Differences between these two genera are many, although as discussed

above they share two synapomorphies, and appear to be sister-groups. The male pedipalpal structure and elongate median epigynal lobe of the female represent distinct synapomorphies for *Megadictyna*.

#### *Included Species*

*Megadictyna thilenii* Dahl.

#### *Megadictyna thilenii* Dahl

(Figs 192–198)

*Megadictyna thilenii* Dahl, 1906: 63. — Roewer, 1954: 1332.

*Megadictyna thileniusi* Dahl. — Bonnet, 1957: 2748; Lehtinen, 1967: 247, fig. 18; Forster, 1970: 178–81, figs 20, 505, 518–30; Coddington, 1990a: fig. 31; Platnick, 1993: 163.

*Ihurakius forsteri* Marples, 1959: 359–60, 335, plate 1 fig. 4, plate 3 figs 2–3. Synonymised by Lehtinen, 1967: 247 and Forster, 1970: 178.

*Megadictyna marplesi* Forster, 1970: 181–3, figs 531–2 (misidentification in part, ♂ allotype only).

#### *Material Examined*

*Holotype* of *Megadictyna thilenii*. ♀, Stephens I., South Island, New Zealand [40°40'S, 174°00'E], Thilenius (ZMB 30537).

*Holotype* of *Ihurakius forsteri*. ♂, Vinegar Hill Reserve, Taihape, Wellington, North Island, New Zealand [39°56'S, 175°38'E], 12.xii.1948, R. R. Forster (OM, lacking both pedipalps).

*Allotype* of *Ihurakius forsteri*. ♀, same data as holotype (not in CMNZ, not examined).

*Paratypes* of *Ihurakius forsteri*. 3 ♀, 7 juv., same data as holotype (OM).

*Allotype* of *Megadictyna marplesi*. ♂, Franz Josef, Westland, South Island, New Zealand [43°24'S, 170°11'E], 24.iv.1951, R. R. Forster (OM).

*Other material.* **New Zealand: North Island: Central Auckland:** 1 juv., Waitakere Range [36°59'S, 174°32'E], 8.ii.1949, RRF (OM). **East Coast:** 1 juv. ♂, Lake Waikare-iti Track [38°43'S, 177°10'E], under log, 13.xii.1946, RRF (OM); 1 ♀, Tuai [38°49'S, 177°09'E], 24.xii.1949, C. L. Wilton (OM); 1 ♀, Waikaremoana on track to Mt Ngamoko [38°45'S, 177°10'E], on foliage at night, 11.x.1946, RRF (OM); 8 juvs, Waikaremoana, Panekiri Track [c. 38°49'S, 177°03'E], 2600 ft [= 792 m], 11.xii.1946, RRF (OM); 2 ♀, Waikaremoana [38°43'S, 177°10'E], 13.xii.1946, RRF (OM); 1 ♀, Pukeamaru Range [37°39'S, 178°15'E], Dec. 1950, R. K. Dell, J. Moreland (OM); 1 juv. ♀, Te Araroa [37°38'S, 178°22'E], Dec. 1950, R. K. Dell (OM). **Hawke's Bay:** 2 ♀, 1 juv., Kereru, Poporangi Ck [39°38'S, 176°25'E], 1–5.ii.1954, J. Dugdale (OM); 1 ♀, 1 juv. ♀, Mahoe-Putoka, 26.iii.1966, R. W. Hutton (OM); 1 ♀, Te Mata Peak, near Havelock North [39°42'S, 176°55'E], 28.xii.1947, RRF (OM). **Manawatu:** 1 juv. ♂, 3 juv., Aorangi, Feilding [40°15'S, 175°35'E], 21.viii.1948, RRF (OM); 1 ♂, 3 juvs, Feilding [40°14'S, 175°34'E], 26.xii.1949, RRF (OM); 1 ♂, 3 juvs, same data except 6.i.1952 (OM); 2 juv. ♀, Kitchener Park, Feilding [40°14'S, 175°34'E], 2.ii.1959, RRF (OM); 4 juv., Totara Reserve, Palmerston North [40°20'S, 176°00'E?], Aug. 1948, RRF (OM); 1 ♀, Totara Reserve, Pohangina V. [40°20'S, 176°00'E?], 26.xii.1966, RRF (OM); 1 ♂, same data except 13.i.1967 (OM). **South Auckland:** 1 juv. ♀, Lake Okataina [38°08'S, 176°25'E], Rimutawa forest, 20.x.1984, D. J. Court (OM); 1 ♀, Okataina Scenic Reserve [c. 38°08'S, 176°25'E], 6.ii.1982, D. J. Court (OM); 3 ♀, 4 juvs, Poronui Beech Forest, S of Napier-Taupo Rd [c. 38°55'S, 176°26'E], 31.i.1956, R. K. Dell (MNZ); 2 ♀, 1 juv. ♀, Tuna Saddle, near Taumarunui [c. 38°53'S, 175°16'E], 10.i.1967, RRF (OM); 1 ♀, 2 juv., Upper Waihaha, West Taupo [c. 38°44'S, 175°45'E], podocarp forest, 4.xi.1953, R. K. Dell (OM); 1 ♀ (with egg-sac), Waituhi [Saddle], near Taumarunui [38°52'S, 175°33'E], 10.i.1967, RRF (OM); 3 ♀, Whale I., Bay of Plenty [37°51'S, 176°59'E], 31.xii.1985, D. J. Court (OM); 1 ♂, same data except 4.i.1986 (OM); 1 ♀, 1 juv., Whanganui R. Bridge, West Taupo [38°47'S, 175°41'E], 6.xi.1953, R. K. Dell (MNZ); 1 ♀, Whenuakura Plains, West Taupo [c. 38°50'S, 175°27'E], 26.i.1956, R. K. Dell (MNZ). **Taranaki:** 1 ♀, Aramoho, Wanganui [39°54'S, 175°03'E], hopping on road in bright sun, 25.xii.1920 (OM); 1 juv. ♀, Bushy Park, Wanganui [39°54'S, 175°02'E], 19.iii.1969, RRF, C. L. Wilton (OM); 1 juv. ♀, Mt Egmont [39°18'S, 174°04'E], 3505 ft [= 1068 m], 21.iii.1969, RRF, C. L. Wilton (OM); 1 ♀, Stratford [39°21'S, 174°17'E], 30.xii.1937, S. M. Valentine (OM); 1 ♀, Waitomo Cave, near Te Kuiti [38°16'S, 175°07'E], 20.xii.1937, J. M. Valentine (OM). **Wellington:** 1 ♀, 5 juv., Chateau

Tongariro [39°13'S, 175°33'E], 29.xii.1948, RRF (OM); 1 ♀, 2 juv. ♀, Days Bay [41°16'S, 174°54'E], 30.xi.1947, RRF (OM); 1 juv., Erua [39°14'S, 175°24'E], 26.ii.1967, C. L. Wilton (OM); 1 ♂, 1 ♀, Horokiwi Valley [41°06'S, 174°54'E], 13.ii.1963, R. G. Ordish, J. H. McMillan (OM); 2 juv. ♀, Johnsons Park, Karori [41°17'S, 174°44'E], 24.vii.1946, RRF (OM); 1 juv., Kaihinu, Tararua [40°30'S, 175°33'E], 1500 ft [= 457 m], 19.vi.1948, R. K. Dell (OM); 1 ♀, 3 juvs, Kapiti I. [40°52'S, 174°55'E], May 1947, RRF (OM); 1 ♀, Karori [41°17'S, 174°44'E], 2.viii.1942, RRF (OM); 1 juv., Karori Hills [c. 41°17'S, 174°43'E], 6.vii.1946, RRF (OM); 4 juv., K[ing] G[eorge] V Park, 21.v.1950, RRF (OM); 1 juv. ♀, Kiriwhakapapa [40°49'S, 175°37'E], 29.xii.1957, R. R. Hutton (OM); 1 juv., Levin [40°37'S, 175°17'E], 6.vi.1948, RRF (OM); 1 juv., Wairarapa Waterfalls, Mangareia [40°52'S, 175°52'E], 4.ii.1940, C. L. Wilton (OM); 6 ♂, 1 ♀, Orongorongo Valley [c. 41°25'S, 174°54'E], broadleaf forest, April–June 1976, Pitfall Ecology Division (OM); 2 ♂, same data except Silver Beech forest (OM); 1 ♂, same data except Hard Beech forest, June 1976 (OM); 1 juv. ♂, Porirua [41°08'S, 174°50'E], 7.vi.1948, C. McCann (OM); 3 ♀, Stokes Valley [41°11'S, 174°59'E], 30.xi.1947, R. K. Dell (MNZ); 1 juv. ♂, 1 juv., same locality, 10.i.1948, RRF (OM); 1 ♀, Tawa [41°10'S, 174°49'E], 3.xii.1963, R. G. Ordish (OM); 1 ♀, Turanganui Valley [c. 41°21'S, 175°09'E], at base of tree, 23.ii.1961, R. G. Ordish (OM); 1 ♀, 7 juvs, Waikanae [40°53'S, 175°04'E], 3.i.1948, RRF (OM); 1 juv., same data except Jan. 1948 (OM); 2 juvs, W. Rimutaka's [c. 41°17'S, 175°05'E], 800 ft [= 244 m], 13.vi.1948, R. K. Dell, J. Moreland (MNZ); 1 juv., Vinegar Hill Reserve, Taihape [39°56'S, 175°38'E], 12.xii.1948, RRF (OM); 1 ♀, same data except 1.i.1967 (OM); 1 juv., Wiltons Bush [41°16'S, 174°45'E], Dec. 1952, J. Dugdale (OM). **South Island:** Canterbury: 2 juv. ♂, 1 juv. ♀, Ashley Gorge [43°15'S, 172°12'E], 14.x.1949, RRF (OM); 1 juv. ♂, same data except 16.x.1949 (OM); 1 juv. ♀, same data except Dec. 1957, R. L. C. Pilgrim (OM); 2 juv. ♂, Coopers Ck [43°17'S, 172°07'E], 15.x.1953, RRF (OM); 1 juv., Fox's Ck [43°14'S, 172°41'E], 19.ii.1953, RRF (OM); 1 juv., Gore Bay [42°52'S, 173°18'E], 30.xi.1948, RRF (OM); 1 ♀, junction of Harper and Avoca R.s [43°11'S, 171°32'E], 3.v.1954, J. Dugdale (OM); 1 juv. ♀, Hoods Bush, Malvern Hills [41°46'S, 173°34'E], May 1953, RRF (OM); 1 juv. ♀, Lake Taylor [42°46'S, 172°14'E], 14.iv.1952, Canterbury Field Club (OM); 1 juv. ♀, 2 juv., Lewis Pass [42°23'S, 172°24'E], 14.xi.1949, RRF (OM); 1 ♀, same locality, 23.v.1953, C. Holmes (OM); 1 juv. ♀, same locality, 25.iv.1977, RRF (OM); 1 juv. ♀, Maruia Springs, Lewis Pass [42°23'S, 172°20'E], 25.iv.1977, RRF (OM); 2 juv. ♂, Mt Algidus [43°14'S, 171°21'E], 1900 ft [= 579 m], forest, 14.iii.1965, E. S. Gourlay (OM); 1 juv., Okuku Pass [43°06'S, 172°27'E], 6.iv.1952, J. Dugdale (OM); 1 ♀, Otu Stream, broadleaf forest, 19.viii.1960, P. Johns (OM); 1 juv. ♀, Rakaiā Gorge [c. 43°31'S, 171°38'E], 30.iv.1950, RRF (OM); 1 juv., Upper Hororata [c. 43°32'S, 171°57'E], 21.i.[19]22, G. Archey (OM). Marlborough: 1 juv. ♀, Arapawa I., Queen Charlotte Sounds [41°11'S, 174°19'E], 22.ix.1963, M. A. Crozier (OM); 1 ♀, Blumine I., Queen Charlotte Sound [41°10'S, 174°14'E], 26.viii.1932, A. W. B. Powell (AIM); 2 ♀, same data except 29.ix.1963, M. A. Crozier (OM); 1 ♀, same data except south side of I.. 11.xi.1961, B. A. Holloway (OM); 1 ♀, Mangatapu, Upper Pelorus R. [c. 41°25'S, 173°20'E], 27.viii.1960, P. Johns (OM); 1 ♀, Ship Cove, Queen Charlotte Sounds [41°06'S, 174°15'E], 12.ix.1948, R. K. Dell (MNZ). Nelson: 1 ♂, Big Bush State Forest, under log, 24.xi.1983, D. Hunt (OM); 1 juv., Cable Bay [41°09'S, 173°24'E], 29.iii.1966, C. L. Wilton (OM); 1 juv. ♀, Canaan Track, Pikikiruna Range, 2000' [c. 41°00'S, 172°52'E], 17.iii.1960, C. W. O'Brien (OM); 1 ♀, Canaan Track [c. 41°00'S, 172°51'E], 25.x.1948, Cawthon (OM); 1 ♀, Flora Hut [41°11'S, 172°44'E], 22.i.1948, RRF (OM); 1 ♀, Golden Downs [41°33'S, 172°53'E], 16.v.1979, RRF (OM); 1 ♂, Lake Rotoiti [41°50'S, 172°50'E], malaise trap, 1.xii.1976, A. K. Walker (OM); 1 ♀, Leslie Valley Track [c. 41°13'S, 172°35'E], under log, 26.i.1948, RRF (OM); 1 juv. ♀, Motupipi Cave, Takaka [c. 40°51'S, 172°51'E], 20.viii.1960, J. I. Townsend, W. P. Thomas (OM); 1 ♀, Takaka Hill [c. 40°51'S, 172°48'E], 2400–3800 ft [= 732–1158 m], J. Marston (OM); 1 juv. ♀, Upper Takaka [41°03'S, 172°50'E], 20.v.1955, C. Holmes, T. Holmes (OM); 1 juv., Wairoa Gorge [c. 41°30'S, 173°05'E], March 1966, C. L. Wilton (OM); 1 juv. ♀, Whangapoka, 1000 ft [= 305 m], under stone under *Nothofagus fusca*, 15.viii.1968, J. C. Watt (OM). *Without locality data:* 2 ♂, 1 ♀, 4 juvs (OM).

### Diagnosis

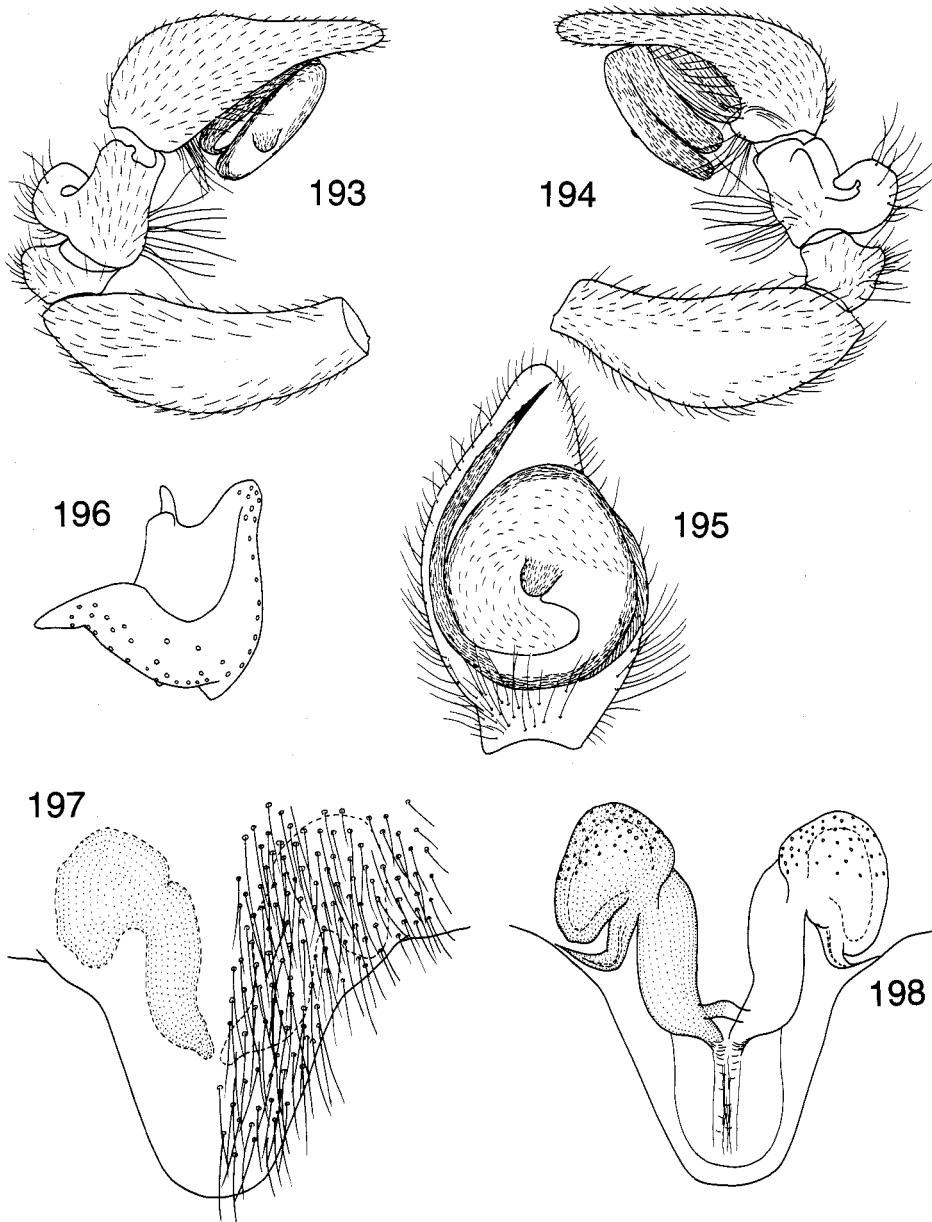
As for genus.

### Description

#### Adult (*Orongoro Valley, and Takaka Hill, New Zealand*)

Colour: carapace and sternum dusky yellow; abdomen creamy yellow, with pale brown mottling, sigilla light brown and very small; chelicerae light brown; legs mainly yellow-brown, with darker banding on many segments. Carapace with moderately long setae and

very shallow fovea. Male pedipalp (Figs 193–196): patella with dorsal apophysis; retrolateral tibial apophysis arising dorsally from prolateral keel and twisting retrolaterally, with narrow hyaline flange distally; small retrolateral apophysis present; prolateral tibial apophysis absent; embolus long and slender, with 5–8 denticles on prolateral margin; conductor absent; median apophysis situated centrally on bulb, moderately tuberculate. Legs: long and slender; 1423; with spines arranged as detailed by Forster (1970); calamistrum of 43 bristles (♀) or about 15 bristles in ill-defined row (♂). Abdomen with short, slender setae, tip just reaching past base of next seta. Epigyne (Figs 197–198) with



**Figs 193–198.** *Megadictyna thilenii* Dahl. 193–196, male (Orongorongo Valley, New Zealand), left pedipalp: 193, prolateral; 194, retrolateral; 195, ventral; 196, tibia, dorsal. 197–198, female (Takaka Hill, New Zealand), epigyne: 197, ventral; 198, dorsal.

elongate median lobe completely covered with long setae; dorsal lobe surface with thickened rim and indistinct median longitudinal septum; small curved cuticular ridge present between copulatory ducts; copulatory duct openings on dorsal epigynal margin, copulatory ducts elongate and thick, entering spermathecae submesally; spermathecae ovoid, anterior and anterolateral surfaces with numerous pores; fertilisation ducts opening laterally.

*Dimensions (mm).* ♂ Orongoro Valley, NZ (♀ Takaka Hill, NZ): total length 9.9 (13.1). Carapace 4.95/3.78 (5.10/4.50). Eyes: AME 0.20 (0.18), ALE 0.26 (0.26), PME 0.23 (0.23), PLE 0.25 (0.22), AME-AME 0.29 (0.19), AME-ALE 0.26 (0.30), PME-PME 0.15 (0.20), PME-PLE 0.37 (0.42), PLE-ALE 0.04 (0.09), eye group width 1.59 (1.71), MOQ front width 0.55 (0.48), MOQ back width 0.61 (0.63), MOQ length 0.62 (0.59). Sternum 2.30/2.21 (2.53/2.55). Abdomen 6.26/3.78 (8.50/7.50). Pedipalp: femur 2.11 (1.90), patella 0.59 (0.82), tibia 0.77 (1.03), tarsus 1.88 (1.90), total 5.35 (5.65). Leg I: femur 5.92 (8.29), patella 2.03 (2.37), tibia 6.20 (6.16), metatarsus 4.95 (4.91), tarsus 2.83 (2.79), total 21.93 (24.52). Leg II: femur 4.91 (5.20), patella 1.86 (2.16), tibia 4.72 (4.55), metatarsus 3.86 (3.82), tarsus 1.12 (2.10), total 16.47 (17.83). Leg III: femur 3.18 (4.18), patella 1.64 (1.96), tibia 3.43 (3.20), metatarsus 3.08 (2.99), tarsus 1.65 (1.58), total 12.98 (13.91). Leg IV: femur 5.41 (5.75), patella 1.81 (2.30), tibia 5.80 (4.61), metatarsus 4.32 (4.30), tarsus 2.24 (2.20), total 19.58 (19.16).

#### Remarks

Under Article 31a(iii) of the International Code of Zoological Nomenclature, the alteration of Dahl's specific epithet '*thilenii*' to '*thilenius*' by Bonnet (1957) is an unjustified emendation (International Commission on Zoological Nomenclature 1985). The original name is correctly formed if *Thilenius* is treated as a Latin name (Article 31a).

Forster (1970) noted variation in genitalic structures but was hampered by the lack of enough specimens on which to analyse this variation. He concluded that only a single widespread species was present, and although minor differences in pedipalp morphology are apparent, I concur with his decision. Further collecting and analysis of longer series may help to clarify the situation. The male from Whale I. possesses a distinct process surmounted by a seta, much like the male (of unknown provenance) illustrated by Forster (1970, figs 524, 526). Most other males examined here lack such a process, although the male from Lake Rotoiti and, to a lesser extent, some from Orongorongo Valley have an indistinct process. The small triangular embolic tubercle portrayed in Forster (1970, fig. 525) could not be observed on any male available to me. The form of the median apophysis was found to vary and is not a reliable diagnostic character state to differentiate putative species.

As discussed below (see *Forstertyna marplesi*), the male allotype of *M. marplesi* is here considered a specimen of *M. thilenii*, and is not conspecific with the female holotype of *M. marplesi*. *Megadictyna thilenii*, although apparently absent from the southern portion of the South Island (Otago and Southland Provinces), is widespread throughout New Zealand (Fig. 192). Several specimens recorded by Forster (1970) were not available for this study, including those from Franz Josef, Westland.

Adult females have been collected throughout the year (all months except July), and males are known from summer through to early winter.

#### Genus *Forstertyna*, gen. nov.

*Megadictyna* Dahl. — Forster, 1970: 178 (in part).

Type species: *Megadictyna marplesi* Forster, 1970.

#### Diagnosis

Female: epigyne without elongate median lobe; with central V-shaped depression apparently bearing glandular opening; copulatory ducts broadly fused mesally; separate spermathecal head present.

### Remarks

Unfortunately, males of this genus are not yet known (see below). However, the median depression on the epigyne, with its associated pore and gland, and lack of a long median epigynal lobe are distinctive features which warrant the erection of a new genus.

### Etymology

This genus is dedicated to Ray Forster for his many contributions to arachnology.  
Gender: feminine.

### Included Species

*Forstertyna marplesi* (Forster).

### *Forstertyna marplesi* (Forster), comb. nov.

(Figs 192, 199–200)

*Megadictyna marplesi* Forster, 1970: 181–3, figs 533–4 (♀, only; ♂ = *Megadictyna thilenii* Dahl).  
— Brignoli, 1983: 380.

### Material Examined

**Holotype.** ♀, Thompson Sound, Fiordland [Natl Park], Southland, South Island, New Zealand [45°08'S, 166°46'E], sea level, under log, 14.i.1958, R. R. Forster (OM).

**Other material.** **New Zealand: South Island:** *Southland*: 2 juvs, same data as holotype (OM); 1 ♀, Gut Hut, Secretary I., Fiordland [Natl Park] [45°15'S, 166°56'E], 20 ft [= 6 m], 24.xi.1981, A. C. Harris (OM); *Otago*: 1 ♀, Martin's Bay [c. 44°22'S, 167°59'E], under logs, 11.ii.1955, RRF (OM); 1 juv., same locality, 28.i.1955, RRF (OM).

### Diagnosis

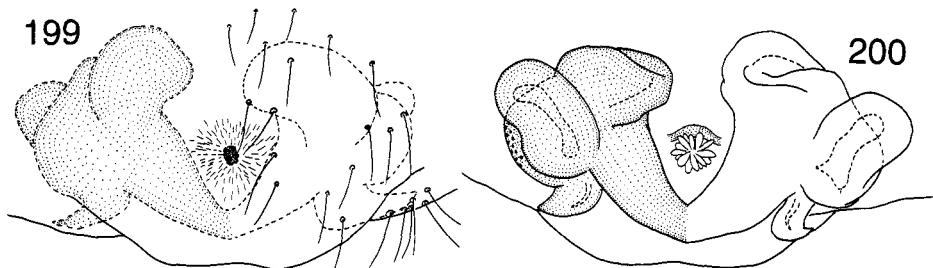
As for genus.

### Description

#### Adult Female (Thompson Sound, New Zealand)

Colour: carapace and sternum dusky yellow; abdomen creamy yellow, with pale brown mottling, sigilla light brown and very small; chelicerae light brown; legs mainly yellow-brown, with darker banding on many segments. Carapace with moderately long setae and very shallow fovea. Legs: long and slender; 1423; with spines arranged as detailed by Forster (1970); calamistrum composed of 25 bristles. Abdomen with short, slender setae, tip just reaching past base of next seta. Epigyne (Figs 199–200) with non-elongated posterior margin which is slightly sinuate; central V-shaped depression present with central pore of irregular shape, which apparently leads to an unidentified gland; internal wall with ridge slightly anterior to gland; copulatory duct openings on dorsal epigynal margin, copulatory ducts elongate and thick, and broadly fused mesally, entering spermathecae somewhat posteriorly; spermathecae irregularly ovoid, lateral surface with pores; separate spermathecal head present; fertilisation ducts opening laterally.

**Dimensions (mm).** Holotype ♀: total length 7.9. Carapace 3.30/2.75. Eyes: AME 0.17, ALE 0.21, PME 0.18, PLE 0.23, AME–AME 0.12, AME–ALE 0.15, PME–PME 0.13, PME–PLE 0.25, PLE–ALE 0.03, eye group width 1.16, MOQ front width 0.46, MOQ back width 0.50, MOQ length 0.38. Sternum 1.69/1.66. Abdomen 5.73/3.71. Pedipalp: femur 1.29, patella 0.60, tibia 0.71, tarsus 1.35, total 3.95. Leg I: femur 4.10, patella 1.50, tibia 4.03, metatarsus 3.21, tarsus 2.09, total 14.93. Leg II: femur 3.34, patella 1.38, tibia 2.89, metatarsus 2.39, tarsus 1.60, total 11.60. Leg III: femur 2.76, patella 1.20, tibia 2.05, metatarsus 2.00, tarsus 1.29, total 9.30. Leg IV: femur 3.72, patella 1.50, tibia 3.10, metatarsus 2.70, tarsus 1.62, total 12.64.



Figs 199–200. *Forsteryna marplesi* (Forster), female holotype, epigyne: 199, ventral; 200, dorsal.

#### Remarks

It appears that the male allotype was incorrectly associated with the female holotype. I cannot detect any differences between this male and the other males that I have at my disposal, and feel that several reasons point to their misassociation. First, the male is somewhat larger than the female (carapace length 4.25 vs. 2.97). Although such size differences are known for nicodamines, in the only other megadictynine, *Megadictyna thilenii*, the male is smaller. Second, the strong similarity in male pedipalps is not correlated with differences between the female epigynes of *M. thilenii* and *F. marplesi*. Such large differences in epigynal structure would surely be reflected in male pedipalpal structure, and the male of *F. marplesi* will, I believe, show a different pedipalpal morphology from that of *Megadictyna*.

*Forsteryna marplesi* is known from Fiordland and Otago in south-western New Zealand (Fig. 192).

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