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A Revision of the American Spiders of the Genus *Micaria* (Araneae, Gnaphosidae)

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ABSTRACT

The 43 known American species of *Micaria*, found from Alaska to southern Mexico, are diagnosed and illustrated. A cladistic analysis of 22 genitalic characters clusters 30 species into six groups and resolves most of the internal structure of the two largest species groups. Four Palearctic species are newly recorded from North America: *M. tripunctata* Holm, *M. alpina* L. Koch, *M. rossica* Thorell, and *M. aenea* Thorell. Fourteen specific names are newly synonymized: *M. perfecta* Banks with *M. pulicaria* (Sundevall); *M. eltoni* Jackson with *M. constricta* Emerton; *M. rowani* Gertsch and *M. jacksonia* Levi and Levi, both with *M. coloradensis* Banks; *M. swansoni* Gertsch and Mulaik and *M. petrunkevitchi* Bryant, both with *M. punctata* Banks; *M. salina* Gertsch with *M. utahna* Gertsch; *M. albocincta* Banks with *M. ros-*

sica Thorell; *M. altana* Gertsch with *M. foxi* Gertsch; *M. tetonia* Levi and Levi with *M. aenea* Thorell; *M. formicula* Roewer with *M. palliditarsus* Banks; *M. alberta* Gertsch with *M. longipes* Emerton; *M. apacheana* Gertsch with *M. emertoni* Gertsch; and *M. melanopa* Gertsch and Davis with *M. deserticola* Gertsch. Fourteen new species are described: *M. lassena*, *M. idana*, *M. medica*, *M. capistrano*, *M. cimarron*, *M. camargo*, *M. pasadena*, *M. nye*, *M. langtry*, *M. otero*, *M. porta*, *M. palma*, *M. icenoglei*, and *M. mexicana*. The males of *M. palliditarsus* Banks, *M. gosiuta* Gertsch, *M. seminola* Gertsch, and *M. riggsi* Gertsch, and the females of *M. mormon* Gertsch, *M. imperiosa* Gertsch, and *M. nanella* Gertsch are described for the first time.

INTRODUCTION

This paper, the 25th in a series on gnaphosoid spiders, completes coverage of the North American members of the superfamily by revising the New World species of *Micaria*. This speciose genus of generalized ant-

mimics is common throughout the Holarctic region, and may extend into Africa as well, but no specimens have been found in collections from Central or South America.

In older literature, *Micaria* was often treat-

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ed as a member of the Clubionidae, and served as the type genus of the clubionid subfamily Micariinae. That subfamily, however, was polyphyletic, for most of the genera that were placed there are castianeirine clubionoids (Reiskind, 1969), whereas *Micaria* has the flattened posterior median eyes, obliquely depressed endites, and basally separated anterior spinnerets characteristic of the Gnaphosidae. The placement of *Micaria* outside the Gnaphosidae seems to have been due only to the relatively small size of the anterior spinnerets, which in poorly preserved specimens are often only narrowly separated (or even touching) posteriorly. However, well-preserved specimens show that the bases of the anterior spinnerets are separated by roughly their width (albeit by soft and occasionally folded cuticle), as in other gnaphosids.

More recently, Mikhailov and Fet (1986) placed the genus in a family of its own (Micariidae), a suggestion not accepted by Wunderlich (1987) or here. Indeed, as first indicated by Wunderlich (1979), genitalic similarities indicate that *Micaria* and the gnaphosid genus *Scotophaeus* may be close relatives. Because of the simplicity of both the male palpi and female epigyna, however, it is difficult to specify a detailed genitalic synapomorphy uniting the two genera, and it is possible, if unlikely, that the genitalic similarities are all plesiomorphic and that their occurrence in both sexes is coincidental.

A few workers have also suggested that the phrurolithines should be transferred from the Clubionidae (or Liocranidae, if the former family is treated as a composite) and considered close relatives of *Micaria*. Although they are similar to *Micaria* in general appearance, phrurolithines have none of the gnaphosid characters mentioned above, and this suggestion cannot be supported.

Thanks largely to the work of Wunderlich (1979), the European species of *Micaria* are relatively well known, but knowledge of the American fauna has been fragmentary, with most of the available specific names having been based on very few specimens. Through the assistance of the collectors and curators listed below, we have been able to study some 4500 adult American specimens of the genus. This material has allowed us to identify sev-

eral synonyms (often of names based on different sexes), misidentifications, and new taxa.

Only two American species have previously been regarded as shared with the Old World: the commonly collected *Micaria pulicaria* (Sundevall), found throughout the Palearctic region, and *Micaria eltoni* Jackson (known in Europe only from Spitsbergen, Norway; an earlier American name, *Micaria constricta* Emerton, is available for the species). Specimens kindly supplied by Dr. Åke Holm of the University of Uppsala, Dr. J. Heurtault of the Muséum National d'Histoire Naturelle, Paris, and Dr. K. Mikhailov of Moscow State University have allowed us to confirm that four additional species are found both in Europe and North America: *Micaria tripunctata* Holm (previously known only from Sweden), *Micaria alpina* L. Koch (a high Alpine taxon), *Micaria rossica* Thorell (widespread in Europe and Russia; American specimens had been described as *Micaria albocincta* Banks), and *Micaria aenea* Thorell (widespread in Europe; American specimens had been described as *Micaria tetonia* Levi and Levi).

It is not known whether the antlike appearance of most American *Micaria* species reflects any obligatory associations with ants. Some species have been taken together with ants that they resemble closely in size and coloration. The ant species involved (based on identifications taken from spider specimen labels) include at least: *Aphaenogaster cockerelli* (Andre), taken with *Micaria imperiosa* Gertsch; *Myrmecocystus mimicus* Wheeler, taken with *Micaria longipes* Emerton and *Micaria porta*, new species; *Pogonomyrmex montanus* Mackay, taken with *Micaria gosiuta* Gertsch; and *Tapinoma sessile* (Say), taken with *Micaria gertschi* Barrows and Ivie and *Micaria longispina* Emerton. The spiders often have abdominal constrictions and flattened, scalelike setae (typically brightly colored or iridescent), and show antennalike movements of the front legs, that enhance the effectiveness of the ant mimicry; these features are unusual (although by no means unique) among gnaphosids. *Micaria* species are generally highly active hunters, even during daylight hours in hot and dry environments where ants could constitute a sizable proportion of the available prey.

The mimicry could, of course, function more in reducing attacks from other predators that shun ants than in facilitating access of the spiders to ants as prey.

We are grateful to Mr. L. Sorkin of the American Museum of Natural History for assistance with mapping, and to Dr. C. D. Dondale of the Biosystematics Research Centre, Agriculture Canada, Dr. W. J. Gertsch of the American Museum of Natural History, Dr. R. E. Leech of the University of Alberta, Dr. K. Mikhailov of Moscow State University, Mr. J. A. Murphy of Hampton, England, and Mr. J. Wunderlich of Straubenhardt, West Germany, for their helpful comments on a draft of the manuscript. The format of the descriptions and the abbreviations used follow Platnick and Shadab (1975); all measurements are in millimeters.

CLADISTICS

Because this revision covers only the American species of *Micaria*, a complete phylogenetic analysis of the genus is not feasible, but it seemed worthwhile to attempt to establish some species groupings that might prove useful in future comparisons with Old World species. The relative simplicity of both the male and female genitalia of *Micaria* makes it difficult to identify enough characters to resolve in detail the relationships among the American taxa. In compiling the data shown in table 1, an effort was made to hypothesize enough characters to allow at least some associations among all 43 species. In a few cases, this was difficult; some species are so highly autapomorphic (for example, *M. porta*), or so generalized and poorly known (for example, *Micaria langtry*, new species) that the characters used (numbers 22 and 8, respectively, in the following list) are far from convincing.

Polarities were judged using *Scotophaeus* as an outgroup. The characters (numbered in the order shown in table 1) include: (1) male palpal tibia expanded dorsally at half its length; (2) male median apophysis reduced in size (coded as 1) or absent (coded as 2); (3) males with two tibial apophyses; (4) male retrolateral tibial apophysis shifted to about half of tibial length (coded as 1) or to base of tibia (coded as 2); (5) male embolus expanded

basally, resulting in a triangular appearance; (6) male embolus apically twisted; (7) male embolus apically recurved; (8) male median apophysis shifted distally; (9) male retrolateral tibial apophysis shortened, broad; (10) male retrolateral tibial apophysis elongated, spiniform; (11) male median apophysis shifted retrolaterally; (12) male bulb with slight (coded as 1) or pronounced (coded as 2) bulge at about half of its length; (13) male retrolateral tibial apophysis reduced to slight prong; (14) female paramedian ducts with distinct apical accessory lobes; (15) female paramedian ducts with twisted apical expansions; (16) female spermathecae rounded or oval (rather than L-shaped); (17) female epigynum with distinct septum; (18) female paramedian ducts arching out to lateral epigynal margins; (19) female paramedian ducts reduced to short lobes; (20) female spermathecae slightly (coded as 1) or highly (coded as 2) convoluted; (21) female epigynum with pair of transverse, curved paramedian ridges (in addition to lateral margins); and (22) female paramedian ducts anteriorly recurved.

Four of these characters are multistate; in three cases (numbers 4, 12, and 20) it seemed desirable to treat the states as unordered. For example, it is possible (if perhaps unlikely) that in those species in which the male retrolateral tibial apophysis has shifted toward the base of the tibia, a median position represents a modification of an initial shift to the base of the segment, rather than an intermediate stage in that shift. In the fourth case (character 2) the states were treated as ordered, as it seems unlikely that a greatly reduced male median apophysis represents a modification of an earlier loss of the structure. Data were coded as missing where one sex is unknown, and also in those cases (characters 8 and 11) where the character is inapplicable (i.e., the relative position of the male median apophysis cannot be judged in those species which have lost the structure).

Treating three of the multistate characters as unordered would be difficult using J. Felsenstein's PHYLIP program package, as it would require many runs using all combinations of the possible orderings of those characters, so only D. Swofford's PAUP package (version 2.4.1) was used, running on an 8086-based microcomputer. Because the

TABLE 1
Data and Options for PAUP Analyses

```

PARAM NOTU=44 NCHAR=22 MISSING=9;
DATA (A8,A1,22I2);
ancestor* 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
pulicari 1 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0
tripunct 1 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 1
alpina 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0
laticeps 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0
punctata 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0
vinnula 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0
aenea 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0
constric 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0 0 1 0
gertschi 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0
browni 9 9 9 9 9 9 9 9 9 9 9 9 9 1 0 1 0 0 0 0 0 0 0
rossica 0 1 0 0 0 0 0 0 1 0 0 0 0 0 0 0 1 0 0 0 0 0 0
foxi 0 1 0 0 0 0 0 0 1 0 0 0 0 0 0 0 1 0 0 0 0 0 0
colorade 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 1 0 0 0 0 1 0
mormon 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0
utahna 0 2 0 0 0 1 0 9 0 0 9 0 0 1 0 1 0 0 0 0 0 0 0
lassena 0 2 0 0 0 1 0 9 0 0 9 0 0 0 1 0 0 0 0 0 0 0 0
idana 0 0 0 0 0 0 1 0 0 1 0 0 0 0 0 1 0 1 0 0 0 0 0
medica 0 2 0 0 0 0 1 9 0 1 9 0 0 0 0 1 0 1 0 0 0 0 0
longispi 0 0 0 0 0 0 1 0 0 1 0 0 0 0 0 1 0 1 0 0 0 0 0
capistra 9 9 9 9 9 9 9 9 9 9 9 9 9 0 0 1 0 1 0 0 0 0 0
elizabet 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0
cimarron 9 9 9 9 9 9 9 9 9 9 9 9 9 0 0 1 0 0 0 0 0 0 0
camargo 9 9 9 9 9 9 9 9 9 9 9 9 9 0 0 1 0 0 0 0 0 0 0
pallidit 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0
pasadena 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
jeanae 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0
nye 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0
imperios 0 2 0 0 0 0 0 9 0 0 9 0 0 0 0 0 0 0 1 0 0 0 0
langtry 0 0 0 0 0 0 0 1 0 0 0 0 0 9 9 9 9 9 9 9 9 9 9
otero 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0
porta 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1
nanella 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0
longipes 0 0 0 2 0 0 0 0 0 0 1 1 0 1 0 0 0 0 0 0 0 0 0
delicatu 0 0 0 2 0 0 0 0 0 0 1 1 0 1 0 0 0 0 0 0 0 0 0
seminola 0 0 0 1 0 0 0 0 0 0 1 2 0 0 0 0 0 0 0 0 0 0 0
riggsi 0 0 0 1 0 0 0 0 0 0 2 0 1 0 0 0 0 0 0 2 0 0 0
emertoni 0 0 0 1 0 0 0 0 0 0 1 2 0 1 0 0 0 0 0 1 0 0 0
palma 9 9 9 9 9 9 9 9 9 9 9 9 9 0 0 0 0 0 0 2 0 0 0
gosiuta 0 0 0 2 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0
icenogle 0 0 0 1 0 0 0 0 0 0 1 2 0 1 0 0 0 0 0 2 0 0 0
desertic 0 0 0 2 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 2 0 0 0
triangul 0 0 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
mexicana 0 0 0 1 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 2 0 0 0
UNORDERED 4 12 20;
DEFINE CONFIL MICARIA.CON;
GO/SWAP=GLOBAL MULPARS MAXTREE=100 CONFIL;

```

number of taxa exceeds the limits of PAUP's exact algorithms, only heuristic algorithms could be employed; the options used are shown in table 1.

Unfortunately, the program would not function with the data as shown in table 1; the data were accepted and the unordered characters were set, but the program would not respond to any command to begin the analysis (i.e., the GO command, with or without other options). Extensive trial-and-error reruns indicated that the problem apparently involved the entries for *M. langtry*, and it was necessary to remove that taxon before the program would function. That species does have many missing entries (because females are unknown), but other species having just as many missing entries were accepted without difficulty, and (as mentioned above) character 8 should have allowed the program to associate the species with others. As a result, the analyses reported here were run without *M. langtry*.

Because the data are insufficient to support any fully dichotomous resolution of the 42 species analyzed, it is not surprising that PAUP quickly reached its limit (MAXTREE) of 100 arrangements. Further branch swapping without the MULPARS option resulted in the eventual discovery of 100 arrangements (probably including many duplications due to zero-length branches) that each require 45 steps, with a consistency index of 0.58. However, as indicated by Platnick (1987), the heuristic algorithms used by PAUP can fail to find the shortest cladogram(s) when the default options are accepted for the addition sequence used, and the number of intermediate trees held in memory, during the initial construction of an estimate. Twenty-three additional analyses were run, therefore, so as to test combinations of each of the four addition sequence options with HOLD values of 1, 5, 10, 15, 20, and 25. Ten of those additional runs (including at least one run of each addition sequence option), again with further branch swapping without MULPARS, did find shorter arrangements requiring 44 steps, and a single run (using the rootless addition sequence and holding 15 trees) succeeded in finding 100 43-step solutions (with a consistency index of 0.61).

Because the apparently shortest clado-

grams were detected only with the rootless addition sequence, eight additional analyses were run using that option and the neighboring HOLD values of 11 through 14 and 16 through 19. Three of those final runs also found 100 43-step arrangements. The groupings supported by a strict consensus of the 400 43-step arrangements (obtained with Swofford's CONTREE program) are shown in figure 1. Twelve species (plus, of course, *M. langtry*) are unplaced in the consensus, but six species groups are recognized, and the internal structure of the two largest ones (the *pulicaria* and *longipes* groups) is well resolved. One of the six species groups, including only *Micaria browni* Barnes and *Micaria utahna* Gertsch, may be an artifact, as male palpal structure indicates that *M. utahna* is a close relative of *Micaria lassena*, new species (which was unplaced in the consensus); eventual discovery of the male of *M. browni* should therefore provide an interesting test of the accuracy of the consensus tree. Among the other species groups, whose existence seems well established, the *pulicaria*, *alpina*, and *rossica* groups include taxa occurring in both the Palearctic and Nearctic regions, and the *rossica* group has exclusively Palearctic members as well, for the recently described Chinese species *Micaria taiguica* Tu and Zhu (1986) shares male and female characters with the two American species of the group. The *idana* and *longipes* groups appear to be exclusively American, so far as we can determine from illustrations of Old World species accessible in the literature.

COLLECTIONS EXAMINED

AJP, A. J. Penniman
AMNH, American Museum of Natural History, including material made available by W. J. Gertsch
BJA, B. J. Abraham
BRV, B. R. Vogel
CAS, California Academy of Sciences, W. Pulawski and D. Ubick
CDB, D. J. Boe
CDFA, California State Department of Food and Agriculture, M. J. Moody
CDU, D. Ubick
CNC, Canadian National Collection, C. D. Dondale and J. H. Redner
CUC, Cornell University, collection housed at AMNH

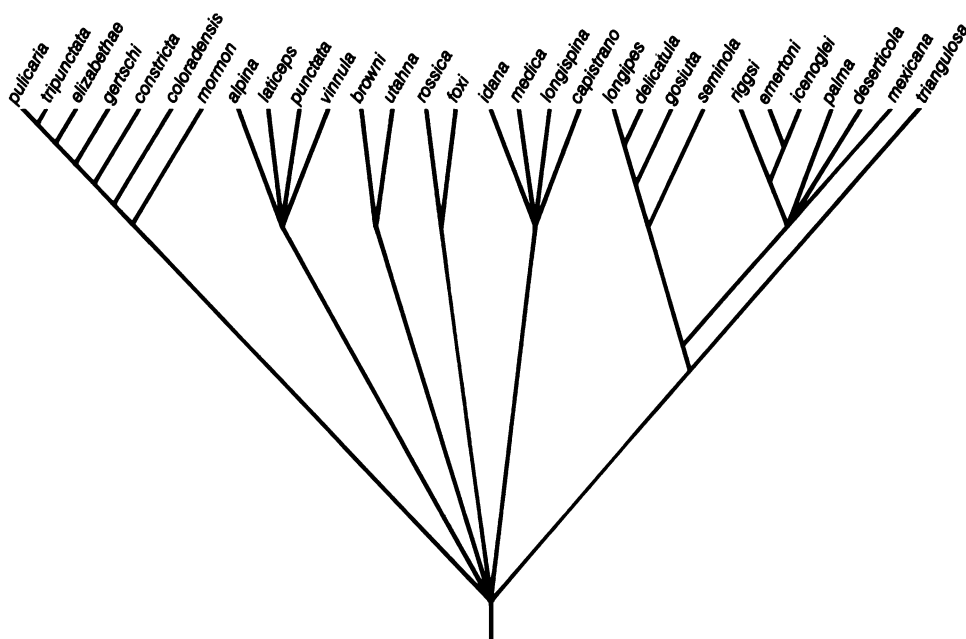


Fig. 1. Groupings supported by the strict consensus of 400 43-step cladograms for the data shown in table 1.

DBR, D. B. Richman
 DCL, D. C. Lowrie
 DJB, D. J. Buckle
 DTJ, D. T. Jennings
 EPC, Exline-Peck Collection, W. B. Peck, now housed at CAS
 FAC, F. A. Coyle
 FMNH, Field Museum of Natural History, A. F. Newton, Jr.
 FSCA, Florida State Collection of Arthropods, G. B. Edwards
 JAB, J. A. Beatty
 LACM, Los Angeles County Museum of Natural History, C. L. Hogue
 MCZ, Museum of Comparative Zoology, Harvard University, H. W. Levi
 MSU, Michigan State University, R. L. Fisher
 NVH, N. V. Horner
 OSU, Ohio State University, C. A. Triplehorn
 REL, R. E. Leech
 ROM, Royal Ontario Museum, D. Barr
 SCJ, S. C. Johnson
 TAM, Texas A&M University, A. Dean
 UCB, University of California, Berkeley, E. I. Schlinger
 UCO, University of Colorado, E. L. Licht
 UCR, University of California, Riverside, S. Frommer
 UMS, University of Mississippi, P. R. Miller
 UNH, University of New Hampshire, R. M. Reeves

UWA, University of Washington, R. L. Crawford
 VDR, V. D. Roth
 WDF, W. D. Fronk
 WRI, W. R. Icenogle
 ZMUU, Zoological Museum, University of Uppsala, Å. Holm

SYSTEMATICS

Micaria Westring

Macaria C. L. Koch, 1837: 17 (type species by monotypy *Aranea fulgens* Walckenaer, 1802), preoccupied.

Micaria Westring, 1851: 47 (nomen novum for *Macaria* C. L. Koch).

Chrysothrix Simon, 1878: 29 (type species by original designation *Drassus dives* Lucas), preoccupied.

Micariolepis Simon, 1879: CLXI (nomen novum for *Chrysothrix* Simon). First synonymized by Wunderlich, 1979: 288.

Bona Pavesi, 1884: 466 (type species by monotypy *Drassus dives* Lucas). First synonymized with *Micariolepis* by Pavesi, 1885: 204.

DIAGNOSIS: The antlike appearance, often accentuated by iridescent scales on both the carapace and abdomen, immediately distinguishes *Micaria* from all other American gnaphosids; illustrations of the type species can be found in Wunderlich (1979).

DESCRIPTION: Total length 1.3–6.5. Carapace oval in dorsal view, widest at rear of coxae II, abruptly narrowed at level of palpal insertion, cephalic area flattened, thoracic groove shifted back onto posterior declivity; bristles present on ocular and clypeal areas only, iridescent scales present, densest along margins of posterior declivity. From above, both eye rows procurved; from front, both rows strongly procurved; AME circular, dark, PME obliquely rectangular, light, ALE and PLE oval, light; eyes subequal in size, relatively evenly spaced except ALE separated from AME by less than their radius; MOQ usually longer than wide in front or in back. Clypeal height greater than AME diameter. Chelicerae usually with one retromarginal and two promarginal teeth. Endites rectangular, obliquely depressed; labium long, triangular, rounded distally; sternum pointed behind. Leg formula 4123. Typical leg spination pattern (only surfaces bearing spines listed): femora: I, II d1-0-0, p0-0-1; III d1-1-0, p0-0-1; IV d1-0-0; tibiae: III p0-1-1, v2-2-2; IV v2-2-2; metatarsi III, IV p0-1-1, v2-2-2, r0-1-1. Legs variably colored, generally with at least part of anterior femora darker than other surfaces; distal portion of tibiae and all of metatarsi and tarsi I and II, and tarsi III and IV, with two rows of stiff setae ventrally; tarsi with two claws and reduced claw tufts; trochanters not notched; metatarsi without preening combs; distal segments with two rows of long trichobothria. Abdomen without dorsal scutum, with iridescent setae, often with constriction at about one-third of length, coloration highly variable even within species; six spinnerets, anteriors short but separated by roughly their diameter at base. Male palp with one or two retrolateral tibial apophyses; bulb with simple looping sperm duct, usually with median apophysis, prolaterally situated embolus often supported distally by membranous extension of bulb functioning as conductor. Epigynum usually with anterior margin, often with pair of lateral margins; spermathecae accompanied by typically elongate paramedian ducts.

UNCERTAIN NAMES: Four specific names are here regarded as nomina dubia: *Micaria aurata* (Hentz, 1847), *Micaria limnicunae* McCook (1885), *Micaria agilis* Banks (1895), and *Micaria bonita* Gertsch and Davis (1940). Of these, *M. aurata* and *M. agilis* are dis-

cussed in detail below (under *Micaria delicatula* Bryant). The name *M. limnicunae* was applied only to egg sacs and spiderlings from Illinois, and no specimens identified by McCook can now be located in the collections of the Philadelphia Academy of Natural Sciences (Dr. James Newlin, in litt.); as Banks (1893) indicated, McCook's description is "worthless." More recently, the name *M. bonita* was applied to juvenile females from Mexico (the original description was said to be of a female, but neither an illustration nor a verbal description of the epigynum was provided, and the label of the holotype correctly records the specimen as a juvenile); the specimen may belong to *Micaria deserticola* Gertsch, but in the absence of topotypical adults the name is best left unplaced.

IDENTIFICATION: Considering the simplicity of the genitalic structures that must be used for identification, any key to species would be far less efficient than simply comparing material to the illustrations and diagnoses supplied.

Micaria pulicaria (Sundevall)

Figures 2–5; Map 1

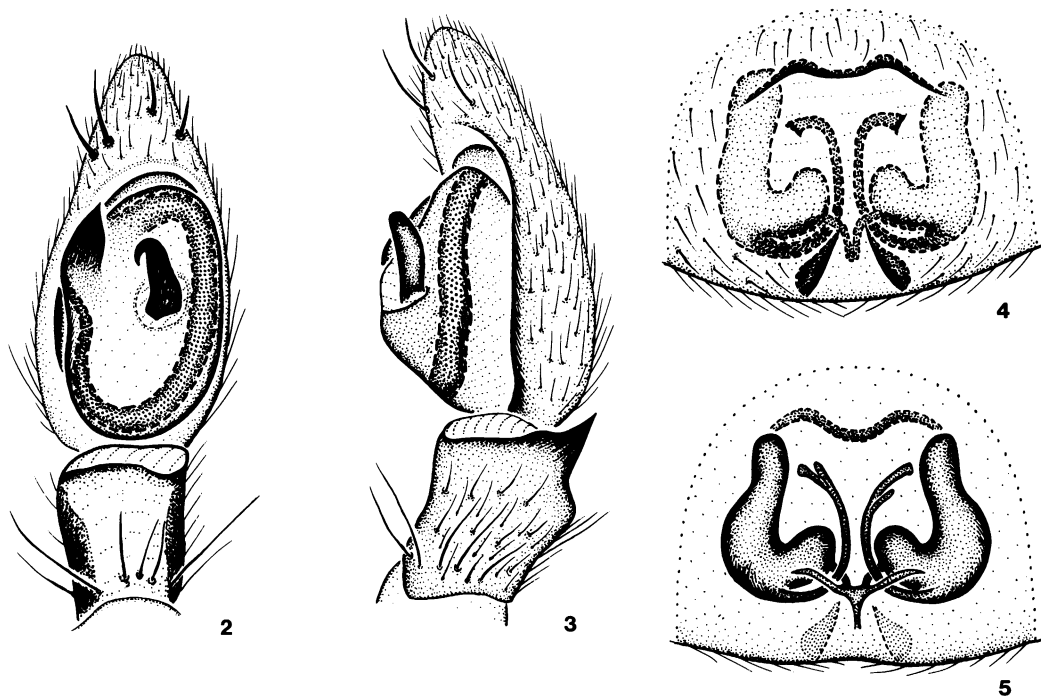
Clubiona pulicaria Sundevall, 1831: 140 (male and female syntypes from Sweden, depository unknown).

Micaria pulicaria: Westring, 1851: 47. – Tullgren, 1946: 62, figs. 125–130. – Locket and Millidge, 1951: 119, figs. 62B, 63A, B, G. – Roewer, 1955: 626. – Bonnet, 1957: 2844. – Miller, 1967: 278, pl. 8, fig. 16. – Holm, 1978: 70, figs. 6–9. – Wunderlich, 1979: 252, figs. 3a–i, 16a–f, 38a–d.

Micaria montana Emerton, 1890: 168, pl. 3, figs. 2, 2a (female holotype from Mt. Washington, Coos County, New Hampshire, in MCZ, examined). – Chickering, 1939: 76, figs. 72–75. – Kaston, 1948: 401, figs. 1437–1439, 1441, 1442. – Roewer, 1955: 631. – Bonnet, 1957: 2842. First synonymized by Hackman, 1954: 9, 87, 95.

Micaria perfecta Banks, 1896a: 59 (male holotype from Fort Collins, Larimer County, Colorado, in MCZ, examined). – Roewer, 1955: 631. – Bonnet, 1957: 2844. **NEW SYNONYMY.**

Micaria gentilis Banks, 1896b: 62 (one male and two female syntypes from Franconia, Grafton County, New Hampshire, in MCZ, examined). – Emerton, 1909: 215, pl. 10, figs. 3, 3a–d. First synonymized with *M. montana* by Gertsch, 1942: 4.



Figs. 2–5. *Micaria pulicaria* (Sundevall). 2. Palp, ventral view. 3. Palp, retrolateral view. 4. Epigynum, ventral view. 5. Epigynum, dorsal view.

NOTE: For European synonyms, see Wunderlich (1979: 252).

DIAGNOSIS: This species seems closest to *M. tripunctata* (males share a dorsally expanded palpal patella, and females share rectangular spermathecae on long paramedian ducts) but can be distinguished by the shorter, wider embolus of males (fig. 2) and the relatively shorter paramedian ducts of females (figs. 4, 5).

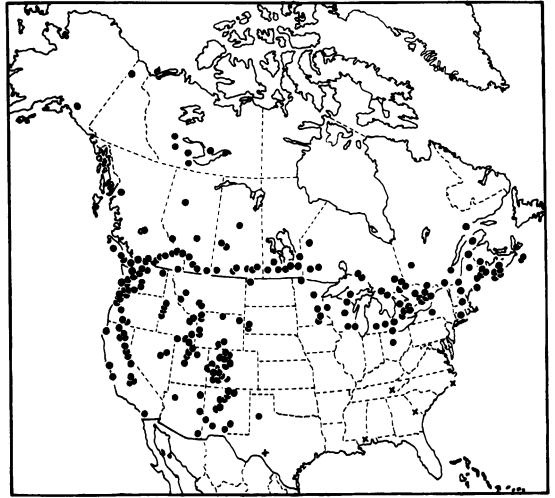
MALE: Total length 3.30 ± 0.52 . Carapace 1.42 ± 0.24 long, 0.99 ± 0.15 wide. Femur II 0.99 ± 0.17 long (469 specimens examined). Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.04, PLE 0.05; AME-AME 0.05, AME-ALE 0.03, PME-PME 0.05, PME-PLE 0.05, ALE-PLE 0.07; MOQ length 0.16, front width 0.13, back width 0.13. Leg spination: femur III p0-1-1, r0-0-1; tibiae: III p1-0-1, r0-1-1; IV p1-0-0, r0-1-1. Embolus wide, not reaching distal end of tegulum (fig. 2); palpal patella expanded dorsally at about half its length (fig. 3).

FEMALE: Total length 3.89 ± 0.34 . Carapace 1.44 ± 0.09 long, 0.98 ± 0.08 wide.

Femur II 0.93 ± 0.07 long (712 specimens examined). Eye sizes and interdistances: AME 0.03, ALE 0.05, PME 0.04, PLE 0.06; AME-AME 0.06, AME-ALE 0.03, PME-PME 0.06, PME-PLE 0.04, ALE-PLE 0.05; MOQ length 0.16, front width 0.12, back width 0.14. Leg spination: femur II p0-0-0; tibiae III, IV v1p-1p-2, r0-0-1. Anterior epigynal margin relatively wide (fig. 4); paramedian ducts long, bifid distally (fig. 5).

RECORDS: ALASKA: 28 mi W Glen Allen; Kodiak Island. CANADA: **Alberta:** Calgary; Cypress Hills Provincial Park; Dixonville; Edmonton; Hotchkiss; Jonas Creek Campground; Lake Louise; Lethbridge; Stirling; Waterton Lakes National Park. **British Columbia:** Alberni, Vancouver Island; Burnaby; Field, Yoho National Park; Fountain Valley; 20 mi W Golden; Kelowna; Kyuquot Hill, Union Island; Manning Provincial Park; Mesachie Lake Forest, Vancouver Island; Oliver; 20 mi E Revelstoke; Riske Creek, 30 mi SW Williams Lake; Saanich Inlet, Vancouver Island; Salmon Arm; Springhouse; Summerland; Terrace; Wellington, Vancou-

ver Island. **Manitoba:** Austin; Elm Creek; Glenlea; Onanole; Picnic; Rennie; Riding Mountain National Park; Riverton; Seddon's Corner; Souris; Spruce Woods Provincial Park; Telford; Wallace Lake; Winnipeg. **New Brunswick:** Fredericton; Green River, 30 mi N Edmundston; Kent Island; Kouchibouguac National Park; St. Andrews. **Northwest Territories:** Fort Providence; Fort Simpson; Lady Evelyn Falls; Rae; Wrigley. **Nova Scotia:** Annapolis Royal; Barrington; Bridgewater; Cape Ste. Ann; Cow Bay; Digby; Granville Ferry; Greywood; Kentville; Kingsport; Lockeport; Sable Island; Weymouth; Wolfville. **Ontario:** Ancaster; Bear Island, Lake Temagami; Belleville; Black Rapids; Burlington; Chatterton; 30 mi E Dryden; Dunbarton; Elora; Fairbank Lake Provincial Park; Favourable Lake; Guelph; Ingersoll; Island 1024, Lake Temagami; John E. Pearce Provincial Park; 20 mi E Kenora; Kingston; Latchford; 15 mi NW Marathon; 75 mi W Marathon; Mer Bleue; Milton; Mindemoya; Manitoulin Island; New Liskeard; Newmarket; Odessa; Ottawa; Owen Sound; Oxford Mills; Pelee Island, Lake Erie; Porquis Junction; Providence Bay, Manitoulin Island; Rednersville; Richmond; Rondeau Provincial Park; Rossmore; South Tea Lake; Sproule Bay, Lake Opeongo; Stirling; Sturgeon Falls; Swansea; Temagami; Thessalon; Toronto; Wallacetown; Wellington; Windsor. **Quebec:** Hull-Ouest, Parc de la Gatineau; Lac Mousseau; Lac Roddick; Mont Orford Park; Montreal; Mount Albert; Ste. Anne de Bellevue; 24 mi S Ste. Anne des Monts; Ste. Foy; Seven Islands; 46 km SE Val d'Or. **Saskatchewan:** Besnard Lake; Cypress Hills Provincial Park; Grenfell; Lady Lake; Montmartre; Mortlach Junction; Pasqua; Radisson; Saskatoon; Wapella. **Yukon:** Old Crow. **UNITED STATES (county records only):** **Arizona:** Apache, Cochise, Coconino. **California:** Fresno, Humboldt, Mariposa, Mono, Monterey, Nevada, Plumas, San Bernardino, San Francisco, Shasta, Sierra, Siskiyou, Tulare, Tuolumne. **Colorado:** Boulder, Chaffee, El Paso, Fremont, Garfield, Gilpin, Grand, Gunnison, Hinsdale, Larimer, Mesa, Montrose, Ouray, Pitkin, San Miguel. **Connecticut:** New Haven. **Idaho:** Adams, Bear Lake, Fremont, Jefferson, Payette, Washington. **Maine:** Hancock, Lincoln, Piscataquis, Washington.

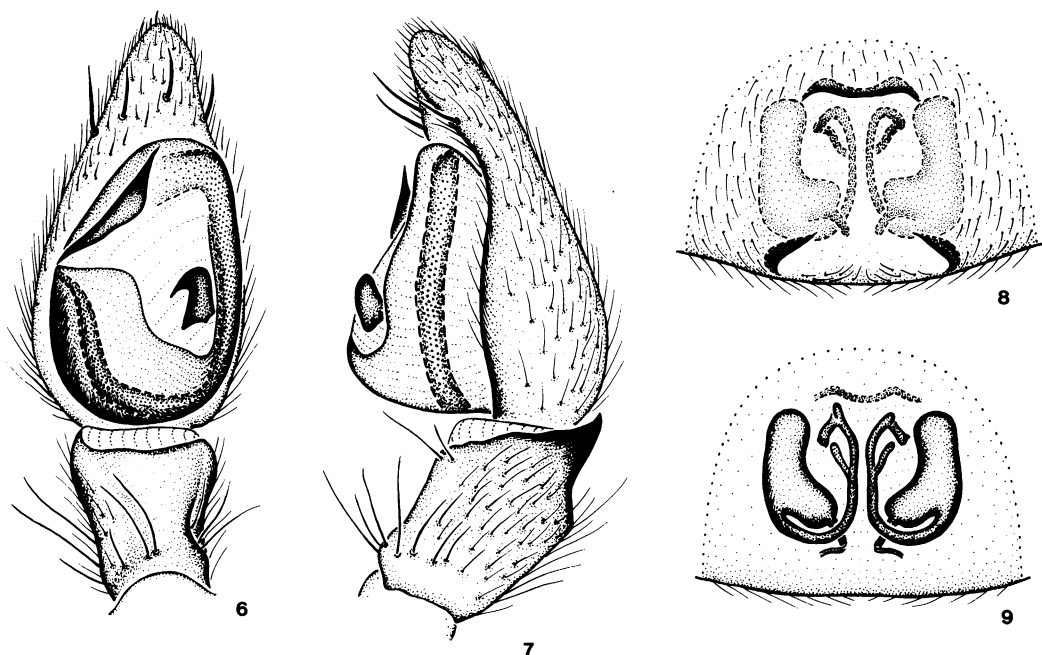


Map 1. North America, showing distribution of *Micaria pulicaria* (circles), *M. browni* (crosses), and *M. langtry* (plus sign).

Michigan: Calhoun, Livingston, Marquette. **Minnesota:** Freeborn, Hennepin, Itasca, Marshall, Ramsey, Roseau, Saint Louis, Wabasha. **Montana:** Gallatin, Park, Powell, Ravalli. **Nevada:** Elko. **New Hampshire:** Cheshire, Coos, Grafton. **New Mexico:** Bernalillo, Catron, Colfax, Grant, Los Alamos, Otero, San Miguel, Santa Fe, Taos. **New York:** Tompkins. **North Dakota:** Divide. **Ohio:** Marion. **Oregon:** Benton, Columbia, Jackson, Klamath, Lane, Multnomah, Tillamook. **South Dakota:** Custer, Pennington. **Texas:** Lubbock. **Utah:** Box Elder, Cache, Davis, Duchesne, Salt Lake, Sanpete, Summit, Utah. **Washington:** Chelan, Clark, Cowitz, Grays Harbor, King, Okanogan, Pacific, Pierce, Skagit, Skamania, Stevens, Thurston, Yakima. **Wisconsin:** Clark, Dane, Florence, Marathon, Racine. **Wyoming:** Carbon, Crook, Lincoln, Park, Sheridan, Teton.

DISTRIBUTION: Holarctic; in America, from Alaska south to New Mexico and east to Nova Scotia (map 1).

NATURAL HISTORY: Mature males and females have been taken year-round (though only rarely in December, January, and February). Specimens have been collected in salt marshes, sphagnum and calcareous bogs, tall-grass prairies, and fields (including corn-fields), in aspen, balsam fir, black spruce, cedar, cottonwood, maple, oak, pine, poplar,



Figs. 6–9. *Micaria tripunctata* Holm. 6. Palp, ventral view. 7. Palp, retrolateral view. 8. Epigynum, ventral view. 9. Epigynum, dorsal view.

and willow forests, under tidal drift, and in buildings, at elevations up to 12,000 ft.

SYNONYMY: When Banks (1896a) described *M. perfecta* (from males only), *M. montana* was known only from females; we have been unable to corroborate the difference in sternal width that Banks (1896b) used to separate males of *M. perfecta* and *M. gentilis*.

Micaria tripunctata Holm

Figures 6–9; Map 2

Micaria tripunctata Holm, 1978: 68, figs. 1–5 (male holotype from Abisko National Park, Torne Lapmark, Sweden, in ZMUU, examined). – Wunderlich, 1979: 255, figs. 17a–c, 39. – Brignoli, 1983: 583.

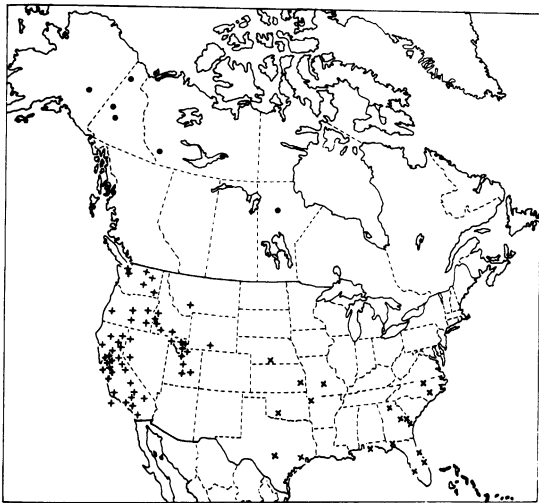
DIAGNOSIS: This species seems closest to *M. pulicaria* (see above) but can be distinguished by the longer embolus of males (fig. 6) and the more widely separated posterior epigynal ridges of females (fig. 8).

MALE: Total length 2.63–3.15. Carapace 1.18–1.24 long, 0.84–0.93 wide. Femur II 0.81–0.87 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.05, PLE 0.05;

AME-AME 0.05, AME-ALE 0.01, PME-PME 0.06, PME-PLE 0.05, ALE-PLE 0.06; MOQ length 0.16, front width 0.13, back width 0.16. Leg spination: femora: III r0-0-1; IV d1-1-0; tibiae: III p1-0-1, v1p-1p-2, r0-0-1; IV p0-1-0, v2-1p-2, r0-1-0; metatarsus III p0-1-2, v2-1p-2. Embolus long, widest at half of length (fig. 6); palpal patella dorsally expanded at about half its length (fig. 7).

FEMALE: Total length 3.35, 3.70. Carapace 1.19, 1.33 long, 0.85, 0.92 wide. Femur II 0.76, 0.78 long. Eye sizes and interdistances: AME 0.05, ALE 0.06, PME 0.06, PLE 0.05; AME-AME 0.03, AME-ALE 0.01, PME-PME 0.04, PME-PLE 0.03, ALE-PLE 0.06; MOQ length 0.17, front width 0.13, back width 0.16. Leg spination: femora I, II p0-0-0; tibiae: III p1-0-1, v1p-1p-2; IV p0-1-1, v1p-1p-2, r0-1-0; metatarsus III p0-1-2, v1p-1p-2. Anterior epigynal margin relatively narrow (fig. 8); paramedian ducts each with two sidebranches distally (fig. 9).

MATERIAL EXAMINED: ALASKA: Gulkana River, near Paxson, June–Aug. 1955 (G. Schumann, AMNH), 1♂. CANADA: Manitoba: South Indian Lake, Aug. 5–10, 1977 (H. Collins, CNC), 2♂. Northwest Territories:



Map 2. North America, showing distribution of *Micaria tripunctata* (circles), *M. punctata* (crosses), and *M. utahna* (plus signs).

South Nahanni River, June 28–Aug. 19, 1972, pitfall (S. Peck, R. Syme, CNC), 1♀. Yukon: Five Fingers, July 13, 1950 (W. Ivie, AMNH), 1♂; North Fork Pass, Dempster Highway mi 51, June 15–22, 1973, elev. 4500 ft (M. Wood,

CNC), 1♀; Old Crow, July 8–20, 1981 (L. Barton, CNC), 1♂.

DISTRIBUTION: Holarctic; in America, from Alaska south to Manitoba (map 2).

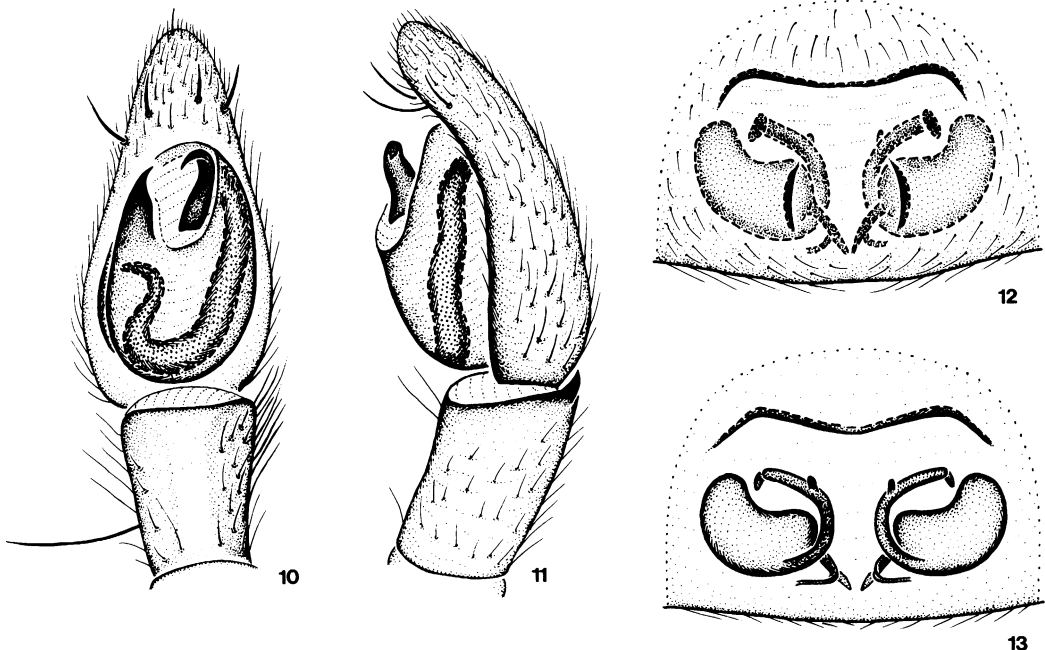
Micaria elizabethae Gertsch

Figures 10–13; Map 3

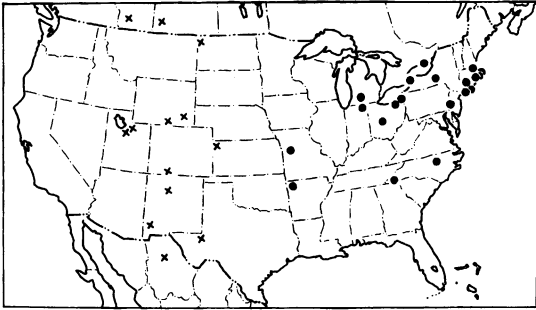
Micaria elizabethae Gertsch, 1942: 3, figs. 10–12 (male holotype from New Haven, New Haven County, Connecticut, in AMNH, examined). – Kaston, 1948: 402, figs. 1443–1445. – Roewer, 1955: 630.

DIAGNOSIS: Males can be recognized by the short embolus, long median apophysis, and short retrolateral tibial apophysis (figs. 10, 11), females by the closely spaced, longitudinally oriented lateral epigynal ridges (fig. 12).

MALE: Total length 2.30 ± 0.20 . Carapace 1.04 ± 0.10 long, 0.66 ± 0.08 wide. Femur II 0.60 ± 0.07 long. Eye sizes and interdistances: AME 0.03, ALE 0.04, PME 0.04, PLE 0.04; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.05, PME-PLE 0.05, ALE-PLE 0.05; MOQ length 0.13, front width 0.10, back width 0.13. Leg spination: femur III d1–



Figs. 10–13. *Micaria elizabethae* Gertsch. 10. Palp, ventral view. 11. Palp, retrolateral view. 12. Epigynum, ventral view. 13. Epigynum, dorsal view.



Map 3. North America, showing distribution of *Micaria elizabethae* (circles) and *M. mormon* (crosses).

0-0; tibiae: III p0-0-1, v0-1p-2, r0-0-1; IV v1p-1p-2; metatarsi: III p0-1-2, v0-2-2, r0-0-1; IV p0-0-1, v0-1p-2, r0-0-1. Embolus short, not reaching to distal edge of palpal bulb, median apophysis as long as embolus (fig. 10); retrolateral tibial apophysis tiny (fig. 11).

FEMALE: Total length 2.59 ± 0.24 . Carapace 1.06 ± 0.07 long, 0.66 ± 0.07 wide. Femur II 0.58 ± 0.03 long. Eye sizes and interdistances: AME 0.03, ALE 0.04, PME 0.04, PLE 0.04; AME-AME 0.04, AME-ALE 0.02, PME-PME 0.05, PME-PLE 0.05, ALE-PLE 0.06; MOQ length 0.14, front width 0.10, back width 0.13. Leg spination: femora: II p0-0-0; III d1-0-0, p0-0-0; tibiae: III p0-0-1, v0-1p-2; IV v0-1p-2; metatarsi: III p0-0-2, v0-1p-2, r0-0-1; IV p0-0-1, v0-1p-2, r0-0-1. Anterior epigynal margin almost straight (fig. 12), paired lateral ridges situated almost at inner edges of spermathecae (fig. 13).

MATERIAL EXAMINED: CANADA: **Ontario:** Rednersville, May 21–June 3, 1964, old field (C. D. Dondale, CNC), 4♂, 1♀; Vineland Station, May 24, 1965 (C. D. Dondale, CNC), 1♂. UNITED STATES: **Arkansas:** *Benton Co.:* Round Prairie, Apr. 23, 1965, prairie (H. Exline, EPC), 3♂. **Connecticut:** *New Haven Co.:* New Haven, June 1, 1938 (E. Kaston, AMNH), 1♂ (type); 2 mi E Seymour, May 30, 1965, marsh (J. and W. Ivie, AMNH), 1♂. **Indiana:** *Steuben Co.:* 10 mi E Angola, Aug. 2, 1964 (J. and W. Ivie, AMNH), 1♀. **Massachusetts:** *Bristol Co.:* Fall River, Mar. 25, 1911 (J. H. Emerton, MCZ), 1♂. *Middlesex Co.:* Holliston, Aug. 12, 1920, sedge swamp (J. H. Emerton, MCZ), 1♂, June 17,

1923 (J. H. Emerton, N. Banks, MCZ), 1♀. *Plymouth Co.:* Ellenville, May 10, 1910 (J. H. Emerton, MCZ), 1♂. **Michigan:** *Calhoun Co.:* Albion, May 20–25, 1933–1935 (A. M. Chickering, MCZ), 2♀. **Missouri:** *Johnson Co.:* Knob Noster State Park, Apr. 11–June 11, 1979, pitfalls, brushy prairie (W. B. Peck, J. Peaslee, EPC), 9♂, 6♀. **New York:** *Nassau Co.:* Sea Cliff (N. Banks, MCZ), 1♂. *Suffolk Co.:* Cold Spring Harbor, June 27, 1932 (W. J. Gertsch, AMNH), 2♀. *Tompkins Co.:* Ithaca, July 1–7 (N. Banks, MCZ), 2♀. **North Carolina:** *Durham Co.:* W side Durham, Dec. 12, 1967 (W. Ivie, AMNH), 1♀. *Macon Co.:* Highlands, June 3–9, 1957, elev. 3800 ft (J. R. Vockeroth, CNC), 1♀. **Ohio:** *Ashtabula Co.:* NW Jefferson, Sept. 23, 1924, prairie (W. Barrows, OSU), 1♂, 10♀. *Cuyahoga Co.:* Cleveland, Apr. 15, 1940, soil (AMNH), 1♀. *Franklin Co.:* Sharon Woods Metropolitan Park, May 8–Oct. 30, 1973, pitfalls (A. J. Penniman, AMNH, AJP, OSU), 42♂, 22♀. **Pennsylvania:** *Bucks Co.:* NE Jamison, May 16–Sept. 30, 1957–1964 (J. and W. Ivie, AMNH), 3♂, 2♀. **Rhode Island:** *Washington Co.:* Kingston, Oct. 1903, with ant (C. R. Crosby, CUC), 1♂.

DISTRIBUTION: Eastern United States and Canada (map 3).

Micaria gertschi Barrows and Ivie
Figures 14–17; Map 4

Micaria gertschi Barrows and Ivie, 1942: 21, figs. 8, 9 (male holotype from Columbus, Franklin County, Ohio, in AMNH, examined). – Gertsch, 1942: 5, figs. 7–9. – Roewer, 1955: 630.

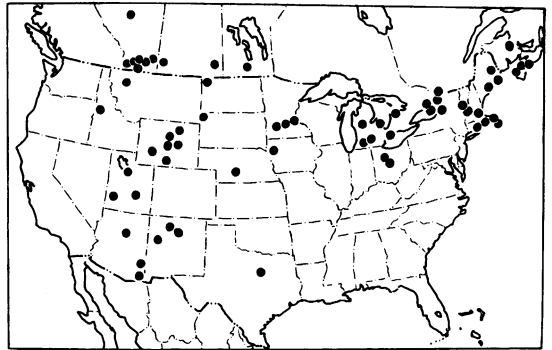
DIAGNOSIS: The peculiar shape of the median apophysis of males (fig. 14) is diagnostic. Females resemble those of *M. browni* but have a shorter anterior epigynal margin (fig. 16).

MALE: Total length 2.91 ± 0.39 . Carapace 1.33 ± 0.17 long, 0.85 ± 0.11 wide. Femur II 0.90 ± 0.11 long (64 specimens examined). Eye sizes and interdistances: AME 0.04, ALE 0.06, PME 0.05, PLE 0.05; AME-AME 0.05, AME-ALE 0.01, PME-PME 0.06, PME-PLE 0.06, ALE-PLE 0.06; MOQ length 0.17, front width 0.13, back width 0.15. Leg spination: femur III d1-0-0; tibiae: I, II v2-2-2; III p0-0-1, v1p-2-2; IV v1p-2-2; metatarsi: III r0-0-1; IV p0-0-1, r0-0-1. Embolus protruding beyond distal edge of tegulum, median

apophysis much longer than wide, tip almost appressed to main portion (fig. 14); retrolateral tibial apophysis tiny (fig. 15).

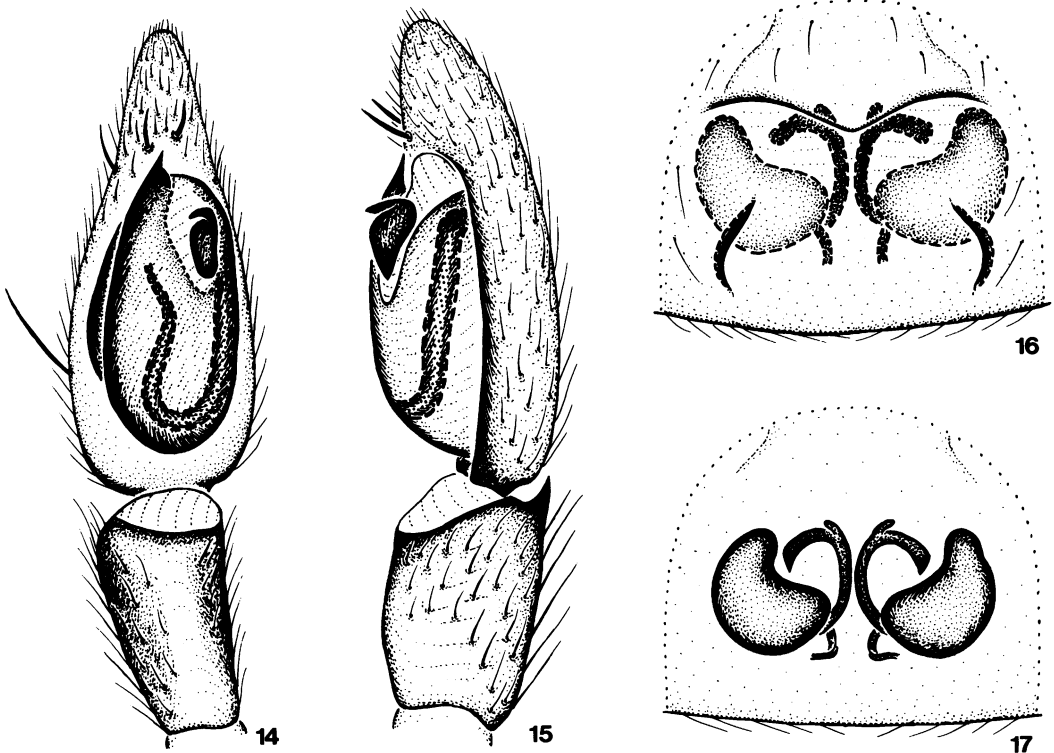
FEMALE: Total length 3.46 ± 0.48 . Carapace 1.46 ± 0.08 long, 0.92 ± 0.05 wide. Femur II 0.97 ± 0.09 long (69 specimens examined). Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.05, PLE 0.05; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.06, PME-PLE 0.06, ALE-PLE 0.07; MOQ length 0.15, front width 0.13, back width 0.16. Leg spination: femur III d1-0-0; tibiae: I, II v2-4-2; III p1-0-1; IV v1p-2-2; metatarsus IV p0-0-1, r0-0-1. Anterior epigynal margin produced posteriorly along midline (fig. 16); spermathecae pea-shaped (fig. 17).

RECORDS: CANADA: **Alberta:** Bow Island; Lethbridge; Medicine Hat; New Dayton; Purple Springs; Seba; Woolford Provincial Park. **Manitoba:** Portage. **New Brunswick:** Kouchibouguac National Park. **Nova Scotia:** Avonport; Kentville; Porter's Point, Canning; Weymouth. **Ontario:** Chatterton; Gan-

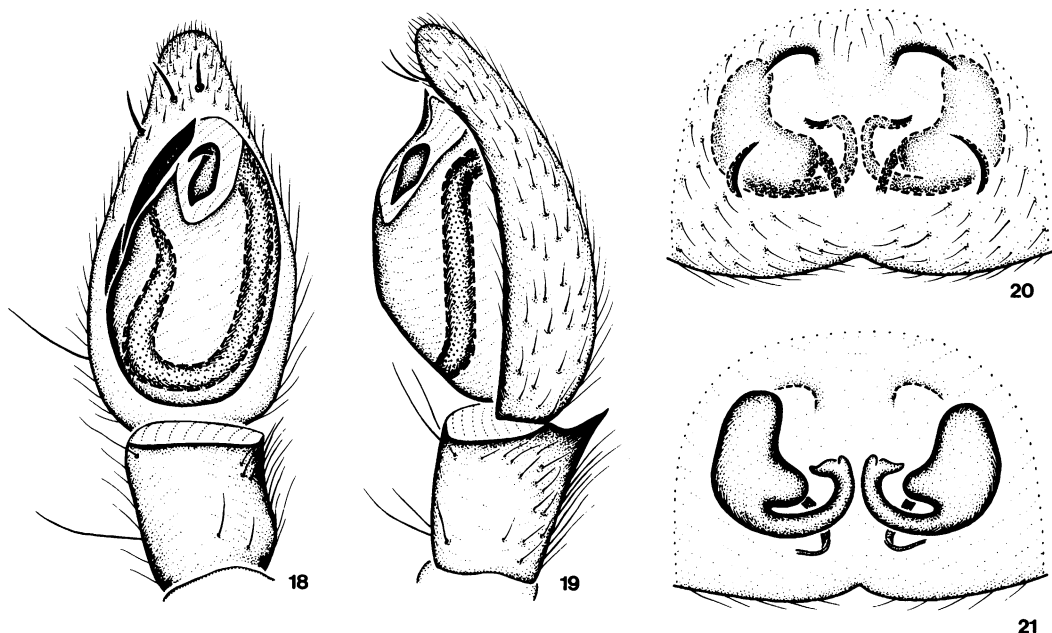


Map 4. North America, showing distribution of *Micaria gertschi*.

anoque; Richmond; Rondeau Provincial Park; Southampton; Wellington. **Saskatchewan:** Maple Creek; Sintaluta; Whitewood. **UNITED STATES** (county records only): **Arizona:** Cochise, Coconino, Greenlee. **Colorado:** Archuleta, Boulder, Chaffee, Jefferson, Montrose, Saguache, Teller. **Connecticut:** New



Figs. 14–17. *Micaria gertschi* Barrows and Ivie. 14. Palp, ventral view. 15. Palp, retrolateral view. 16. Epigynum, ventral view. 17. Epigynum, dorsal view.



Figs. 18–21. *Micaria constricta* Emerton. 18. Palp, ventral view. 19. Palp, retrolateral view. 20. Epigynum, ventral view. 21. Epigynum, dorsal view.

London. **Idaho:** Payette. **Iowa:** Woodbury. **Maine:** Hancock, Lincoln, Penobscot. **Massachusetts:** Barnstable, Middlesex, Nantucket, Norfolk. **Michigan:** Calhoun, Clare, Huron, Ingham, Livingston. **Minnesota:** Hennepin, Ramsey, Renville, Rock. **Montana:** Lake. **Nebraska:** Dawson. **New Hampshire:** Strafford. **New Mexico:** Los Alamos, Santa Fe, Valencia. **New York:** Oswego. **North Dakota:** Divide. **Ohio:** Franklin, Marion. **South Dakota:** Harding. **Texas:** Erath. **Utah:** Beaver, Emery, Salt Lake. **Vermont:** Rutland, Windham. **Wisconsin:** Dane.

DISTRIBUTION: Alberta south to Arizona, east to Nova Scotia and Maine (map 4).

NATURAL HISTORY: Mature males have been taken from late April through late August, mature females from late April through late September. Specimens have been collected along salt marshes, dunes, sand pits, and beaches, in old fields, prairies, pastures, and calcareous bogs, under rocks, and associated with aspen, lodgepole pines, and sage, at elevations up to 9000 ft.

Micaria constricta Emerton
Figures 18–21; Map 5

Micaria constricta Emerton, 1894: 414, pl. 2, figs. 5, 5a–c (male and female syntypes from Laggan

[now Lake Louise], Alberta, Canada, in MCZ, examined).

Micaria eltonii Jackson, 1922: 166, figs. 1, 2 [male holotype from Billefjorden, Spitsbergen, Norway, in British Museum (Natural History), examined by Wunderlich, 1979]. – Roewer, 1955: 623. **NEW SYNONYMY.**

Micaria hesperella Gertsch and Jellison, 1939: 11 (nomen novum for *M. constricta* Emerton, erroneously believed preoccupied by *M. constricta* L. Koch, 1876, a nomen nudum). – Roewer, 1955: 630. – Bonnet, 1957: 2841.

Micaria canadensis Roewer, 1951: 446 (superfluous nomen novum for *M. constricta* Emerton). *Micaria coloradensis* (misidentification): Levi and Levi, 1951: 228, fig. 27 (female only).

Micaria eltoni: Bonnet, 1957: 2837. – Holm, 1958: 61, fig. 14, pl. 1, figs. 1–3. – Wunderlich, 1979: 279, figs. 30a–d, 52a–c. – Hillyard, 1979: 296.

DIAGNOSIS: This species resembles *M. gertschi* in having a rectangular median apophysis, and both that species and *M. browni* in having relatively short, wide epigyna, but can be distinguished by the less protuberant embolar tip of males (fig. 18) and the broken anterior epigynal margin of females (fig. 20).

MALE: Total length 3.36 ± 0.41 . Carapace 1.42 ± 0.15 long, 1.06 ± 0.12 wide. Femur II 1.03 ± 0.11 long (148 specimens examined). Eye sizes and interdistances: AME 0.05,

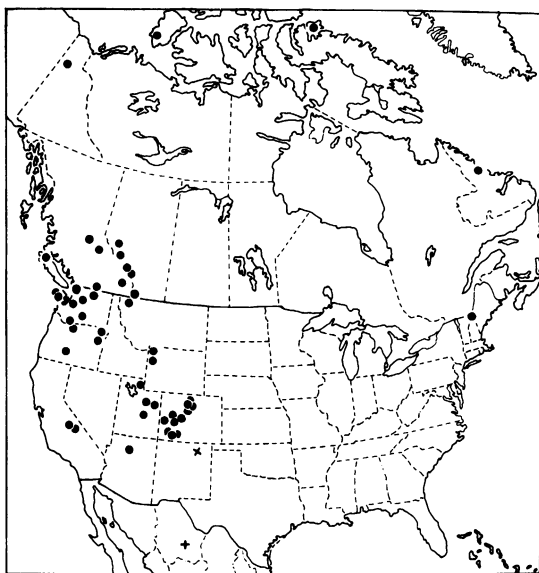
ALE 0.06, PME 0.06, PLE 0.06; AME-AME 0.05, AME-ALE 0.01, PME-PME 0.06, PME-PLE 0.05, ALE-PLE 0.05; MOQ length 0.16, front width 0.15, back width 0.18. Leg spination: femur III p0-1-0; tibiae III, IV r0-0-1; metatarsi: III p0-0-1, r0-0-1; IV p0-0-1. Embolus narrow, just barely protruding beyond edge of tegulum (fig. 18); retrolateral tibial apophysis slender, shifted dorsally (fig. 19).

FEMALE: Total length 3.59 ± 0.36 . Carapace 1.44 ± 0.11 long, 1.02 ± 0.10 wide. Femur II 0.94 ± 0.08 long (128 specimens examined). Eye sizes and interdistances: AME 0.03, ALE 0.05, PME 0.05, PLE 0.05; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.05, PME-PLE 0.06, ALE-PLE 0.05; MOQ length 0.15, front width 0.12, back width 0.15. Leg spination: femora: II p0-0-0; III p0-1-0; tibiae: III p0-0-1, r0-0-1; IV r0-0-1; metatarsi: III p1-0-1, v2-1p-2, r0-0-1; IV p0-0-1, r0-0-1. Anterior epigynal margin consisting of two separate lateral ridges (fig. 20); paramedian ducts extending only half of spermathecal length (fig. 21).

RECORDS: CANADA: **Alberta:** Jasper; Lake Louise; Mt. Edith Cavell; Sulphur Mountain, Banff; Sunwapta Pass, Jasper National Park; Waterton Lakes National Park. **British Columbia:** Apex Mountain, nr. Keremeos; 16 km W Barkerville; Brooks Peninsula, Vancouver Island; Manning Provincial Park; Mt. Arrowsmith, Vancouver Island; Prairie Hills, Selkirk Mountains; Summit Lake. **Northwest Territories:** Aktinek River, Bylot Island; Clyde, Baffin Island; Masik River, Banks Island. **Newfoundland:** Nain, Labrador. **Yukon:** Bluefish Ridge; Dempster Highway km 260-270; Eagle River. **UNITED STATES** (county records only): **Arizona:** Coconino. **California:** Fresno, Inyo. **Colorado:** Boulder, Chaffee, Clear Creek, Gilpin, Gunnison, Hinsdale, Larimer, Mineral, Montrose, Pitkin, San Juan. **Montana:** Flathead. **New Hampshire:** Coos. **Oregon:** Baker, Hood River, Klamath, Wallowa. **Utah:** Emery, Rich, Uintah, Wasatch. **Washington:** Chelan, Clallam, Jefferson, Okanogan, Pierce, Skamania, Whatcom, Yakima. **Wyoming:** Park, Teton.

DISTRIBUTION: Holarctic; in America, from Yukon and Northwest Territories south to Arizona, east to Maine and Newfoundland (map 5).

NATURAL HISTORY: Mature males have



Map 5. North America, showing distribution of *Micaria constricta* (circles), *M. cimarron* (cross), and *M. camargo* (plus sign).

been taken from early May through early October, mature females from mid-June through early October; specimens have been collected in pitfall traps, under stones, in meadows, talus, and moss, and in aspen, lodgepole and bristlecone pine, and spruce-fir forests, as well as above the treeline (at elevations up to 12,500 ft).

SYNONYMY: Although Hillyard (1979) and Leech (in Wunderlich, 1979) recorded the European *M. eltoni* from Canada, they apparently overlooked Emerton's earlier description of the species.

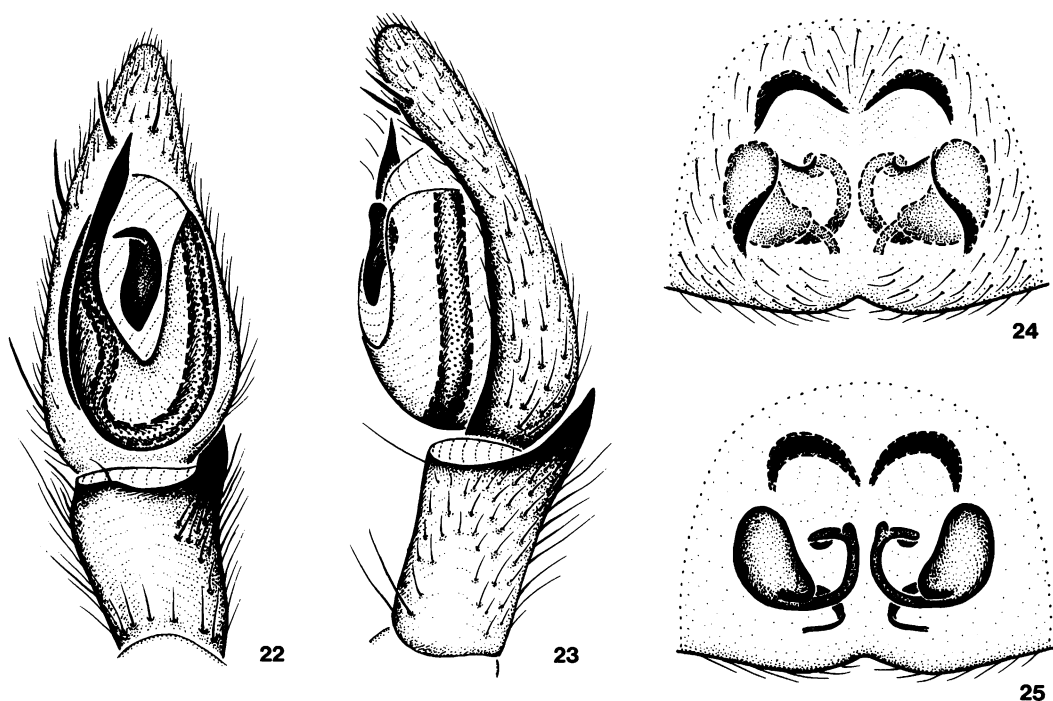
Micaria coloradensis Banks

Figures 22-25; Map 6

Micaria coloradensis Banks, 1896a: 58 (one female and three male syntypes from Fort Collins, Larimer County, Colorado, in MCZ, examined). – Levi and Levi, 1951: 228, figs. 23, 24 (male only). – Roewer, 1955: 630. – Bonnet, 1957: 2836.

Micaria rowani Gertsch, 1942: 4, figs. 17, 18 (male holotype from Seba [Beach], Alberta, Canada, in AMNH, examined). – Roewer, 1955: 631. **NEW SYNONYMY.**

Micaria jacksonia Levi and Levi, 1951: 228, fig. 26 (female holotype from Jackson Lake, Teton County, Wyoming, in AMNH, examined). – Roewer, 1955: 630. **NEW SYNONYMY.**



Figs. 22–25. *Micaria coloradensis* Banks. 22. Palp, ventral view. 23. Palp, retrolateral view. 24. Epigynum, ventral view. 25. Epigynum, dorsal view.

DIAGNOSIS: This species resembles *M. mormon* (males share a retrolaterally narrowed embolar tip that protrudes beyond the palpal bulb, and females share paired, paramedian epigynal openings situated at about half the length of the epigynum) but can be distinguished by the longer median apophysis and more evenly narrowed retrolateral tibial apophysis of males (figs. 22, 23) and the absence of a heavily sclerotized median epigynal ridge in females (fig. 24).

MALE: Total length 3.18 ± 0.32 . Carapace 1.47 ± 0.13 long, 1.02 ± 0.12 wide. Femur II 1.00 ± 0.09 long (69 specimens examined). Eye sizes and interdistances: AME 0.04, ALE 0.06, PME 0.05, PLE 0.05; AME-AME 0.04, AME-ALE 0.01, PME-PME 0.08, PME-PLE 0.03, ALE-PLE 0.07; MOQ length 0.17, front width 0.12, back width 0.17. Leg spination: femur III d1-0-0, r0-0-1; tibiae: I, II v0-1p-2; III p0-1-0, v1p-1p-2, r1-0-1; IV v1p-2-2, r0-1-0; metatarsi: III v2-0-2, r1-0-1; IV r0-0-1. Embolus long, tip protruding beyond palpal bulb, narrowed on retrolateral side only, median apophysis long (fig. 22); retro-

lateral tibial apophysis evenly narrowed distally (fig. 23).

FEMALE: Total length 3.42 ± 0.34 . Carapace 1.40 ± 0.13 long, 1.00 ± 0.10 wide. Femur II 0.98 ± 0.10 long (100 specimens examined). Eye sizes and interdistances: AME 0.04, ALE 0.04, PME 0.04, PLE 0.05; AME-AME 0.03, AME-ALE 0.02, PME-PME 0.05, PME-PLE 0.05, ALE-PLE 0.06; MOQ length 0.15, front width 0.11, back width 0.14. Leg spination: femur III d1-0-0; tibiae: II v0-1p-0; III v1p-2-2; IV v1p-1p-2; metatarsi: III v2-0-0, r0-1-0; IV p0-1-0, v1p-2-2, r0-0-1. Anterior epigynal margin bipartite, hoodlike (fig. 24); anterior tip of paramedian ducts extended laterally to openings (fig. 25).

RECORDS: ALASKA: Minto. CANADA: **Alberta:** Bow Island; Claresholm; Lethbridge; Medicine Hat; Seba Beach; Waterton Lakes National Park; Writing-on-Stone Provincial Park. **British Columbia:** Apex Mountain, nr. Keremeos. **Saskatchewan:** Chaplin Lake. **UNITED STATES** (county records only): **Arizona:** Coconino. **California:** Plumas. **Colorado:** Alamosa, Boulder, Chaffee,

Conejos, El Paso, Gunnison, Hinsdale, Larimer, Mesa, Saguache. **Idaho:** Bonneville, Payette, Valley, Washington. **Oregon:** Crook, Grant, Harney, Klamath, Lane. **South Dakota:** Pennington. **North Dakota:** Ward. **Utah:** Davis, Rich, Sevier, Utah, Wasatch. **Washington:** Kittitas, Lincoln, Okanogan, Spokane. **Wyoming:** Albany, Carbon, Teton.

DISTRIBUTION: Western North America, from Alaska to Arizona (map 6).

NATURAL HISTORY: Mature males have been collected from late April through mid-July, mature females from early May through late August. Specimens have been collected in pitfall traps in grass, sagebrush, and talus, and in aspen, oak, and spruce-fir forests, at elevations up to 10,800 ft.

SYNONYMY: Gertsch provided no characters by which to distinguish *M. rowani* from *M. coloradensis*, the types of which were unavailable to him at the time; Levi and Levi's redescription of the female was apparently due to their misidentification of females of *M. constricta* as those of *M. coloradensis*.

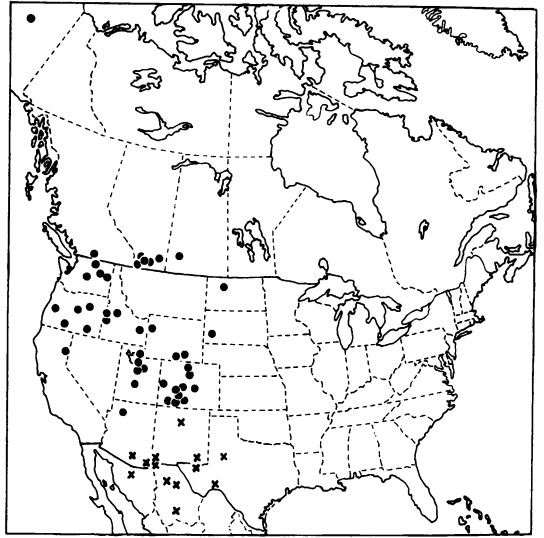
Micaria mormon Gertsch

Figures 26–29; Map 3

Micaria mormon Gertsch, 1935: 17, figs. 41–43 (male holotype from Salt Lake City, Salt Lake County, Utah, in AMNH, examined). – Roewer, 1955: 631. – Bonnet, 1957: 2842.

DIAGNOSIS: This species resembles *M. coloradensis* (see above) but can be distinguished by the shorter median apophysis and basally thicker retrolateral tibial apophysis of males (figs. 26, 27) and the heavily sclerotized median epigynal ridge of females (fig. 28).

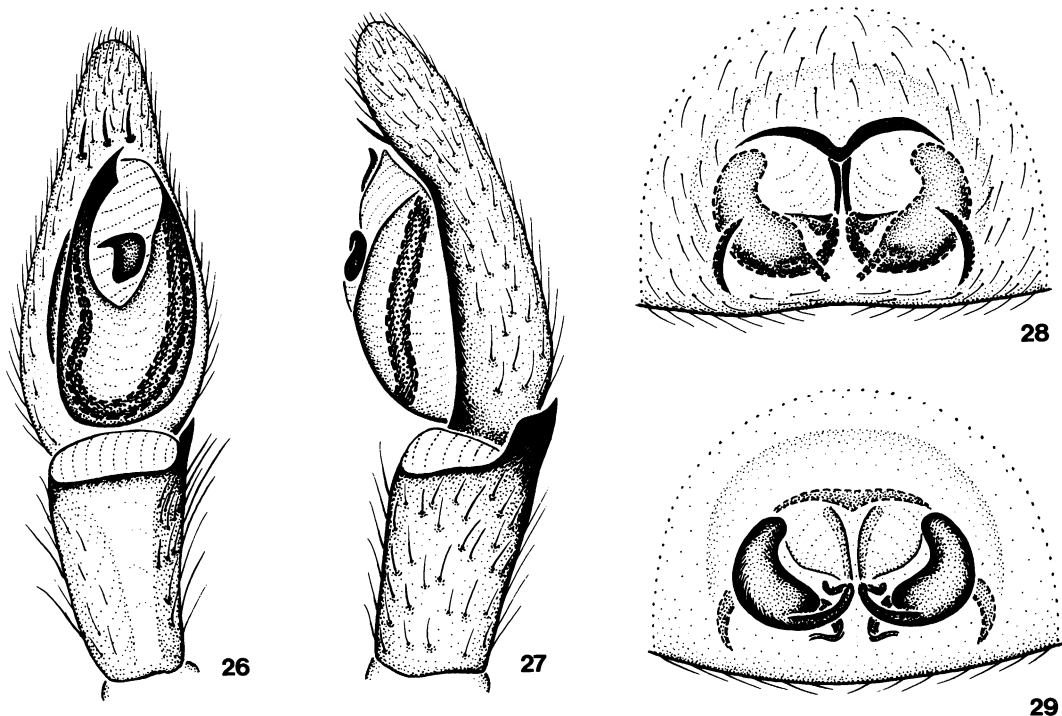
MALE: Total length 2.63 ± 0.27 . Carapace 1.19 ± 0.12 long, 0.89 ± 0.10 wide. Femur II 0.92 ± 0.08 long. Eye sizes and interdistances: AME 0.05, ALE 0.05, PME 0.06, PLE 0.05; AME-AME 0.06, AME-ALE 0.02, PME-PME 0.05, PME-PLE 0.05, ALE-PLE 0.04; MOQ length 0.18, front width 0.16, back width 0.16. Leg spination: femora: II p0-0-0; III d1-0-0, p0-0-0; tibiae: III v0-1p-2; IV v0-0-2; metatarsi: III p0-1-2, v1p-1p-2, r0-0-2; IV p0-0-1, v0-0-2, r0-0-1. Embolar tip protruding beyond palpal bulb, excavated retrolaterally, median apophysis short (fig. 26); retrolateral tibial apophysis thick basally, abruptly narrowed distally (fig. 27).



Map 6. North America, showing distribution of *Micaria coloradensis* (circles) and *M. imperiosa* (crosses).

FEMALE: Total length 2.99 ± 0.42 . Carapace 1.25 ± 0.09 long, 0.97 ± 0.08 wide. Femur II 0.93 ± 0.10 long. Eye sizes and interdistances: AME 0.06, ALE 0.06, PME 0.07, PLE 0.07; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.06, PME-PLE 0.05, ALE-PLE 0.05; MOQ length 0.21, front width 0.17, back width 0.20. Leg spination: femora: II p0-0-0; III d1-0-0, p0-0-0; tibiae: III v1p-1p-2; IV v0-1p-2; metatarsi: III p0-1-2, v1p-2-2, r0-0-1; IV p0-0-1, v1p-1p-2, r0-0-1. Epigynum relatively short, anterior half with heavily sclerotized median ridge (fig. 28); anterior tip of paramedian ducts extended laterally to openings (fig. 29).

MATERIAL EXAMINED: CANADA: **Alberta:** Ft. Macleod, May 15–June 6, 1963, pitfall, field verge (A. L. Turnbull, CNC), 1♂. **Saskatchewan:** Maple Creek, May 14–June 10, 1966, pitfall, grass (A. L. Turnbull, CNC), 1♂. UNITED STATES: **Colorado:** Conejos Co.: Chiquito Peak Road, June 1, 1965 (J. Brookhart, AMNH), 1♂. **Nebraska:** Cheyenne Co.: 10 mi W Sidney, June 5, 1933 (W. Ivie, AMNH), 1♂. **New Mexico:** Grant Co.: Burro Mountains, Apr. 18–Sept. 1, 1972–1973, pin-yon, juniper, nolina (M. N. Muma, AMNH), 21♂, 13♀; Hurley, Aug. 14–Oct. 16, 1972, yucca, allthorn, mesquite (M. H. Muma, AMNH), 2♀; Silver City, July 15, 1972, pin-



Figs. 26–29. *Micaria mormon* Gertsch. 26. Palp, ventral view. 27. Palp, retrolateral view. 28. Epigynum, ventral view. 29. Epigynum, dorsal view.

yon pine, juniper (M. H. Muma, AMNH), 1♀. **Los Alamos Co.:** Los Alamos, Apr.–June, 1976–1977, pitfalls (D. C. Lowrie, AMNH), 6♂; Mortandad Canyon, Los Alamos, June 21–24, 1977, pitfall (D. C. Lowrie, AMNH), 1♀. **North Dakota:** *Divide Co.:* Fortuna, June 28, 1936 (J. Davis, AMNH), 1♀. **Texas:** *Winkler Co.:* 5 mi S Kermit, June 18, 1982, perennial broomweed (D. R. Edwards, AMNH), 1♂. **Utah:** *Salt Lake County:* City Creek Canyon, Salt Lake City, June 14, 1931 (AMNH), 1♂ (type); Dry Canyon, Salt Lake City, Oct. 15, 1932 (A. M. Chickering, AMNH), 1♂, Apr. 28, 1933 (W. Ivie, AMNH), 1♂; Saltair, Apr. 18, 1961, elev. 1300 m, under shore debris (H. W. Levi, MCZ), 1♂, 1♀; W Salt Lake City, Mar. 30, 1941 (W. Ivie, AMNH), 1♂. *Summit Co.:* Smith and Morehouse Canyon, June 3, 1934 (W. Ivie, AMNH), 1♂. **Wyoming:** *Carbon Co.:* Stratton Experimental Watershed, Saratoga, Aug. 11–17, 1972, sagebrush, elev. 7900 ft (J. Schmid, DTJ), 1♀. *Platte Co.:* Guernsey, June 18, 1963 (R. Lavigne, AMNH), 1♀. **MEXICO:** **Chi-**

huahua: Valle de Olivos, July 20, 1947, elev. 5500 ft (W. J. Gertsch, AMNH), 1♂.

DISTRIBUTION: Alberta and Saskatchewan south to Chihuahua (map 3).

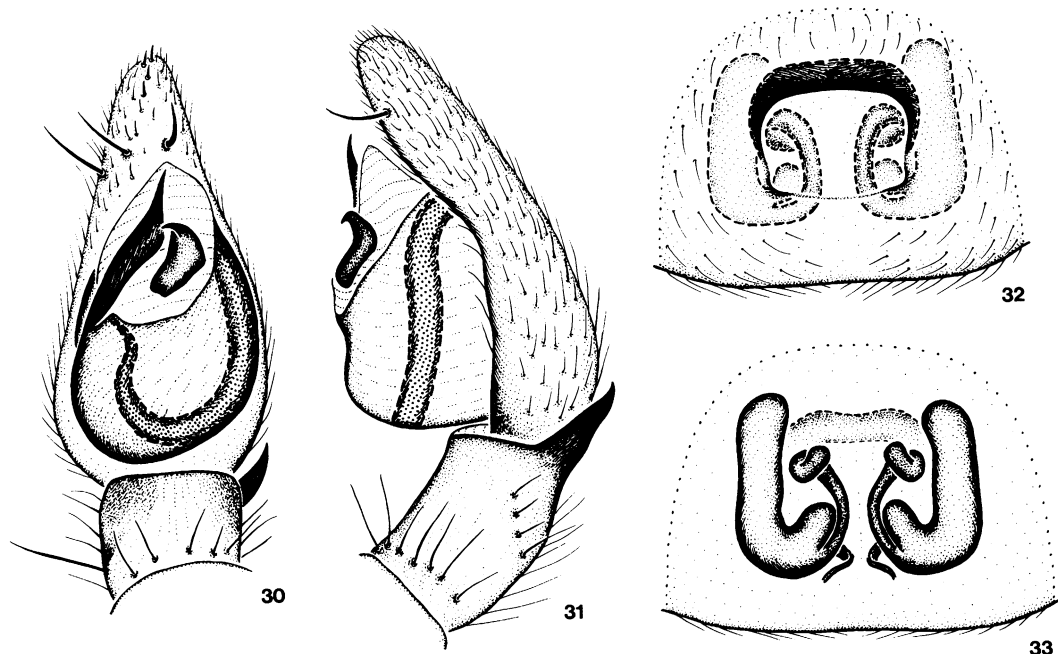
Micaria alpina L. Koch

Figures 30–33; Map 7

Micaria alpina L. Koch, 1872: 313 (female holotype from Tirol, Austria, not examined). – Tullgren, 1946: 68, figs. 139–141. – Locket and Millidge, 1951: 123, figs. 63E, F, H. – Roewer, 1955: 622. – Bonnet, 1957: 2835. – Locket, Millidge, and Merrett, 1974: 12, figs. 5D, E. – Holm, 1978: 71, figs. 10–12, 17, 18. – Wunderlich, 1979: 281, figs. 31a–d, 54a–d.

NOTE: For European synonyms, see Wunderlich (1979: 281).

DIAGNOSIS: This species resembles *M. laticeps* and *M. punctata* in having an archlike anterior epigynal margin and distally twisted paramedian epigynal ducts, but can be distinguished by the basally narrower embolus of males (fig. 30) and the much heavier anterior epigynal margin of females (fig. 32).



Figs. 30–33. *Micaria alpina* L. Koch. 30. Palp, ventral view. 31. Palp, retrolateral view. 32. Epigynum, ventral view. 33. Epigynum, dorsal view.

MALE: Total length 3.23 ± 0.19 . Carapace 1.49 ± 0.10 long, 1.01 ± 0.08 wide. Femur II 0.97 ± 0.07 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.05, PLE 0.05; AME-AME 0.07, AME-ALE 0.04, PME-PME 0.08, PME-PLE 0.08, ALE-PLE 0.07; MOQ length 0.17, front width 0.15, back width 0.18. Leg spination: femur III d1-0-0; tibia IV v2-1p-2; metatarsi: III p0-0-1; IV v2-4-2, r0-0-1. Embolus not widened basally, median apophysis massive (fig. 30); retrolateral tibial apophysis shifted dorsally (fig. 31).

FEMALE: Total length 3.13–4.07. Carapace 1.35–1.54 long, 0.86–1.10 wide. Femur II 0.79–0.95 long. Eye sizes and interdistances: AME 0.05, ALE 0.05, PME 0.05, PLE 0.04; AME-AME 0.06, AME-ALE 0.03, PME-PME 0.07, PME-PLE 0.06, ALE-PLE 0.08; MOQ length 0.17, front width 0.16, back width 0.17. Leg spination: femur II p0-0-0; tibiae: III r0-0-1; IV v2-1p-2; metatarsus IV p0-0-1, v2-4-2, r0-0-1. Anterior epigynal margin greatly thickened (fig. 32); spermathecae relatively long, anteriorly straight (fig. 33).

MATERIAL EXAMINED: ALASKA: Old

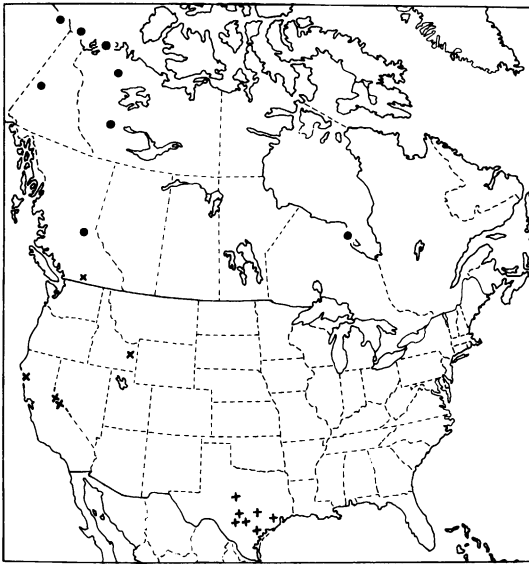
Woman Creek, Sheenjek River Valley, June 12, 1956, elev. 2000 ft, dry hillside, spruce, dwarf birch (G. Schaller, MCZ), 1♀. CANADA: **British Columbia:** Summit Lake, June 1–July 8, 1981, pitfall in moss above treeline (C. D. Dondale, CNC), 1♂. **Northwest Territories:** Lac Maunoir, July 19–27, 1969 (G. E. Shewell, CNC), 1♂; 20 mi E Tuktoyaktuk, June 28–July 28, 1971, pitfalls (W. R. M. Mason, CNC), 17♂, 2♀; Wrigley, June 6–12, 1969, pitfall (G. E. Shewell, CNC), 1♀. **Ontario:** James Bay (radar site 415C), July 8–31, 1979 (R. I. G. Morrison, CNC), 24♂, 3♀. **Yukon:** Herschel Island, July 24–28, 1971, pitfall (W. R. M. Mason, CNC), 1♂; North Fork Pass, Dempster Highway, June 22–July 3, 1981, pitfall in shrubs (C. D. Dondale, CNC), 1♀.

DISTRIBUTION: Holarctic; in America, from Alaska east to Ontario (map 7).

Micaria laticeps Emerton

Figures 34–37; Map 8

Micaria laticeps Emerton, 1909: 214, pl. 10, figs. 4, 4a–c (male holotype from New Haven, New Haven County, Connecticut, in MCZ, exam-



Map 7. North America, showing distribution of *Micaria alpina* (circles), *M. idana* (crosses), and *M. vinnula* (plus signs).

ined). – Kaston, 1948: 402, figs. 1446–1450, 1450a. – Roewer, 1955: 631. – Bonnet, 1957: 2841.

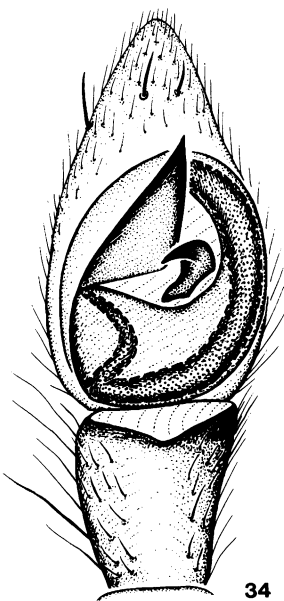
Micaria multimaculata Kaston, 1938: 182, figs.

18–23 (female holotype from Bethany, New Haven County, Connecticut, in MCZ, examined). – Bonnet, 1957: 2842. First synonymized by Kaston, 1948: 402.

DIAGNOSIS: The basally broadened embolus of males (fig. 34) and anteriorly recurved paramedian epigynal ducts of females (fig. 37) are diagnostic.

MALE: Total length 2.64 ± 0.47 . Carapace 1.29 ± 0.16 long, 0.79 ± 0.09 wide. Femur II 0.70 ± 0.10 long. Eye sizes and interdistances: AME 0.03, ALE 0.04, PME 0.04, PLE 0.04; AME-AME 0.05, AME-ALE 0.03, PME-PME 0.07, PME-PLE 0.07, ALE-PLE 0.05; MOQ length 0.13, front width 0.11, back width 0.15. Leg spination: femora: II p0-0-0; III d1-0-0, p0-0-0; tibiae: III p0-0-1, v0-1p-2; IV v1p-1p-2; metatarsi: III v1p-1p-2, r0-0-1; IV p0-0-0, v1p-1p-2, r0-0-0. Embolus triangular, greatly widened basally (fig. 34); retrolateral tibial apophysis narrow (fig. 35).

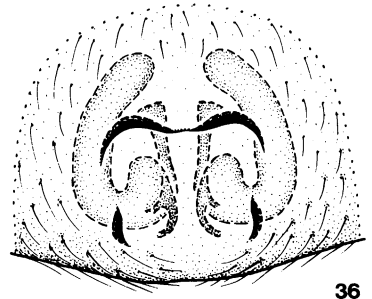
FEMALE: Total length 2.84 ± 0.31 . Carapace 1.26 ± 0.09 long, 0.78 ± 0.08 wide. Femur II 0.63 ± 0.06 long. Eye sizes and interdistances: AME 0.04, ALE 0.04, PME 0.05, PLE 0.04; AME-AME 0.04, AME-ALE



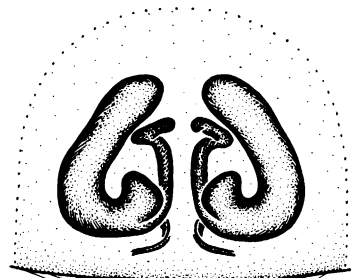
34



35



36



37

Figs. 34–37. *Micaria laticeps* Emerton. 34. Palp, ventral view. 35. Palp, retrolateral view. 36. Epigynum, ventral view. 37. Epigynum, dorsal view.

0.03, PME-PME 0.06, PME-PLE 0.07, ALE-PLE 0.05; MOQ length 0.14, front width 0.12, back width 0.16. Leg spination: femora: I, II p0-0-0; III d1-0-0, p0-0-0; tibiae: III p0-0-1, v0-1p-2; IV v0-1p-2; metatarsi: III v1p-1p-2, r0-0-1; IV p0-0-1, v1p-1p-2, r0-0-1. Spermathecae extending far anterior of anterior epigynal margin (fig. 36); paramedian ducts recurved anteriorly (fig. 37).

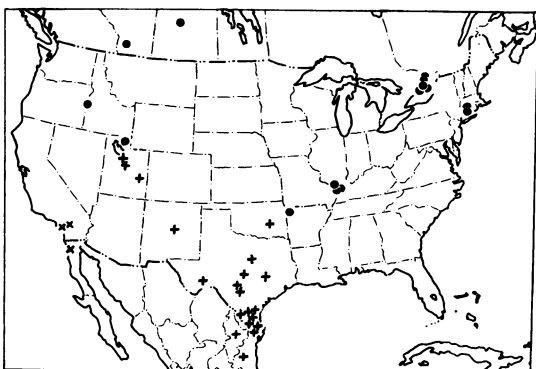
MATERIAL EXAMINED: CANADA: **Alberta:** Fort Macleod, May 15–June 6, 1963, pitfall, field verge (A. L. Turnbull, CNC), 1♂. **Ontario:** Belleville, June 26, 1959, pitfall (A. L. Turnbull, CNC), 1♂; 7 km SW Carleton Place, June 20–July 25, 1980, intercept trap, edge of hardwoods (S. J. Miller, CNC), 2♂, 1♀; Chatterton, 13 mi N Belleville, May 29–July 9, 1960–1969, pitfalls, meadow, edge of woods (A. L. Turnbull, CNC), 5♂, 1♀; Newburgh, near Napanee, May 2, 1976, under stone with ants (J. H. Redner, CNC), 1♀, Sept. 21–22, 1978, under stones in pasture (C. D. Dondale, J. H. Redner, CNC), 1♂, 1♀; Odessa, May 15–June 5, 1962 (C. D. Dondale, J. H. Redner, CNC), 2♂; 30 km W Ottawa, June 29, 1978, under rocks (J. H. Redner, CNC), 1♀. **Saskatchewan:** 5 mi NE Saskatoon, May–Aug. 1967 (E. Gorin, DJB), 16♂, 3♀. **UNITED STATES:** **Arkansas:** *Benton Co.:* Round Prairie, Apr. 23–May 21, 1965 (EPC), 6♂. **Connecticut:** *New Haven Co.:* Bethany, Sept. 14 (matured Sept. 21), 1937 (D. S. Riggs, MCZ, AMNH), 2♂ (including type); New Haven, Apr. 3, 1881, under stone (J. H. Emerton, MCZ), 1♂ (type). **Idaho:** *Payette Co.:* 5 mi N Payette, Sept. 20, 1943 (W. Ivie, AMNH), 1♂, 1♀. **Illinois:** *Jackson Co.:* Carbondale, May 13, 1969, leaf litter (J. M. Nelson, JAB), 1♂. *Massac Co.:* Massac Creek Hill, Trail 72, Apr. 19, 1972 (T. N. Trudeau, JAB), 1♂. *Pope Co.:* Lusk Creek, 3 mi E Eddyville, May 5–26, 1971, pitfall, old field (T. N. Trudeau, N. Magnuson, JAB), 2♂. **Utah:** *Cache Co.:* Green Canyon, 1976–1976 (C. H. Beedlow, B. Abraham, AMNH), 3♂, 1♀.

DISTRIBUTION: Alberta to Ontario, south to Utah and Arkansas (map 8).

Micaria punctata Banks

Figures 38–41; Map 2

Micaria punctata Banks, 1896a: 58 (three female syntypes from Punta Gorda, Charlotte County,



Map 8. North America, showing distribution of *Micaria laticeps* (circles), *M. capistrano* (crosses), and *M. nanella* (plus signs).

Florida, in MCZ, examined). – Roewer, 1955: 629. – Bonnet, 1957: 2847.

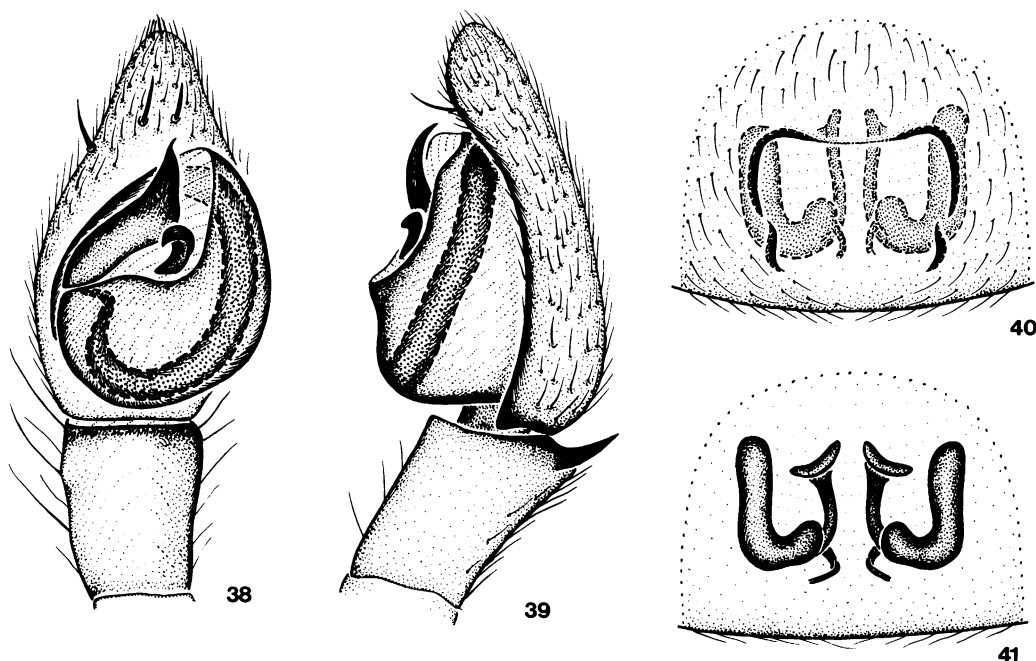
Micaria swansonii Gertsch and Mulaik, 1936: 21, fig. 29 (male holotype from Houston, Harris County, Texas, in AMNH, examined). – Roewer, 1955: 632. – Bonnet, 1957: 2850. **NEW SYNONYMY.**

Micaria petrunkevitchi Bryant, 1945: 209, fig. 12 (female holotype from Sebastian, Indian River County, Florida, in MCZ, examined). – Roewer, 1955: 629. **NEW SYNONYMY.**

DIAGNOSIS: The slightly hooked tip of the male embolus (fig. 38) and the wide anterior epigynal margin of females (fig. 40) are diagnostic.

MALE: Total length 1.81 ± 0.21 . Carapace 0.88 ± 0.12 long, 0.56 ± 0.06 wide. Femur II 0.53 ± 0.05 long. Eye sizes and interdistances: AME 0.03, ALE 0.03, PME 0.03, PLE 0.04; AME-AME 0.03, AME-ALE 0.01, PME-PME 0.05, PME-PLE 0.04, ALE-PLE 0.04; MOQ length 0.11, front width 0.09, back width 0.11. Leg spination: femora: II p0-0-0; III d1-0-0, p0-0-0; tibiae: III p0-0-1, v0-1p-2; IV v0-1p-2; metatarsi: III v1p-2-2, r0-0-0; IV p0-0-0, v1p-2-2, r0-0-0. Embolus occupying over half of tegular width (fig. 38); retrolateral tibial apophysis almost transverse (fig. 39).

FEMALE: Total length 2.04 ± 0.20 . Carapace 0.85 ± 0.03 long, 0.54 ± 0.02 wide. Femur II 0.49 ± 0.02 long. Eye sizes and interdistances: AME 0.04, ALE 0.04, PME 0.04, PLE 0.05; AME-AME 0.04, AME-ALE 0.02, PME-PME 0.05, PME-PLE 0.05, ALE-PLE 0.03; MOQ length 0.12, front width 0.11,



Figs. 38–41. *Micaria punctata* Banks. 38. Palp, ventral view. 39. Palp, retrolateral view. 40. Epigynum, ventral view. 41. Epigynum, dorsal view.

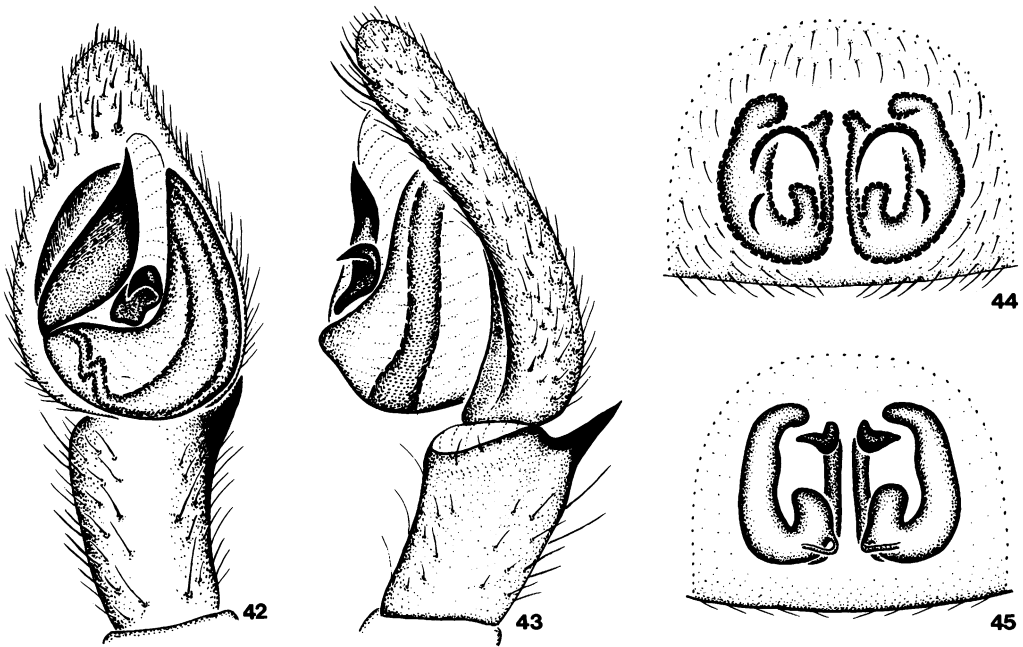
back width 0.12. Leg spination: femora: I, II p0-0-0; III d1-0-0, p0-0-0; tibiae: III p0-0-1, v0-1p-2; IV v0-0-2, r0-1-1; metatarsi: III v0-2-2, r0-0-0; IV p0-0-0, v0-0-2. Anterior epigynal margin wide, reaching halfway to epigastric furrow (fig. 40); paramedian epigynal ducts curved anteriorly (fig. 41).

MATERIAL EXAMINED: UNITED STATES: **Arkansas:** *Washington Co.*: Cove Creek Valley, Boston Mountains, 15 mi S Prairie Grove, Jan. 9–May 12, 1957–1963, elev. 1000 ft (O. and M. Hite, MCZ, EPC), 3♂, 2♀. **Florida:** *Charlotte Co.*: Punta Gorda (A. T. Slosson, MCZ), 3♀ (types). *Indian River Co.*: Sebastian, winter 1941–1942 (G. Nelson, MCZ), 1♀ (type). *Leon Co.*: Tallahassee, Jan. 2, 1943 (W. M. Barrows, OSU), 1♂, 2♀. *Santa Rosa Co.*: 14 mi E Gulf Breeze, June 1, 1976 (R. T. Schuh, AMNH), 1♀. *Volusia Co.*: Edgewater, Mar. 16, 1939 (C. A. Frost, MCZ), 1♀. **Georgia:** *Chatham Co.*: 3 mi NW Savannah Beach, Mar. 14, 1954 (W. Ivie, AMNH), 1♂. *Hall Co.*: Lula, Apr. 24, 1943 (W. Ivie, AMNH), 1♀. *Jenkins Co.*: Millen, Apr. 16, 1943 (W. Ivie, AMNH), 1♀. *Screven Co.*: 4 mi NE Sylvania, Apr. 9, 1943 (W. Ivie, AMNH), 2♂, 4♀. **Kansas:** *Bourbon Co.*: Red-

field, Apr. 23, 1962 (W. Ivie, AMNH), 1♂, 1♀. **Missouri:** *Phelps Co.*: Rolla, May 4, 1963 (H. Exline, Russell, EPC), 2♂. **Nebraska:** *Harlan Co.*: Alma, Oct. 27, 1945 (M. H. Muma, AMNH), 1♂. **North Carolina:** *Orange Co.*: Barbour Farm, St. Mary's Road, Mar. 13–May 7, 1964, pitfall, abandoned field (J. W. Berry, JAB), 2♂. *Sampson Co.*: Jones Lake, May 4, 1949 (D. L. Wray, AMNH), 1♀. **Oklahoma:** *Comanche Co.*: Wichita Mountains, Apr. 13, 1978, pitfall, short bluestem prairie (J. C. Cokendolpher, F. Bryce, NVH), 1♂. **Texas:** *Harris Co.*: Houston, Nov. 1935 (J. Swanson, AMNH), 1♂ (type). *Kerr Co.*: 3.2 km ENE Camp Verde, Feb. 4–Aug. 26, 1983–1984, pitfalls, pasture (W. M. Rogers, AMNH), 4♂; 6.4 km S Center Point, Aug. 20–26, 1983, pitfall, oak (W. M. Rogers, AMNH), 1♂, 1♀; 6.4–17.7 km E Kerrville, Mar. 3–Aug. 26, 1983–1984, pitfalls, pasture, oak, juniper (W. M. Rogers, AMNH), 4♂, 1♀.

DISTRIBUTION: Southeastern United States (map 2).

SYNONYMY: Several simultaneous collections of both sexes indicate that *M. swansonii* is the male of *M. punctata*. The “short black spines or cusps on the anterior tibiae and



Figs. 42–45. *Micaria vinnula* Gertsch and Davis. 42. Palp, ventral view. 43. Palp, retrolateral view. 44. Epigynum, ventral view. 45. Epigynum, dorsal view.

metatarsi” that Bryant (1945: 210) used to separate *M. petrunkevitchi* “from others of the genus” are just the thickened setae found in all *Micaria*.

Micaria vinnula Gertsch and Davis

Figures 42–45; Map 7

Micaria vinnula Gertsch and Davis, 1936: 18, figs. 22–24 (male holotype from San Antonio, Bexar County, Texas, in AMNH, examined). – Roewer, 1955: 632. – Bonnet, 1957: 2850.

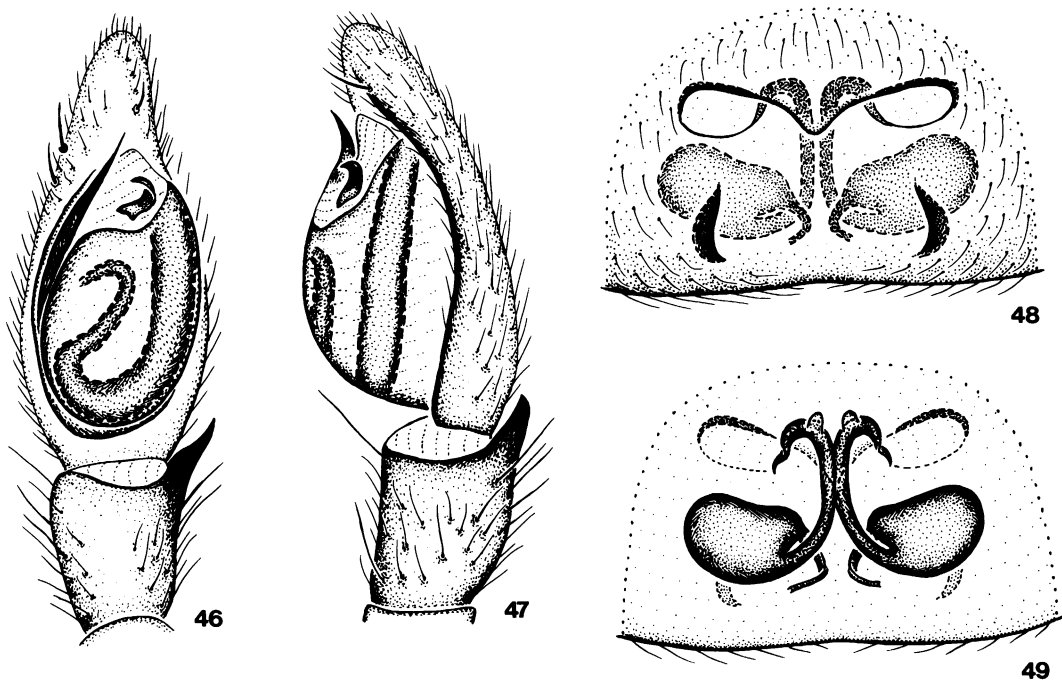
DIAGNOSIS: This species closely resembles *M. punctata*, but, as indicated by Gertsch and Davis, can be distinguished by the stronger retrolateral tibial apophysis of males (fig. 43) and the rounded anterior epigynal margins of females (fig. 44).

MALE: Total length 1.97–2.37. Carapace 1.00–1.24 long, 0.64–0.75 wide. Femur II 0.56–0.64 long. Eye sizes and interdistances: AME 0.04, ALE 0.04, PME 0.03, PLE 0.04; AME-AME 0.04, AME-ALE 0.02, PME-PME 0.07, PME-PLE 0.07, ALE-PLE 0.07; MOQ length 0.16, front width 0.12, back width 0.13. Leg spination: femora II, III p0-0-0; tibiae: III p0-0-1, v0-1p-1p; IV v1p-1p-2; metatarsi III, IV p0-0-1, r0-0-1. Embolus

expanded basally, almost triangular (fig. 42); retrolateral tibial apophysis sharply tapered (fig. 43).

FEMALE: Total length 2.07 ± 0.22 . Carapace 0.96 ± 0.09 long, 0.62 ± 0.04 wide. Femur II 0.52 ± 0.03 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.04, PLE 0.04; AME-AME 0.03, AME-ALE 0.02, PME-PME 0.05, PME-PLE 0.06, ALE-PLE 0.04; MOQ length 0.14, front width 0.11, back width 0.13. Leg spination: femora I–III p0-0-0; tibiae: III p0-0-1, v0-1p-1p; IV v1p-1p-2; metatarsi: III p0-0-1, v0-2-2, r0-0-1; IV p0-0-1, v1p-1p-2, r0-0-1. Anterior epigynal margins rounded (fig. 44); paramedian ducts expanded anteriorly (fig. 45).

MATERIAL EXAMINED: UNITED STATES: **Texas:** *Bandera Co.:* 3.2 km W Bandera, July 23–Aug. 26, 1983, pitfalls, pasture (W. M. Rogers, S. A. Phillips, Jr., AMNH), 1♂, 6♀. *Bexar Co.:* San Antonio, Dec. 28, 1935 (L. I. Davis, AMNH), 1♂, 1♀ (types). *Coleman Co.:* Horne Ranch, Coleman, July 16, 1982, prickly pear (Gilreath, Hackler, TAM), 2♂. *Harris Co.:* Houston, Jan. 16, 1955 (R. D. Barnes, AMNH), 1♀. *Kerr Co.:* Kerrville, Oct. 11, 1975, dead grass (J. C. Cokendolpher,



Figs. 46–49. 46, 47. *Micaria langtry*, new species. 48, 49. *M. browni* Barnes. 46. Palp, ventral view. 47. Palp, retrolateral view. 48. Epigynum, ventral view. 49. Epigynum, dorsal view.

NVH), 1♀. *Victoria Co.*: Victoria, June 7, 1937 (S. Mulaik, AMNH), 1♀. *Williamson Co.*: Granger, July 22, 1936 (L. I. Davis, AMNH), 1♂.

DISTRIBUTION: Known only from central and southern Texas (map 7).

Micaria browni Barnes

Figures 48, 49; Map 1

Micaria browni Barnes, 1953: 16, fig. 11 (female holotype from Shackleford Banks, Carteret County, North Carolina, in AMNH, examined). – Roewer, 1955: 630.

DIAGNOSIS: The recurved lateral edges of the anterior epigynal margin of females (fig. 48) are diagnostic.

MALE: Unknown.

FEMALE: Total length 3.34–3.79. Carapace 1.44–1.77 long, 0.80–1.09 wide. Femur II 0.83–0.95 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.04, PLE 0.05; AME-AME 0.05, AME-ALE 0.03, PME-PME 0.07, PME-PLE 0.06, ALE-PLE 0.06; MOQ length 0.16, front width 0.13, back width 0.15. Leg spination: femora: II p0-0-

0; III d1-0-0, p0-0-0; tibiae: I v2-4-2; II v2-4-4; III p0-0-1, v1r-2-2, r0-1-1; IV v0-0-2; metatarsus IV p0-0-1, r0-0-1. Sides of anterior epigynal margin forming oval loops (fig. 48); spermathecae much wider than long (fig. 49).

MATERIAL EXAMINED: UNITED STATES: **Georgia:** Screven Co.: E Sylvania, Apr. 17, 1943 (W. Ivie, AMNH), 1♀. **Mississippi:** George Co.: Lucedale, Sept. 1930 (Dietrich, CUC), 1♀. **North Carolina:** Carteret Co.: W end of Shackleford Banks, July 15, 1950 (R. D. Barnes, AMNH), 1♀ (type). **Tennessee:** Roane Co.: nr. Rockford, July 15, 1933 (W. Ivie, AMNH), 1♀.

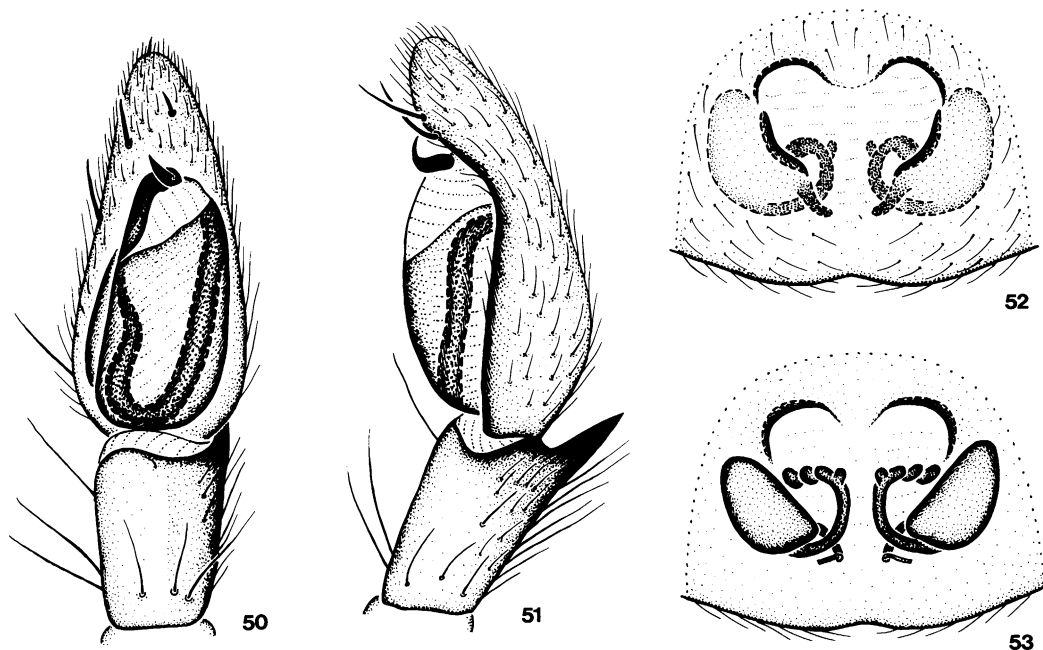
DISTRIBUTION: Southeastern United States (map 1).

Micaria utahna Gertsch

Figures 50–53; Map 2

Micaria utahna Gertsch, 1933: 3, fig. 1 (male holotype from City Creek Canyon, Salt Lake County, Utah, in AMNH, examined); 1935: 17, fig. 40.

Micaria salina Gertsch, 1942: 5, fig. 5 (female ho-



Figs. 50–53. *Micaria utahna* Gertsch. 50. Palp, ventral view. 51. Palp, retrolateral view. 52. Epigynum, ventral view. 53. Epigynum, dorsal view.

holotype from Salina, Sevier County, Utah, in AMNH, examined). – Roewer, 1955: 632. NEW SYNONYMY.

Micaria utahana: Roewer, 1955: 632 (lapsus). – Bonnet, 1957: 2850 (lapsus).

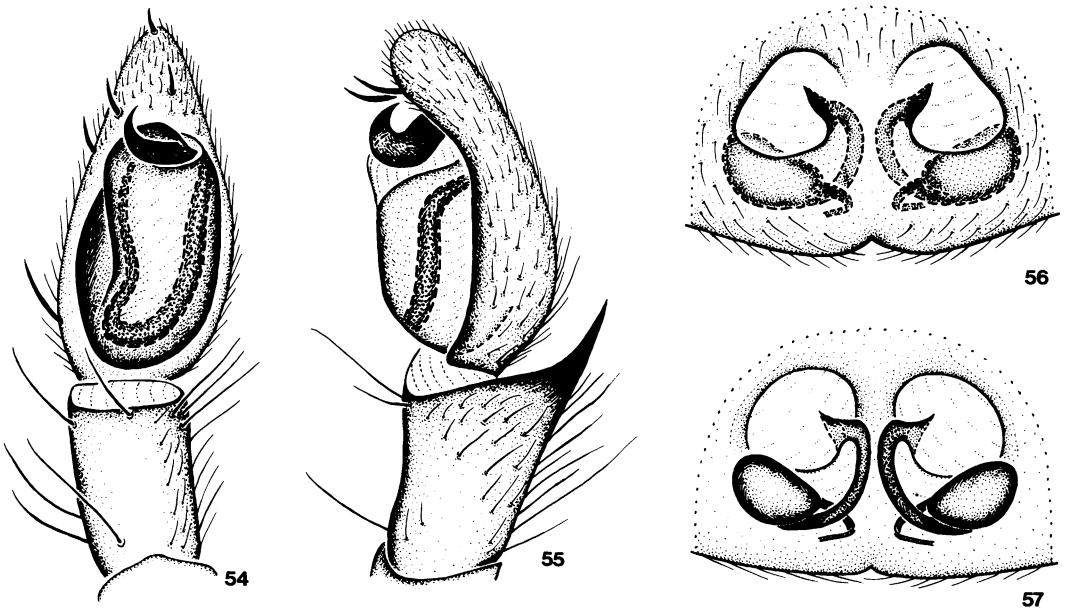
DIAGNOSIS: This species resembles *M. las-sena* (males of both have a peculiarly twisted embolar tip) but can be distinguished by the narrower embolus of males (fig. 50) and the shorter anterior epigynal margin of females (fig. 52).

MALE: Total length 2.93 ± 0.42 . Carapace 1.38 ± 0.20 long, 0.95 ± 0.14 wide. Femur II 0.92 ± 0.18 long (90 specimens examined). Eye sizes and interdistances: AME 0.05, ALE 0.05, PME 0.05, PLE 0.05; AME-AME 0.05, AME-ALE 0.03, PME-PME 0.08, PME-PLE 0.06, ALE-PLE 0.07; MOQ length 0.17, front width 0.14, back width 0.18. Leg spination: femur II p0-0-0; tibiae: III p0-0-1; IV p0-1-0, r0-1-0; metatarsus III p0-0-1, r0-0-0. Embolus recurved prolaterally (fig. 50); retrolateral tibial apophysis relatively long, straight (fig. 51).

FEMALE: Total length 3.30 ± 0.45 . Carapace 1.35 ± 0.12 long, 0.91 ± 0.08 wide. Femur II 0.88 ± 0.08 long (140 specimens

examined). Eye sizes and interdistances: AME 0.04, ALE 0.04, PME 0.04, PLE 0.05; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.06, PME-PLE 0.05, ALE-PLE 0.05; MOQ length 0.15, front width 0.13, back width 0.15. Leg spination: femur II p0-0-0; tibiae: III v1p-2-2; IV p0-1-0, v1p-1p-2; metatarsi: III, IV p0-0-1, v1p-2-2, r0-0-1. Epigynum with lateral ridges not contiguous with anterior margin (fig. 52); paramedian ducts twisted anteriorly (fig. 53).

RECORDS: UNITED STATES (county records only): **California:** Alameda, Contra Costa, Eldorado, Fresno, Kern, Lassen, Los Angeles, Mendocino, Mono, Monterey, Napa, Plumas, Sacramento, San Bernardino, San Diego, San Francisco, San Mateo, Santa Barbara, Santa Clara, Sierra, Solano, Tehama, Tulare, Tuolumne, Ventura, Yolo. **Idaho:** Canyon, Cassia, Payette, Twin Falls, Washington. **Montana:** Gallatin. **Nevada:** Lyon, Washoe. **Oregon:** Baker, Crook, Lake, Lane, Malheur. **Utah:** Box Elder, Cache, Emery, Morgan, Rich, Salt Lake, Sevier, Summit, Utah. **Washington:** Grant, Island, Lincoln, Okanogan, San Juan, Whitman. **Wyoming:** Carbon.



Figs. 54–57. *Micaria lassena*, new species. 54. Palp, ventral view. 55. Palp, retrolateral view. 56. Epigynum, ventral view. 57. Epigynum, dorsal view.

DISTRIBUTION: Western United States (map 2).

NATURAL HISTORY: Mature males have been taken from late April through early September, mature females from early March through early September. Specimens have been collected in bogs, grass, manzanita chaparral, oak duff, and sagebrush, at elevations up to 8600 ft.

SYNONYMY: Several simultaneous collections of both sexes indicate that *M. salina* is the female of *M. utahna*.

***Micaria lassena*, new species**

Figures 54–57; Map 9

TYPES: Male holotype and female allotype from 25 mi N Susanville on Pine Creek Road, Lassen County, California (July 2, 1940; W. M. Pearce), deposited in AMNH.

ETYMOLOGY: The specific name refers to the type locality.

DIAGNOSIS: This species resembles *M. utahna* (see above) but can be distinguished by the much wider embolus of males (fig. 54) and the much longer anterior epigynal margin of females (fig. 56).

MALE: Total length 3.14 ± 0.51 . Carapace 1.41 ± 0.20 long, 1.00 ± 0.15 wide. Femur

II 0.97 ± 0.12 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.05, PLE 0.05; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.06, PME-PLE 0.05, ALE-PLE 0.06; MOQ length 0.19, front width 0.13, back width 0.16. Leg spination: femur III r0-0-1; tibiae: III p1-0-1, r0-0-1; IV p0-0-1, r0-0-1. Embolus recurved prolaterally, occupying most of distal width of palpal bulb (fig. 54); retrolateral tibial apophysis long, sharply pointed (fig. 55).

FEMALE: Total length 3.11 ± 0.48 . Carapace 1.32 ± 0.10 long, 0.93 ± 0.07 wide. Femur II 0.89 ± 0.06 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.05, PLE 0.06; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.05, PME-PLE 0.05, ALE-PLE 0.05; MOQ length 0.16, front width 0.13, back width 0.15. Leg spination: femora: II p0-0-0; III p0-1-1, r0-0-1; tibiae: III v1p-1p-2, r0-0-1; IV p0-0-1, v1p-2-2, r0-0-1; metatarsi III, IV v1p-2-2. Anterior epigynal margin bipartite, forming almost complete circles (fig. 56); paramedian ducts expanded anteriorly (fig. 57).

OTHER MATERIAL EXAMINED: UNITED STATES: **California:** *Lassen Co.:* Gallatin Beach, Eagle Lake, Aug. 14, 1979 (D. Boe,

CDB), 1♀; 25 mi N Susanville on Pine Creek Road, July 2, 1940 (W. M. Pearce, AMNH), 1♂, 2♀. *San Luis Obispo Co.*: Pismo Beach, May 18, 1936 (CUC), 1♂. **Idaho**: *Ada Co.*: Boise, June 15, 1941 (B. Malkin, AMNH), 1♀. *Bonneville Co.*: Idaho Falls, June 11–Aug. 10, 1966–1967 (AMNH), 4♂, 5♀. **Nevada**: *Lincoln Co.*: Dry Lake Valley, 6 mi N, 16 mi W Caliente, Mar.–Sept. 1986, elev. 4800 ft (D. Giuliani, CAS), 1♀. **Oregon**: *Baker Co.*: Baker, Aug. 12, 1958, elev. 4200 ft, in timber (J. Baker, AMNH), 3♀; Sagebrush Draw, Baker, June 16–24, 1957, elev. 3500 ft (C. Freitag, AMNH), 1♂. *Douglas Co.*: Drew, June 15, 1938 (M. M. Hatch, EPC), 2♂. *Harney Co.*: Wagontire, June 23, 1952 (B. Malkin, AMNH), 1♀. *Lake Co.*: Albert Lake, July 2, 1961 (B. Malkin, AMNH), 1♂. **Utah**: *Beaver Co.*: Milford (AMNH), 1♀. *Millard Co.*: Fillmore, 1917 (R. V. Chamberlin, MCZ), 1♀. *Rich Co.*: E side Bear Lake, June 26, 1962 (W. Ivie, AMNH), 1♂. *Salt Lake Co.*: Salt Lake City, summer 1934 (Miscel, AMNH), 1♀. *Summit Co.*: W Emery, June 3, 1933 (W. Ivie, AMNH), 1♀. **Wyoming**: *Lincoln Co.*: Kemmerer, July 29, 1981 (B. J. Abraham, BJA), 1♀.

DISTRIBUTION: Western United States (map 9).

Micaria rossica Thorell

Figures 58–61; Map 10

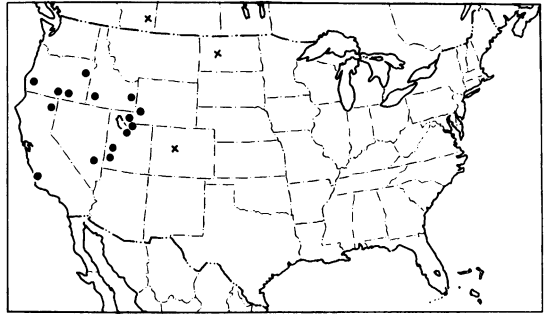
Micaria rossica Thorell, 1875: 112 (male and female syntypes from Odessa, Ukraine, USSR, in Zoologisches Museum, Helsinki, examined by Wunderlich, 1979). – Roewer, 1955: 627. – Bonnet, 1957: 2847. – Wunderlich, 1979: 308, figs. 70a–c. – Mikhailov and Fet, 1986: 176, fig. 2.

Micaria scenica Simon, 1878: 17 (male and female syntypes from various localities in France, should be in Muséum National d'Histoire Naturelle, Paris, not examined); 1932: 955, 956, 976, figs. 1492, 1493. – Lessert, 1910: 436, figs. 203, 204. – Roewer, 1955: 627. – Bonnet, 1957: 2847. – Wunderlich, 1979: 286, figs. 33a–e, 57a–c. First synonymized by Mikhailov and Fet, 1986: 176.

Micaria albocincta Banks, 1901: 573 (female lectotype, here designated, from Beulah, San Miguel County, New Mexico, in MCZ, examined). – Roewer, 1955: 629. – Bonnet, 1957: 2834. NEW SYNONYMY.

Micaria altana (misidentification): Gertsch, 1935: 17, fig. 38 (male only).

NOTE: For other European synonyms, see Wunderlich (1979: 308).

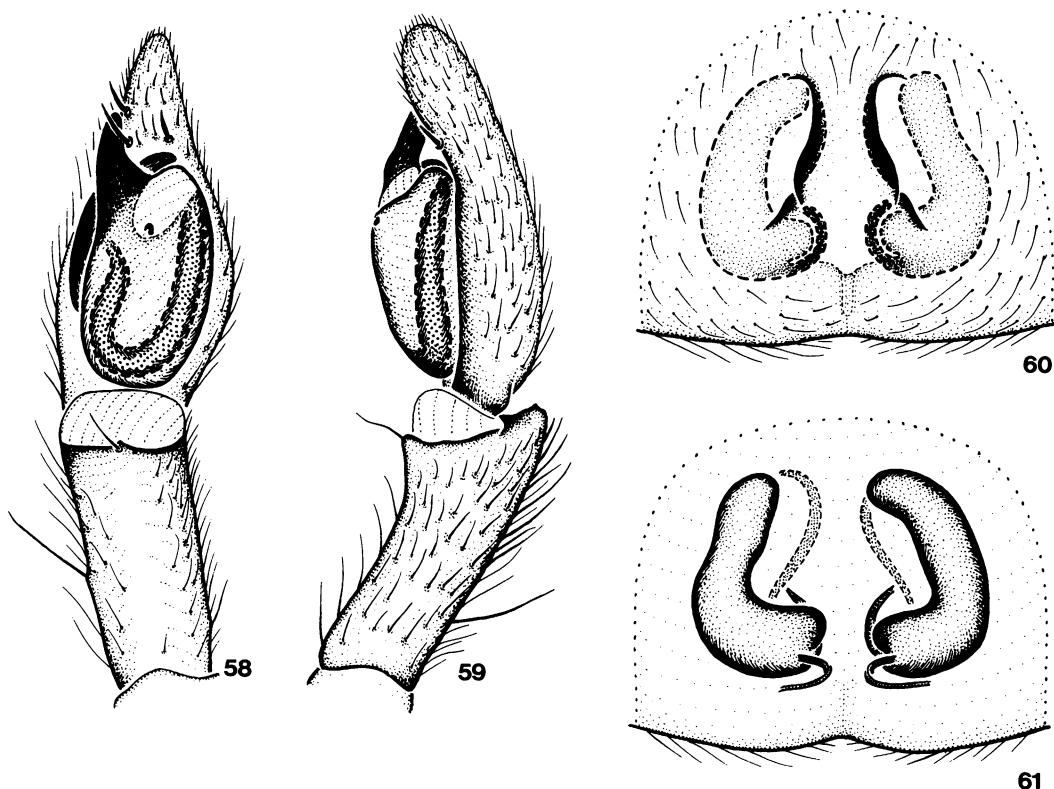


Map 9. North America, showing distribution of *Micaria lassena* (circles) and *M. medica* (crosses).

DIAGNOSIS: This species seems closest to *M. foxi* (males share a greatly thickened embolus and greatly reduced median apophysis; females share a median epigynal septum) but can be distinguished by the longer embolus of males (fig. 58) and the larger epigynal septum of females (fig. 60).

MALE: Total length 3.91 ± 0.39 . Carapace 1.84 ± 0.15 long, 1.22 ± 0.11 wide. Femur II 1.27 ± 0.06 long (251 specimens examined). Eye sizes and interdistances: AME 0.05, ALE 0.05, PME 0.05, PLE 0.05; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.10, PME-PL 0.06, ALE-PL 0.08; MOQ length 0.21, front width 0.15, back width 0.20. Leg spination: femora: I, II d1-1-0; IV d1-0-1; tibiae: I v2-2-0; II v2-2-1p; III d0-1-0, p1-0-1, r0-1-1; IV p1-0-1, r0-1-1; metatarsi: II v2-0-0; III, IV p0-1-2, r0-1-2. Embolus prolonged on prolateral side of bulb, median apophysis minute (fig. 58); retrolateral tibial apophysis very short, wide (fig. 59).

FEMALE: Total length 4.75 ± 0.47 . Carapace 1.84 ± 0.14 long, 1.21 ± 0.10 wide. Femur II 1.28 ± 0.07 long (181 specimens examined). Eye sizes and interdistances: AME 0.04, ALE 0.06, PME 0.06, PLE 0.06; AME-AME 0.07, AME-ALE 0.02, PME-PME 0.07, PME-PL 0.06, ALE-PL 0.08; MOQ length 0.22, front width 0.15, back width 0.19. Leg spination: femora: I, II d1-1-0; III p0-1-0; IV d1-0-1; tibiae: I v2-2-0; II v1r-2-1p; III d0-1-0, p1-0-1, r0-0-1; IV p1-0-1, v1p-2-2, r0-1-1; metatarsi: I, II v1r-0-0; III, IV p0-1-2, r0-1-2. Anterior epigynal margin divided, forming median septum (fig. 60); spermathecae relatively narrow throughout their length (fig. 61).



Figs. 58–61. *Micaria rossica* Thorell. 58. Palp, ventral view. 59. Palp, retrolateral view. 60. Epigynum, ventral view. 61. Epigynum, dorsal view.

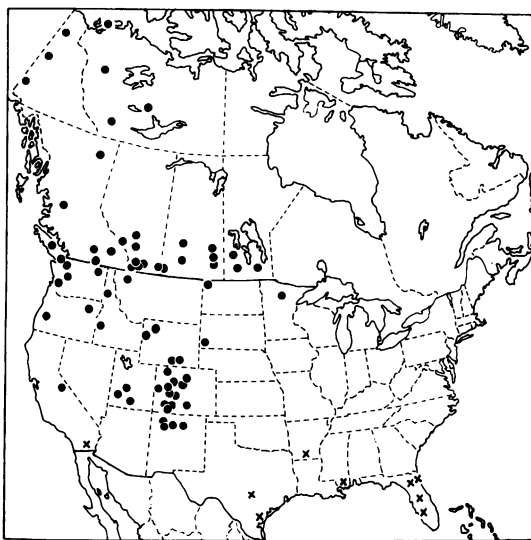
RECORDS: **ALASKA:** Alaska Highway, milepost 1260. **CANADA:** **Alberta:** Banff; 16 mi W Calgary; Claresholm; Cypress Hills Provincial Park; Leduc; Lethbridge; Magrath; Stirling; Waterton Lakes National Park. **British Columbia:** Apex Mountain, nr. Keremeos; Comox, Vancouver Island; Fort Nelson; Goldstream Provincial Park; Kamloops; Prairie Hills, Selkirk Mountains; Sparwood; Terrace; Victoria. **Manitoba:** Brandon; Glenlea; Riding Mountain National Park; Tolstoi. **Northwest Territories:** Fort Simpson; Norman Wells; 20 mi E Tuktoyaktuk; Yellowknife. **Saskatchewan:** Clavet; Cypress Hills Provincial Park; Cypress Lake; Englefeld; Lady Lake; Laura; McLean; Pasqua; Saskatoon; Sinaluta; Whitewood. **Yukon:** Dry Creek; Old Crow; Sheep Mountain, Kluane National Park. **UNITED STATES** (county records only): **California:** Mono. **Colorado:** Archuleta, Boulder, Chaffee, Clear Creek, Custer, Gunnison, Hinsdale, Mesa, Pitkin,

Routt, Saguache, Summit. **Idaho:** Latah, Payette. **Minnesota:** Itasca. **Montana:** Flathead. **New Mexico:** Rio Arriba, Sandoval, San Miguel, Santa Fe. **North Dakota:** Divide. **Oregon:** Lane, Union. **South Dakota:** Custer. **Utah:** Beaver, Garfield, Sevier. **Washington:** Island, King, Stevens, Thurston. **Wyoming:** Albany, Carbon, Park, Teton.

DISTRIBUTION: Western North America, from Alaska south to New Mexico (map 10).

NATURAL HISTORY: Mature males have been taken from late April through mid-August, mature females from late April through mid-September. Specimens have been collected in pitfall, emergence, and intercept traps, in litter and among stones, in aspen, lodgepole pine, and spruce forests, in alfalfa fields, sagebrush, salt marshes, and tall grass prairies, at elevations up to 12,500 ft.

SYNONYMY: Although there is some variation in both the width of the epigynal septum of females and the shape of the embolus



Map 10. North America, showing distribution of *Micaria rossica* (circles) and *M. seminola* (crosses).

of males, no geographically consistent differences have been discovered among the American, European, and Russian specimens examined.

Micaria foxi Gertsch

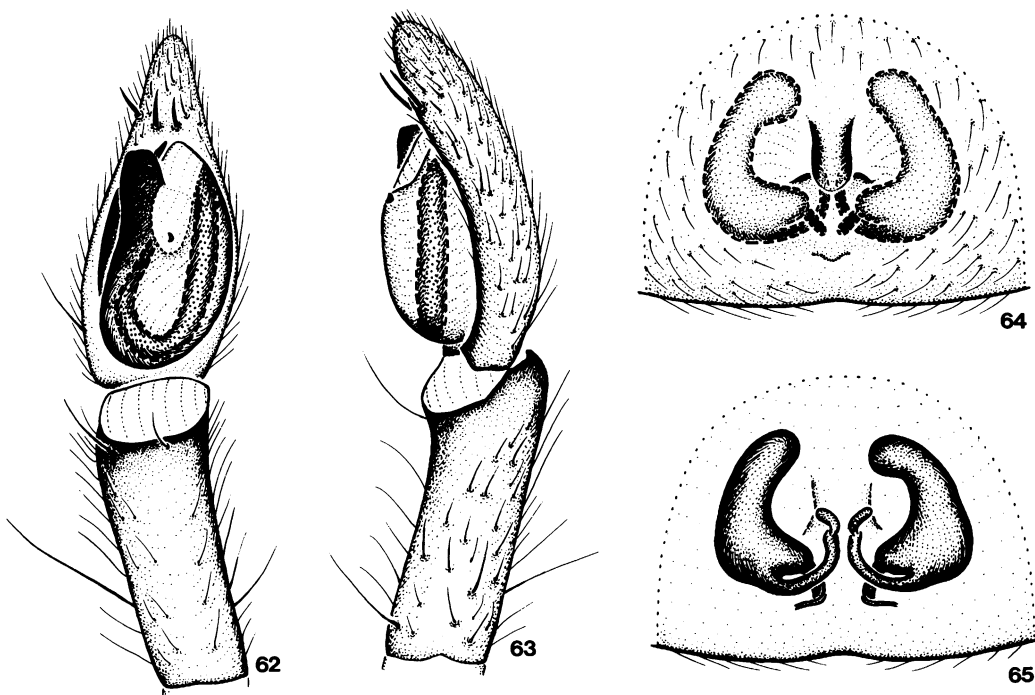
Figures 62–65; Map 11

Micaria foxi Gertsch, 1933: 5, fig. 2 (male holotype from Richfield, Sevier County, Utah, in AMNH, examined); 1935: 17, fig. 39. – Roewer, 1955: 630. – Bonnet, 1957: 2838.

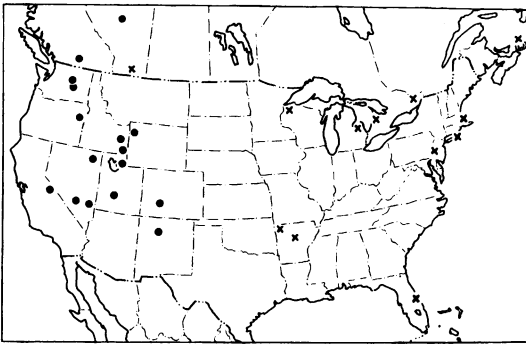
Micaria altana Gertsch, 1933: 6, fig. 5 (female holotype from Seba [Beach], Alberta, Canada, in AMNH, examined). – Roewer, 1955: 629. – Bonnet, 1957: 2835. NEW SYNONYMY.

DIAGNOSIS: This species seems closest to *M. rossica* (see above) but can be distinguished by the shorter embolus of males (fig. 62) and the smaller epigynal septum of females (fig. 64).

MALE: Total length 3.24 ± 0.44 . Carapace 1.58 ± 0.19 long, 1.02 ± 0.14 wide. Femur II 1.25 ± 0.10 long. Eye sizes and interdistances: AME 0.06, ALE 0.07, PME 0.06, PLE 0.05; AME-AME 0.05, AME-ALE 0.01, PME-PME 0.06, PME-PLE 0.05, ALE-PLE 0.05; MOQ length 0.19, front width 0.17, back width 0.18. Leg spination: femora I, II d1-1-0; tibiae: I, II v2-2-0; III d0-1-0, p1-0-1, r0-0-1; IV p1-0-1, r1-0-1; metatarsus III p0-1-2, r0-1-2. Embolus thickened, distally



Figs. 62–65. *Micaria foxi* Gertsch. 62. Palp, ventral view. 63. Palp, retrolateral view. 64. Epigynum, ventral view. 65. Epigynum, dorsal view.



Map 11. North America, showing distribution of *Micaria foxi* (circles) and *M. longispina* (crosses).

truncated, median apophysis tiny (fig. 62); retrolateral tibial apophysis reduced to small hook (fig. 63).

FEMALE: Total length 3.94 ± 0.48 . Carapace 1.75 ± 0.12 long, 1.11 ± 0.09 wide. Femur II 1.23 ± 0.07 long. Eye sizes and interdistances: AME 0.04, ALE 0.06, PME 0.06, PLE 0.06; AME-AME 0.06, AME-ALE 0.02, PME-PME 0.07, PME-PLE 0.05, ALE-PLE 0.05; MOQ length 0.20, front width 0.14, back width 0.19. Leg spination: femora I, II d1-1-0; tibiae: I v2-2-0; II v1r-2-0; III d0-1-0, p1-0-1, r0-0-1; IV p1-0-1, v1p-2-2, r0-0-1; metatarsi III, IV p0-1-2, r0-1-2. Anterior epigynal margin u-shaped, forming narrow median septum (fig. 64); spermathecae widened posteriorly (fig. 65).

MATERIAL EXAMINED: CANADA: **Alberta:** Seba Beach, July 1930 (AMNH), 1♀ (type). **British Columbia:** Summerland, May–Aug. 20, 1979–1980, pitfalls on dry sagebrush hillside (W. D. Charles, C. D. Dondale, CNC), 12♂, 9♀. UNITED STATES: **California:** *Mono Co.:* Benton, Apr. 8, 1942 (W. M. Pearce, AMNH), 1♂. **Colorado:** *Saguache Co.:* Hooper Cemetery Road, June 1–25, 1965 (J. Brookhart, AMNH), 3♀. **Idaho:** *Bear Lake Co.:* Bloomington, Aug. 19, 1931 (W. Ivie, AMNH), 1♀. *Bonneville Co.:* Idaho Falls, June 25, 1967 (AMNH), 1♂. **Nevada:** *Elko Co.:* nr. Elko, July 18, 1932 (W. Ivie, AMNH), 1♀ (penultimate). *Lincoln Co.:* Sand Valley, 2 mi N, 7 mi W Tempiute, Mar.–Sept. 1986, elev. 4800 ft (D. Giuliani, CAS), 1♂. *Nye Co.:* Mercury, June 14–Aug. 5, 1962–1963 (AMNH), 3♂. **New Mexico:** *Los Alamos Co.:* Los Alamos, Apr. 11–June, 1976–1977 (D. C. Low-

rie, AMNH), 8♂, 7♀. **Oregon:** *Baker Co.:* Sagebrush Draw, Baker, June 16–24, 1957, elev. 3500 ft (C. Freitag, AMNH), 1♂. **Utah:** *Morgan Co.:* East Canyon, June 14, 1942 (W. Ivie, AMNH), 2♀. *Sevier Co.:* Richfield, July 4, 1930 (D. E. Fox, AMNH), 1♂ (type). **Washington:** *Douglas Co.:* Moses Coulee, May 23, 1976, elev. 1020 ft, beaten from shrubs (C. Stoner, UWA), 1♀; Pine Canyon, May 7, 1974, elev. 2300 ft, under rock (R. Crawford, UWA), 1♀. *Grant Co.:* Highway I-90, Apr. 7–28, 1974, elev. 1235 ft, pitfall (R. Crawford, UWA), 1♂, 1♀. **Wyoming:** *Carbon Co.:* Stratton Experimental Watershed, Saratoga, July 4–7, 1972, elev. 7800 ft, pitfall, sagebrush (J. Schmid, DTJ), 1♀. *Teton:* N end, Blacktail Butte, Jackson Hole, July 18, 1950, under rock (D. C. Lowrie, AMNH), 1♂; Uhl Hill, nr. Moran, July 17, 1950, elev. 7000 ft, under rock (D. C. Lowrie, AMNH), 1♂.

DISTRIBUTION: Western North America, from Alberta south to New Mexico (map 11).

SYNONYMY: Several simultaneous collections of both sexes indicate that *M. altana* is the female of *M. foxi*.

Micaria aenea Thorell

Figures 66–69; Map 12

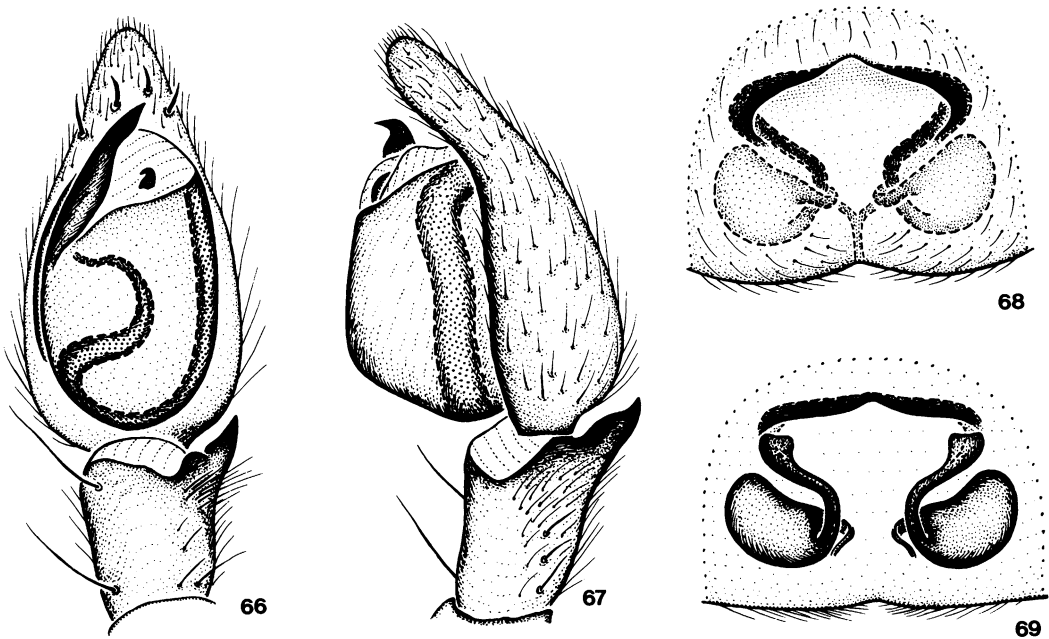
Micaria aenea Thorell, 1871: 175 (female holotype from Gotska Sandön, Sweden, in Naturhistoriska Riksmuseet, Stockholm, examined by Wunderlich, 1979). – Tullgren, 1946: 67, fig. 138. – Roewer, 1955: 622. – Bonnet, 1957: 2834. – Miller, 1967: 275, pl. 8, figs. 12–14. – Holm, 1978: 72, figs. 13–16. – Wunderlich, 1979: 271, figs. 5, 26a–d, 48a, b.

Micaria tetonia Levi and Levi, 1951: 228, figs. 21, 22 (male holotype from Moran, Teton County, Wyoming, in AMNH, examined). – Roewer, 1955: 632. – Lowrie and Gertsch, 1955: 13, fig. 31. **NEW SYNONYMY.**

NOTE: For European synonyms, see Wunderlich (1979: 271).

DIAGNOSIS: This distinctive species can be recognized easily by the long, thick, arched embolus of males (fig. 66) and the laterally thickened anterior epigynal margin of females (fig. 68).

MALE: Total length 3.20 ± 0.22 . Carapace 1.47 ± 0.08 long, 1.14 ± 0.06 wide. Femur II 1.15 ± 0.05 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.06, PLE 0.05; AME-AME 0.06, AME-ALE 0.03,



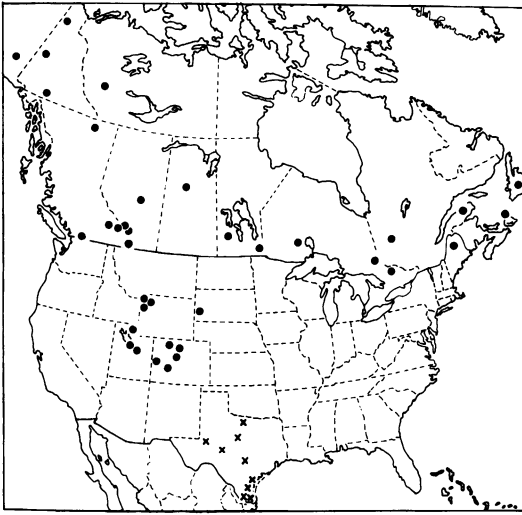
Figs. 66–69. *Micaria aenea* Thorell. 66. Palp, ventral view. 67. Palp, retrolateral view. 68. Epigynum, ventral view. 69. Epigynum, dorsal view.

PME-PME 0.06, PME-PLE 0.06, ALE-PLE 0.07; MOQ length 0.16, front width 0.14, back width 0.18. Leg spination: femora: III p0-1-0, r0-0-1; IV d1-1-0; tibiae: I v2-2-0; II v2-2-2; III p1-0-1, r0-1-1; IV p1-0-0, r0-1-1; metatarsi: I, II v2-0-0; III, IV p0-1-2, r0-1-2. Embolus constricted at about half its length, median apophysis very small (fig. 66); retrolateral tibial apophysis widened basally (fig. 67).

FEMALE: Total length 3.96 ± 0.42 . Carapace 1.52 ± 0.04 long, 1.20 ± 0.03 wide. Femur II 1.15 ± 0.05 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.06, PLE 0.05; AME-AME 0.06, AME-ALE 0.02, PME-PME 0.07, PME-PLE 0.05, ALE-PLE 0.08; MOQ length 0.18, front width 0.13, back width 0.20. Leg spination: femora: I, II d1-1-0; III r0-0-1; IV d1-1-0; tibiae: I v2-2-0; II v2-2-2; III, IV p1-0-1, r0-1-1; metatarsi: I, II v2-0-0; III, IV p0-1-2, r0-1-2. Anterior epigynal margin thickened at sides (fig. 68); paramedian epigynal ducts displaced to sides and widened anteriorly (fig. 69).

MATERIAL EXAMINED: ALASKA: McCarthy, June 14–15, 1934 (AMNH, EPC), 2♂. CANADA: **Alberta:** Canmore, May 16–June

5, 1963, pitfall, grass at wood edge (A. L. Turnbull, CNC), 1♂; 4 mi W Lake Louise, May 17–June 1, 1963, pitfall, edge of lodgepole pine stand (A. L. Turnbull, CNC), 3♂; 10 km E Tofield, July 6–12, 1982 (R. G. Holmberg, DJB), 1♀; Waterton Lakes National Park, July 23–29, 1980, pitfall, mixed forest floor (E. E. Lindquist, CNC), 1♀. **British Columbia:** Fountain Valley, June 25, 1937 (K. Graham, CNC), 1♀; Manning Provincial Park, June 14–July 4, 1979, pitfall, shrubs at edge of beaver pond (C. D. Dondale, CNC), 1♀; 20 mi E Revelstoke, May 17–June 1, 1963, pitfall, mixed woods (A. L. Turnbull, CNC), 1♂; Summit Lake, Alaska Highway mi 392, July 21, 1959, elev. 4200 ft (R. E. Leech, CNC), 1♀; Yoho National Park, May 17–June 1, 1963, pitfall, grass meadow (A. L. Turnbull, CNC), 1♂. **Manitoba:** 1 km N Onanole, July 18–Aug. 2, 1979, pitfalls, mixed woods, field-forest edge (S. J. Miller, CNC), 2♂; Rennie, June 25, 1963 (W. Ives, CNC), 1♀; Riding Mountain National Park, June 25–Aug. 14, 1979, pitfalls, meadow beside black spruce bog, mixed deciduous woods (S. J. Miller, D. B. Lyons, CNC), 4♂, 5♀. **Newfoundland:** Noel Pauls Brook, late June 1984, low vegetation



Map 12. North America, showing distribution of *Micaria aenea* (circles) and *M. triangulosa* (crosses).

(L. Hollett, CNC), 1♀. **Northwest Territories:** Wrigley, June 1–15, 1969, pan trap (G. E. Shewell, CNC), 28♂. **Nova Scotia:** Cape Breton Highlands National Park, May 9–July 18, 1983–1984, elev. 300 m, pitfall and malaise traps in fen, barrens, and birch-fir forest (Y. Bousquet, H. Goulet, L. Masner, A. Smetana, H. J. Teskey, R. Vockeroth, CNC), 8♂, 12♀. **Ontario:** Black Sturgeon Lake, June 12, 1961, ground trap (CNC), 1♂; Sproule Bay, Lake Opeongo, Algonquin Provincial Park, June 26–July 7, 1945 (W. Ivie, T. B. Kurata, AMNH), 1♀; 7 mi S Temagami, July 10–Aug. 1, 1973, pitfall, grass and weeds (J. Redner, C. Starr, CNC), 1♂, 1♀. **Quebec:** Gaspé Provincial Park, Highway 299, 24 mi S Ste. Anne des Monts, June 5–July 23, 1980, pitfall, edge of fir forest (C. D. Dondale, J. H. Redner, CNC), 2♂; 46 km SE Val d'Or on Highway 117, July 15, 1982, sifting moss and litter (C. D. Dondale, J. Redner, CNC), 1♀. **Saskatchewan:** Besnard Lake, May 8–31, 1970–1977, mixed woods (D. J. Buckle, DJB), 5♂. **Yukon:** Carcross, June 4–July 7, 1981, pitfall, sand dunes (C. D. Dondale, CNC), 2♂, 1♀; Dempster Highway km 64, June 22–July 3, 1981, pan trap, willows along creek (C. D. Dondale, CNC), 1♂; Old Crow, June 25–Aug. 2, 1981, litter and stones (C. D. Dondale, L. Barton, CNC), 2♂, 11♀, July 4–29, 1983, pitfall, slope with artemisia (S. G. and R. J. Cannings,

CNC), 3♀. **UNITED STATES: Colorado:** *Boulder Co.:* Nederland, Aug. 22, 1973 (K. Mowrer, WDF), 2♀. *Clear Creek Co.:* Mt. Evans, June 21–Aug. 18, 1967, elev. 11,500 ft, pitfalls, shrubs, grasses, rocks at treeline (R. Schmoller, AMNH), 6♂, 2♀. *Gunnison Co.:* Avery Flats, East River Valley, Elk Mountains, July 1957, elev. 9700 ft (H. and L. Levi, MCZ), 1♀; Gothic, Elk Mountains, June 28–30, 1969, elev. 3000 m (H., L., and F. Levi, MCZ), 1♀; Lamphier Creek, Fossil Ridge, N Ohlo, July 28, 1960, elev. 3500–3800 m, dry spruce-fir forest (H. Levi, A. Kostinsky, MCZ), 1♀. *Jackson Co.:* Routt National Forest, elev. 10,000 ft (D. T. Jennings, MCZ), 1♀. *Mesa Co.:* Loma, June 26, 1935, elev. 9000 ft (D. Cottam, AMNH), 1♀. **Maine:** *Piscataquis Co.:* Spencer Bay Township, 8.4 km WNW Kokadjo, June 6–15, 1980, pitfall, spruce-fir (D. J. Hilburn, DTJ), 1♂, 1♀. **South Dakota:** *Pennington Co.:* near Harney Peak, June 28, 1952, elev. 6800 ft (MCZ), 1♀. **Utah:** *Rich Co.:* 8.4 km SW Pickleville, 1977, elev. 2612 m (G. Waagen, AMNH), 3♀. *Salt Lake Co.:* Mill Creek Canyon, July 1945 (S. and D. Mulaik, AMNH), 1♂. *Wasatch Co.:* Lost Lake, Uintah Mountains, June 19, 1941 (W. Ivie, AMNH), 1♂. **Wyoming:** *Park Co.:* Bridge Bay, Yellowstone Lake, June 20, 1938 (W. Ivie, AMNH), 1♂; Lake Creek Camp, July 24, 1962 (F., P., and M. Rindge, AMNH), 1♂; Lewis Falls, June 24, 1938 (W. Ivie, AMNH), 1♂. *Teton Co.:* Pilgrim Creek, near Moran, July 12, 1950, in oil drum (D. C. Lowrie, AMNH), 1♀; Signal Mountain, Moran, July 1950, lodgepole forest (AMNH), 1♂ (type).

DISTRIBUTION: Holarctic; in America, from Alaska to Newfoundland, south into the Rocky Mountains (map 12).

SYNONYMY: When *M. tetonia* was described (from males only), *M. aenea* was known only from females.

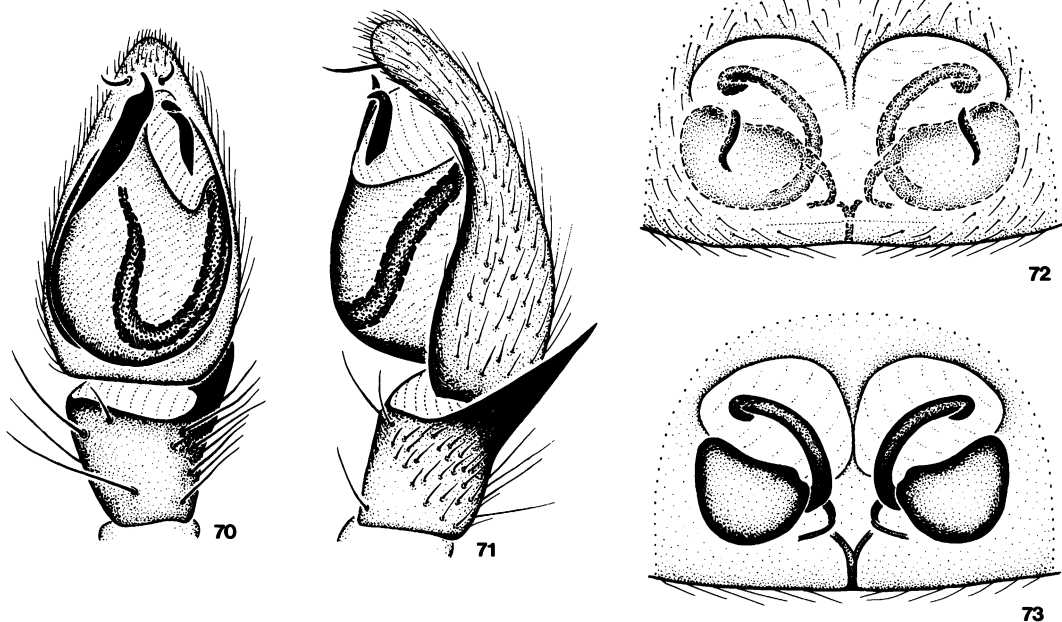
Micaria idana, new species

Figures 70–73; Map 7

TYPES: Male holotype and female allotype from Idaho Falls, Bonneville County, Idaho (male, June 27, 1966; female, Aug. 7, 1967), deposited in AMNH.

ETYMOLOGY: The specific name is an arbitrary combination of letters.

DIAGNOSIS: This species resembles *M.*



Figs. 70–73. *Micaria idana*, new species. 70. Palp, ventral view. 71. Palp, retrolateral view. 72. Epigynum, ventral view. 73. Epigynum, dorsal view.

medica and *M. longispina* in having a greatly elongated and sharply pointed retrolateral tibial apophysis in males, but can be distinguished by the shorter median apophysis of males (fig. 70) and the bipartite anterior epigynal margin of females (fig. 72).

MALE: Total length 1.55–2.34. Carapace 0.79–1.00 long, 0.56–0.85 wide. Femur II 0.52–0.76 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.05, PLE 0.05; AME-AME 0.04, AME-ALE 0.01, PME-PME 0.05, PME-PLE 0.03, ALE-PLE 0.04; MOQ length 0.14, front width 0.12, back width 0.15. Leg spination: femora II, III p0-0-0; tibiae: III p0-0-1, v0-1p-2; IV v0-1p-2; metatarsi: III p0-0-1, v0-2-2, r0-0-1; IV p0-0-1, v0-2-2, r0-0-1. Embolar tip hooklike (fig. 70); retrolateral tibial apophysis very long, sharply pointed (fig. 71).

FEMALE: Total length 2.34, 3.04. Carapace 1.00, 1.13 long, 0.82, 0.83 wide. Femur II 0.68, 0.79 long. Eye sizes and interdistances: AME 0.04, ALE 0.06, PME 0.05, PLE 0.05; AME-AME 0.05, AME-ALE 0.01, PME-PME 0.05, PME-PLE 0.03, ALE-PLE 0.03; MOQ length 0.14, front width 0.13, back width 0.15. Leg spination: femora II, III p0-

0-0; tibiae: III p0-0-1, v0-1p-2; IV v0-1p-2; metatarsi: III p0-0-1, v1p-2-2, r0-0-1; IV p0-0-1, v0-1p-2, r0-0-1. Anterior epigynal margin bipartite, wide (fig. 72); paramedian ducts reaching almost to sides of epigynum (fig. 73).

OTHER MATERIAL EXAMINED: CANADA: British Columbia: Apex Mountain, nr. Keremeos, July 16, 1982, elev. 3000 ft (H. Kirk, CNC), 1♂. **UNITED STATES: California:** *Mendocino Co.:* Inglenook Fen, 4 mi N Ft. Bragg, June 24, 1974 (C. Griswold, UCB), 1♂. *Mono Co.:* Benton Station, June 15, 1941 (W. M. Pearce, AMNH), 1♂; Bodie Ghost Town, Sept. 15, 1982, elev. 8300 ft, under rock (C. Griswold, UCB), 1♀.

DISTRIBUTION: British Columbia south to California (map 7).

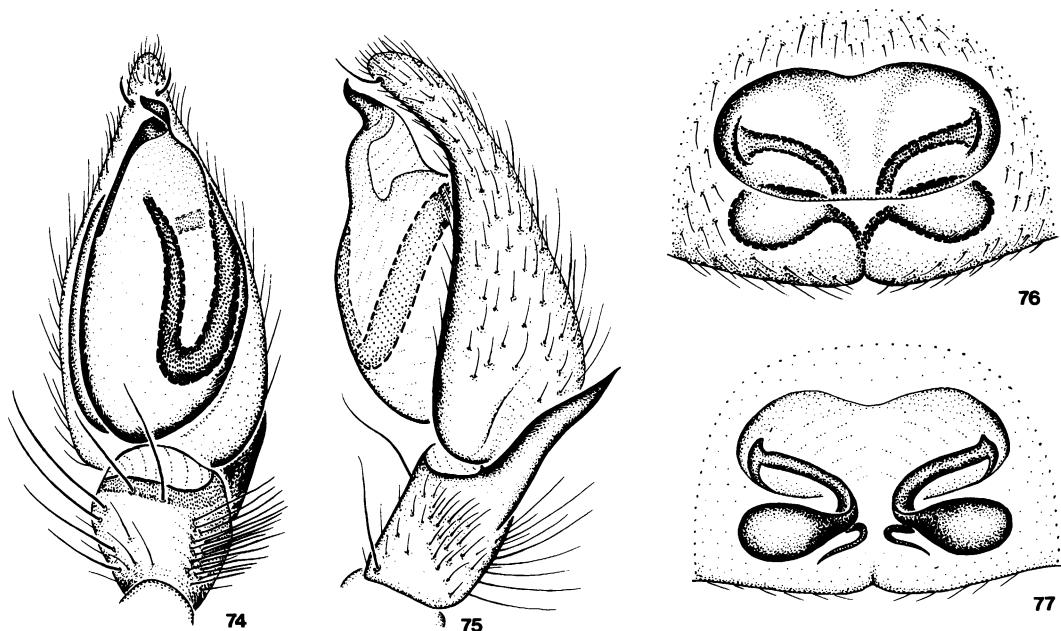
Micaria medica, new species

Figures 74–77; Map 9

TYPE: Male holotype from Medicine Hat, Alberta, Canada (July 27–Aug. 4, 1980; G. Gibson), deposited in CNC.

ETYMOLOGY: The specific name is an arbitrary combination of letters.

DIAGNOSIS: This species seems closest to



Figs. 74–77. *Micaria medica*, new species. 74. Palp, ventral view. 75. Palp, retrolateral view. 76. Epigynum, ventral view. 77. Epigynum, dorsal view.

M. idana and *M. longispina* (see above; males and females, not collected together, have been matched on that basis) but can be distinguished by the absence of a median apophysis in males (fig. 74) and by the entire anterior epigynal margin of females (fig. 76).

MALE: Total length 2.48, 2.50. Carapace 0.94, 1.13 long, 0.68, 0.87 wide. Femur II 0.71, 0.82 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.04, PLE 0.05; AME-AME 0.03, AME-ALE 0.01, PME-PME 0.06, PME-PLE 0.05, ALE-PLE 0.05; MOQ length 0.15, front width 0.11, back width 0.14. Leg spination: tibiae: III p0-0-1, v0-1p-2; IV v1p-1p-2; metatarsi: III p0-0-1, v0-1p-2, r0-0-1; IV p0-0-1, v0-2-2, r0-0-1. Median apophysis absent (fig. 74); retrolateral tibial apophysis long, directed dorsally (fig. 75).

FEMALE: Total length 3.00. Carapace 1.09 long, 0.88 wide. Femur II 0.75 long. Eye sizes and interdistances: AME 0.03, ALE 0.06, PME 0.04, PLE 0.05; AME-AME 0.05, AME-ALE 0.01, PME-PME 0.05, PME-PLE 0.04, ALE-PLE 0.04; MOQ length 0.15, front width 0.11, back width 0.13. Leg spination (segments beyond femur of leg III missing): femora II, III p0-0-0; tibia IV v0-1p-2; metatar-

sus IV p0-0-1, v1p-1p-2, r0-0-1. Anterior epigynal margin entire, surrounding depressed fossa (fig. 76); paramedian epigynal ducts long, almost transversely oriented (fig. 77).

OTHER MATERIAL EXAMINED: UNITED STATES: **Colorado:** *Lake Co.:* W Twin Lakes, Sawatch Mountains, July 24, 1961, elev. 2900 m, aspen, lodgepole pine (H. and L. Levi, MCZ), 1♀. **North Dakota:** *Ward Co.:* 1.5 mi E Minot, July 16–30, 1971, pitfall, high, dry prairie (K. J. Stone, P. D. Tobin, FSCA), 1♂.

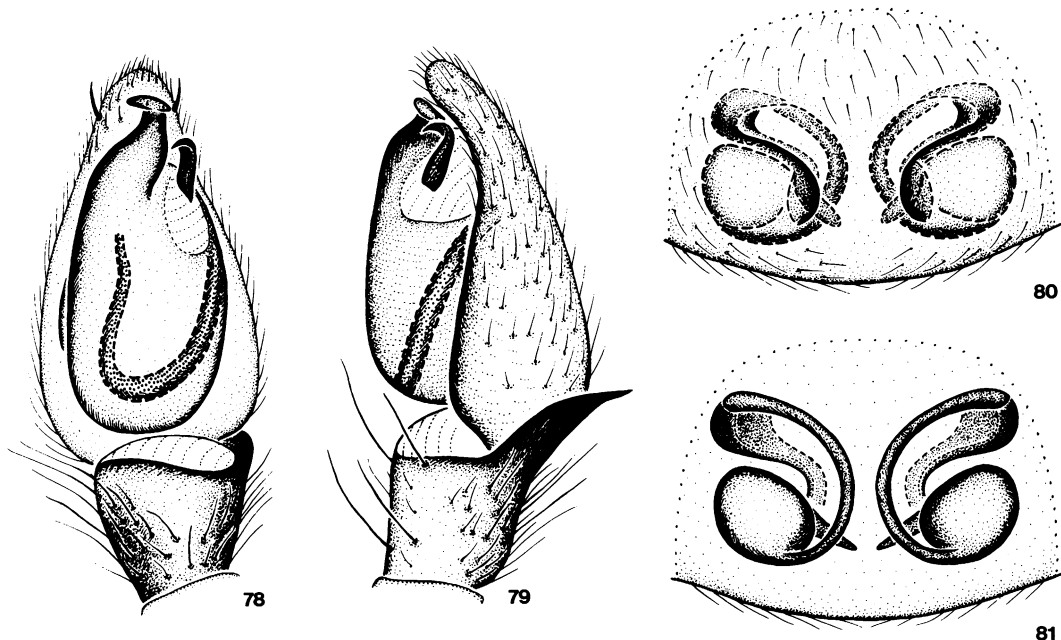
DISTRIBUTION: Known only from Alberta, North Dakota, and Colorado (map 9).

Micaria longispina Emerton

Figures 78–81; Map 11

Micaria longispina Emerton, 1911: 403, pl. 5, figs. 6, 6a–b (male holotype from Ellisville, Plymouth County, Massachusetts, in MCZ, examined). – Kaston, 1948: 403, figs. 1422, 2124. – Roewer, 1955: 631. – Bonnet, 1957: 2842.

DIAGNOSIS: This species seems closest to *M. idana* and *M. medica* (see above) but can be distinguished by the ventrally directed and expanded tip of the male embolus (figs. 78, 79) and the curved lateral ridges of the female epigynum (figs. 80, 81).

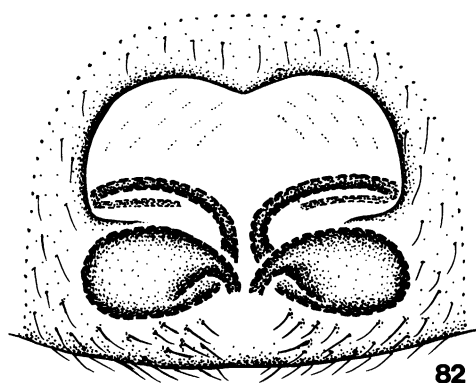


Figs. 78–81. *Micaria longispina* Emerton. 78. Palp, ventral view. 79. Palp, retrolateral view. 80. Epigynum, ventral view. 81. Epigynum, dorsal view.

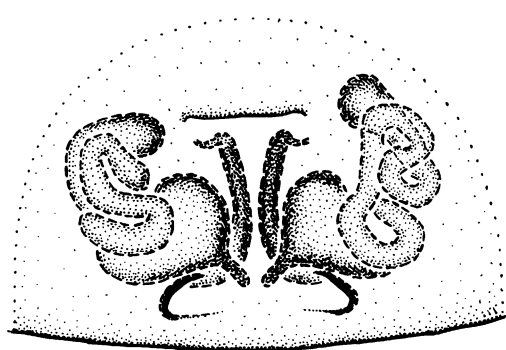
MALE: Total length 2.05 ± 0.21 . Carapace 0.86 ± 0.05 long, 0.63 ± 0.05 wide. Femur II 0.52 ± 0.05 long. Eye sizes and interdistances: AME 0.03, ALE 0.04, PME 0.04, PLE 0.04; AME-AME 0.03, AME-ALE 0.01, PME-PME 0.04, PME-PLE 0.04, ALE-PLE 0.04; MOQ length 0.12, front width 0.09, back width 0.12. Leg spination: femora: I, II p0-0-0; III d1-0-0, p0-0-0; tibiae: III p0-0-1, v0-0-2; IV v0-0-2; metatarsi: III, IV p0-0-1, v0-0-2, r0-0-1. Embolus widened basally, distally (fig. 78); retrolateral tibial apophysis long, angled distally (fig. 79).

FEMALE: Total length 2.38 ± 0.48 . Carapace 0.84 ± 0.05 long, 0.65 ± 0.07 wide. Femur II 0.51 ± 0.03 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.04, PLE 0.05; AME-AME 0.03, AME-ALE 0.01, PME-PME 0.05, PME-PLE 0.04, ALE-PLE 0.03; MOQ length 0.13, front width 0.10, back width 0.13. Leg spination: femora: I, II p0-0-0; III d1-0-0, p0-0-0; tibiae: III p0-0-1, v0-0-2; IV v0-1p-2; metatarsi: III p0-0-1, v0-0-2, r0-0-1; IV p0-0-1, v0-1p-2, r0-0-1. Epigynum with curving lateral ridges (fig. 80); course of paramedian ducts paralleling that of epigynal ridges (fig. 81).

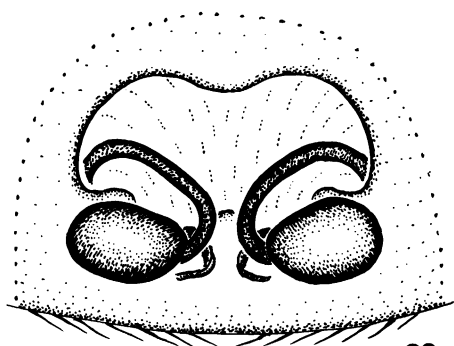
MATERIAL EXAMINED: CANADA: **Alberta:** 0.5 km E Writing-on-Stone Provincial Park, July 5–20, 1981, pan trap (D. McCorquodale, CNC), 1♂. **Nova Scotia:** Paquet Lake, Cape Breton Highlands National Park, June 9–Aug. 1, 1983, elev. 300 m, pitfalls (Y. Bousquet, D. C. and J. E. Bright, H. Goulet, J. R. Vockeroth, CNC), 12♂, 2♀. **Ontario:** Constance Bay, W. Ottawa, June 29–July 27, 1978, pitfall, pines on sand dune (C. D. Dondale, J. H. Redner, CNC), 1♀; Southampton, June 20, 1975, under board with ant (W. Maddison, CNC), 5♀. **UNITED STATES:** **Arkansas:** *Benton Co.:* Round Prairie, Apr. 23–May 14, 1965, pitfall (H. Exline, EPC), 1♂, 1♀. *Conway Co.:* no specific locality, July 15–Aug. 15, 1964 (EPC), 1♀. **Florida:** *Brevard Co.:* Titusville, Mar. 22, 1939 (F. E. Lutz, AMNH), 2♂, 1♀. **Massachusetts:** *Plymouth Co.:* Ellisville, Plymouth, May 10, 1910, straw on shore (J. H. Emerton, MCZ), 1♂ (type). **Michigan:** *Tuscola Co.:* no specific locality, June 8, 1951 (R. R. Dreisbach, MCZ), 1♀. **New York:** *Suffolk Co.:* Gardiners Island, May 25, 1924 (CUC), 1♀. **Pennsylvania:** *Bucks Co.:* 2 mi NE Jamison, May 1955–1966 (J. and W. Ivie, AMNH), 1♂, 1♀. **Wisconsin:** *Douglas Co.:*



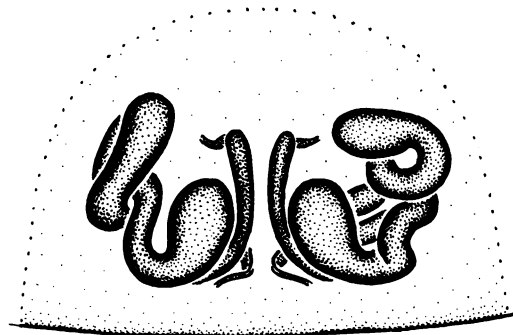
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83



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Figs. 82–85. 82, 83. *Micaria capistrano*, new species. 84, 85. *M. palma*, new species. 82, 84. Epigynum, ventral view. 83, 85. Epigynum, dorsal view.

Pattison State Park, July 18, 1949 (H. W. Levi, AMNH), 1♀.

DISTRIBUTION: Alberta to Nova Scotia, south to Florida (map 11).

***Micaria capistrano*, new species**

Figures 82, 83; Map 8

TYPE: Female holotype from Santa Ana Canyon, 12 mi E of Capistrano, near Riverside County border, Orange County, California (Mar. 30, 1960; W. J. Gertsch, W. Ivie, R. Schrammel), deposited in AMNH.

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: Females resemble those of *M. idana*, *M. medica*, and *M. longispina* in having long, laterally directed paramedian epigynal ducts, but can be distinguished by the doubly arched anterior epigynal margin (fig. 82).

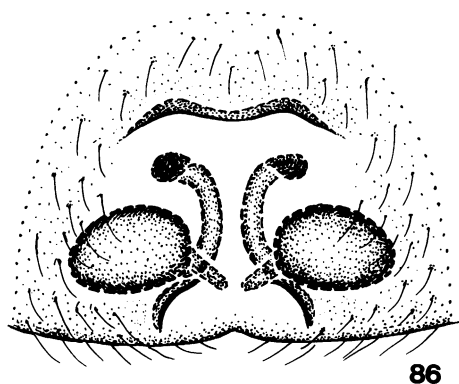
MALE: Unknown.

FEMALE: Total length 2.12–2.78. Carapace

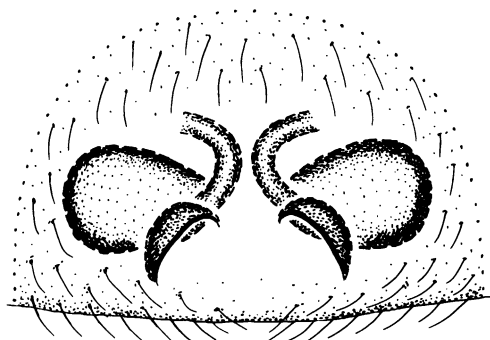
0.84–0.99 long, 0.64–0.73 wide. Femur II 0.49–0.63 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.04, PLE 0.04; AME-AME 0.04, AME-ALE 0.01, PME-PME 0.05, PME-PLE 0.04, ALE-PLE 0.04; MOQ length 0.13, front width 0.12, back width 0.12. Leg spination: femora I-III p0-0-0; tibiae: III p0-0-0, v0-0-1p, r0-0-0; IV v0-0-0; metatarsi: III p0-0-0, v0-0-2, r0-0-1; IV p0-0-1, v0-0-2, r0-0-1. Anterior epigynal margin produced posteriorly at middle (fig. 82); paramedian epigynal ducts reaching almost to lateral margins of epigynum (fig. 83).

OTHER MATERIAL EXAMINED: UNITED STATES: **California:** *Riverside Co.*: entrance, Box Springs Park, Dec. 29, 1976, under cardboard (B. Carroll, UCR), 1♀. MEXICO: **Baja California Norte:** Meling Ranch, San José, May 1–4, 1961 (W. J. Gertsch, V. Roth, AMNH), 4♀.

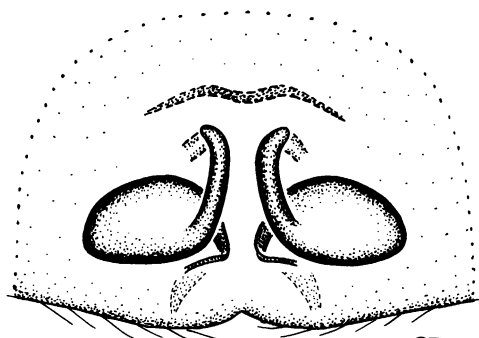
DISTRIBUTION: Known only from southern California and Baja California Norte (map 8).



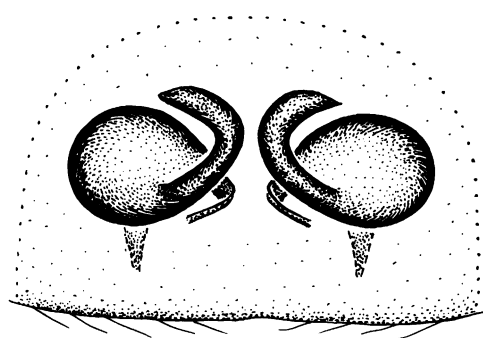
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88



87



89

Figs. 86–89. 86, 87. *Micaria cimarron*, new species. 88, 89. *M. camargo*, new species. 86, 88. Epigynum, ventral view. 87, 89. Epigynum, dorsal view.

***Micaria cimarron*, new species**

Figures 86, 87; Map 5

TYPE: Female holotype from Cimarron Canyon, west of Ute Park, Colfax County, New Mexico (Oct. 4, 1965; J. and W. Ivie), deposited in AMNH.

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: This species and the similar *M. camargo* resemble *M. elizabethae* in epigynal structure, but females can be distinguished from those of the first species by the short, posteriorly situated lateral epigynal margins and from those of the second by the presence of an anterior epigynal margin (fig. 86).

MALE: Unknown.

FEMALE: Total length 2.72. Carapace 1.10 long, 0.79 wide. Femur II 0.67 long. Eye sizes and interdistances: AME 0.03, ALE 0.05, PME 0.04, PLE 0.04; AME-AME 0.03, AME-ALE 0.03, PME-PME 0.05, PME-PL 0.03,

ALE-PL 0.05; MOQ length 0.13, front width 0.09, back width 0.13. Leg spination: femur II p0-0-0; tibiae: III p0-0-1, v1p-1p-2; IV v1p-1p-2, r0-1-0; metatarsi: III p0-0-1, r0-0-1; IV p0-0-1, v1p-2-2, r0-0-1. Anterior epigynal margin pronounced (fig. 86); spermathecae short, rounded (fig. 87).

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Known only from the type locality in New Mexico (map 5).

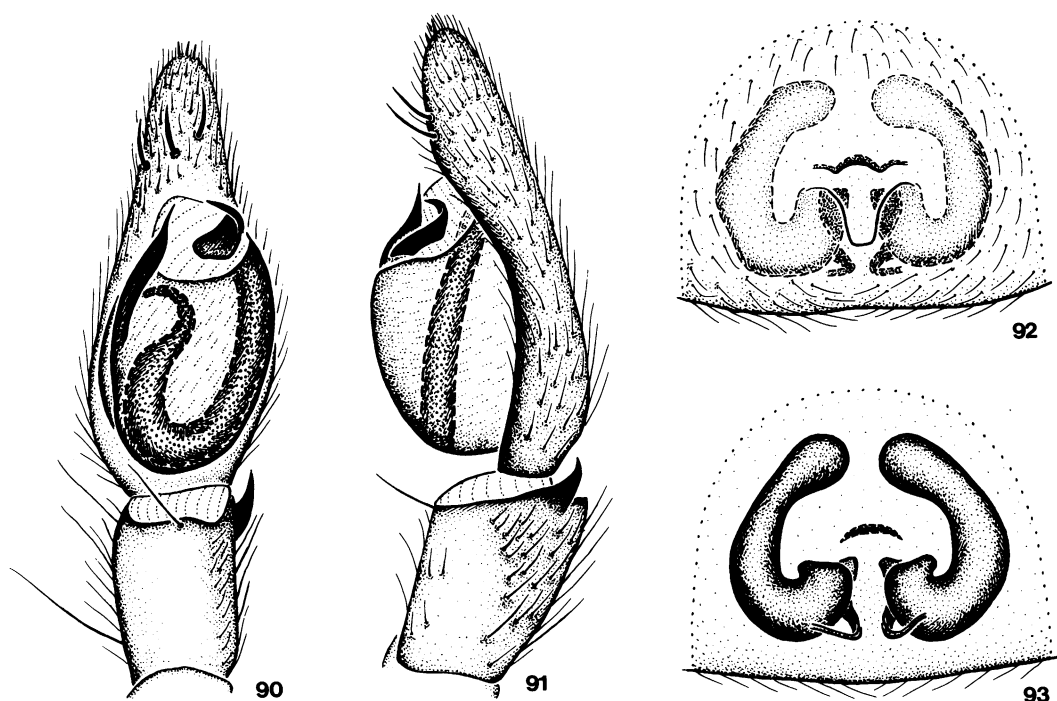
***Micaria camargo*, new species**

Figures 88, 89; Map 5

TYPE: Female holotype from 25 mi southwest of Camargo, Chihuahua, Mexico (July 14, 1947; W. J. Gertsch), deposited in AMNH.

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: Females can be distinguished from those of the similar *M. cimarron* by the



Figs. 90–93. *Micaria palliditarsus* Banks. 90. Palp, ventral view. 91. Palp, retrolateral view. 92. Epigynum, ventral view. 93. Epigynum, dorsal view.

absence of an anterior epigynal margin (fig. 88).

MALE: Unknown.

FEMALE: Total length 1.86. Carapace 0.84 long, 0.60 wide. Femur II 0.53 long. Eye sizes and interdistances: AME 0.03, ALE 0.04, PME 0.03, PLE 0.04; AME-AME 0.03, AME-ALE 0.01, PME-PME 0.05, PME-PLE 0.03, ALE-PLE 0.03; MOQ length 0.11, front width 0.09, back width 0.12. Leg spination: femora I–III p0-0-0; tibiae: III p0-0-1, v0-0-1p; IV v0-1p-1p; metatarsi: III p0-0-1, v0-1p-1p, r0-0-1; IV p0-0-1, v0-1p-2, r0-0-1. Anterior epigynal margin absent (fig. 88); spermathecae short, rounded (fig. 89).

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Known only from the type locality in Chihuahua, Mexico (map 5).

Micaria palliditarsus Banks

Figures 90–93; Map 13

Micaria palliditarsus Banks, 1896a: 59 (female holotype from Los Angeles, Los Angeles County, California, in MCZ, examined). – Roewer, 1955: 631.

Micaria palliditarsus: Banks, 1910: 10 (lapsus). – Bonnet, 1957: 2843 (unjustified emendation).

Micaria formicoides Chamberlin and Woodbury, 1929: 139, pl. 2, fig. 5 (female holotype from St. George, Washington County, Utah, in AMNH, examined); preoccupied by *M. formicoides* Banks, 1892. – Bonnet, 1957: 2838.

Micaria formicula Roewer, 1951: 446 (nomen novum for *M. formicoides* Chamberlin and Woodbury); 1955: 630. NEW SYNONYMY.

DIAGNOSIS: Males can be recognized by the narrowed tip of the embolus, basally widened median apophysis, and narrow retrolateral tibial apophysis (figs. 90, 91), females by the narrow anterior epigynal margin situated just in advance of a septumlike ridge (fig. 92).

MALE: Total length 2.66. Carapace 1.32 long, 0.84 wide. Femur II 1.12 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.04, PLE 0.05; AME-AME 0.06, AME-ALE 0.01, PME-PME 0.07, PME-PLE 0.05, ALE-PLE 0.04; MOQ length 0.15, front width 0.14, back width 0.15. Leg spination (tibiae and metatarsi IV missing): femora: II p0-0-0; III d1-0-0, p0-0-0; tibiae: I, II v1r-2-0; III

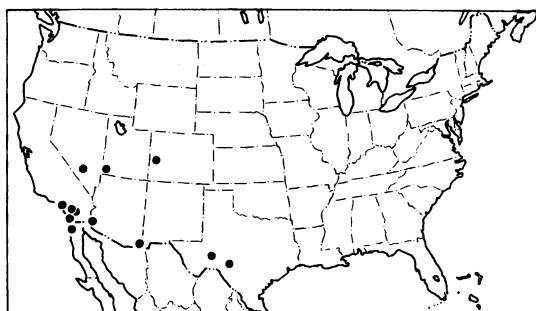
p0-0-0. Embolus abruptly narrowed distally, median apophysis wider basally than distally (fig. 90); retrolateral tibial apophysis short, narrow, straight at tip (fig. 91).

FEMALE: Total length 4.19 ± 0.46 . Carapace 1.71 ± 0.14 long, 1.00 ± 0.07 wide. Femur II 1.27 ± 0.17 long. Eye sizes and interdistances: AME 0.05, ALE 0.05, PME 0.06, PLE 0.05; AME-AME 0.06, AME-ALE 0.02, PME-PME 0.06, PME-PLE 0.05, ALE-PLE 0.06; MOQ length 0.18, front width 0.16, back width 0.18. Leg spination: femora: II p0-0-0; III d1-0-0, p0-0-0; tibiae: I, II v2-2-0; III p0-0-0; metatarsus III r0-0-0. Anterior epigynal ridge narrow, situated at about half of epigynal length (fig. 92); spermathecae elongate, paramedian ducts reduced (fig. 93).

MATERIAL EXAMINED: UNITED STATES: **Arizona:** Cochise Co.: Portal, June 1969, woodrat nest (V. Roth, AMNH), 1♀. Yuma Co.: Palm Canyon, 65 mi N Yuma, Apr. 23, 1965, under rock (AMNH), 1♀. **California:** Los Angeles Co.: Los Angeles (MCZ), 1♀ (type). Riverside Co.: NE Black Hill, Feb. 17, 1974 (S. Frommer, UCR), 1♀; Hidden Spring Canyon, Little San Bernardino Mountains, Apr. 11, 1930 (W. Wheeler, MCZ), 1♀; W fork, Palm Canyon, 5 mi S Palm Springs, Mar. 25, 1960 (V. Roth, AMNH), 1♀; Palm Springs, Apr. 12, 1957 (R. X. Schick, AMNH), 1♀; Santa Rosa Mountains, Mar. 21, 1968, elev. 1200 ft, under rock (W. Icenogle, UCR), 1♀. San Diego Co.: Palm Springs Canyon, Anza-Borrego Desert State Park, Apr. 9, 1979, under granite (D. Ubick, CDU), 1♀. **Colorado:** Mesa Co.: Loma, June 26, 1935, elev. 9000 ft (D. Cottam, AMNH), 1♀. **Nevada:** Nye Co.: Mercury, Apr. 21–Sept. 12, 1961 (AMNH), 1♂, 1♀. **Texas:** Crockett Co.: Lancaster Hill, May 6, 1958 (W. H. McAlister, AMNH), 1♀. Edwards Co.: 10 mi SE Carta Valley, June 27, 1970, under rock (AMNH), 1♀. **Utah:** Washington Co.: St. George, 1927 (A. M. Woodbury, AMNH), 1♀ (type). **MEXICO:** Baja California Norte: 14 mi N Laguna Hanson, May 30, 1960 (V. Roth, AMNH), 1♀.

DISTRIBUTION: Southwestern United States and Baja California, Mexico (map 13).

SYNONYMY: Chamberlin and Woodbury provided no characters to distinguish *M. formicula* from *M. palliditarsus*, and there appear to be none.



Map 13. North America, showing distribution of *Micaria palliditarsus*.

***Micaria pasadena*, new species**

Figures 94–97; Map 14

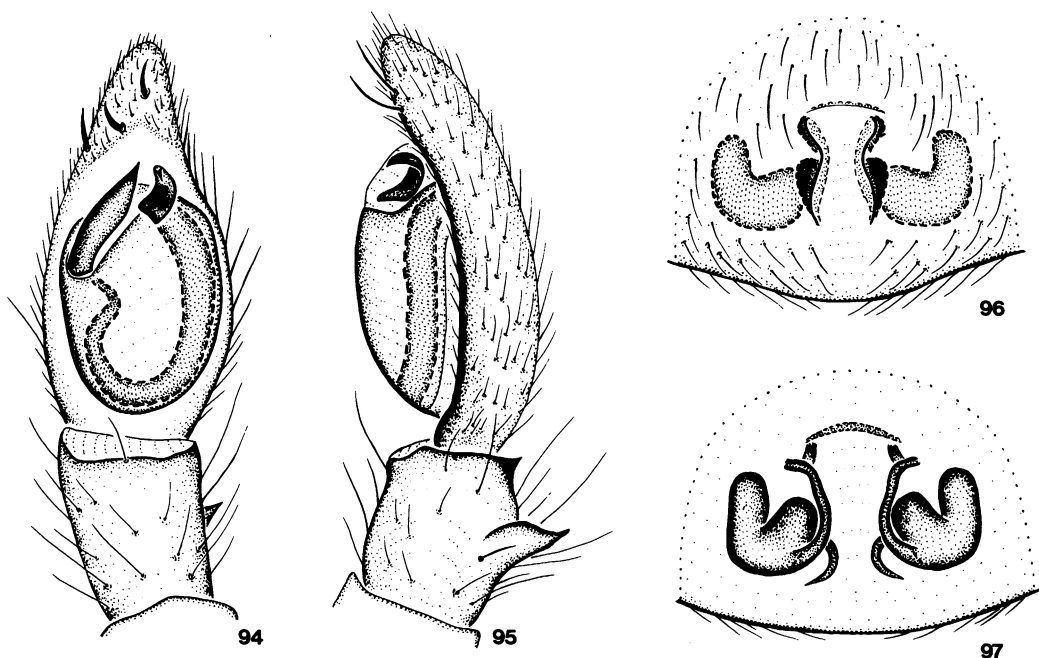
TYPES: Male holotype and female allotype from Pasadena, Los Angeles County, California (Mar. 16, 1968; B. J. Kaston), deposited in AMNH.

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: This species resembles *M. jeanae* (both have at least a slight dorsal, as well as a retrolateral, tibial apophysis in males) but can be distinguished by the shorter dorsal tibial apophysis of males (fig. 95) and the elaborate lateral epigynal margins of females (fig. 96).

MALE: Total length 3.01 ± 0.33 . Carapace 1.43 ± 0.18 long, 0.87 ± 0.11 wide. Femur II 0.88 ± 0.09 long (32 specimens examined). Eye sizes and interdistances: AME 0.05, ALE 0.05, PME 0.05, PLE 0.05; AME-AME 0.04, AME-ALE 0.02, PME-PME 0.09, PME-PLE 0.07, ALE-PLE 0.07; MOQ length 0.17, front width 0.14, back width 0.19. Leg spination: femur III r0-1-1; tibiae: III v2-1p-2; IV p0-1-0, v2-1p-2, r0-1-0; metatarsus III r0-0-1. Median apophysis situated distally (fig. 94); larger tibial apophysis directed retrolaterally (fig. 95).

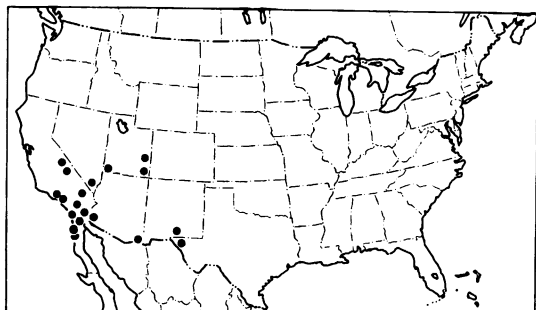
FEMALE: Total length 3.78 ± 0.45 . Carapace 1.55 ± 0.06 long, 0.89 ± 0.03 wide. Femur II 0.91 ± 0.05 long (56 specimens examined). Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.05, PLE 0.05; AME-AME 0.05, AME-ALE 0.03, PME-PME 0.08, PME-PLE 0.06, ALE-PLE 0.07; MOQ length 0.16, front width 0.13, back width 0.17. Leg spination: femur III d1-0-0, r0-0-1; tibiae: III v2-1p-2, r0-1-0; IV p0-1-0, v1p-1p-2,



Figs. 94–97. *Micaria pasadena*, new species. 94. Palp, ventral view. 95. Palp, retrolateral view. 96. Epigynum, ventral view. 97. Epigynum, dorsal view.

r0-1-0. Lateral epigynal margins long, conspicuous (fig. 96); spermathecae abruptly curved laterally, highly variable in length (fig. 97).

RECORDS: UNITED STATES (county records only): **Arizona:** Cochise, Yuma. **California:** Imperial, Inyo, Los Angeles, Mono, Riverside, San Bernardino, San Diego, Ventura. **Nevada:** Clark. **New Mexico:** Otero. **Texas:** Hudspeth. **Utah:** Grand, San Juan, Washington. **MEXICO:** **Baja California Norte:** Arroyo Santo Domingo; El Mayor; 42 mi S Ensenada.



Map 14. North America, showing distribution of *Micaria pasadena*.

DISTRIBUTION: Southwestern United States and northwestern Mexico (map 14).

NATURAL HISTORY: Mature males have been collected from mid-March through early August, mature females from mid-March through early November. Specimens have been taken in pitfall traps in burrobrush, in poplar duff, on sand dunes, and in buildings, at elevations up to 4000 ft.

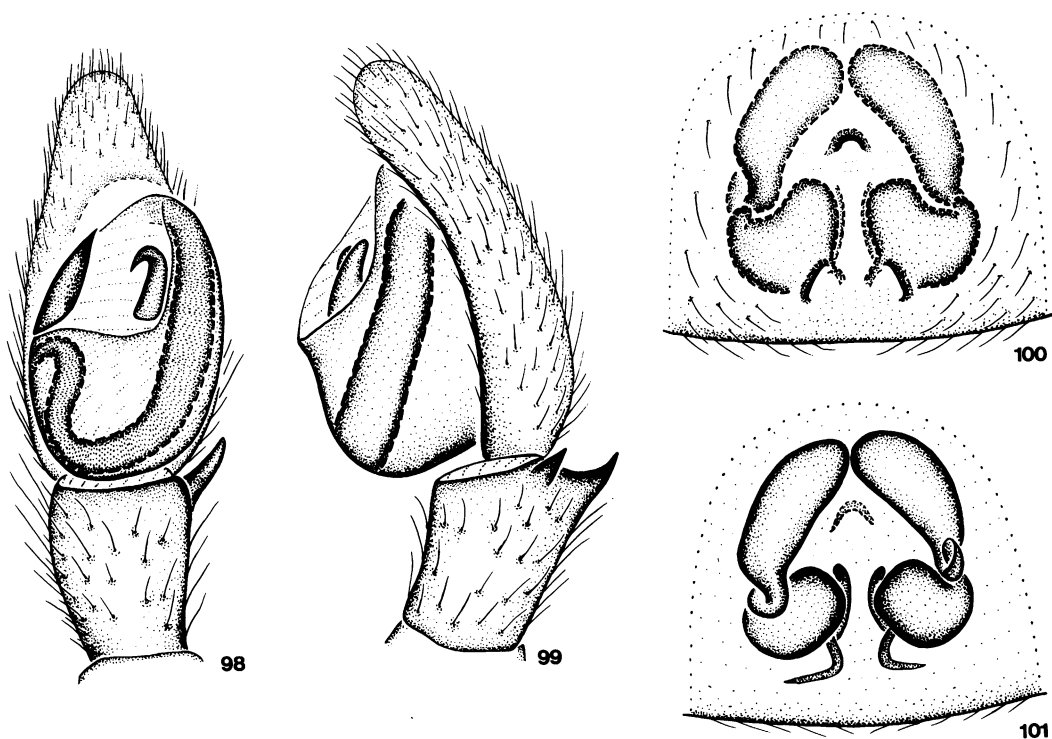
Micaria jeanae Gertsch

Figures 98–101; Map 15

Micaria jeanae Gertsch, 1942: 4, figs. 13–16 (male holotype from Glenwood, Sevier County, Utah, in AMNH, examined). – Roewer, 1955: 631.

DIAGNOSIS: This species seems closest to *M. pasadena* but can be distinguished by the two equally long tibial apophyses of males (fig. 99) and the narrow, hoodlike anterior epigynal margin of females (fig. 100).

MALE: Total length 2.17 ± 0.52 . Carapace 0.96 ± 0.12 long, 0.61 ± 0.07 wide. Femur II 0.55 ± 0.06 long (49 specimens examined). Eye sizes and interdistances: AME 0.04, ALE 0.04, PME 0.03, PLE 0.03; AME-AME 0.04, AME-ALE 0.02, PME-PME 0.06, PME-PL



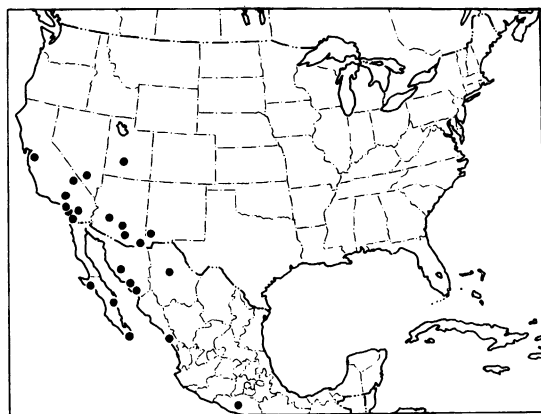
Figs. 98–101. *Micaria jeanae* Gertsch. 98. Palp, ventral view. 99. Palp, retrolateral view. 100. Epigynum, ventral view. 101. Epigynum, dorsal view.

0.05, ALE-PLE 0.05; MOQ length 0.12, front width 0.12, back width 0.13. Leg spination: femora: I, II p0-0-0; III d1-0-0; tibiae: III p1-0-1, v0-1p-2; IV v0-1p-2; metatarsi: III p0-0-1, v1p-1p-2, r0-0-1; IV p0-0-1, v0-1p-2, r0-0-1. Embolus only slightly longer than median apophysis (fig. 98); two tibial apophyses nearly equal in length (fig. 99).

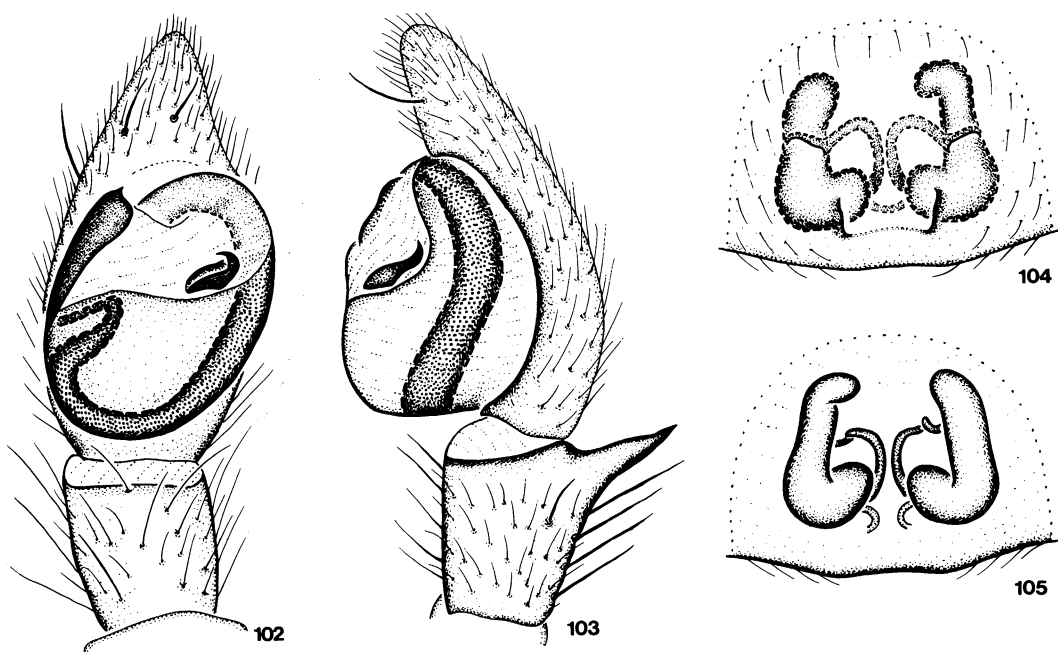
FEMALE: Total length 2.53 ± 0.35 . Carapace 1.08 ± 0.12 long, 0.66 ± 0.06 wide. Femur II 0.58 ± 0.06 long (59 specimens examined). Eye sizes and interdistances: AME 0.04, ALE 0.03, PME 0.03, PLE 0.03; AME-AME 0.03, AME-ALE 0.01, PME-PME 0.06, PME-PLE 0.06, ALE-PLE 0.04; MOQ length 0.13, front width 0.12, back width 0.13. Leg spination: femora: I, II p0-0-0; III d1-0-0, p0-0-0; tibiae: III p0-0-0, v0-1p-2; IV v0-1p-2; metatarsi III, IV p0-0-1, v0-1p-2, r0-0-1. Anterior epigynal margin narrow, hoodlike (fig. 100); spermathecae highly variable in length and amount of coiling (fig. 101).

RECORDS: UNITED STATES (county records only): **Arizona:** Cochise, Maricopa, Pima,

Pinal. **California:** Contra Costa, Inyo, Kern, Los Angeles, Orange, Riverside, San Diego. **Nevada:** Nye. **New Mexico:** Grant. **Utah:** Sevier. **MEXICO:** **Baja California Sur:** 7 mi SE Guerrero Negro; 13 mi E San Javier; 6 mi W San José del Cabo. **Chihuahua:** Cañón



Map 15. North America, showing distribution of *Micaria jeanae*.



Figs. 102–105. *Micaria nye*, new species. 102. Palp, ventral view. 103. Palp, retrolateral view. 104. Epigynum, ventral view. 105. Epigynum, dorsal view.

Prieta, nr. Primavera. **Guerrero:** Mexcala. **Sinaloa:** 6 mi E Villa Unión. **Sonora:** Guaymas; 6 mi S Presa Obregón; 10 mi W Sonoyta.

DISTRIBUTION: Southwestern United States and western Mexico (map 15).

NATURAL HISTORY: Mature males have been collected from late February through late August, mature females from late March through mid-November. Specimens have been taken in pinyon pine and juniper, eucalyptus duff, and Bermuda grass, under rocks, on beaches, and in buildings, at elevations up to 3600 ft.

Micaria nye, new species

Figures 102–105; Map 16

TYPE: Male holotype from Mercury, Nye County, Nevada (April 6, 1960), deposited in AMNH.

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: This distinctive species can be recognized by the oddly shaped embolus of males (fig. 102) and the elongated paramedian epigynal ducts of females (figs. 104, 105).

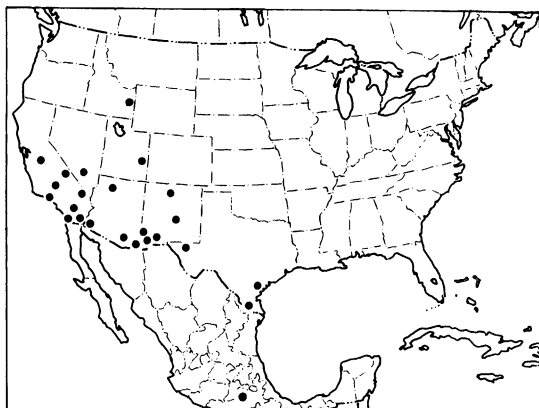
MALE: Total length 2.79 ± 0.39 . Carapace 1.23 ± 0.12 long, 0.74 ± 0.07 wide. Femur

II 0.86 ± 0.13 long. Eye sizes and interdistances: AME 0.05, ALE 0.05, PME 0.04, PLE 0.05; AME-AME 0.04, AME-ALE 0.02, PME-PME 0.07, PME-PLE 0.05, ALE-PLE 0.05; MOQ length 0.16, front width 0.14, back width 0.15. Leg spination: femur III r0-0-1; tibiae: III r0-1-0; IV p0-1-0, v2-1p-2, r0-1-0. Embolus widened distally but constricted to narrow point at tip (fig. 102); retrolateral tibial apophysis directed dorsally (fig. 103).

FEMALE: Total length 3.63 ± 0.53 . Carapace 1.45 ± 0.18 long, 0.88 ± 0.12 wide. Femur II 0.93 ± 0.11 long. Eye sizes and interdistances: AME 0.06, ALE 0.05, PME 0.04, PLE 0.04; AME-AME 0.06, AME-ALE 0.02, PME-PME 0.08, PME-PLE 0.06, ALE-PLE 0.06; MOQ length 0.19, front width 0.18, back width 0.16. Leg spination: tibiae: III r0-1-0; IV p0-1-0, v1p-1p-2, r0-1-0. Paramedian epigynal ducts extending to lateral edges of spermathecae (fig. 104); spermathecae curving inward at anterior ends (fig. 105).

OTHER MATERIAL EXAMINED: UNITED STATES: **Arizona:** *Cochise Co.*: 2 mi N Portal, Apr. 16, under stone (M. Cazier, W. J. Gertsch, AMNH), 1♂, 1♀, Sept. 17, 1960 (M.

Cazier, AMNH), 1♂; 2 mi NE Portal, Sept. 20, 1960 (M. Cazier, AMNH), 5♀; SE corner, Slaughter Ranch, Apr. 28, 1963 (V. Roth, AMNH), 1♀; 3 mi E Willcox, Apr. 13, 1986 (J. Prószyński, CAS), 1♂. *Coconino Co.*: 25 mi N The Gap, Navajo Indian Reservation, July 21, 1949 (W. J. and J. W. Gertsch, AMNH), 1♂, 2♀. *Pima Co.*: Summerhaven area, Mt. Lemmon, May 21, 1963 (W. J. Gertsch, W. Ivie, AMNH), 1♀. *Yuma Co.*: Gila Valley, Nov. 17, 1955 (V. Roth, AMNH), 1♀. **California**: *Imperial Co.*: 3 mi N Glamis, Sept. 16, 1972, on dunes at night (M. Wasbauer, CDFA), 1♂; 17 mi N Ogilby, Jan. 13, 1977 (V. Roth, Schroepfer), 1♂; 3 mi S Palo Verde, Apr. 9, 1964 (C. A. Toschi, UCB), 1♀. *Inyo Co.*: White Mountains, 2 mi S Schulman Grove, Oct. 1, 1985–June 28, 1986, elev. 9200 ft, pitfalls (D. Giuliani, CAS), 1♂, 3♀. *Kern Co.*: N Buena Vista Lake Bed, July 15, 1969, under board (L. Davis, CDFA), 1♀. *Riverside Co.*: 1 mi E Blythe, May 24, 1970, pitfall in dunes (M. Wasbauer, CDFA), 4♂, 2♀. *San Bernardino Co.*: Cima, Apr. 15, 1961 (V. Roth, AMNH), 1♀; Landers, Apr. 8, 1979, under rock (D. Ubick, CDU), 1♂; Piute Valley, 3 mi S Nevada border, Oct. 2, 1981, on ground (W. R. Icenogle, WRI), 1♀. *San Diego Co.*: Mountain Springs, Mar. 20, 1960 (W. J. Gertsch, W. Ivie, R. Schrammel, AMNH), 3♀. *Stanislaus Co.*: 5 mi N Turlock Lake, May 26–June 4, 1976, pitfalls (J. Collins, UCB), 1♂, 2♀. *Ventura Co.*: Chuchupate Ranger Station, May 5, 1959, on dry slope (J. Powell, AMNH), 2♀; Mt. Pinos, July 10, 1983 (D. Boe, CDB), 1♂. **Idaho**: *Bonneville Co.*: Idaho Falls, June 7, 1957 (AMNH), 1♂. **Nevada**: *Nye Co.*: Mercury, Apr. 3–July 21, 1960–1961 (AMNH), 3♂, 3♀. **New Mexico**: *Dona Ana Co.*: 10 mi S White Sands, July 16, 1935 (AMNH), 1♀; White Sands National Monument, July 15, 1972, pitfall, sand verbenas, coldenia (M. H. Muma, AMNH), 1♂. *Grant Co.*: Silver City, May 10, 1972, pitfall, pinyon pine, juniper (M. H. Muma, AMNH), 1♀. *Lincoln Co.*: no specific locality, May 6, 1972 (S. E. Riechert, AMNH), 1♀. *Los Alamos Co.*: Los Alamos, June 21–24, 1977, pitfall (D. C. Lowrie, AMNH), 1♂. *Otero Co.*: Alamogordo, June 14–July 3, 1972, pitfall, burrowbrush, saltbush (M. H. Muma, AMNH), 2♂, 1♀. **Texas**: *Culberson Co.*: Guadalupe Mountains, Sept. 25, 1950 (W. J.



Map 16. North America, showing distribution of *Micaria nye*.

Gertsch, AMNH), 1♂. *Erath Co.*: Stephenville, May 5–11, 1981, pitfalls (C. W. Agnew, TAM), 3♂. *San Patricio Co.*: 8 mi NE Sinton, Sept. 1959–1960 (H. E. Laughlin, AMNH), 5♂. *Starr Co.*: 5 mi E Rio Grande City, May 31, 1939 (D. Mulaik, AMNH), 1♀. **Utah**: *Grand Co.*: Colorado River at Dolores River, Apr. 13, 1933 (W. Ivie, AMNH), 1♂. **MEXICO**: **Morelos**: 12 mi S Cuernavaca, May 3, 1963 (W. J. Gertsch, W. Ivie, AMNH), 1♀.

DISTRIBUTION: Western United States and Mexico (map 16).

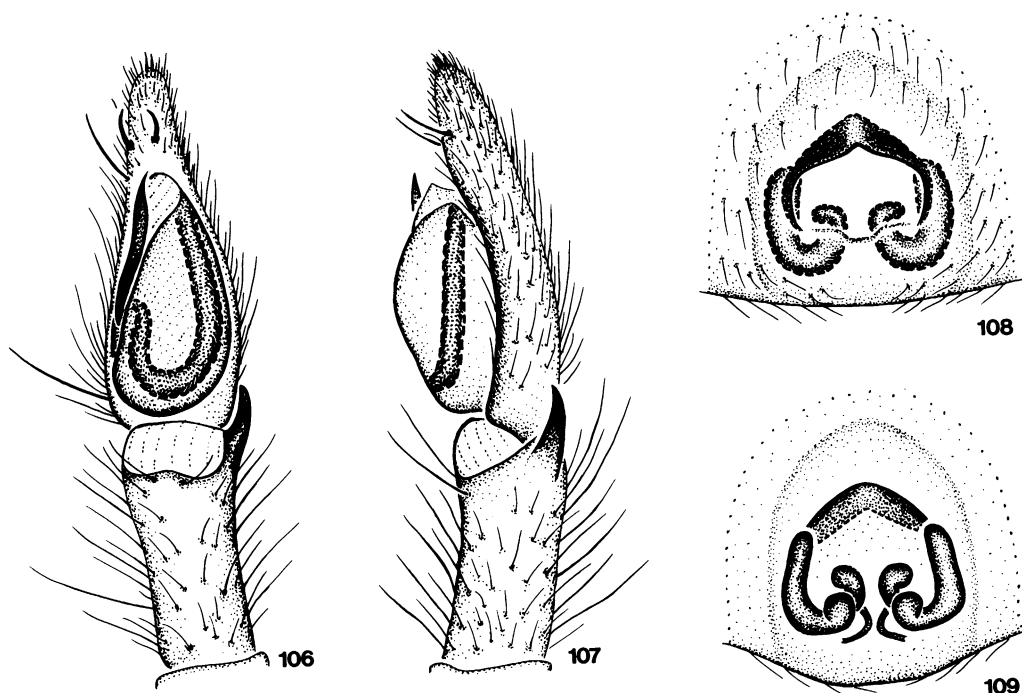
Micaria imperiosa Gertsch

Figures 106–109; Map 6

Micaria imperiosa Gertsch, 1935: 16, fig. 37 (male holotype from Dryden, Terrell County, Texas, in AMNH, examined). – Roewer, 1955: 630. – Bonnet, 1957: 2841.

DIAGNOSIS: This large species can be recognized by the elongate palpal tarsus and the shape of retrolateral tibial apophysis of males (figs. 106, 107) and the well-developed epigynal hood of females (fig. 108).

MALE: Total length 5.70 ± 0.77 . Carapace 2.70 ± 0.45 long, 1.58 ± 0.25 wide. Femur II 1.88 ± 0.27 long. Eye sizes and interdistances: AME 0.08, ALE 0.08, PME 0.07, PLE 0.07; AME-AME 0.08, AME-ALE 0.04, PME-PME 0.15, PME-PLE 0.15, ALE-PLE 0.16; MOQ length 0.30, front width 0.24, back width 0.29. Leg spination: femora: III r0-0-1; IV d1-0-1, r0-0-1; tibiae: III r0-1-0; IV p0-1-0, v2-4-2, r0-1-0; metatarsi: III v2-4-2, r0-1-0; IV p0-1-0, v2-4-2. Palpal bulb,



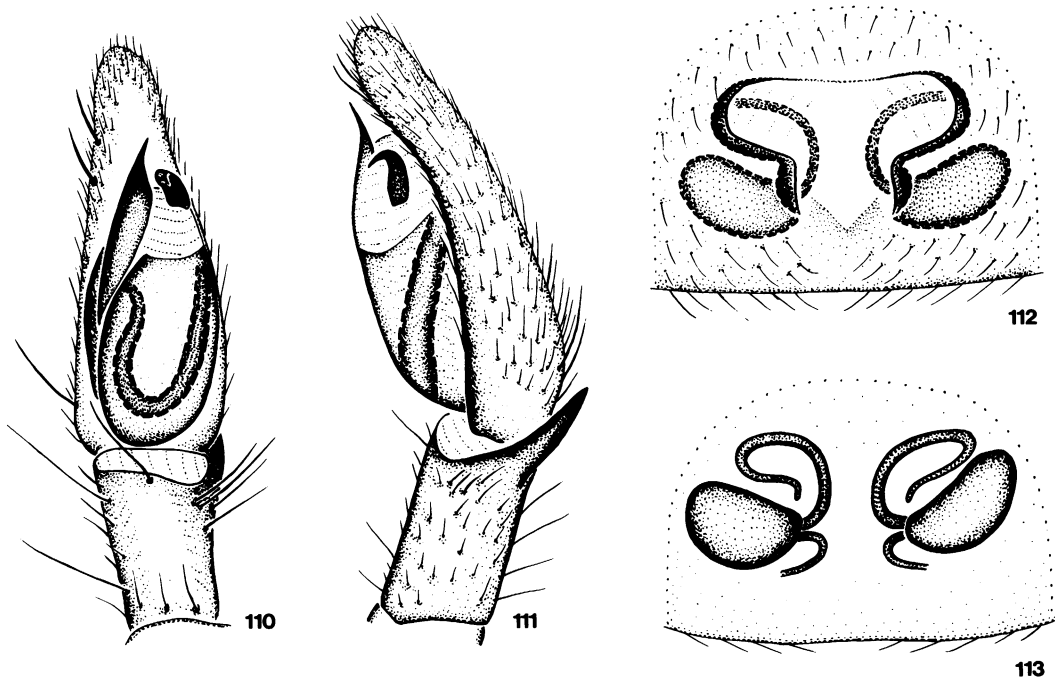
Figs. 106–109. *Micaria imperiosa* Gertsch. 106. Palp, ventral view. 107. Palp, retrolateral view. 108. Epigynum, ventral view. 109. Epigynum, dorsal view.

tarsus, and embolus relatively long (fig. 106); retrolateral tibial apophysis directed prolaterally at tip (fig. 107).

FEMALE: Total length 5.88 ± 0.42 . Carapace 2.55 ± 0.20 long, 1.48 ± 0.10 wide. Femur II 1.71 ± 0.12 long. Eye sizes and interdistances: AME 0.06, ALE 0.06, PME 0.06, PLE 0.06; AME-AME 0.08, AME-ALE 0.04, PME-PME 0.11, PME-PLE 0.11, ALE-PLE 0.09; MOQ length 0.23, front width 0.20, back width 0.23. Leg spination: femur III p0-0-0; tibiae: III r0-1-0; IV p1-0-0, r0-1-0; metatarsus IV p0-1-1, r0-1-0. Epigynum with anterior hood (fig. 108); paramedian epigynal ducts short, wide (fig. 109).

MATERIAL EXAMINED: UNITED STATES:
Arizona: *Cochise Co.:* 10 mi N Bisbee, Mule Mountains, Sept. 7, 1950 (W. J. Gertsch, AMNH), 1♂; Chiricahua Mountains, Aug. 19, 1977 (V. Roth, A. Jung, CDU), 1♂; Colossal Cave, Oct. 9, 1939 (R. H. Crandall, AMNH), 1♀; 28 mi E Douglas, Aug. 23, 1965 (V. Roth, AMNH), 1♂; Pearce, Aug. 22, 1952 (B. Malkin, AMNH), 1♂; 2 mi E Portal, Aug. 22–24, 1966 (W. J. Gertsch, AMNH), 2♂; 2 mi NE Portal, Sept. 19–Oct. 29, 1960, with ants in allionia (M. Cazier, AMNH), 5♂, 15♀; Ram-

sey Canyon, Huachuca Mountains, Aug. 20–25, 1932 (W. S. Creighton, MCZ), 1♀; 21 mi SW Ruby, Sept. 5, 1950 (W. J. Gertsch, AMNH), 1♂. *Pima Co.:* Cienaga Wash, 30 mi E Tucson, Sept. 11, 1964 (W. and J. Ivie, AMNH), 5♂; Tucson, Aug. (O. Bryant, AMNH), 2♂, 1♀. **New Mexico:** *Eddy Co.:* Whites City, Sept. 24, 1950 (W. J. Gertsch, AMNH), 1♀. *Grant Co.:* Hurley, July 17–Oct. 16, 1972–1973, pitfalls, yucca, allthorn, mesquite (M. H. Muma, AMNH), 84♂, 21♀; Lordsburg, Aug. 16–Oct. 1, 1972–1973, pitfalls, yucca, ephedra (M. H. Muma, AMNH), 65♂, 7♀; Silver City, Aug. 15–Sept. 1, 1972, pitfall, pinyon pine, juniper (M. H. Muma, AMNH), 8♂. *Hidalgo Co.:* Rodeo, Sept. 10, 1950 (W. J. Gertsch, AMNH), 1♀; 1 mi N Rodeo, Aug. 27, 1963 (AMNH), 4♂. *Los Alamos Co.:* Los Alamos, Aug. 5–8, 1977, pitfalls (D. C. Lowrie, AMNH, DCL), 4♂. **Texas:** *Borden Co.:* 13 mi W Gail, Oct. 15, 1953 (M. Cazier, AMNH), 2♀. *Culberson Co.:* 5 mi E Van Horn, Sept. 26, 1950 (W. J. Gertsch, AMNH), 1♀. *Terrell Co.:* 4 mi E Dryden, Sept. 4, 1939 (S. and J. Mulaik, AMNH), 1♂, 1♀; 5 mi E Dryden, summer 1934 (S. Mulaik, AMNH), 1♂ (holotype). **MEXICO:** *Aguas-*



Figs. 110–113. *Micaria otero*, new species. 110. Palp, ventral view. 111. Palp, retrolateral view. 112. Epigynum, ventral view. 113. Epigynum, dorsal view.

calientes: 7.5 mi N Tepezala, Aug. 30, 1965 (W. J. Gertsch, R. Hastings, AMNH), 1♂. **Chihuahua:** 60 km S C. Grandes, Aug. 25, 1981 (F. Pérez D., DBR), 1♂; 1 mi E La Saucedá, July 21, 1947 (W. J. Gertsch, AMNH), 1♂; Madera, July 5, 1947 (W. J. Gertsch, AMNH), 1♂; Primavera, June 29, 1947, elev. 5500–6000 ft (W. J. Gertsch, AMNH), 1♂. **Distrito Federal:** Contreras, Oct. 1, 1939 (C. Bolívar, AMNH), 1♀. **México:** 12 mi NW Toluca, May 7, 1963 (W. J. Gertsch, W. Ivie, AMNH), 1♂. **Michoacán:** 3 mi NE Pátzcuaro, Sept. 5, 1966 (W. and J. Ivie, AMNH), 3♂. **Sonora:** 11 mi S Imuris, Nov. 8, 1952, elev. 2700 ft (W. S. Creighton, AMNH), 1♀.

DISTRIBUTION: Southwestern United States and northern Mexico (map 6).

***Micaria langtry*, new species**

Figures 46, 47; Map 1

TYPE: Male holotype from Langtry, Val Verde County, Texas (June 3, 1941; S. and D. Mulaik), deposited in AMNH.

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: This species resembles *M. im-*

periosa in having an elongate, anteriorly constricted abdomen and relatively long legs, but can be distinguished from all other American *Micaria* by the long, narrow embolus of males (fig. 46).

MALE: Total length 3.38. Carapace 1.48 long, 0.86 wide. Femur II 1.28 long. Eye sizes and interdistances: AME 0.05, ALE 0.05, PME 0.04, PLE 0.04; AME-AME 0.05, AME-ALE 0.01, PME-PME 0.07, PME-PLE 0.06, ALE-PLE 0.06; MOQ length 0.18, front width 0.15, back width 0.15. Leg spination: femora II, III p0-0-0; tibiae: III p0-0-0; IV v1p-1p-0; metatarsi: III r0-1-0; IV r0-0-0. Embolus long, narrow (fig. 46); retrolateral tibial apophysis relatively wide basally (fig. 47).

FEMALE: Unknown.

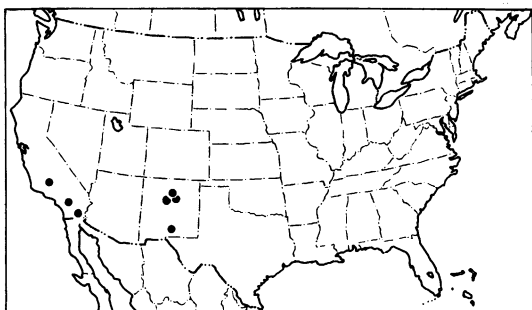
OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Known only from the type locality in Texas (map 1).

***Micaria otero*, new species**

Figures 110–113; Map 17

TYPES: Male holotype and female allotype from pitfall traps in burrowbrush and saltbush at Alamogordo, Otero County, New



Map 17. North America, showing distribution of *Micaria otero*.

Mexico (June 14, 1972; M. H. Muma), deposited in AMNH.

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: Males can be recognized by the relatively long embolus and retrolateral tibial apophysis (figs. 110, 111), females by the long lateral epigynal margins (fig. 112).

MALE: Total length 2.33 ± 0.22 . Carapace 1.11 ± 0.10 long, 0.76 ± 0.10 wide. Femur II $0.75\text{--}0.90$ long. Eye sizes and interdistances: AME 0.04, ALE 0.04, PME 0.04, PLE 0.05; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.06, PME-PLE 0.05, ALE-PLE 0.04; MOQ length 0.15, front width 0.13, back width 0.14. Leg spination: femur III p0-0-0; tibiae: III p0-0-1, v1p-2-2; IV v1p-1p-2, r0-1-0; metatarsi: III p0-0-1, r0-0-1; IV p0-0-1, v1p-2-2, r0-0-1. Embolus protruding beyond palpal bulb, median apophysis situated distally (fig. 110); retrolateral tibial apophysis relatively long, strong (fig. 111).

FEMALE: Total length 1.99–3.25. Carapace 0.86–1.39 long, 0.64–0.96 wide. Femur II 0.52–1.01 long. Eye sizes and interdistances: AME 0.05, ALE 0.05, PME 0.05, PLE 0.05; AME-AME 0.04, AME-ALE 0.01, PME-PME 0.06, PME-PLE 0.05, ALE-PLE 0.04; MOQ length 0.16, front width 0.14, back width 0.16. Leg spination: tibiae: III p0-0-1, v1p-2-2, r0-0-1; IV v1p-1p-2, r0-1-0; metatarsi: III v1p-2-2, r0-0-1; IV p0-0-1, v1p-1p-2, r0-0-0. Lateral epigynal margins pronounced, more widely separated anteriorly than posteriorly (fig. 112); paramedian epigynal ducts looped distally (fig. 113).

OTHER MATERIAL EXAMINED: UNITED STATES: **California:** *Imperial Co.:* 3 mi S Palo Verde, Apr. 9, 1963 (C. A. Toschi, UCB),

1♀. *Kern Co.:* 8 mi N, 3 mi W Ridgecrest, Mar. 26–Apr. 12, 1981, elev. 640 m, sand dunes (D. Giuliani, CAS), 1♂. *Riverside Co.:* Snow Creek Canyon, Apr. 12, 1957, creosote bush scrub (R. X. Schick, D. Verity, AMNH), 1♂. **New Mexico:** *Bernalillo Co.:* 10–15 mi W Albuquerque (Gorham, AMNH), 1♀. *Los Alamos Co.:* Mortandad Canyon, Los Alamos, June 28–July 1, 1976, pitfall (D. C. Lowrie, AMNH), 1♀. *Otero Co.:* Alamogordo, June 14–July 3, 1972, pitfalls, burro-brush, saltbush (M. H. Muma, AMNH), 8♂. *Santa Fe Co.:* 12 mi S Lamy (C. C. Hoff, AMNH), 1♂.

DISTRIBUTION: Southern California to New Mexico (map 17).

Micaria porta, new species

Figures 114–117; Map 18

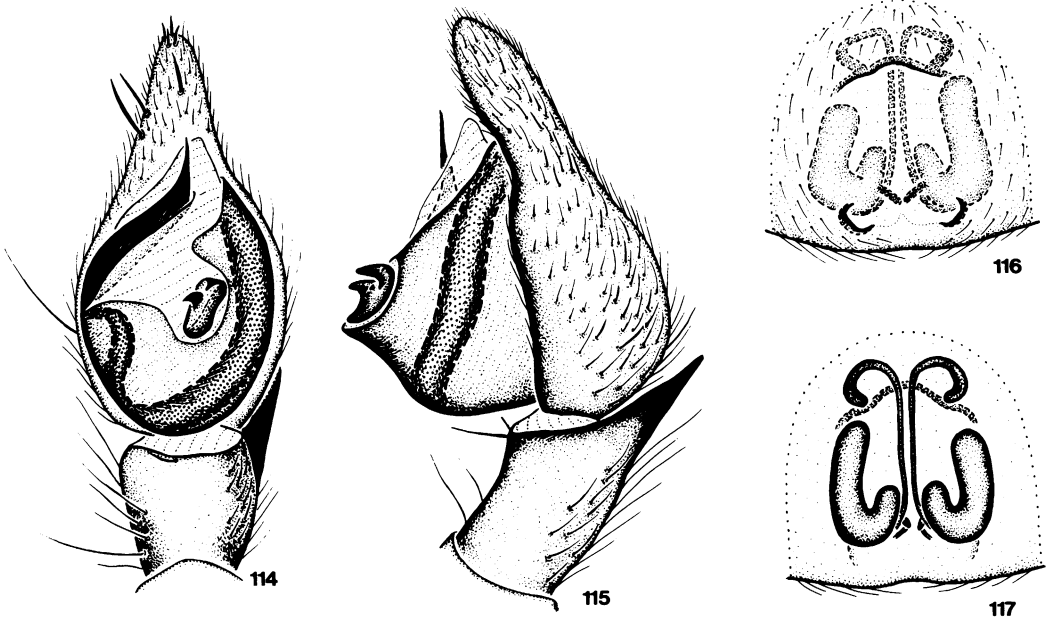
TYPES: Male holotype and female allotype from 2 mi NE Portal, Cochise County, Arizona (Sept. 20, 1960; M. Cazier), deposited in AMNH.

ETYMOLOGY: The specific name is an arbitrary combination of letters.

DIAGNOSIS: This bizarre species is easily recognized by the two prongs on the median apophysis and the ventrally prolonged palpal bulb of males (figs. 114, 115) and the greatly elongated and distally curled paramedian epigynal ducts of females (figs. 116, 117).

MALE: Total length 3.23 ± 0.29 . Carapace 1.46 ± 0.21 long, 0.93 ± 0.12 wide. Femur II 0.94 ± 0.14 long. Eye sizes and interdistances: AME 0.05, ALE 0.05, PME 0.05, PLE 0.05; AME-AME 0.06, AME-ALE 0.02, PME-PME 0.10, PME-PLE 0.05, ALE-PLE 0.06; MOQ length 0.22, front width 0.15, back width 0.20. Leg spination: femur III d1-0-0, r0-0-1; tibiae: III v2-1p-2, r0-1-0; IV p0-1-0, v2-1p-2, r0-1-0. Median apophysis with two distal prongs (fig. 114); palpal bulb prolonged ventrally (fig. 115).

FEMALE: Total length 3.67 ± 0.49 . Carapace 1.48 ± 0.08 long, 0.92 ± 0.07 wide. Femur II 0.88 ± 0.05 long. Eye sizes and interdistances: AME 0.06, ALE 0.06, PME 0.05, PLE 0.06; AME-AME 0.06, AME-ALE 0.03, PME-PME 0.09, PME-PLE 0.05, ALE-PLE 0.09; MOQ length 0.22, front width 0.18, back width 0.19. Leg spination: femur III d1-0-0, r0-0-1; tibiae: III v2-1p-2, r0-1-0; IV p0-



Figs. 114–117. *Micaria porta*, new species. 114. Palp, ventral view. 115. Palp, retrolateral view. 116. Epigynum, ventral view. 117. Epigynum, dorsal view.

1-0, v1p-1p-2, r0-1-0. Epigynum with pair of posterolateral sockets (fig. 116); paramedian ducts extending anterior of anterior epigynal margin, curled anteriorly (fig. 117).

OTHER MATERIAL EXAMINED: UNITED STATES: **Arizona:** *Cochise Co.*: 6 mi N Apache, Sept. 5, 1968 (AMNH), 1♂; 2–6 mi NE Portal, Sept. 5–Nov. 3, 1950–1968, some with ants in allionia patch (M. Cazier, W. J. Gertsch, AMNH), 13♂, 29♀. **Colorado:** *Larimer Co.*: Fort Collins (N. Banks, MCZ), 1♀. **Idaho:** *Bonneville Co.*: Idaho Falls, Aug. 7, 1967 (AMNH), 1♂. **Nevada:** *Nye Co.*: Mercury, Aug. 3, 1962 (AMNH), 1♂. **New Mexico:** *Grant Co.*: Hurley, June 1–Oct. 3, 1972–1973, yucca, allthorn, mesquite (M. H. Muma, AMNH), 16♂, 20♀; Silver City, Sept. 15, 1972, pitfall, pinyon pine, juniper (M. H. Muma, AMNH), 2♂. *Hidalgo Co.*: 5 mi S Road Forks, Oct. 10, 1963 (J. and W. Ivie, AMNH), 1♂; 2.3 mi NW Rodeo, Oct. 6, 1960 (M. Cazier, AMNH), 1♀. *Lincoln Co.*: Carriazo, Aug. 15–Sept. 8, 1971–1974 (S. Riechert, AMNH), 2♂. **North Dakota:** *Divide Co.*: Fortuna, June 28, 1936 (J. Davis, AMNH), 1♂. **Utah:** *Carbon Co.*: 4 mi NW Price, June 17, 1940 (W. Ivie, AMNH), 1♂. **Wyoming:** *Albany Co.*: Laramie, Aug. 5, 1961, alfalfa

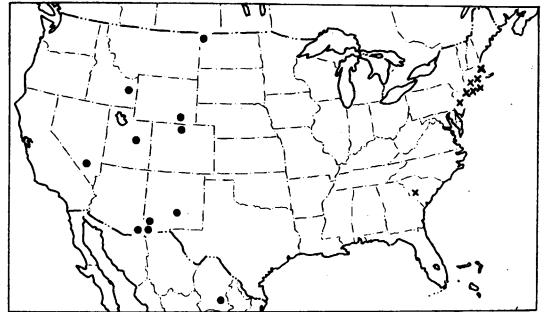
field (W. D. Fronk, AMNH), 1♀. **MEXICO:** **Coahuila:** Saltillo, Aug. 23, 1947 (W. J. Gertsch, AMNH), 1♂.

DISTRIBUTION: Western United States and northern Mexico (map 18).

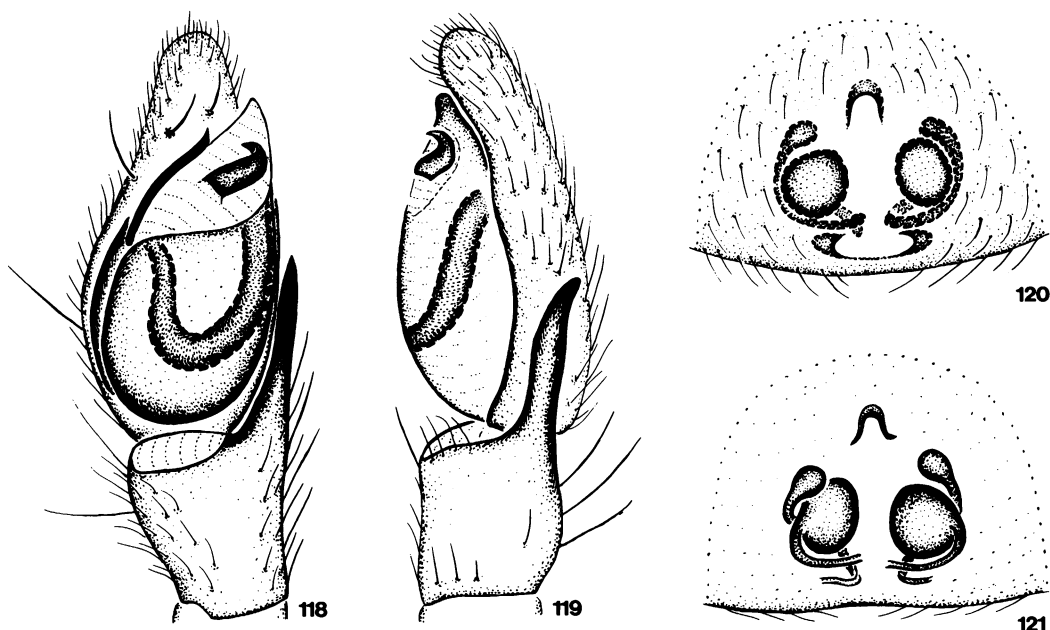
Micaria nanella Gertsch

Figures 118–121; Map 8

Micaria nanella Gertsch, 1935: 19, figs. 47, 48 (male holotype from Sanderson, Terrell County, Texas, in AMNH, examined). – Roewer, 1955: 631. – Bonnet, 1957: 2843.



Map 18. North America, showing distribution of *Micaria porta* (circles) and *M. delicatula* (crosses).



Figs. 118–121. *Micaria nanella* Gertsch. 118. Palp, ventral view. 119. Palp, retrolateral view. 120. Epigynum, ventral view. 121. Epigynum, dorsal view.

DIAGNOSIS: This peculiar species is easily recognized by the extremely elongated retrolateral tibial apophysis of males (fig. 119) and the narrow anterior epigynal margin of females (fig. 120), but its relationships to other species remain obscure.

MALE: Total length 1.86 ± 0.15 . Carapace 0.90 ± 0.08 long, 0.57 ± 0.04 wide. Femur II 0.49 ± 0.04 long. Eye sizes and interdistances: AME 0.03, ALE 0.04, PME 0.03, PLE 0.03; AME-AME 0.03, AME-ALE 0.01, PME-PME 0.05, PME-PLE 0.06, ALE-PLE 0.05; MOQ length 0.11, front width 0.09, back width 0.11. Leg spination: femora I–III p0-0-0; tibiae: III p0-0-1, v0-1p-2; IV v1p-1p-2; metatarsi: III p0-0-1, v1p-1p-1p, r0-0-1; IV p0-0-1, v0-1p-1p, r0-0-1. Anterior epigynal margin narrow (fig. 120); spermathecae with secondary lateral bulbs (fig. 121).

FEMALE: Total length 2.42 ± 0.21 . Carapace 0.98 ± 0.06 long, 0.61 ± 0.04 wide. Femur II 0.51 ± 0.04 long. Eye sizes and interdistances: AME 0.03, ALE 0.03, PME 0.03, PLE 0.03; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.06, PME-PLE 0.06, ALE-PLE 0.06; MOQ length 0.13, front width 0.11, back width 0.12. Leg spination: femora I–III

p0-0-0; tibiae: III p0-0-1, v0-1p-1p; IV v1p-1p-1p; metatarsi: III p0-0-1, v1p-1p-1p, r0-0-1; IV p0-0-1, v0-1p-1p, r0-0-1. Anterior epigynal margin narrow (fig. 120); spermathecae with secondary lateral bulbs (fig. 121).

MATERIAL EXAMINED: UNITED STATES: **New Mexico:** *Torrance Co.*: no specific locality (C. C. Hoff, AMNH), 1♀. **Oklahoma:** *McIntosh Co.*: Arrowhead State Park, July 17, 1966 (W. Ivie, AMNH), 1♀. **Texas:** *Bandera Co.*: 3.2 km W Bandera, July 23–Oct. 21, 1983, pitfall, pasture (S. A. Phillips, Jr., AMNH), 3♂, 1♀. *Burleson Co.*: no specific locality, Mar. 4, 1973, tree bark (C. Ross, TAM), 1♂. *Cameron Co.*: no specific locality, May 12, 1936 (L. I. Davis, AMNH), 1♀; Green Island Bird Sanctuary, May 11, 1975 (S. Mulaik, AMNH), 1♀. *Erath Co.*: Stephenville, Apr. 21–Oct. 2, 1981–1983, pitfalls, sand (C. W. Agnew, TAM), 2♂, 1♀. *Hidalgo Co.*: Edinburg, Apr.–Dec. 1936–1939 (S. and D. Mulaik, AMNH), 3♀; McCook, Apr. 18, 1936 (S. and D. Mulaik, AMNH), 1♂, 1♀. *Jim Wells Co.*: 10 mi N Alice, June 7, 1977 (AMNH), 1♀. *Kerr Co.*: 3.2 km ENE Camp Verde, Mar. 3–Apr. 23, 1983–1984, pitfalls, pasture (W. M. Rogers, AMNH), 4♂; 6.4 km S Center Point, July 23–30, 1983, pitfall, oak (S. A.

Phillips, Jr., AMNH), 1♀; Kerrville, Aug. 1939 (S. and D. Mulaik, AMNH), 1♀; 6.4 km E Kerrville, Aug. 20–26, 1983, pitfall, juniper (S. A. Phillips, Jr., AMNH), 1♂; Raven Ranch, Aug. 1939 (D. Mulaik, AMNH), 1♂. *Llano Co.*: no specific locality, July 10–12, 1936 (L. I. Davis, AMNH), 1♂. *Nueces Co.*: Driscoll, Mar. 23, 1966 (S. Mulaik, AMNH), 1♀. *San Patricio Co.*: 7 mi N Sinton, Mar. 1, 1980 (D. K. Hoffmaster, AMNH), 1♂; 8 mi NE Sinton, Apr. 5–Sept. 30, 1959–1960 (H. E. Laughlin, AMNH), 5♂, 2♀. *Terrell Co.*: Sanderson, July 4, 1934 (S. Mulaik, AMNH), 1♂ (type). *Webb Co.*: 54 mi S Laredo, July 1, 1936 (L. I. Davis, AMNH), 1♂, 1♀. **Utah**: *Grand Co.*: Moab, May 9, 1933 (W. Ivie, AMNH), 1♂. *Salt Lake Co.*: City Creek Canyon, Oct. 19, 1940 (W. Ivie, AMNH), 1♂. *Utah Co.*: Bells Canyon, Wasatch Mountains, May 6, 1934 (W. Ivie, AMNH), 5♂, 1♀. **MEXICO**: **Nuevo León**: La Huasteca Canyon, 3 mi SW Santa Catarina, Aug.–Oct. 4, 1978 (L. Malaret, AMNH), 1♂, 3♀. **Tamaulipas**: Reynosa, May 2, 1936 (S. Mulaik, AMNH), 1♀; 6 mi S Victoria, Apr. 16, 1963 (W. J. Gertsch, W. Ivie, AMNH), 1♂.

DISTRIBUTION: Utah to northeastern Mexico (map 8).

Micaria longipes Emerton

Figures 122–125; Map 19

Micaria longipes Emerton, 1890: 167, pl. 3, figs. 1, 1a–h (male lectotype, here designated, from Medford, Middlesex County, Massachusetts, in MCZ, examined). – Kaston, 1945: 8, figs. 36, 37, 45; 1948: 400, figs. 1416, 1417, 1430, 1431, 2125. – Roewer, 1955: 631.

Micaria formicoides Banks, 1892: 14, pl. 1, fig. 51 (female holotype from Ithaca, Tompkins County, New York, in MCZ, examined). First synonymized by Banks, 1916: 68.

Micaria aurata (nomen dubium): Gertsch, 1933: 2, fig. 4. – Bonnet, 1957: 2835 (in part).

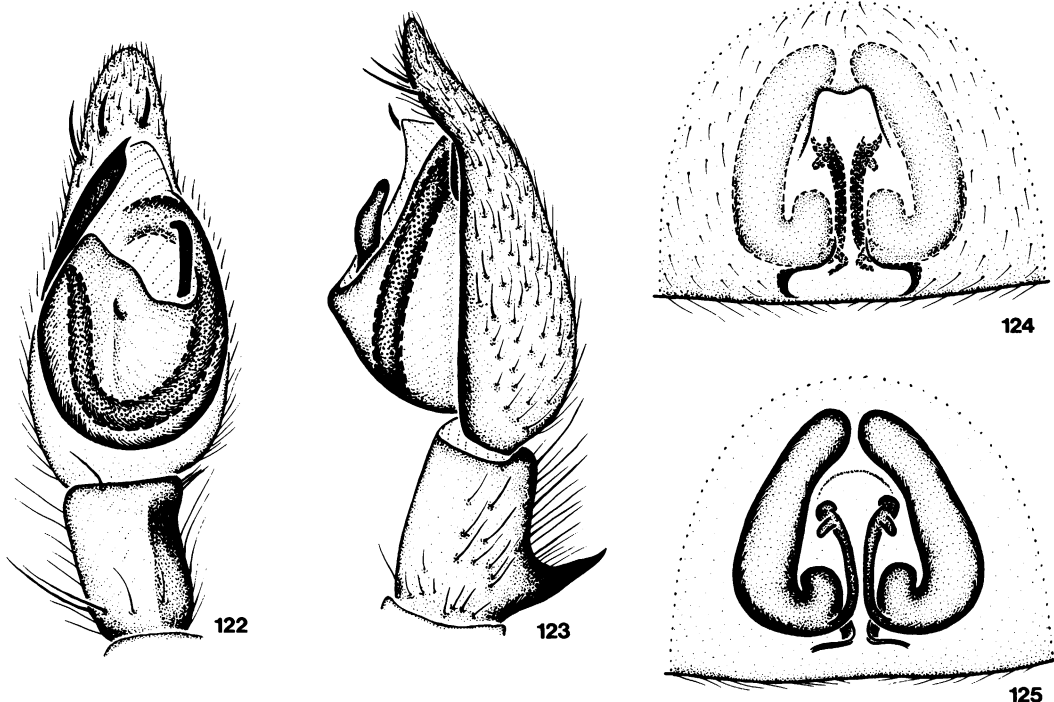
Micaria alberta Gertsch, 1942: 1, fig. 1 (female holotype from Medicine Hat, Alberta, Canada, in AMNH, examined). Roewer, 1955: 629. **NEW SYNONYMY**.

DIAGNOSIS: This species seems closest to *M. delicatula* (males of both have the retrolateral tibial apophysis shifted to the basal portion of the tibia) but can be distinguished by the longer median apophysis of males (fig. 122) and the more closely spaced posterior epigynal sockets of females (fig. 124).

MALE: Total length 4.22 ± 0.55 . Carapace 1.97 ± 0.24 long, 1.13 ± 0.14 wide. Femur II 1.30 ± 0.16 long (176 specimens examined). Eye sizes and interdistances: AME 0.06, ALE 0.05, PME 0.05, PLE 0.06; AME-AME 0.07, AME-ALE 0.03, PME-PME 0.12, PME-PL 0.09, ALE-PL 0.09; MOQ length 0.21, front width 0.19, back width 0.22. Leg spination: femur III r0-0-1; tibiae: III r0-1-0; IV p0-1-0, v2-1p-2, r0-1-0. Embolus abruptly narrowed distally, median apophysis long, narrow (fig. 122); retrolateral tibial apophysis situated near proximal end of tibia (fig. 123).

FEMALE: Total length 4.94 ± 0.53 . Carapace 2.05 ± 0.20 long, 1.19 ± 0.10 wide. Femur II 1.24 ± 0.12 long (167 specimens examined). Eye sizes and interdistances: AME 0.06, ALE 0.06, PME 0.05, PLE 0.05; AME-AME 0.07, AME-ALE 0.04, PME-PME 0.12, PME-PL 0.10, ALE-PL 0.10; MOQ length 0.23, front width 0.19, back width 0.22. Leg spination: femur III d1-0-0, r0-0-1; tibiae: III r0-1-0; IV p0-1-0, r0-1-0; metatarsi: III r0-0-2; IV v2-3-2. Posterior epigynal sockets occupying less of epigynal width than spermathecae (fig. 124); spermathecae elongate, tubular (fig. 125).

RECORDS: **CANADA**: **Alberta**: Calgary; Lethbridge; Medicine Hat; Woolchester; Writing-on-Stone Provincial Park. **British Columbia**: Koocanusa Lake. **New Brunswick**: Kouchibouguac National Park. **Ontario**: Belleville; Chatterton; Grenadier Island, St. Lawrence Islands National Park; Newburgh; Raymonds Corners. **Saskatchewan**: Clavet. **UNITED STATES** (county records only): **Alabama**: Tuscaloosa. **Arizona**: Cochise, Coconino. **Colorado**: Chaffee, El Paso, Larimer. **Connecticut**: Fairfield, New Haven, New London. **Illinois**: Champaign, Macoupin. **Iowa**: Woodbury. **Kansas**: Riley. **Maryland**: Allegany. **Massachusetts**: Essex, Hampshire, Middlesex, Norfolk. **Michigan**: Livingston. **Minnesota**: Itasca, Ramsey, Wabasha. **Mississippi**: Oktibbeha. **Missouri**: Johnson. **Montana**: Silver Bow. **New Hampshire**: Grafton, Hillsboro, Merrimack, Strafford. **New Jersey**: Bergen. **New Mexico**: Bernalillo, Colfax, Dona Ana, Eddy, Grant, Hidalgo, Luna, Santa Fe, Union, Valencia. **New York**: Onondaga, Sullivan, Tompkins. **North Carolina**: Haywood, Macon, Orange. **North Dakota**: Divide, Williams. **Oklahoma**: Cleve-



Figs. 122–125. *Micaria longipes* Emerton. 122. Palp, ventral view. 123. Palp, retrolateral view. 124. Epigynum, ventral view. 125. Epigynum, dorsal view.

land, Texas. **Ohio:** Fairfield, Franklin, Hocking. **Pennsylvania:** Schuylkill. **South Dakota:** Day. **Tennessee:** Sevier. **Texas:** Borden, Comanche, Culberson, Denton, Erath, Frio, Hidalgo, Jeff Davis, Lynn, Reeves, San Patricio, Taylor, Tom Green, Travis. **Virginia:** Fairfax. **West Virginia:** Hancock. **MEXICO:** **Chihuahua:** Rancho La Campana. **Hidalgo:** 5 mi S Zimapan. **Sonora:** Cajón Bonito.

DISTRIBUTION: Southern Canada to Hidalgo (map 19), but evidently replaced in the far west of the United States and Mexico by *M. gosiuta*.

NATURAL HISTORY: Mature males have been taken from early June through early October, mature females from late April through late November. Specimens have been collected in pitfall and intercept traps in cultivated fields, grassland, pastures, prairies, and sand, in oak leaf litter and oak-pine barrens, in emergence traps in a white spruce plantation, in asparagus, peanuts, cotton, and goldenrod, under rocks, and in buildings, at elevations up to 7000 ft.

SYNONYMY: Gertsch provided characters

to distinguish *M. alberta* from *M. aurata* (= *M. delicatula*) but not from *M. longipes*, the types of which were unavailable to him at the time.

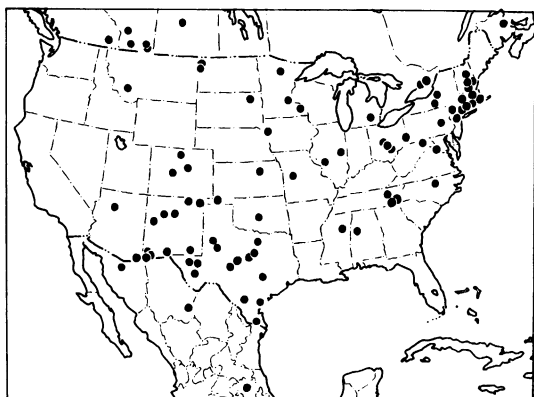
Micaria delicatula Bryant

Figures 126–129; Map 18

Micaria delicatula Bryant, 1941: 138 (male holotype from Cold Spring Harbor, Suffolk County, New York, in MCZ, examined).

Micaria aurata (nomen dubium): Kaston, 1945: 8, figs. 30–35, 44; 1948: 401, figs. 1418, 1419, 1432, 1434–1436, 2126, 2127. – Roewer, 1955: 629. – Bonnet, 1957: 2835 (in part).

NOMENCLATURE: Several names have been applied to this uncommonly collected species. Kaston (1945) accepted the name *Herpyllus auratus* Hentz (1847), the types of which have been destroyed. Because no modern specimens of the species have been taken in Alabama (the type locality of *M. aurata*) and it is likely that Hentz had instead *M. longipes* or *M. browni*, *M. aurata* (Hentz) is here regarded as a nomen dubium. Kaston (1945) also placed *M. agilis* Banks (1895) as a syn-



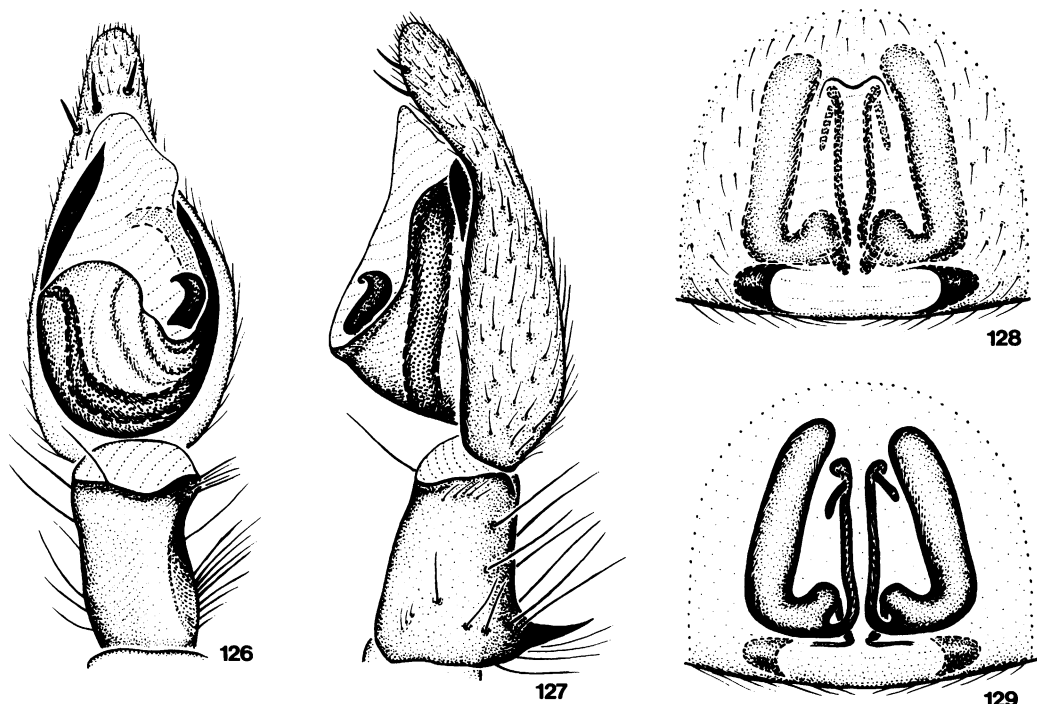
Map 19. North America, showing distribution of *Micaria longipes*.

onym of *M. aurata*. Banks described a specimen (now lost) from Missouri; it is unlikely that this species occurs there. Banks reported *M. agilis* also from Washington, D.C., and Sea Cliff, New York; the former specimens have been lost, whereas the latter are a mixed series of this species and *M. longipes*. Banks' name is probably a junior synonym of *M.*

longipes, but in the absence of the type is regarded here as a nomen dubium also. Finally, Bryant (1941) proposed a new name, *M. delicatula*, for specimens previously identified as *M. aurata* by herself, Gertsch, and Kaston. Bryant supplied this new name because she thought that *Herpyllus auratus* was based on a *Castianeira* rather than a *Micaria* (a view effectively refuted by Kaston, 1945). Although Bryant's reasons for proposing *M. delicatula* may have been dubious, she did mention a particular specimen and did differentiate the species from *M. longipes*. Her name is therefore available and is used here; the male specimen she referred to has been labeled as the holotype and deposited in the MCZ type collection.

DIAGNOSIS: This species seems closest to *M. longipes* (see above) but can be distinguished by the shorter median apophysis of males (fig. 126) and the more widely spaced posterior epigynal sockets of females (fig. 128).

MALE: Total length 4.56 ± 0.30 . Carapace 2.05 ± 0.13 long, 1.24 ± 0.09 wide. Femur II 1.34 ± 0.10 long. Eye sizes and interdist-



Figs. 126–129. *Micaria delicatula* Bryant. 126. Palp, ventral view. 127. Palp, retrolateral view. 128. Epigynum, ventral view. 129. Epigynum, dorsal view.

ances: AME 0.06, ALE 0.05, PME 0.05, PLE 0.05; AME-AME 0.07, AME-ALE 0.02, PME-PME 0.11, PME-PLE 0.08, ALE-PLE 0.08; MOQ length 0.22, front width 0.19, back width 0.21. Leg spination: femur III d1-0-0, r0-0-1; tibiae: III v2-1p-2, r0-1-0; IV p0-1-0, r0-1-0. Median apophysis relatively short, far from embolus (fig. 126); retrolateral tibial apophysis situated near proximal end of tibia (fig. 127).

FEMALE: Total length 5.62 ± 0.60 . Carapace 2.35 ± 0.14 long, 1.41 ± 0.13 wide. Femur II 1.38 ± 0.08 long. Eye sizes and interdistances: AME 0.06, ALE 0.06, PME 0.06, PLE 0.06; AME-AME 0.08, AME-ALE 0.03, PME-PME 0.13, PME-PLE 0.10, ALE-PLE 0.10; MOQ length 0.25, front width 0.20, back width 0.25. Leg spination: femur III r0-0-1; tibiae: III p0-1-0, v2-1p-2, r0-1-0; IV p0-1-0, r0-1-0; metatarsus III p0-1-0. Epigynal sockets (and accompanying sclerotizations) occupying as much of epigynal width as spermathecae (fig. 128); paramedian ducts extending almost to anterior edge of epigynum (fig. 129).

MATERIAL EXAMINED: UNITED STATES: **Connecticut:** *New Haven Co.:* Devon, Sept. 22, 1935 (B. J. Kaston, AMNH), 1♀; West Haven, Aug. 18, 1935 (D. S. Riggs, AMNH), 1♂, 2♀, Sept. 8, 1935 (B. J. Kaston, AMNH), 1♂, 6♀. *New London Co.:* Black Hall, Aug. 23, 1935 (D. S. Riggs, B. J. Kaston, AMNH), 2♂. **Massachusetts:** *Essex Co.:* Ipswich, June 3–Aug. 20, 1900–1909, running on dry sand (J. H. Emerton, MCZ), 5♀. **New Jersey:** *Monmouth Co.:* Sandy Hook State Park, Aug. 31, 1963, running on sand (B. Cutler, AMNH), 2♀. **New York:** *Kings Co.:* Coney Island, July 1881 (AMNH), 4♂. *Nassau Co.:* no specific locality (N. Pike, AMNH), 3♂, 1♀; Sea Cliff (N. Banks, MCZ), 1♂, 4♀. *Suffolk Co.:* Sand Spit, Cold Spring Harbor, Aug. 19, 1907 (E. B. Bryant, MCZ), 1♂ (type). **South Carolina:** *Aiken Co.:* Savannah River Plant, Oct. 27–Nov. 13, 1959, under board (W. Tarpley, AMNH), 2♀.

DISTRIBUTION: Known only from the Eastern Seaboard of the United States (map 18).

Micaria gosiuta Gertsch

Figures 130–133; Map 20

Micaria aurata (nomen dubium): Gertsch, 1933: 2, fig. 6.

Micaria gosiuta Gertsch, 1942: 1, fig. 2 (female

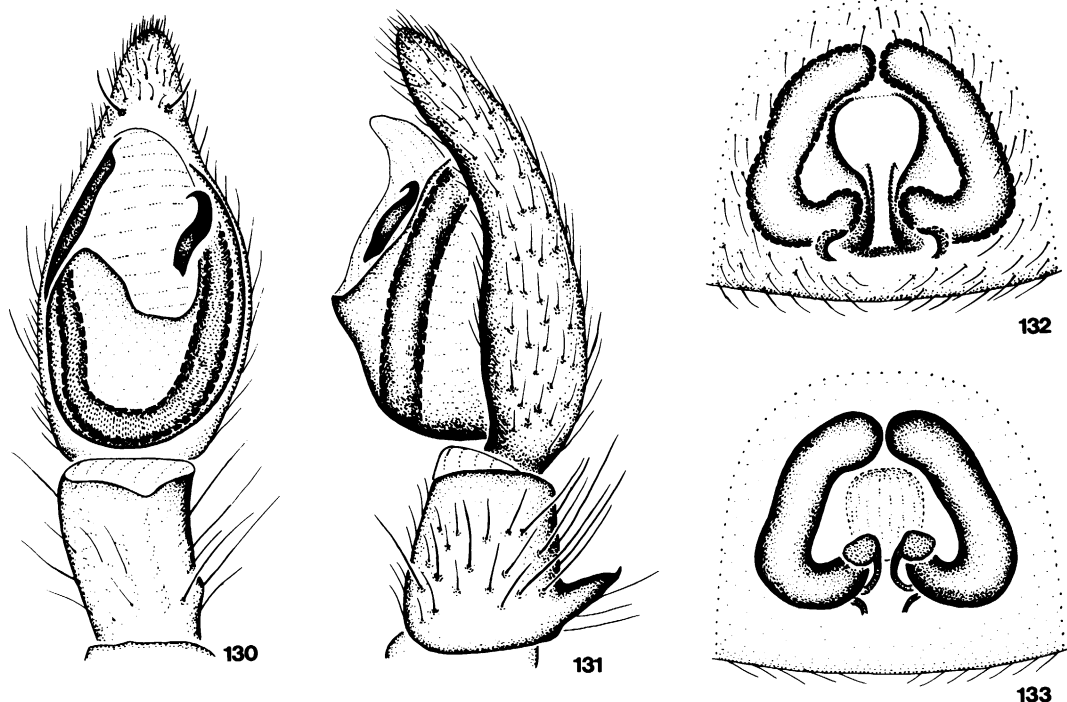
holotype from City Creek Canyon, Salt Lake County, Utah, in AMNH, examined). – Roewer, 1955: 630.

DIAGNOSIS: This species resembles *M. longipes* and *M. delicatula* but can be distinguished by the basal bulge on the retrolateral tibial apophysis of males (figs. 130, 131) and the relatively short paramedian epigynal ducts of females (figs. 132, 133).

MALE: Total length 4.26 ± 0.37 . Carapace 2.00 ± 0.18 long, 1.20 ± 0.13 wide. Femur II 1.26 ± 0.11 long. Eye sizes and interdistances: AME 0.05, ALE 0.04, PME 0.04, PLE 0.04; AME-AME 0.06, AME-ALE 0.01, PME-PME 0.11, PME-PLE 0.06, ALE-PLE 0.07; MOQ length 0.20, front width 0.16, back width 0.19. Leg spination: femora: III d1-0-1, r0-0-1; IV d1-0-1; tibiae: III v2-1p-2, r0-1-0; IV p0-1-0, r0-1-0. Median apophysis relatively long, situated far from embolus (fig. 130); retrolateral tibial apophysis proximally situated, basally bulging (fig. 131).

FEMALE: Total length 4.92 ± 0.73 . Carapace 2.16 ± 0.16 long, 1.32 ± 0.12 wide. Femur II 1.29 ± 0.14 long. Eye sizes and interdistances: AME 0.06, ALE 0.05, PME 0.05, PLE 0.05; AME-AME 0.06, AME-ALE 0.02, PME-PME 0.12, PME-PLE 0.06, ALE-PLE 0.09; MOQ length 0.21, front width 0.18, back width 0.22. Leg spination: femora: III d1-0-1, r0-0-1; IV d1-0-1; tibiae: III v2-1p-2, r0-1-0; IV p0-1-0, r0-1-0; metatarsus IV v2-3-2. Epigynum with circular median depression (fig. 132); paramedian ducts relatively short (fig. 133).

MATERIAL EXAMINED: UNITED STATES: **Arizona:** *Graham Co.:* Shannon Camp, Graham Mountains, Sept. 13, 1950 (W. J. Gertsch, AMNH), 1♂. *Maricopa Co.:* South Mountain Park, Nov. 8, 1964, pitfall (S. C. Williams, AMNH), 1♀. *Pima Co.:* W Arivaca, Dec. 31, 1940 (S. and D. Mulaik, AMNH), 1♀; Santa Rita Mountains, Oct. 3, 1939 (R. H. Crandall, AMNH), 1♂; Tucson, Sept. 6, 1939 (R. H. Crandall, AMNH), 1♂, Oct. 1–8, 1953 (R. H. Crandall, AMNH), 1♀, Oct. 9, 1963 (W. and J. Ivie, AMNH), 1♀. **Santa Cruz Co.:** 7 mi SE Ruby, Sept. 5, 1950 (W. J. Gertsch, AMNH), 1♂. **California:** *Inyo Co.:* 2.5 mi S, 8.5 mi W Big Pine, Oct. 6, 1985–May 13, 1986, elev. 8400 ft (D. Giuliani, CAS), 1♀; Kearsarge Pass Road, Aug. 29, 1979, elev. 8700 ft (P. Adams, CDFA), 1♀. *Mono Co.:* Big Alkali Lake, Sept. 2, 1980–



Figs. 130–133. *Micaria gosiuta* Gertsch. 130. Palp, ventral view. 131. Palp, retrolateral view. 132. Epigynum, ventral view. 133. Epigynum, dorsal view.

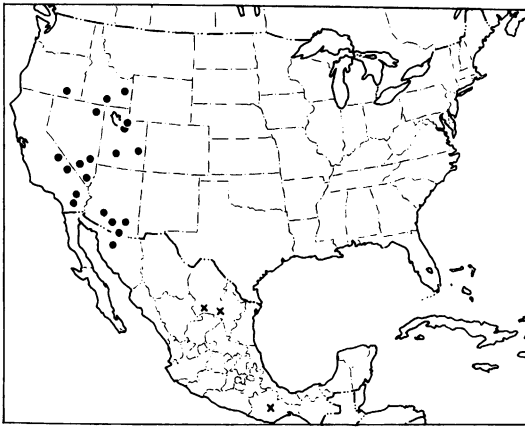
Apr. 22, 1981, elev. 2100 m, pitfall (D. Giuliani, CAS), 1♂; 9 mi N Bishop, July 29, 1980–Mar. 12, 1981, elev. 1300 m, pitfall (D. Giuliani, CAS), 1♂; 1.5 mi E Tom's Place, Sept. 2, 1980–Apr. 22, 1981, pitfall (D. Giuliani, CAS), 3♂, 1♀. **Riverside Co.:** Garner Valley, San Jacinto Mountains, Sept. 25, 1975, on artemisia (A. J. Mayor, UCR), 1♀; 5 mi NW Palm Springs, Feb. 13, 1976, elev. 1600 ft, sand dune (S. C. Johnson, SCJ), 1♀. **San Bernardino Co.:** Apple Valley, July 24–Sept. 29, 1978, elev. 3000 ft., under trash, creosote bush (W. R. Icenogle, WRI), 2♂, 1♀; Big Pine Flats, San Bernardino Mountains, Sept. 30–Oct. 16, 1978, with ants (W. and E. Mackay, MCZ), 3♀; 12.5 mi E Camp Angelus, Aug. 18, 1980, elev. 7000 ft (C. Griswold, UCB), 1♂. **Idaho:** **Bonneville Co.:** Idaho Falls, May 19–28, 1966 (AMNH), 2♀. **Cassia Co.:** 5 mi NE Malta, Sept. 5, 1964 (W. F. Barr, AMNH), 1♀. **Nevada:** **Clark Co.:** 0.25 mi W Searchlight, Oct. 2, 1981, elev. 3000 ft (W. R. Icenogle, WRI), 1♀. **Elko Co.:** 20 mi W Elko, Sept. 5, 1935 (W. Ivie, R. V. Chamberlin, AMNH), 1♂. **Lincoln Co.:** Dry Lake Valley, Mar.–Sept. 1986, elev. 4800 ft (D. Giuliani, CAS), 2♂,

2♀; Oak Springs Summit, Mar.–Sept. 1986, elev. 6200 ft (D. Giuliani, CAS), 1♂, 1♀. **Nye Co.:** Mercury, Aug. 24–Sept. 25, 1960–1961 (AMNH), 5♂. **Oregon:** **Harney Co.:** Alvord Basin, 1979, pitfall, sand dunes (J. D. Lattin, CNC), 3♂. **Utah:** **Grand Co.:** Moab, Sept. 8, 1933 (W. Ivie, AMNH), 1♂, 1♀ (penultimate). **Salt Lake Co.:** City Creek Canyon, Aug. 29, 1931 (W. J. Gertsch, AMNH), 1♀ (type). **Sevier Co.:** 2 mi E Glenwood, June 30, 1940 (W. J. Gertsch, AMNH), 1♀. **Summit Co.:** Park City, May 12, 1944 (W. Ivie, AMNH), 1♂. **MEXICO:** **Baja California Sur:** San José del Cabo, 1896 (N. Banks, MCZ), 1♀; San José Viejo, July 17, 1978, on croton (M. A. Cazier, AMNH), 2♂, 6♀. **Sonora:** 5 mi S Santa Ana, Nov. 8, 1952, elev. 2500 ft (W. S. Creighton, AMNH), 1♀.

DISTRIBUTION: Oregon and Idaho south to Baja California Sur and Sonora (map 20), evidently replacing *M. longipes* in those areas.

Micaria seminola Gertsch
Figures 134–137; Map 10

Micaria seminola Gertsch, 1942: 3, fig. 6 (female holotype from Saint Augustine, Saint Johns



Map 20. North America, showing distribution of *Micaria gosiuta* (circles) and *M. mexicana* (crosses).

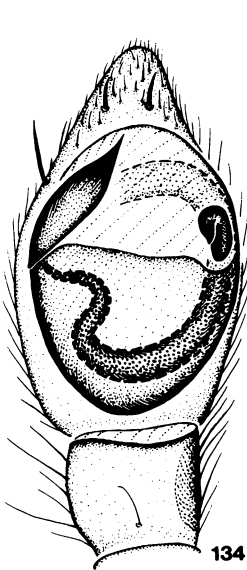
County, Florida, in AMNH, examined). — Roewer, 1955: 632.

DIAGNOSIS: This distinctive species can be recognized by the greatly shortened palpal tibia of males (figs. 134, 135) and the posteriorly enlarged spermathecae of females (figs. 136, 137).

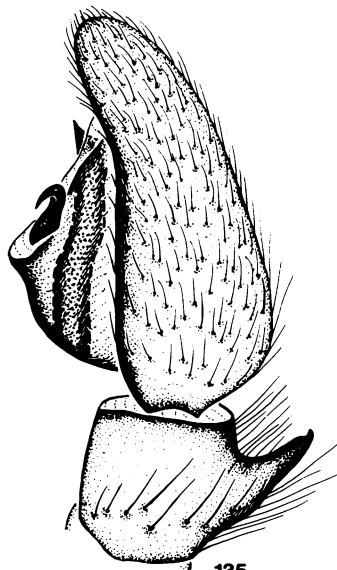
MALE: Total length 1.63–2.25. Carapace

0.77–0.88 long, 0.49–0.59 wide. Femur II 0.48–0.56 long. Eye sizes and interdistances: AME 0.03, ALE 0.04, PME 0.03, PLE 0.03; AME-AME 0.04, AME-ALE 0.01, PME-PME 0.05, PME-PLE 0.03, ALE-PLE 0.05; MOQ length 0.10, front width 0.10, back width 0.11. Leg spination: femora: II p0-0-0; III d1-0-0, p0-0-0; tibiae: III p0-0-1, v1p-2-2, r0-1-0; IV p0-1-0, v1p-1p-2; metatarsi: III v1p-2-2, r0-0-1; IV p0-1-0, v1p-2-2, r0-1-1. Embolus widest at about half its length (fig. 134); tibia short, with retrolateral tibial apophysis situated at about half its length (fig. 135).

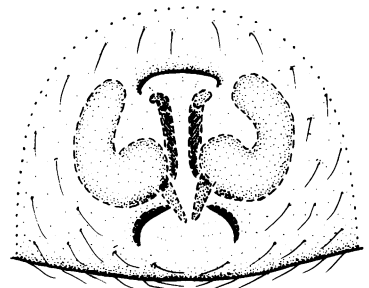
FEMALE: Total length 2.14–2.66. Carapace 0.92–1.00 long, 0.61–0.66 wide. Femur II 0.52–0.61 long. Eye sizes and interdistances: AME 0.04, ALE 0.04, PME 0.04, PLE 0.05; AME-AME 0.04, AME-ALE 0.01, PME-PME 0.05, PME-PLE 0.04, ALE-PLE 0.05; MOQ length 0.13, front width 0.12, back width 0.13. Leg spination: femora: II p0-0-0; III d1-0-0; tibiae: III v2-1p-2, r0-1-0; IV p0-1-0, v1p-2-2, r0-1-0; metatarsi: III v2-1p-2; IV p0-1-0, v1p-2-2. Anterior epigynal ridge and posterior epigynal sockets occupying less than half of epigynal width (fig. 136); spermathecae rotund posteriorly (fig. 137).



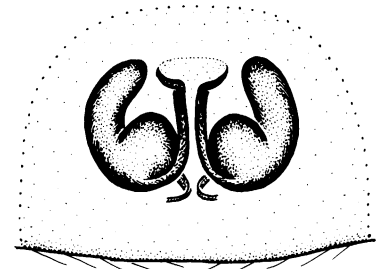
134



135

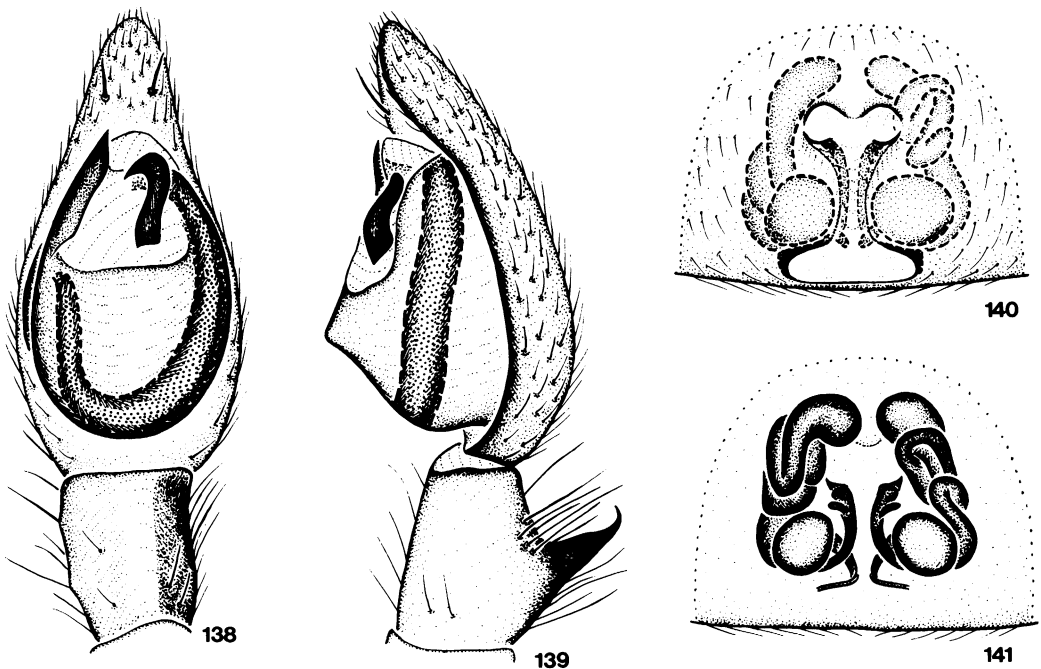


136



137

Figs. 134–137. *Micaria seminola* Gertsch. 134. Palp, ventral view. 135. Palp, retrolateral view. 136. Epigynum, ventral view. 137. Epigynum, dorsal view.



Figs. 138–141. *Micaria riggsi* Gertsch. 138. Palp, ventral view. 139. Palp, retrolateral view. 140. Epigynum, ventral view. 141. Epigynum, dorsal view.

MATERIAL EXAMINED: UNITED STATES: **Arkansas:** *Bradley Co.*: Hermitage, Apr. 19, 1963, pitfall (Leslie, EPC), 1♀. **California:** *Imperial Co.*: Fish Springs, NW shore, Salton Sea, Mar. 12, 1941 (W. Ivie, AMNH), 1♂. **Florida:** *Alachua Co.*: Gainesville, Feb. 27, 1927 (W. M. Barrows, OSU), 1♀. *Lee Co.*: Fort Myers, winter 1934 (W. M. Barrows, AMNH), 1♀. *Polk Co.*: Winter Haven, May 26–Sept. 9, 1968–1970, pitfalls, sand pine dune (K. J. Stone, M. H. Muma, H. L. Greene, FSCA), 3♂. *Saint Johns Co.*: Saint Augustine, Feb. 25, 1934 (H. K. Wallace, AMNH), 1♀ (type). **Mississippi:** *Harrison Co.*: Pass Christian, Aug. 12, 1938 (L. I. Davis, AMNH), 1♀. **Texas:** *San Patricio Co.*: 8 mi NE Sinton, July 6, 1960 (H. E. Laughlin, AMNH), 1♂. *Travis Co.*: Austin, Mar. 27, 1946 (H. Exline, EPC), 1♂.

DISTRIBUTION: Southern United States (map 10).

Micaria riggsi Gertsch
Figures 138–141; Map 21

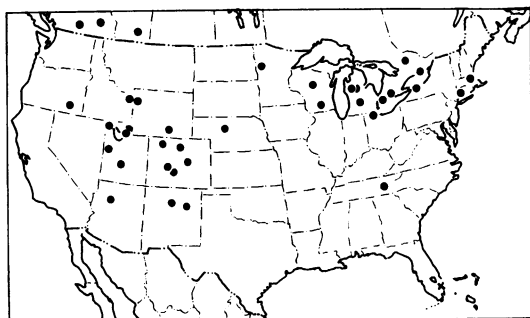
Micaria riggsi Gertsch, 1942: 2, fig. 4 (female holotype from Norwalk, Fairfield County, Con-

necticut, in AMNH, examined). – Kaston, 1948: 404, fig. 1451. – Roewer, 1955: 631.

DIAGNOSIS: This species resembles *M. emertoni* and *M. icenoglei* (males share a distally bent retrolateral tibial apophysis situated at about half the length of the palpal tibia) but can be distinguished by the longer median apophysis of males (fig. 138) and the narrow anterior epigynal margin of females (fig. 141).

MALE: Total length 3.35 ± 0.48 . Carapace 1.54 ± 0.15 long, 0.97 ± 0.12 wide. Femur II 1.00 ± 0.14 long (47 specimens examined). Eye sizes and interdistances: AME 0.05, ALE 0.05, PME 0.05, PLE 0.05; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.06, PME-PLE 0.06, ALE-PLE 0.06; MOQ length 0.19, front width 0.15, back width 0.16. Leg spination: femora: III r0-1-0; IV d1-1-0; tibiae: III r0-0-1; IV p0-1-0, v2-3-2; metatarsus IV v2-3-2. Median apophysis almost as long as embolus (fig. 138); retrolateral tibial apophysis situated at about half of tibial length, bent distally (fig. 139).

FEMALE: Total length 3.88 ± 0.23 . Carapace 1.65 ± 0.10 long, 1.03 ± 0.07 wide.



Map 21. North America, showing distribution of *Micaria riggsi* (circles) and *M. palma* (cross).

Femur II 1.00 ± 0.15 long (57 specimens examined). Eye sizes and interdistances: AME 0.04, ALE 0.04, PME 0.05, PLE 0.05; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.08, PME-PLE 0.06, ALE-PLE 0.08; MOQ length 0.19, front width 0.13, back width 0.18. Leg spination: femora: III d1-0-0, r0-1-0; IV d1-1-0; tibiae: III r0-1-0; IV p0-1-0, v2-3-2, r0-1-0; metatarsus IV v2-3-2. Anterior epigynal margin and epigynal openings almost forming circles (fig. 140); spermathecae highly, irregularly convoluted (fig. 141).

RECORDS: CANADA: **Alberta:** Chin. **British Columbia:** Apex Mountain, nr. Kere-meos; Salmon Arm. **Ontario:** Chatterton; Dwight; Foxboro; Hepworth; Kirby Farm, W Huntington; Long Point; Rondeau Provincial Park; Sproule Bay, Lake Opeongo, Algonquin Provincial Park. UNITED STATES (county records only): **Arizona:** Coconino. **Colorado:** Boulder, Gunnison, Routt, Saguache, Teller. **Connecticut:** Fairfield. **Idaho:** Fremont. **Massachusetts:** Middlesex. **Michigan:** Clare, Clinton, Osceola. **Minnesota:** Clay. **Nebraska:** Thomas. **New Mexico:** Los Alamos, San Miguel. **New York:** Orleans. **Ohio:** Lucas. **Oregon:** Harney. **Tennessee:** Sevier. **Utah:** Box Elder, Juab, Morgan, Rich, Sevier. **Wisconsin:** Dane, Marathon. **Wyoming:** Carbon, Teton.

NATURAL HISTORY: Mature males have been taken from late April through early September, mature females from mid-May through late August. Specimens have been collected in pitfall traps in meadows, grassy fields, and sand blowouts, under boards on sand, on mullein, sweeping upland prairies, in dry sage and lichens, and in buildings, at elevations up to 11,000 ft.

DISTRIBUTION: Widespread in the United States and southern Canada (map 21).

Micaria emertoni Gertsch

Figures 142–145; Map 22

Micaria quinquenotata Emerton, 1909: 215, pl. 10, figs. 1, 1a–e (male and female syntypes from Ipswich, Essex County, Massachusetts, in MCZ, examined); preoccupied by *M. quinquenotata* Simon, 1895.

Micaria emertoni Gertsch, 1935: 16 (nomen novum for *M. quinquenotata* Emerton). – Kaston, 1948: 403, figs. 1420, 1421, 1440. – Roewer, 1955: 630. – Bonnet, 1957: 2837.

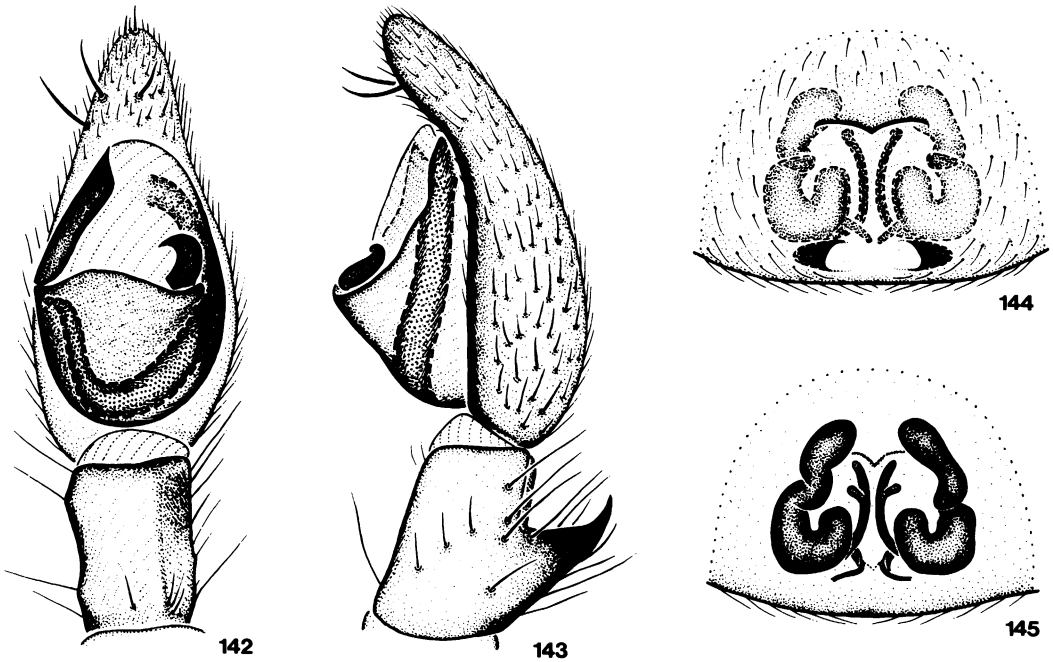
Micaria apacheana Gertsch, 1942: 2, fig. 3 (female holotype from Whiteriver, Navaho County, Arizona, in AMNH, examined). – Roewer, 1955: 629. NEW SYNONYMY.

DIAGNOSIS: This species seems closest to *M. riggsi* and *M. icenoglei* (see above) but can be distinguished by the short, wide median apophysis of males (fig. 142) and the less convoluted spermathecae of females (fig. 145).

MALE: Total length 2.94 ± 0.35 . Carapace 1.38 ± 0.18 long, 0.93 ± 0.12 wide. Femur II 0.87 ± 0.13 long (23 specimens examined). Eye sizes and interdistances: AME 0.04, ALE 0.04, PME 0.04, PLE 0.05; AME-AME 0.05, AME-ALE 0.01, PME-PME 0.06, PME-PLE 0.05, ALE-PLE 0.06; MOQ length 0.16, front width 0.13, back width 0.15. Leg spination: femora: III r0-0-1; IV d1-1-0; tibiae: III r0-1-0; IV p0-1-0, r0-1-0; metatarsus IV v2-3-2. Median apophysis much shorter than embolus (fig. 142); retrolateral tibial apophysis situated at about half of tibial length, bent distally (fig. 143).

FEMALE: Total length 3.37 ± 0.55 . Carapace 1.36 ± 0.20 long, 0.90 ± 0.15 wide. Femur II 0.81 ± 0.12 long (45 specimens examined). Eye sizes and interdistances: AME 0.05, ALE 0.04, PME 0.04, PLE 0.04; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.09, PME-PLE 0.05, ALE-PLE 0.07; MOQ length 0.17, front width 0.15, back width 0.17. Leg spination: femora: III r0-0-1; IV d1-1-0; tibiae: III r0-1-0; IV p0-1-0, r0-1-0; metatarsus IV p0-1-0, v2-3-2. Anterior epigynal margin winglike (fig. 144); spermathecae moderately, irregularly convoluted (fig. 145).

RECORDS: CANADA: **Alberta:** Highway 48, N Elkwater Provincial Park. **Saskatchewan:** Sand Hills, near Crane Lake. UNITED STATES (county records only): **Arizona:** Cochise, Navaho. **Colorado:** Conejos. **Idaho:**



Figs. 142–145. *Micaria emertoni* Gertsch. 142. Palp, ventral view. 143. Palp, retrolateral view. 144. Epigynum, ventral view. 145. Epigynum, dorsal view.

Cassia. **Maryland:** Worcester. **Massachusetts:** Barnstable, Dukes, Essex. **Michigan:** Alger, Leelanau, Oceana. **Nevada:** Nye. **New Jersey:** Monmouth. **New Mexico:** Bernalillo, Grant, Sandoval, San Miguel, Valencia. **New York:** Nassau. **North Dakota:** Divide. **Oregon:** Benton, Klamath. **Texas:** Brewster. **Washington:** Thurston. **MEXICO:** **Durango:** Yerbánis, 80 mi NE Durango. **Hidalgo:** Ixmiquilpan. **Zacatecas:** “Los Patos” pond, SE Zacatecas.

DISTRIBUTION: Southern Canada to Mexico (map 22).

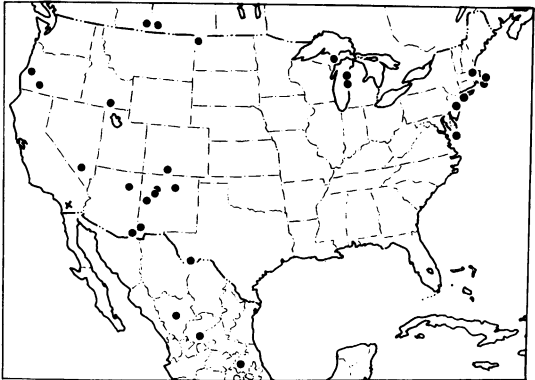
NATURAL HISTORY: Mature males have been taken from early June through mid-December, mature females from mid-March through early October. Specimens have been collected on beaches, sand dunes, and clay banks, under rocks and trash, in pitfall traps in pinyon-pine and juniper, and in buildings.

SYNONYMY: Gertsch (1942: 2) evidently overlooked *M. emertoni* in saying that *M. apacheana* “is distinguished from other members of the *aurata* group in having a transverse ridge across the anterior portion of the epigynum.” All females of *M. emertoni* examined have such a ridge.

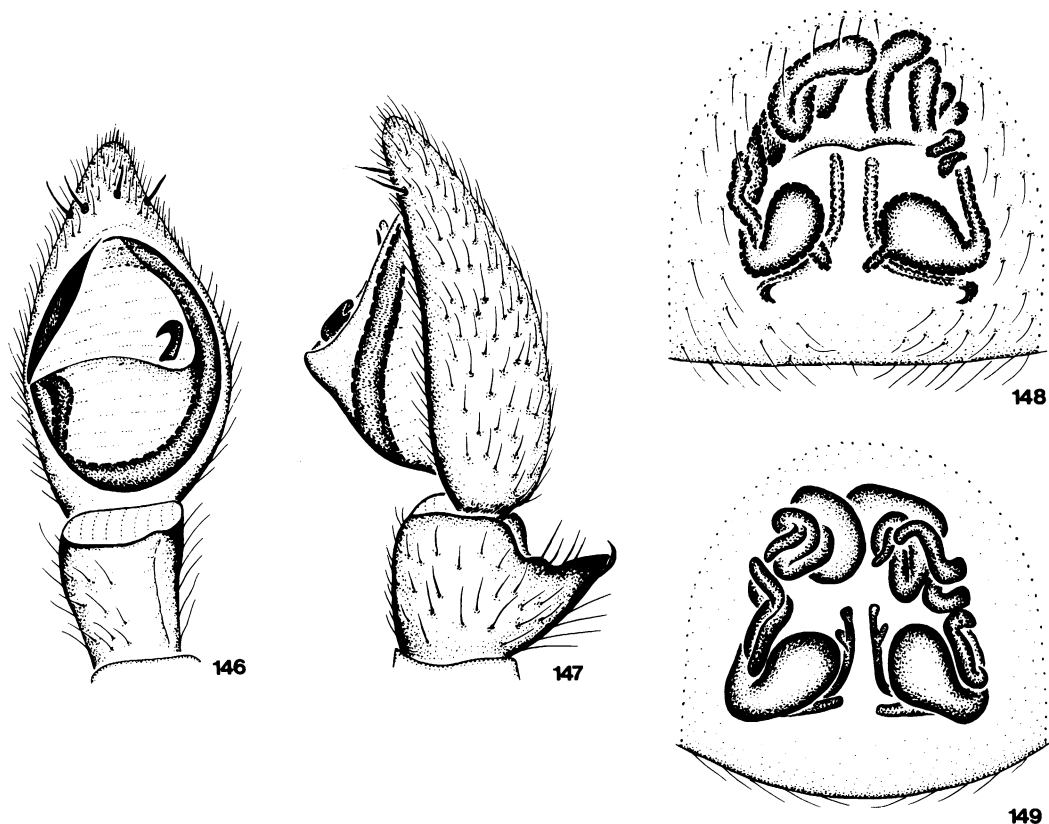
Micaria icenoglei, new species
Figures 146–149; Map 22

TYPES: Male holotype and female allotype taken under rocks at Winchester, Riverside County, California (male, Apr. 4, 1971; female, Apr. 9, 1971; W. R. Icenogle), deposited in AMNH courtesy of Mr. Icenogle.

ETYMOLOGY: The specific name is a pa-



Map 22. North America, showing distribution of *Micaria emertoni* (circles) and *M. icenoglei* (cross).



Figs. 146–149. *Micaria icenoglei*, new species. 146. Palp, ventral view. 147. Palp, retrolateral view. 148. Epigynum, ventral view. 149. Epigynum, dorsal view.

tronym in honor of Mr. Wendell Icenogle, who has collected the only known specimens of the species.

DIAGNOSIS: This species resembles *M. riggsi* and *M. emertoni* but can be distinguished by the relatively smaller median apophysis and relatively larger retrolateral tibial apophysis of males (fig. 147) and the medially situated transverse anterior epigynal margin of females (fig. 148).

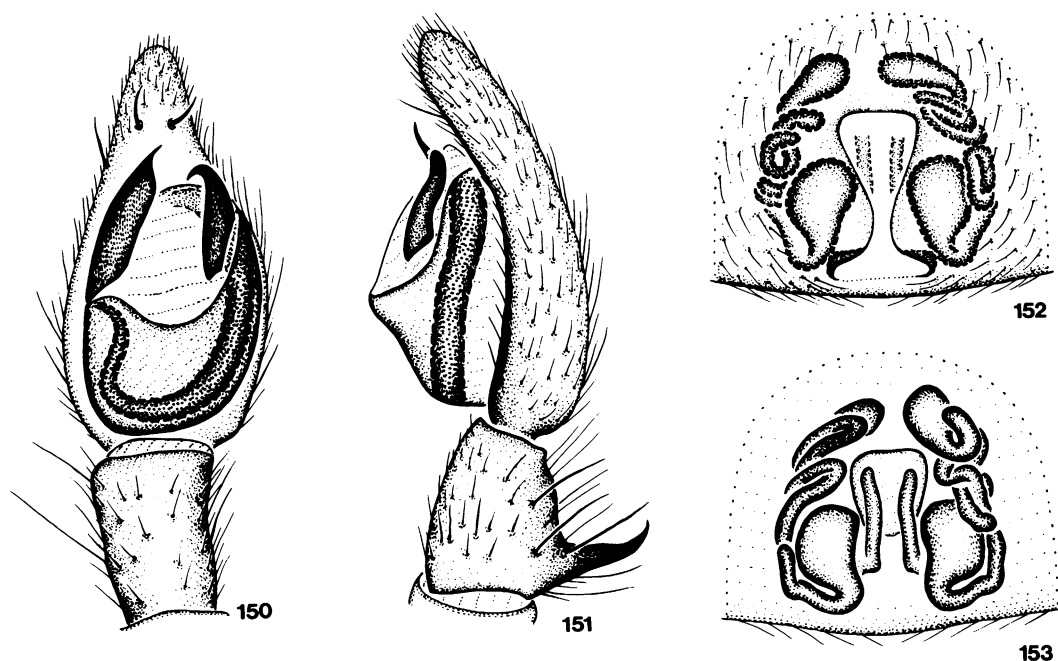
MALE: Total length 2.36–2.76. Carapace 0.96–1.24 long, 0.58–0.83 wide. Femur II 0.60–0.75 long. Eye sizes and interdistances: AME 0.03, ALE 0.04, PME 0.03, PLE 0.04; AME-AME 0.03, AME-ALE 0.01, PME-PME 0.05, PME-PLE 0.03, ALE-PLE 0.04; MOQ length 0.13, front width 0.09, back width 0.11. Leg spination: femora II, III p0-0-0; tibiae: III v0-1p-2; IV p0-1-0, v1p-1p-2; metatarsus III v0-2-2. Median apophysis relatively small (fig. 146); retrolateral tibial

apophysis relatively large, with distinctly bent tip (fig. 147).

FEMALE: Total length 2.23–3.64. Carapace 1.20–1.44 long, 0.83–0.92 wide. Femur II 0.58–0.83 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.05, PLE 0.04; AME-AME 0.05, AME-ALE 0.01, PME-PME 0.06, PME-PLE 0.04, ALE-PLE 0.05; MOQ length 0.16, front width 0.13, back width 0.16. Leg spination: femora: II p0-0-0; III d1-0-0, p0-0-0; tibiae III, IV p0-1-0, v1p-1p-2; metatarsi III, IV v1p-2-2. Anterior epigynal margin transverse (fig. 148); spermathecae highly convoluted (fig. 149).

OTHER MATERIAL EXAMINED: UNITED STATES: **California:** *Riverside Co.:* Winchester, Apr. 4–July 27, 1967–1977, elev. 1500 ft, in building, on ground, pitfalls (W. R. Icenogle, WRI), 2♂, 3♀.

DISTRIBUTION: Known only from Riverside County, California (map 22).



Figs. 150–153. *Micaria deserticola* Gertsch. 150. Palp, ventral view. 151. Palp, retrolateral view. 152. Epigynum, ventral view. 153. Epigynum, dorsal view.

***Micaria palma*, new species**

Figures 84, 85; Map 21

TYPE: Female holotype from Palm Beach, Palm Beach County, Florida (no date; N. Banks), deposited in MCZ.

ETYMOLOGY: The specific name is an arbitrary combination of letters.

DIAGNOSIS: The laterally displaced spermathecae of females (figs. 84, 85) are diagnostic.

MALE: Unknown.

FEMALE: Total length 2.90. Carapace 1.10 long, 0.75 wide. Femur II 0.56 long. Eye sizes and interdistances: AME 0.04, ALE 0.04, PME 0.04, PLE 0.04; AME-AME 0.04, AME-ALE 0.01, PME-PME 0.06, PME-PLE 0.04, ALE-PLE 0.05; MOQ length 0.14, front width 0.12, back width 0.14. Leg spination (leg III missing): femora I, II p0-0-0; tibia IV v1p-1p-2; metatarsus IV p0-1-0, r0-1-0. Anterior epigynal margin straight (fig. 84); spermathecae laterally displaced, highly convoluted (fig. 85).

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Known only from Florida (map 21).

***Micaria deserticola* Gertsch**

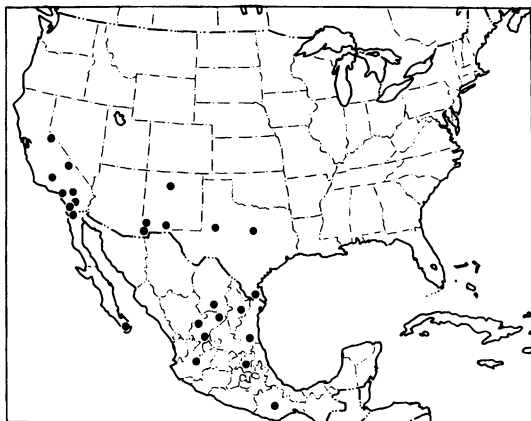
Figures 150–153; Map 23

Micaria deserticola Gertsch, 1933: 2, figs. 7, 8 (male holotype from Scottsdale, Maricopa County, Arizona, in AMNH, examined). – Roewer, 1955: 630. – Bonnet, 1957: 2837.

Micaria melanopa Gertsch and Davis, 1940: 14, fig. 28 (female holotype from San Pedro, Tamaulipas, Mexico, in AMNH, examined). – Roewer, 1955: 629. **NEW SYNONYMY.**

DIAGNOSIS: Males can be recognized by the long, narrow, bent tip of the retrolateral tibial apophysis (fig. 151), females by the long lateral epigynal margins and highly convoluted spermathecae (figs. 152, 153).

MALE: Total length 2.81 ± 0.28 . Carapace 1.28 ± 0.15 long, 0.76 ± 0.09 wide. Femur II 0.76 ± 0.09 long (68 specimens examined). Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.05, PLE 0.05; AME-AME 0.05, AME-ALE 0.03, PME-PME 0.07, PME-PLE 0.05, ALE-PLE 0.08; MOQ length 0.18, front width 0.13, back width 0.17. Leg spination: femur III d1-0-0; tibiae: III p0-1-0, v1p-1p-2, r0-0-0; IV v1p-1p-2, r0-1-0; metatarsi III v1p-2-2. Median apophysis relatively long



Map 23. North America, showing distribution of *Micaria deserticola*.

(fig. 150); retrolateral tibial apophysis with long, narrow, bent tip (fig. 151).

FEMALE: Total length 3.38 ± 0.24 . Carapace 1.48 ± 0.10 long, 0.88 ± 0.06 wide. Femur II 0.84 ± 0.09 long (54 specimens examined). Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.05, PLE 0.05; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.08, PME-PLE 0.07, ALE-PLE 0.07; MOQ length 0.17, front width 0.13, back width 0.18. Leg spination: femora: II p0-0-0; III d1-0-0; tibiae: III v1p-1p-2; IV v1p-1p-2, r0-1-0. Lateral epigynal margins outlining hourglass-shaped central area (fig. 152); spermathecae highly convoluted (fig. 153).

RECORDS: UNITED STATES (county records only): **Arizona:** Cochise, Maricopa, Yuma. **California:** Alpine, Inyo, Kern, Los Angeles, Riverside, San Bernardino, San Diego. **New Mexico:** Dona Ana, Grant, Hidalgo, Los Alamos. **Texas:** Comanche, Hidalgo, Howard. **MEXICO:** **Baja California Norte:** 6 mi W Tecate. **Baja California Sur:** San José Viejo. **Coahuila:** Guadalupe. **Hidalgo:** 7 mi SE Zimapán. **Jalisco:** 4 mi SW Guadalajara. **Nuevo León:** 3 mi SW Santa Catarina. **Oaxaca:** Oaxaca. **Tamaulipas:** San Pedro. **Zacatecas:** 9 mi NE Concepción de Oro; Ojo Caliente; Saín Alto.

DISTRIBUTION: California to Texas, south to Oaxaca, Mexico (map 23).

NATURAL HISTORY: Mature males have been taken from late March through late December, mature females in all months except January. Specimens have been collected in

alfalfa, allionia, althorn, Bermuda grass, buildings, cotton, croton, ephedra, juniper, mesquite, nolina, peanuts, pinyon pine, and yucca, at elevations up to 10,100 ft.

SYNONYMY: As Gertsch and Davis (1940: 14) observed, *M. melanopa* "agrees completely in color pattern and closely in structure with *Micaria deserticola* Gertsch." They distinguished the latter by the "slightly recurved" (as opposed to "essentially straight") posterior eye row, but no geographically consistent differences among populations in this or other characters have been found in the samples now available.

Micaria mexicana, new species

Figures 154–157; Map 20

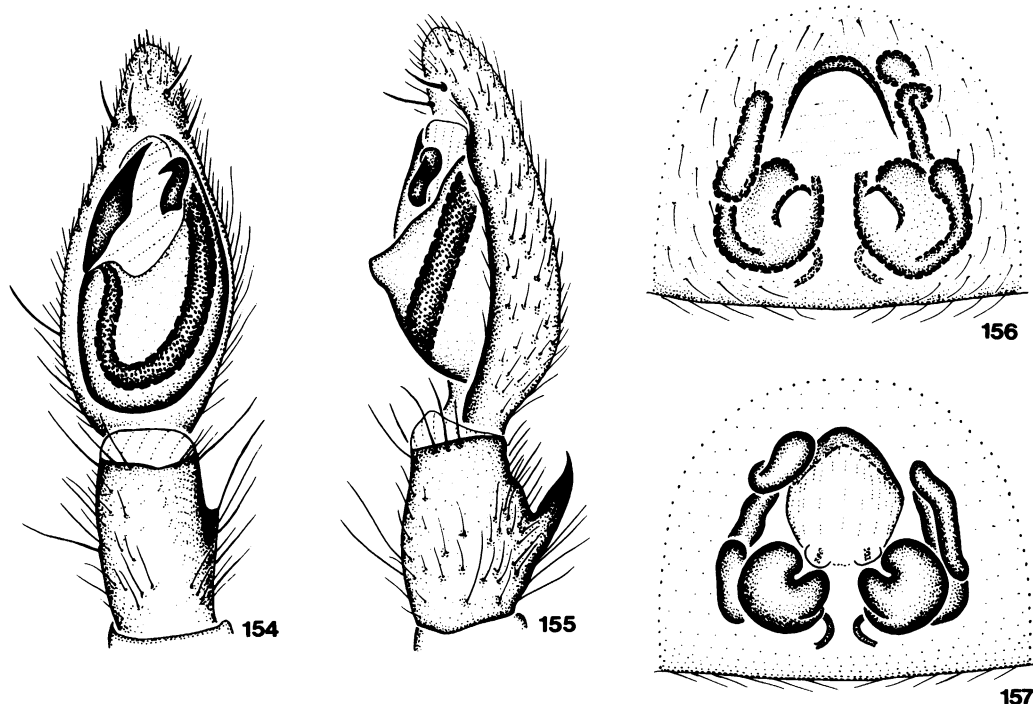
TYPE: Male holotype taken in area bordering meadow in pine-oak-madrona assemblage at Llano de los Flores, Sierra de Juárez, Oaxaca, Mexico (Aug. 8, 1963; M. R. Bogert and E. Bock), deposited in AMNH.

ETYMOLOGY: The specific name refers to the type locality.

DIAGNOSIS: Males can be recognized by the sharply angled retrolateral tibial apophysis (fig. 155), females by the crescent-shaped anterior epigynal margin (fig. 156).

MALE: Total length 4.74. Carapace 2.03 long, 1.50 wide. Femur II 1.38 long. Eye sizes and interdistances: AME 0.05, ALE 0.05, PME 0.04, PLE 0.05; AME-AME 0.08, AME-ALE 0.03, PME-PME 0.12, PME-PLE 0.08, ALE-PLE 0.09; MOQ length 0.20, front width 0.18, back width 0.20. Leg spination: femora: I, II p0-0-0; III d1-0-0; IV d1-0-1; tibiae: III p0-0-0, v0-1-0; IV r0-1-0; metatarsi III, IV v2-3-2. Median apophysis moderately long (fig. 154); retrolateral tibial apophysis directed almost distally (fig. 155).

FEMALE: Total length 3.96, 4.21. Carapace 1.55, 1.61 long, 0.90, 0.94 wide. Femur II 1.13, 1.20 long. Eye sizes and interdistances: AME 0.05, ALE 0.05, PME 0.04, PLE 0.05; AME-AME 0.06, AME-ALE 0.02, PME-PME 0.10, PME-PLE 0.05, ALE-PLE 0.08; MOQ length 0.19, front width 0.16, back width 0.18. Leg spination: femora: II p0-0-0; II d1-0-0, p0-0-0; tibiae: III p0-0-0, v1p-2-2; IV v1p-2-2; metatarsus III r0-1-0. Anterior epigynal margin crescent-shaped (fig.



Figs. 154–157. *Micaria mexicana*, new species. 154. Palp, ventral view. 155. Palp, retrolateral view. 156. Epigynum, ventral view. 157. Epigynum, dorsal view.

156); spermathecae highly convoluted (fig. 157).

OTHER MATERIAL EXAMINED: Two females from Coahuila, Mexico (one taken 20 mi E Saltillo on July 18, 1956, by W. J. Gertsch and V. Roth, the other at Guadalupe on May 24, 1952 by M. A. Cazier, W. J. Gertsch, and R. Schrammel, both in AMNH) are tentatively matched with the holotype because of the similarities of both sexes to those of *M. deserticola*.

DISTRIBUTION: Mexico (map 20).

Micaria triangulosa Gertsch

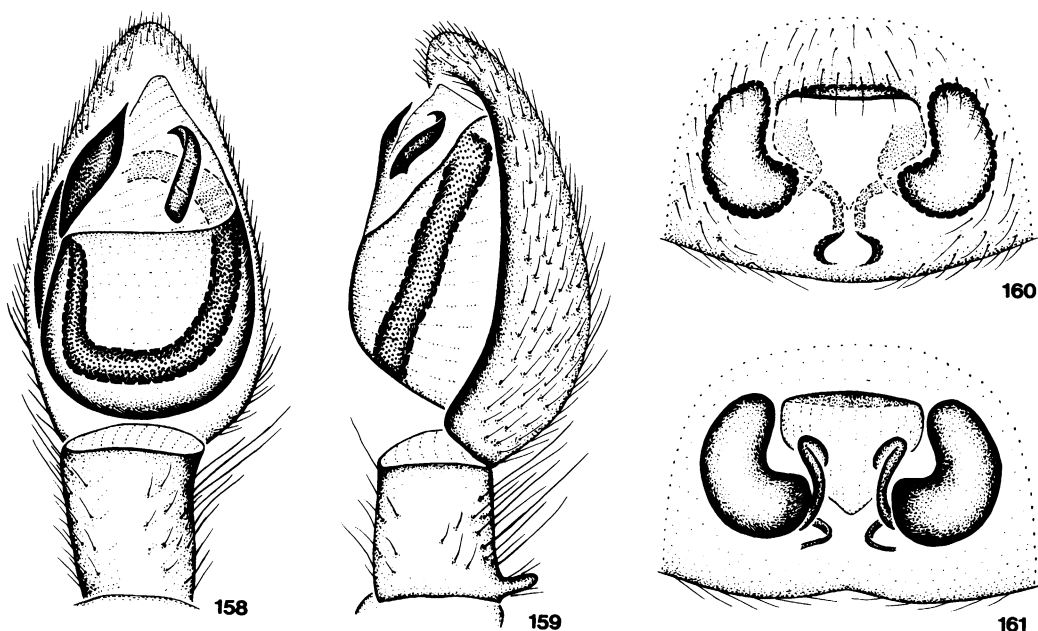
Figures 158–161; Map 12

Micaria triangulosa Gertsch, 1935: 20, figs. 44–46 (male holotype from Edinburg, Hidalgo County, Texas, in AMNH, examined). – Roewer, 1955: 632. – Bonnet, 1957: 2850.

DIAGNOSIS: This distinctive species can be recognized easily by the short, basally situated retrolateral tibial apophysis of males (fig. 159) and the triangular anteromedian epigynal depression of females (fig. 160).

MALE: Total length 2.22 ± 0.18 . Carapace 0.92 ± 0.07 long, 0.59 ± 0.04 wide. Femur II 0.52 ± 0.02 long. Eye sizes and interdistances: AME 0.03, ALE 0.04, PME 0.03, PLE 0.04; AME-AME 0.03, AME-ALE 0.01, PME-PME 0.04, PME-PLE 0.03, ALE-PLE 0.04; MOQ length 0.13, front width 0.09, back width 0.10. Leg spination: femora: II p0-0-0; III d1-0-0, p0-0-0; tibiae: III p0-0-0, v0-0-2; IV v0-0-2; metatarsi: III p0-0-0, v0-1p-2, r0-0-0; IV p0-0-1, v1p-1p-2, r0-0-1. Embolus relatively short (fig. 158); retrolateral tibial apophysis situated basally, relatively short (fig. 159).

FEMALE: Total length 2.75 ± 0.20 . Carapace 1.09 ± 0.09 long, 0.72 ± 0.08 wide. Femur II 0.58 ± 0.04 long. Eye sizes and interdistances: AME 0.03, ALE 0.03, PME 0.04, PLE 0.04; AME-AME 0.04, AME-ALE 0.01, PME-PME 0.05, PME-PLE 0.03, ALE-PLE 0.05; MOQ length 0.14, front width 0.10, back width 0.13. Leg spination: femora: II p0-0-0; III d1-0-0, p0-0-0; tibiae: III p0-0-1, v0-0-2; IV v0-0-2; metatarsi: III p0-0-0, v0-1p-2, r0-0-0; IV p0-0-1, v1p-1p-2, r0-0-1.



Figs. 158–161. *Micaria triangulosa* Gertsch. 158. Palp, ventral view. 159. Palp, retrolateral view. 160. Epigynum, ventral view. 161. Epigynum, dorsal view.

Epigynum with triangular anteromedian depression (fig. 160); spermathecae widely separated (fig. 161).

MATERIAL EXAMINED: UNITED STATES: **Texas:** *Cameron Co.:* Green Island Bird Sanctuary, May 11, 1935 (S. Mulaik, AMNH), 1♂; Harlingen, Nov. 7, 1934 (S. Mulaik, AMNH), 1♀; Laguna Madre, 25 mi SE Harlingen, Sept. 26, 1945 (Rutherford, McConnell, AMNH), 1♂. *Clay Co.:* no specific locality, May 2, 1981 (G. Zolnerowich, NVH), 1♂. *Eastland Co.:* Cisco, Apr. 3, 1966 (L. Pinter, MCZ), 1♂. *Ector Co.:* 9 mi S Odessa, Mar. 20, 1978 (Hall, Moody, Francke, AMNH), 1♂. *Hays Co.:* no specific locality, Apr. 15, 1939 (S. and D. Mulaik, AMNH), 1♂. *Hidalgo Co.:* Edinburg, Jan. 7–Nov. 27, 1934–1939 (S. and D. Mulaik, AMNH), 6♂, 15♀ (including types). *Kleberg Co.:* South Pasture, Kingsville, Feb. 28, 1968 (AMNH), 1♀. *San Patricio Co.:* 8 mi NE Sinton, Mar. 22–Oct. 15, 1959–1960 (H. E. Laughlin, AMNH), 12♂, 5♀. *Tom Green Co.:* San Angelo, July 1, 1982 (Gilreath, Hackler, TAM), 1♂, 1♀.

DISTRIBUTION: Known only from Texas (map 12).

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