

A REVISION OF THE AMERICAN
SPIDERS OF THE GENUS *ZELOTES*
(ARANEAE, GNAPHOSIDAE)

NORMAN I. PLATNICK AND MOHAMMAD U. SHADAB

BULLETIN
OF THE
AMERICAN MUSEUM OF NATURAL HISTORY
VOLUME 174 : ARTICLE 2 NEW YORK : 1983

A REVISION OF THE AMERICAN
SPIDERS OF THE GENUS *ZELOTES*
(ARANEAE, GNAPHOSIDAE)

NORMAN I. PLATNICK

*Curator, Department of Entomology
American Museum of Natural History
Adjunct Professor, Department of Biology
City College, City University of New York*

MOHAMMAD U. SHADAB

*Scientific Assistant, Department of Entomology
American Museum of Natural History*

BULLETIN OF THE AMERICAN MUSEUM OF NATURAL HISTORY

Volume 174, article 2, pages 97–192, figures 1–272, maps 1–22

Issued February 4, 1983

Price: \$7.50 a copy

CONTENTS

Abstract	99
Introduction	99
Collections Examined	103
<i>Zelotes</i> Gistel	103
The <i>subterraneus</i> Group	104
The <i>subterraneus</i> Subgroup	105
The <i>hentzi</i> Subgroup	112
The <i>tuobus</i> Subgroup	123
The <i>catholicus</i> Subgroup	135
The <i>talpa</i> Subgroup	140
The <i>funestus</i> Group	141
The <i>funestus</i> Subgroup	141
The <i>petrophilus</i> Subgroup	147
The <i>gynethus</i> Subgroup	155
The <i>mayanus</i> Subgroup	163
The <i>jamaicensis</i> Subgroup	167
The <i>duplex</i> Group	168
The <i>duplex</i> Subgroup	168
The <i>laccus</i> Subgroup	173
The <i>puritanus</i> Subgroup	180
Introduced Species	184
Literature Cited	188
Index of Specific Names	191

ABSTRACT

The genus *Zelotes* is redefined to include those gnaphosids with a preening comb on metatarsi III and IV and an intercalary sclerite situated prolaterally between the tegulum and terminal apophysis on the male palp. The 58 known American species, found from Alaska and northern Canada south to southern Mexico and Jamaica, are placed in three species groups with 13 subgroups. Cladograms, keys, diagnoses, descriptions, illustrations, scanning electron micrographs, locality records, and distribution maps are provided. The American species *Z. fratrís* is removed from the synonymy of the European *Z. subterraneus* (C. L. Koch), but three other European species [*Z. kodaensis* Miller and Buchar, *Z. pallidus* (O. P.-Cambridge), and *Z. nilicola* (O. P.-Cambridge)] are newly recorded from America. Apparently introduced populations of the southwestern species *Z. reformans* Chamberlin are newly recorded from Peru and Hawaii. Eleven specific names are newly synonymized: *Z. pallidenotatus* Mello-Leitão with

Eilica modesta Keyserling; *Z. chicano* Gertsch and Riechert with *Z. lasalanus* Chamberlin; *Z. inheritus* Kaston with *Z. pullus* (Bryant); *Z. pullatus* Fox with *Z. tuobus* Chamberlin; *Z. calvanisticus* Chamberlin and *Z. protestans* Chamberlin, both with *Z. monachus* Chamberlin; *Z. omissus* Chamberlin with *Z. perditus* Chamberlin; *Z. montereus* Chamberlin with *Z. discens* Chamberlin; *Z. nanus* Chamberlin and Gertsch with *Z. nannodes* Chamberlin; *Z. kodaensis* Miller and Buchar with *Z. puritanus* Chamberlin; and *Z. circumspectus* (Simon) with *Z. pallidus* (O. P.-Cambridge). The males of *Z. gynethus* Chamberlin, *Z. discens* Chamberlin, *Z. mayanus* Chamberlin and Ivie, *Z. monodens* Chamberlin, and *Z. reformans* Chamberlin, and the females of *Z. pullus* (Bryant), *Z. pseustes* Chamberlin, *Z. anglo* Gertsch and Riechert, *Z. petrophilus* Chamberlin, and *Z. nilicola* (O. P.-Cambridge) are described for the first time. Thirty new species are described.

INTRODUCTION

This paper, the sixteenth in a series on the spider family Gnaphosidae, is the third devoted to the New World representatives of the *Zelotes* complex, a highly speciose and worldwide group containing those gnaphosids with a preening comb on metatarsi III and IV. Generic limits within this complex have always been poorly understood (Berland, 1919; Marinaro, 1967), and the genus *Zelotes* itself, the subject of the present study, is no exception. For example, recent keys to American gnaphosid genera, such as those of Roth and Brown (1973) and Kaston (1978), assign specimens to *Zelotes* only by the absence of the modifications of the posterior eye row that characterize the two sister genera *Drassyllus* and *Camillina* (Platnick and Shadab, 1982a, 1982b). The situation is no better in the Old World, where *Zelotes* has been so vaguely defined that even some *Drassyllus* species have been lumped into the genus.

The first question to be confronted is whether the species currently included in

Zelotes are united by any features that can be considered synapomorphic. Even a cursory examination of the illustrations presented below reveals an astonishing variety of both male and female genitalic structures. Moreover, many Old World species (of which there are probably at least 200) belong to species groups that are unrepresented in America and that extend the range of genitalic variation even farther; most of these taxa have never been adequately described or illustrated, much less studied comparatively. Hence, any conclusions about the genus reached here are only tentative and will have to be tested by future revisionary studies of the Old World fauna.

A comparison of the palpal structure of *Zelotes subterraneus* (C. L. Koch), the type species (figs. 2, 3), and its immediate relatives with that typical of *Drassyllus* (Platnick and Shadab, 1982a, fig. 3) provides a starting point. As Chamberlin (1922) noted (and used as a key character), the *Zelotes* palp differs mainly in that the embolus and associated

terminal elements are restricted to the distal edge of the bulb. This feature must be considered plesiomorphic, however, because (1) it is the general case within the Gnaphosidae and, for that matter, most other families of two-clawed hunting spiders as well, and (2) the differences in the *Drassyllus* palp are almost entirely due to the enlargement of the terminal apophysis into the bifid unit peculiar to that genus.

A feature of the typical *Zelotes* palp that seems not to have been noticed previously, however, is that the area of the bulb corresponding to that occupied by the enlarged terminal apophysis in *Drassyllus* is not, as one would expect, occupied entirely by the tegulum. In fact, the tegulum in *Zelotes* is proportionally only slightly larger than it is in *Drassyllus*, and much of the intervening area is taken over by a separate, prolaterally situated sclerite not found in either *Drassyllus* or *Camillina*. Hence, we hypothesized that the presence of this intercalary sclerite (fig. 2) is synapomorphic for *Zelotes*, and tested that conjecture by examining the palpal structure of all the North American species currently assigned to *Zelotes*. These species were cataloged by Ubick and Roth (1973); subsequently two additional species were described by Gertsch and Riechert (1976) and two others transferred from *Zelotes* to other genera by Platnick and Shadab (1980, 1982a).

The intercalary sclerite is immediately recognizable in almost all the species. In a few cases, the distal edge of the sclerite is very close to the proximal edge of the terminal apophysis, but detailed examination (particularly of freshly matured individuals) always reveals their separation. In only four taxa is the sclerite not readily observable: the three species assigned below to the *duplex* subgroup, and *Zelotes rusticus* (L. Koch). In the case of the *duplex* subgroup, dissection of the tegulum and terminal elements away from the subtegulum revealed the sclerite. It is largely obscured (in its normal position) because the distal edge of the tegulum and the proximal edge of the terminal apophysis have expanded and cover it, but the sclerite is present and has actually become greatly elongated, running around the back of the bulb (between the subtegulum and the remainder of the bulb) and reappearing in ventral view at the distal

edge as one of the terminal elements (figs. 207, 208).

In the case of *Z. rusticus*, however, dissection of the palp revealed no trace of the sclerite or any obvious homolog. This species has always been problematical; in North America alone, it has been described six times and in three different genera (Ubick and Roth, 1973), including *Drassyllus*. Roth and Brown (1973), in their generic key, were compelled to highlight the species in a footnote and include a palpal illustration in order to assign it to *Zelotes*, and suggested that the species is misplaced. It is evidently not a native member of the American fauna; it is synanthropic and largely, if not entirely, restricted to human habitations. Specimens are abundant, for example, in New York City apartments where they feed predominantly on cockroaches (also introduced). Because of its synanthropic habits, *Z. rusticus* occurs in scattered localities all over the world (and has therefore accumulated what is probably the longest list of synonyms of any gnaphosid species), but no close relatives of the species have been identified in the literature on any fauna.

To determine whether *Z. rusticus* is in fact misplaced, and not a member of *Zelotes* at all, or is merely a highly autapomorphic member of some Old World species group of *Zelotes* that has lost the intercalary sclerite, we surveyed the Old World zelotines available in the collections of the American Museum of Natural History, the Museum of Comparative Zoology, and the California Academy of Sciences, and enlisted the aid of Mr. John A. Murphy of Hampton, England, who examined specimens in the British Museum (Natural History) and in his own extensive collections of Mediterranean and African gnaphosids. These surveys indicate that the vast majority of Old World taxa that would currently be assigned to *Zelotes* do indeed have an intercalary sclerite. The only specimens found that might be close relatives of *Z. rusticus* are African, lack the sclerite, and provide no links between *Z. rusticus* and taxa with the sclerite. We therefore tentatively accept the sclerite as a synapomorphy and here exclude *Z. rusticus* from the genus. The proper placement of that species, and of those excluded from *Drassyllus* by Platnick and Shadab (1982a), will be discussed in a

subsequent paper in this series. As delimited here, *Zelotes* includes the subgenera *Zelotes*, *Archizelotes*, *Heterozelotes*, and *Microzelotes* of Lohmander (1944) and Miller (1967).

As thus delimited, *Zelotes* occurs in America from Alaska and northern Canada south to Oaxaca, Mexico, and Jamaica. Some 20 species from Central and South America are currently assigned to the genus, but aside from an apparently introduced population of *Zelotes reformans* Chamberlin in Peru, no true *Zelotes* have been found in collections of Neotropical gnaphosids. Examination of the descriptions and (in some cases) type specimens of these taxa indicates that most are not even members of the *Zelotes* complex, and some are grossly misplaced. For example, study of the female holotype of *Zelotes pallidenotatus* Mello-Leitão (1938, p. 113, figs. 32, 33) from Argentina, housed in the Museo de La Plata and made available through the courtesy of Dr. Ricardo F. Arrozpide, indicates that the name is a junior synonym of *Eilica modesta* Keyserling (NEW SYNONYMY), a species revised by Platnick (1975, p. 6, figs. 3, 8–11; 1977, p. 397) and a member of the Laroniinae! The described Neotropical species that are members of the *Zelotes* complex are synonyms of "*Z.*" *rusticus* or other synanthropic species, and will be reassigned in subsequent papers. The absence of *Zelotes* from South America is surprising, for there are numerous species in Africa, but it is paralleled in Australia. The only described Australian species, *Zelotes flavens* (L. Koch), appears to be a member of the *Zelotes* complex but not of *Zelotes* itself.

Prior to the present study, only one species of true *Zelotes* was believed to occur in both the Old World and the New. This species, the most commonly collected gnaphosid in America (comprising over one-third of the approximately 7300 adult specimens examined for this study), has been considered to be identical with the European *Z. subterraneus* since the time of Simon (1878), although Schenkel (1950) misidentified a Canadian specimen as a different European species, *Zelotes gallicus* Simon. As has been independently discovered by Ms. Ute Grimm of the Universität Hamburg, however, the American population is not conspecific with either European species. The name *Zelotes*

fratris Chamberlin is available for the American population, which is readily distinguishable from *Z. subterraneus* in both sexes (compare figs. 2–5 with 6–9).

At least three additional Old World species do occur in America, however. Two of these are Mediterranean taxa that probably represent relatively recent introductions into America. One, *Zelotes pallidus* (O. P.-Cambridge), a species best known under the name of a junior synonym, *Zelotes circumspectus* (Simon), was collected at a single locality in Contra Costa County, California, in 1980. The other, *Zelotes nilicola* (O. P.-Cambridge), has been collected at many localities in southern California and adjacent Arizona since 1955, often in buildings, orchards, and agricultural fields. The third species was recently described from Czechoslovakia as *Zelotes kodaensis* by Miller and Buchar (1977), and has also been recorded from Poland (Starega, 1976) and Austria (Thaler, 1981). Examination of specimens kindly lent by Dr. Jan Buchar of the University Karlovy indicates that *Z. kodaensis* is a synonym of *Zelotes puritanus* Chamberlin, a species widespread and commonly collected in northern North America. This taxon is so distinct from all other European *Zelotes* that it is difficult to believe that it is a native element of the north European fauna that was overlooked by the many students of Palaearctic spiders prior to 1977. We therefore suspect that it represents a recent introduction into Europe.

One additional species, *Z. reformans*, is also a possible introduction. This southwestern species has many close relatives in Africa and India, and the occurrence of isolated populations in Peru and Hawaii suggests that it may not be natively American. The African and Asian collections examined thus far, however, have produced no specimens of *Z. reformans*.

The introduced species notwithstanding, the most unexpected aspect of the distribution of American *Zelotes* is undoubtedly the high diversity of the genus in the state of California. No fewer than 15 new Californian species are described below, and we would not be surprised if several others remain to be discovered. Because these species are almost entirely allopatric, special attention

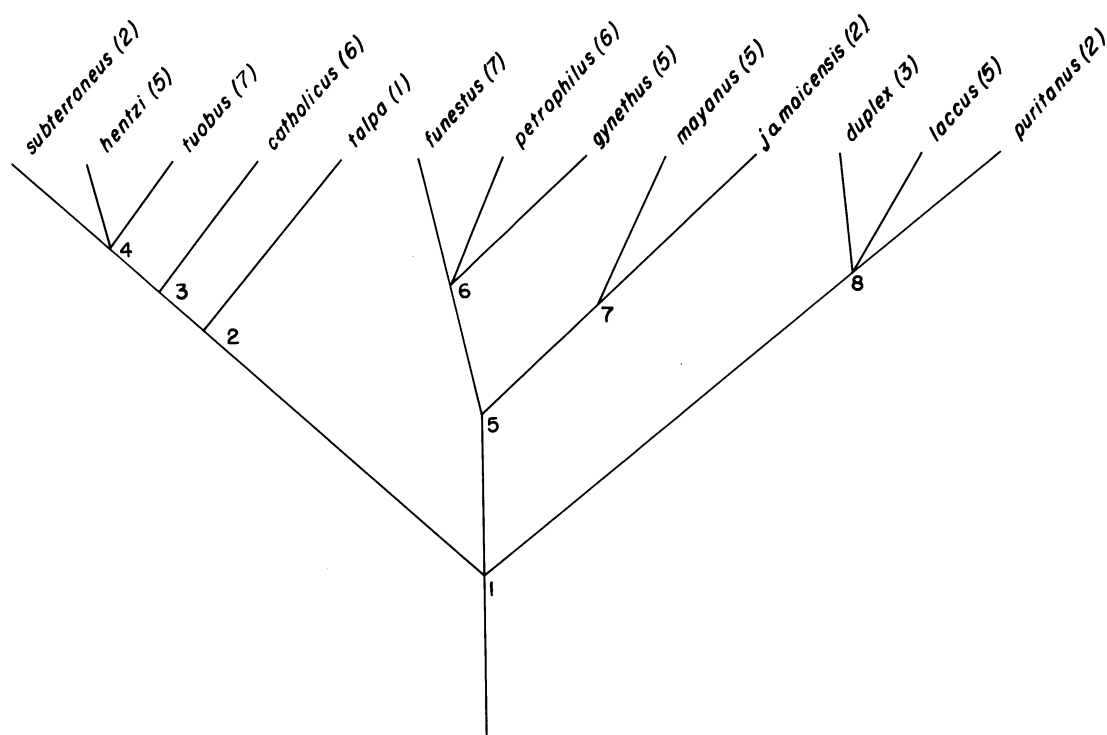


FIG. 1. Cladogram of species groups (components 2, 5, and 8) and subgroups (the terminal taxa) of American *Zelotes*. Characters defining the numbered components are discussed in text. The numbers of American species assigned to each subgroup are indicated in parentheses.

has been paid below to detailed mapping of their known ranges, and fully resolved cladograms of their interrelationships are provided whenever possible in the hope that these will prove useful in future studies of vicariance patterns within California.

Also of interest are the temporal separations evident between some sympatric *Zelotes*, with spring-maturing and fall-maturing species pairs often occurring at the same localities. For example, in series of pit-fall traps run by Dr. Martin H. Muma at several localities in Grant County, New Mexico, in 1972 and 1973, males of *Zelotes lasalanus* Chamberlin were collected commonly from April 14 through August 1, but were replaced by males of *Zelotes anglo* Gertsch and Riechert from September 1 through November 4; similarly, females of *Z. lasalanus* were taken from May 3 through September 15 and those of *Z. anglo* from September 16 through December 3. At a nearby site in Hidalgo County, New Mexico, the

spring-maturing species was *Zelotes monachus* Chamberlin, but the temporal separation from *Z. anglo* was maintained.

A cladogram (fig. 1) of the presumably native American *Zelotes* (component 1, defined by the presence of the intercalary sclerite discussed above) can also serve as a guide to placing specimens in the three species groups (the *subterraneus* group, component 2; the *funestus* group, component 5; and the *duplex* group, component 8) and 13 subgroups (the terminal taxa of fig. 1) listed in the Contents, by consulting the diagnoses of the various components provided below. Of course, simply flipping through the illustrations to find the right "ballpark" should provide equally quick access to the keys to the closely similar members of each subgroup.

The format of the descriptions and standard abbreviations of morphological terms follow those used in Platnick and Shadab (1975) and in figures 2–5. Whenever sufficient material was available, we supplied

scanning electron micrographs of the distal elements of the male palpal bulb (removed from the cymbium) and the female epigynum (scraped free of setae). Complete collection data are provided for the less commonly collected species and only summaries for those taxa abundant in collections. Unless another depository is indicated, all specimens mentioned below are in the American Museum of Natural History. All measurements are in millimeters.

We thank Ms. Joan Whelan and Mr. Ian Stupakoff of the American Museum for assistance with the scanning electron microscope, and Drs. Charles D. Dondale of the Biosystematics Research Institute and B. J. Kaston of San Diego State University for reviewing a draft of the manuscript.

COLLECTIONS EXAMINED

AJP, Mr. A. J. Penniman
 AMNH, American Museum of Natural History, including material made available by Dr. W. J. Gertsch
 ARB, Dr. A. R. Brady
 BJK, Dr. B. J. Kaston
 BMNH, British Museum (Natural History), Mr. F. Wanless and Mr. P. Hillyard
 BRV, Dr. B. R. Vogel
 CAS, California Academy of Sciences, Dr. W. Pulawski
 CDFA, California State Department of Food and Agriculture, Ms. M. J. Moody
 CNC, Canadian National Collection, Dr. C. D. Dondale and Mr. J. H. Redner
 CUC, Cornell University Collection, housed at AMNH
 DEB, Mr. D. E. Bixler
 DKH, Ms. D. K. Hoffmaster
 DPC, Mr. D. P. Carroll
 DTJ, Dr. D. T. Jennings
 DU, Mr. D. Ubick
 EPC, Exline-Peck Collection, Dr. W. B. Peck
 FAC, Dr. F. A. Coyle
 FMNH, Field Museum of Natural History, Dr. J. Kethley
 FSCA, Florida State Collection of Arthropods, Dr. G. B. Edwards
 HEC, Hope Entomological Collections, Oxford University, Dr. M. C. Birch
 JAB, Dr. J. A. Beatty
 JAM, Mr. J. A. Murphy
 JEC, Dr. J. E. Carico
 JSH, Mr. J. S. Heiss

LACM, Natural History Museum of Los Angeles County, Dr. C. L. Hogue and Mr. C. Nagano
 MCZ, Museum of Comparative Zoology, Dr. H. W. Levi
 MET, Mr. M. E. Thompson
 MNHN, Muséum National d'Histoire Naturelle, Dr. M. Hubert
 MSU, Michigan State University, Dr. R. L. Fischer
 NDA, Nevada Department of Agriculture, Dr. I. La Rivers and Ms. M. J. Moody
 NMB, Naturhistorisches Museum Basel, Dr. E. Sutter
 NVH, Dr. N. V. Horner and Mr. G. Zolnerowich
 ORSU, Oregon State University, Dr. A. Moldenke
 OSU, Ohio State University, Dr. C. A. Triplehorn and Mr. A. J. Penniman
 REL, Dr. R. E. Leech
 ROM, Royal Ontario Museum, Dr. D. Barr
 SBM, Santa Barbara Museum of Natural History, Dr. F. G. Hochberg and Mr. S. Miller
 SCJ, Mr. S. C. Johnson
 TAM, Texas A&M University, Dr. A. Dean
 TTU, Texas Tech University, Dr. O. F. Francke and Mr. J. C. Cokendolpher
 UCB, University of California at Berkeley, Dr. E. I. Schlinger and Mr. C. Griswold
 UCR, University of California at Riverside, Mr. S. Frommer
 UNH, University of New Hampshire, Dr. R. M. Reeves
 USNM, National Museum of Natural History, Dr. R. E. Crabill, Jr.
 UWA, University of Washington, Mr. R. L. Crawford
 VDR, Mr. V. D. Roth
 WAS, Dr. W. A. Shear
 WDF, Dr. W. D. Fronk
 WES, Mr. W. E. Sedgwick
 WRI, Mr. W. R. Icenogle

ZELOTES GISTEL

Melanophora C. L. Koch, 1833, pt. 120 (type species by original designation *Melanophora subterranea* C. L. Koch); preoccupied by *Melanophora* Meigen, 1803 (Diptera).
Zelotes Gistel, 1848, p. xi (*nomen novum* for *Melanophora* C. L. Koch).
Prothesima L. Koch, 1872, p. 139 (superfluous *nomen novum* for *Melanophora* C. L. Koch).

DIAGNOSIS: Males of *Zelotes* can be distinguished from all other gnaphosids by the combined presence of a preening comb on metatarsi III and IV (Platnick and Shadab, 1982a, figs. 1, 2) and an intercalary sclerite on the male palp (fig. 2). No comparable synapomorphy has been found for females, but

in America, females of *Zelotes* can be distinguished from all other gnaphosids by the combined presence of the preening comb and posterior median eyes that are scarcely, if at all, larger than the posterior laterals and about as far apart as they are from the posterior laterals.

DESCRIPTION: Total length 1.8–12.6. Carapace oval in dorsal view, widest between coxae II and III, slightly invaginated at middle of posterior margin, narrowed just behind level of palpi, usually dark brown with black reticulations but sometimes lighter, with long erect black setae along edges of posterior declivity; cephalic area flattened, thoracic groove long, longitudinal. From above, anterior eye row recurved, posterior row straight; from front, anterior row straight, posterior row slightly procurved; AME circular, dark; PME irregularly triangular, light; ALE and PLE oval, light; AME usually smaller than other subequal eyes, separated by roughly their diameter, by less than their radius from ALE; PME separated by their radius or more from each other and from PLE; lateral eyes of each side separated by roughly their diameter; MOQ usually longer than wide, wider in back than in front. Clypeal height roughly equal to AME diameter. Chelicerae usually with one denticle and three teeth on promargin and one denticle and one tooth on retromargin. Endites short, rectangular, obliquely and posteromedially depressed, narrowed at palpal insertion; labium broadly triangular, gently rounded distally; sternum with marginal brush of setae and sclerotized extensions to and between coxae. Leg formula 4123. Typical leg spination pattern (only surfaces bearing spines listed): femora I, II d1-1-0, p0-0-1; III, IV d1-1-0, p0-1-1, r0-1-1; patella III r0-1-0; tibiae: III p1-1-1, v2-2-2, r0-1-1; IV p1-1-1, v2-2-2, r1-1-1; metatarsi: I, II v2-0-0; III p1-2-2, v2-2-0, r1-1-2; IV p1-2-2, v2-2-0, r1-2-2. Legs usually dark brown with tarsi lightest but sometimes lighter; distal halves of metatarsi and tarsi scopulate; tarsi with two dentate claws and weak claw tufts; trochanters not notched; metatarsi III and IV with preening comb; distal segments with two rows of long trichobothria. Abdomen usually dark gray; males with shiny brown anterior scutum; six spinnerets, anteriors much the largest, sclero-

tized, separated at base by more than their width. Palp with simple ledge-shaped terminal apophysis (sometimes fused dorsally to embolar base), large embolar base (bearing projection and curved embolus), median apophysis, membranous conductor, and intercalary sclerite. Epigynum variable, often with pair of blind paramedian ducts.

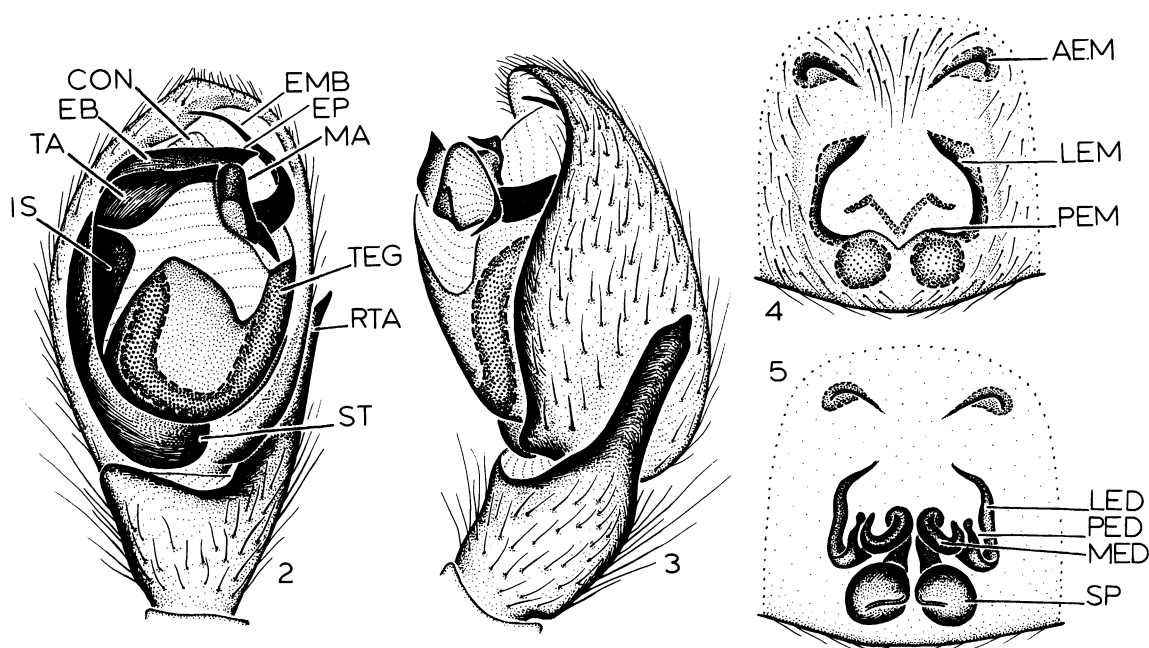
MISPLACED SPECIES: See the Introduction.

UNCERTAIN NAMES: The holotype of *Z. adolescens* Chamberlin (1922) is an unidentifiable juvenile. The type material of the following specific names is lost or destroyed and the taxa are not recognizable from the original descriptions: *Z. ater* (Hentz, 1832); *Z. directus* (Banks, 1898); *Z. fidelis* (Banks, 1898; see comments in Platnick and Shadab, 1982a, p. 93); *Z. gentilis* (Banks, 1898); *Z. griseus* (Banks, 1898); *Z. indecisus* (Banks, 1898); *Z. melancholicus* (Thorell, 1877); and *Z. paludis* Chamberlin (1922). All these names are therefore regarded as *nomina dubia*.

THE *subterraneus* GROUP

DIAGNOSIS: The *subterraneus* group (component 2, fig. 1) contains those species with typical *Zelotes* genitalic morphology. Males are unique in having a very wide embolar base that extends across most of the width of the palpal bulb; they also have a relatively short, distally originating embolus and a relatively small median apophysis (as in fig. 2). Females have a basically rectangular epigynum outlined by paired anterior, lateral, and (straight) posterior margins; internally, the median, paramedian, and lateral ducts are arranged transversely (as in figs. 4, 5).

INTRARELATIONSHIPS: The *subterraneus*, *hentzi*, and *tuobus* subgroups (component 4, fig. 1) form a tightly knit complex in which males have a short, straight, transversely oriented embolar projection (as in fig. 2) and females have the paramedian ducts oriented longitudinally (as in fig. 5). By contrast, in the *catholicus* subgroup males have a long, curved embolar projection that crosses a peculiarly short, squared embolus and then twists distally (as in fig. 92); females have the paramedian ducts oriented transversely (as in fig. 95). The *talpa* subgroup contains a single species known only from males, which have a complexly convoluted embolar base



FIGS. 2-5. *Zelotes subterraneus* (C. L. Koch). 2. Palp, ventral view; abbreviations: CON, conductor; EB, embolar base; EMB, embolus; EP, embolar projection; IS, intercalary sclerite; MA, median apophysis; RTA, retrolateral tibial apophysis; ST, subtegulum; TA, terminal apophysis; TEG, tegulum. 3. Palp, retrolateral view. 4. Epigynum, ventral view; abbreviations: AEM, anterior epigynal margin; LEM, lateral epigynal margin; PEM, posterior epigynal margin. 5. Epigynum, dorsal view; abbreviations: LED, lateral epigynal duct; MED, median epigynal duct; PED, paramedian epigynal duct; SP, spermathecae.

bearing a bifid embolar projection (fig. 108). The placement of this species will remain uncertain until females are discovered. If the peculiar embolar base and projection represent a modification of the type of structure found in all other members of the *subterraneus* group, then *Z. talpa* would constitute an independent subgroup within component 4. In the absence of any other characters supporting that arrangement, we prefer the hypothesis that the untwisted embolar base bearing a single projection and the convoluted base bearing a bifid projection are each synapomorphic, and therefore consider *Z. talpa* the sister group of all other species in the *subterraneus* group (i.e., component 3, fig. 1).

THE *subterraneus* SUBGROUP

DIAGNOSIS: The *subterraneus* subgroup contains those species in which males have a short, flat embolar base (figs. 2, 6, 14), the distal ridge of which is produced ventrally

(figs. 10, 12). Females of the American species can be recognized by their simple, uncoiled median epigynal ducts (figs. 9, 17). The subgroup is predominantly European, including such species as *Z. subterraneus* (C. L. Koch), *Z. apricorum* (L. Koch), *Z. gallicus* Simon, and *Z. cyanescens* Simon. As only two species occur in America, a key is omitted.

Zelotes subterraneus (C. L. Koch)

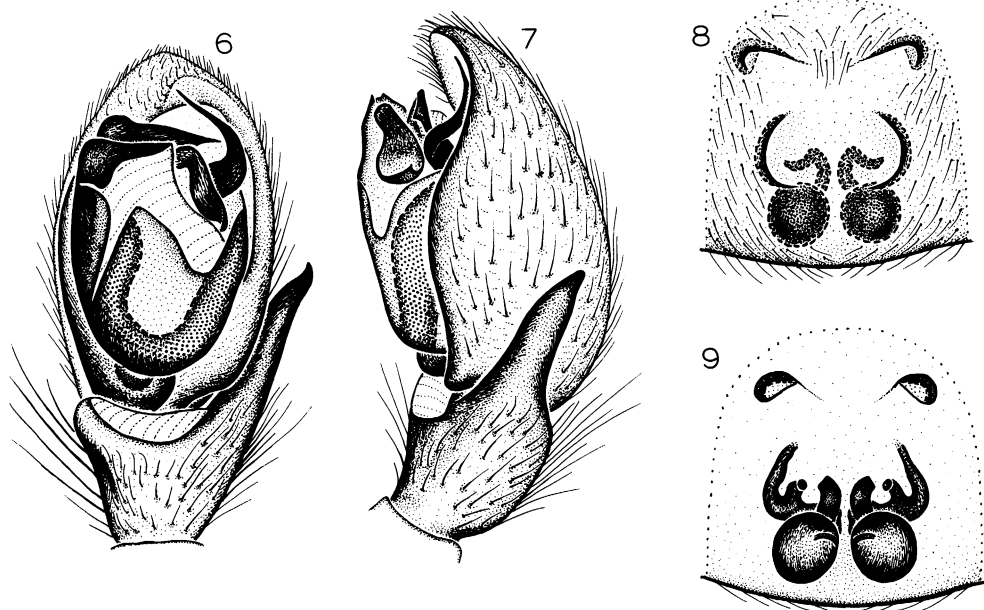
Figures 2-5

Melanophora subterranea C. L. Koch, 1833, pt. 120, pls. 20, 21 (male and female syntypes from Germany, may be in Zoologisches Museum, Berlin, not examined).

Zelotes subterraneus: Gistel, 1848, p. 461. Bonnet, 1959, p. 4952.

Zelotes ater (misidentification): Roewer, 1954, p. 461 (European specimens only).

Illustrations of this, the type species, based on specimens from Austria (JAM), are provided here primarily for comparison with the



FIGS. 6–9. *Zelotes fratrís* Chamberlin. 6. Palp, ventral view. 7. Palp, retrolateral view. 8. Epigynum, ventral view. 9. Epigynum, dorsal view.

American species *Z. fratrís*, which has generally been confused with *Z. subterraneus*. Males of *Z. subterraneus* have a longer embolus than do those of *Z. fratrís*, and females have conspicuous extensions of the median epigynal ducts that are absent in *Z. fratrís*. The catalogs of Bonnet and Roewer, cited above, provide detailed accounts of the long and complex history of the treatment of these species in the literature. Roewer listed the species as *Z. ater* (Hentz, 1832), but (aside from the fact that the original description of that species could apply to any member of the *subterraneus* group and no type material exists) Hentz's name is unavailable for the American population because it is a junior homonym of *Z. ater* (Latreille, 1806), one of many old European names that are equally unrecognizable.

Zelotes fratrís Chamberlin

Figures 6–11; Map 1

Prothesima subterranea (misidentification): Simon, 1878, p. 54 (American specimens only).

Zelotes fratrís Chamberlin, 1920, p. 193, fig. 1 (male holotype from Logan Canyon, Cache County, Utah, in MCZ, examined).

Zelotes subterraneus (misidentification): Chamberlin, 1922, p. 163. Kaston, 1948, p. 356, figs. 1248–1251. Bonnet, 1959, p. 4952 (American specimens only). Ubick and Roth, 1973, p. 8.

Zelotes inheritus (misidentification): Kaston, 1945, p. 1, fig. 42 (female only); 1948, p. 356, fig. 1247 (female only).

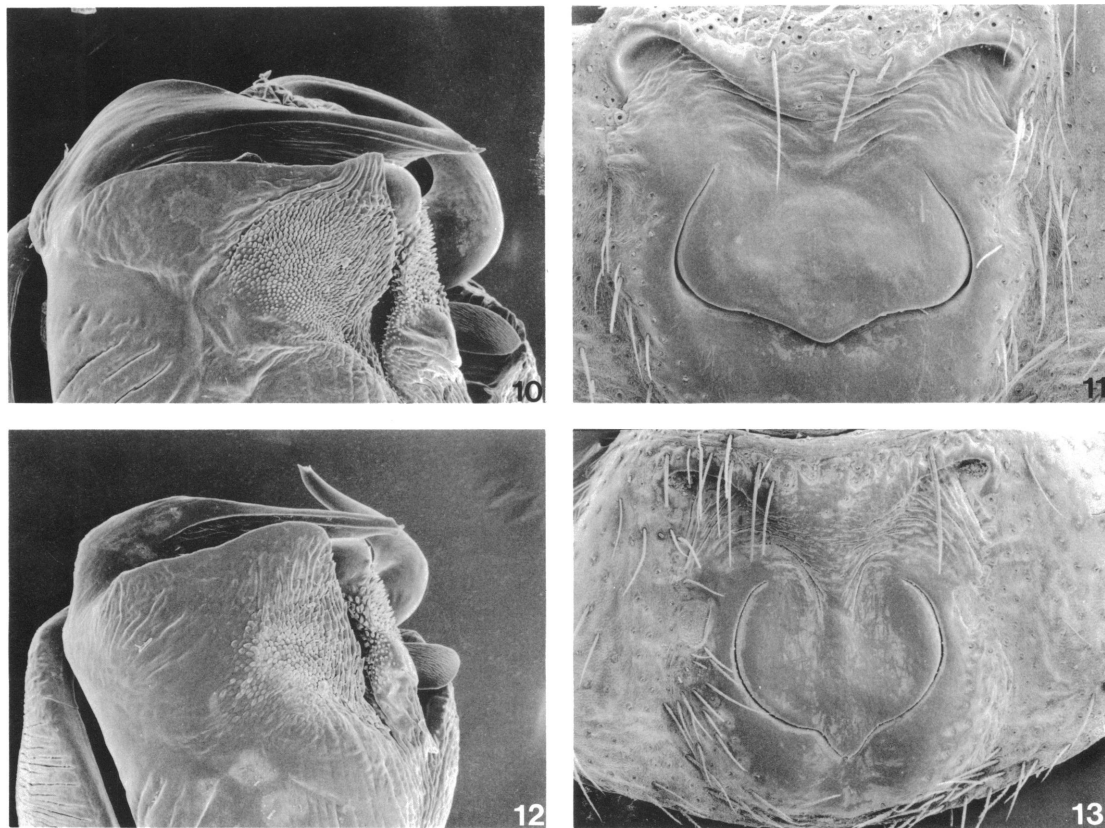
Zelotes gallicus (misidentification): Schenkel, 1950, p. 38.

Zelotes ater (unavailable name): Roewer, 1954, p. 461 (American specimens only).

DIAGNOSIS: *Zelotes fratrís* can be easily distinguished from *Z. sula* by the much longer EMB (figs. 6, 10) of males and the more widely separated LEM (figs. 8, 11) and differently shaped MED (figs. 8, 9) of females.

MALE: Total length 6.04 ± 0.49 . Carapace 2.64 ± 0.15 long, 2.06 ± 0.13 wide. Femur II 1.54 ± 0.08 long (1077 specimens examined). Eye sizes and interdistances: AME 0.06, ALE 0.08, PME 0.08, PLE 0.08; AME–AME 0.06, AME–ALE 0.02, PME–PME 0.05, PME–PLE 0.05, ALE–PLE 0.09. MOQ length 0.26, front width 0.18, back width 0.21. EMB long, narrow (figs. 6, 7, 10). Leg spination: tibia III r1-1-1; metatarsus III r1-2-2.

FEMALE: Total length 6.96 ± 0.69 . Cara-

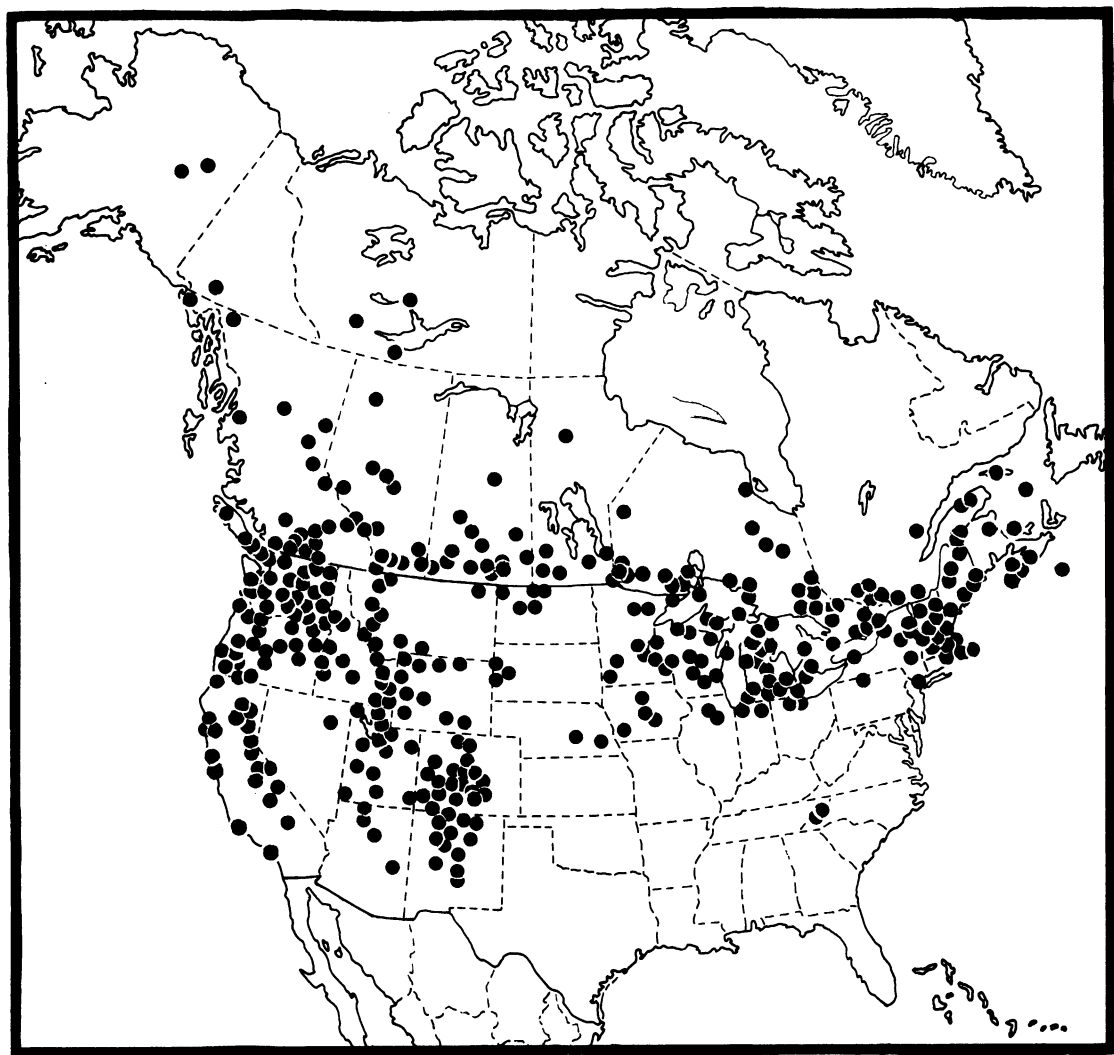


FIGS. 10–13. 10, 11. *Zelotes fratrisc* Chamberlin. 12, 13. *Z. sula* Lowrie and Gertsch. 10, 12. Palp, ventral view, 205 $\times$. 11, 13. Epigynum, ventral view, 125 $\times$.

pace 2.76 ± 0.13 long, 2.10 ± 0.09 wide. Femur II 1.55 ± 0.04 long (1832 specimens examined). Eye sizes and interdistances: AME 0.10, ALE 0.09, PME 0.09, PLE 0.08; AME–AME 0.09, AME–ALE 0.02, PME–PME 0.05, PME–PLE 0.06, ALE–PLE 0.07. MOQ length 0.25, front width 0.29, back width 0.23. MED (viewed ventrally) wide, distally transverse (figs. 8, 9, 11). Leg spination: metatarsus III r-1-2-2.

RECORDS: ALASKA: Circle Hot Springs, College, Fairbanks, Haines. CANADA (marginal records only): *Alberta*: Waterton Lakes National Park. *British Columbia*: Port Alberni, Tagish Lake, Terrace. *Manitoba*: Rennie. *New Brunswick*: Kouchibouguac National Park. *Northwest Territories*: Fort Simpson, Rae. *Nova Scotia*: Bridgewater, Sable Island. *Ontario*: Attawapiskat, Belleville, Black Sturgeon Lake. *Prince Edward*

Island: Wellington. *Quebec*: Anticosti Island, Brion Island, Mount Jacques Cartier. *Saskatchewan*: Cypress Hills Provincial Park, Wapella. *Yukon*: Lake Laberge Campground. UNITED STATES (county records only): *Arizona*: Coconino, Navajo. *California*: Del Norte, El Dorado, Fresno, Inyo, Lake, Los Angeles, Marin, Mariposa, Mendocino, Mono, Nevada, Placer, Plumas, San Mateo, Santa Barbara, Shasta, Sierra, Siskiyou, Tehama, Tulare. *Colorado*: Archuleta, Boulder, Chaffee, Clear Creek, Custer, Douglas, El Paso, Fremont, Garfield, Gilpin, Gunnison, Hinsdale, Jackson, Jefferson, La Plata, Larimer, Mesa, Montrose, Ouray, Pitkin, Pueblo, Saguache, San Juan, San Miguel. *Connecticut*: Windham. *Idaho*: Adams, Bear Lake, Blaine, Bonneville, Canyon, Caribou, Clark, Franklin, Idaho, Lewis, Madison, Payette, Valley, Washington. *Illinois*: La Salle,



MAP 1. North America, showing distribution of *Zelotes fratis*.

Lee. *Indiana*: Noble, Porter. *Iowa*: Hancock, Jasper, Montgomery, Story. *Maine*: Aroostook, Cumberland, Hancock, Knox, Lincoln, Piscataquis, Somerset, Washington. *Massachusetts*: Barnstable, Essex, Franklin, Middlesex, Norfolk, Plymouth, Suffolk, Worcester. *Michigan*: Alcona, Alpena, Baraga, Berrien, Calhoun, Charlevoix, Cheboygan, Chippewa, Clare, Clinton, Emmet, Ingham, Iosco, Jackson, Kalamazoo, Keweenaw, Lake, Livingston, Marquette, Midland, Oakland, Otsego, Shiawassee, Washtenaw. *Minnesota*:

Anoka, Cook, Itasca, Murray, Ramsey, Renville, Saint Louis, Wabasha, Washington. *Montana*: Beaverhead, Carbon, Daniels, Flathead, Gallatin, Glacier, Granite, Lake, Powell, Ravalli. *Nebraska*: Hall, Lancaster. *Nevada*: Elko. *New Hampshire*: Carroll, Cheshire, Coos, Grafton, Hillsborough, Stratford. *New Jersey*: Bergen. *New Mexico*: Bernalillo, Colfax, Lincoln, Los Alamos, Otero, Rio Arriba, Sandoval, San Miguel, Socorro, Taos, Torrance. *New York*: Essex, Fulton, Greene, Jefferson, Orleans, Warren.

North Carolina: Avery, Mitchell. *North Dakota*: Bottineau, Divide, McHenry, Rolette, Ward. *Ohio*: Erie, Ottawa. *Oregon*: Baker, Benton, Clackamas, Clatsop, Coos, Crook, Deschutes, Douglas, Gilliam, Grant, Harney, Jackson, Josephine, Klamath, Lake, Lane, Linn, Multnomah, Union, Wallowa, Washington. *Pennsylvania*: Potter. *South Dakota*: Custer, Lawrence, Pennington. *Utah*: Box Elder, Cache, Garfield, Millard, Rich, Salt Lake, San Juan, Sevier, Summit, Tooele, Uintah, Utah, Washington, Weber. *Vermont*: Bennington, Chittenden, Windham, Windsor. *Washington*: Benton, Chelan, Douglas, Ferry, Franklin, Grant, King, Kittitas, Lincoln, Mason, Okanogan, Pacific, Pend Oreille, Pierce, San Juan, Skamania, Spokane, Stevens, Thurston, Walla Walla, Whatcom, Whitman, Yakima. *Wisconsin*: Ashland, Burnett, Columbia, Door, Florence, Iron, Juneau, La Crosse, Manitowoc, Marathon, Saint Croix, Waushara. *Wyoming*: Albany, Big Horn, Carbon, Fremont, Lincoln, Park, Sheridan, Sublette, Teton, Yellowstone.

DISTRIBUTION: Alaska to Nova Scotia, south to southern California, New Mexico, Nebraska, and Massachusetts, with apparently isolated populations (Pleistocene relicts?) on the summits of Grandfather and Roan mountains in western North Carolina (map 1). Two male specimens from Livingston County, Texas (AMNH), and St. Lucia, British West Indies (MCZ), are presumed to be either mislabeled or introduced by humans.

NATURAL HISTORY: Mature males have been taken from late April through late September (and rarely in November and January), mature females in every month except January. Specimens have been collected in emergence, pitfall, and vacuum traps, in aspen, basswood, cedar, cottonwood, Douglas fir, juniper, maple, oak (gambel and pin), pine (jack, lodgepole, and ponderosa), poplar, red alder, spruce (black, blue, and white), and willow forests, on sand dunes, in apple orchards, clover, *Equisetum*, fields, heather, meadows, moss, roses, sagebrush, salt marshes, sphagnum bogs, tamarack swamps, *Viburnum* shrubs, and wheat fields, in an abandoned beaver house, a mouse nest on a beach, and a rotting stump, and under boards, debris, and rocks, at elevations up to 11,750 feet.

Zelotes sula Lowrie and Gertsch

Figures 12–17; Map 2

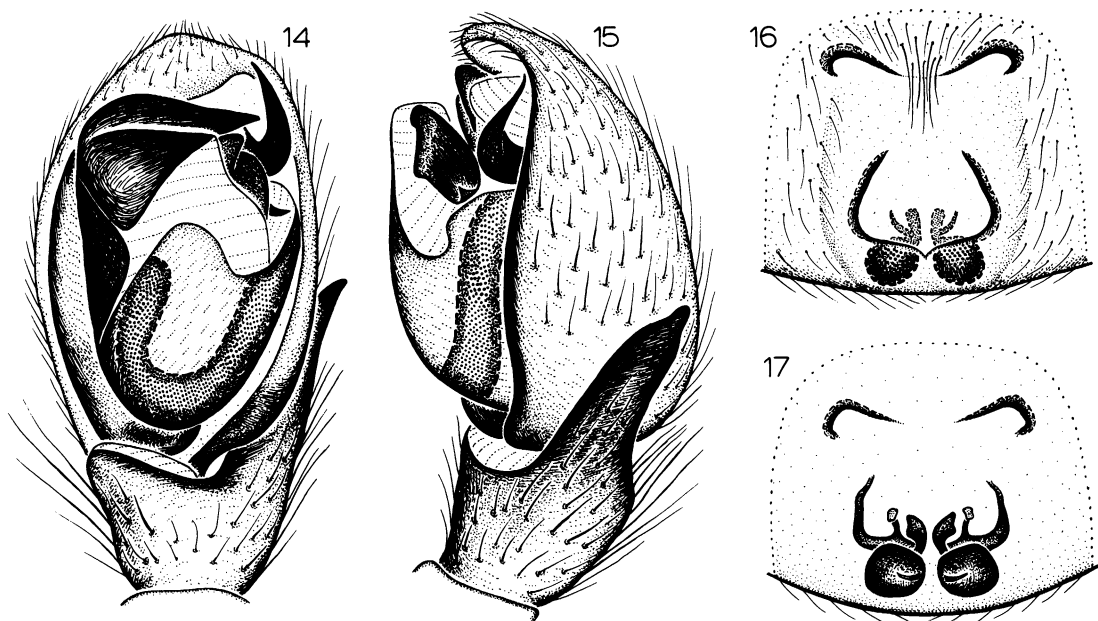
Zelotes sula Lowrie and Gertsch, 1955, p. 11, figs. 1–3 (male holotype from Moran, Teton County, Wyoming, in AMNH, examined). Ubick and Roth, 1973, p. 8.

DIAGNOSIS: *Zelotes sula* can be easily distinguished from *Z. frateris* by the much shorter, wider EMB (figs. 12, 14) of males and the more closely spaced LEM (figs. 13, 16) and differently shaped MED (figs. 16, 17) of females.

MALE: Total length 4.47 ± 0.40 . Carapace 1.92 ± 0.11 long, 1.51 ± 0.10 wide. Femur II 1.11 ± 0.07 long. Eye sizes and interdistances: AME 0.04, ALE 0.06, 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 0.19, front width 0.13, back width 0.15. EMB short, wide (figs. 12, 14, 15). Leg spination: femur IV p0-0-1, r0-0-1; tibiae: III r1-1-1; IV r2-1-1; metatarsus III r1-2-2.

FEMALE: Total length 4.61 ± 0.56 . Carapace 1.94 ± 0.16 long, 1.50 ± 0.13 wide. Femur II 1.09 ± 0.11 long. Eye sizes and interdistances: AME 0.03, ALE 0.08, PME 0.06, PLE 0.06, AME–AME 0.05, AME–ALE 0.02, PME–PME 0.04, PME–PLE 0.06, ALE–PLE 0.05. MOQ length 0.16, front width 0.11, back width 0.16. MED (viewed ventrally) bifid (figs. 13, 16, 17). Leg spination: femur IV p0-0-1; metatarsus III r1-2-2.

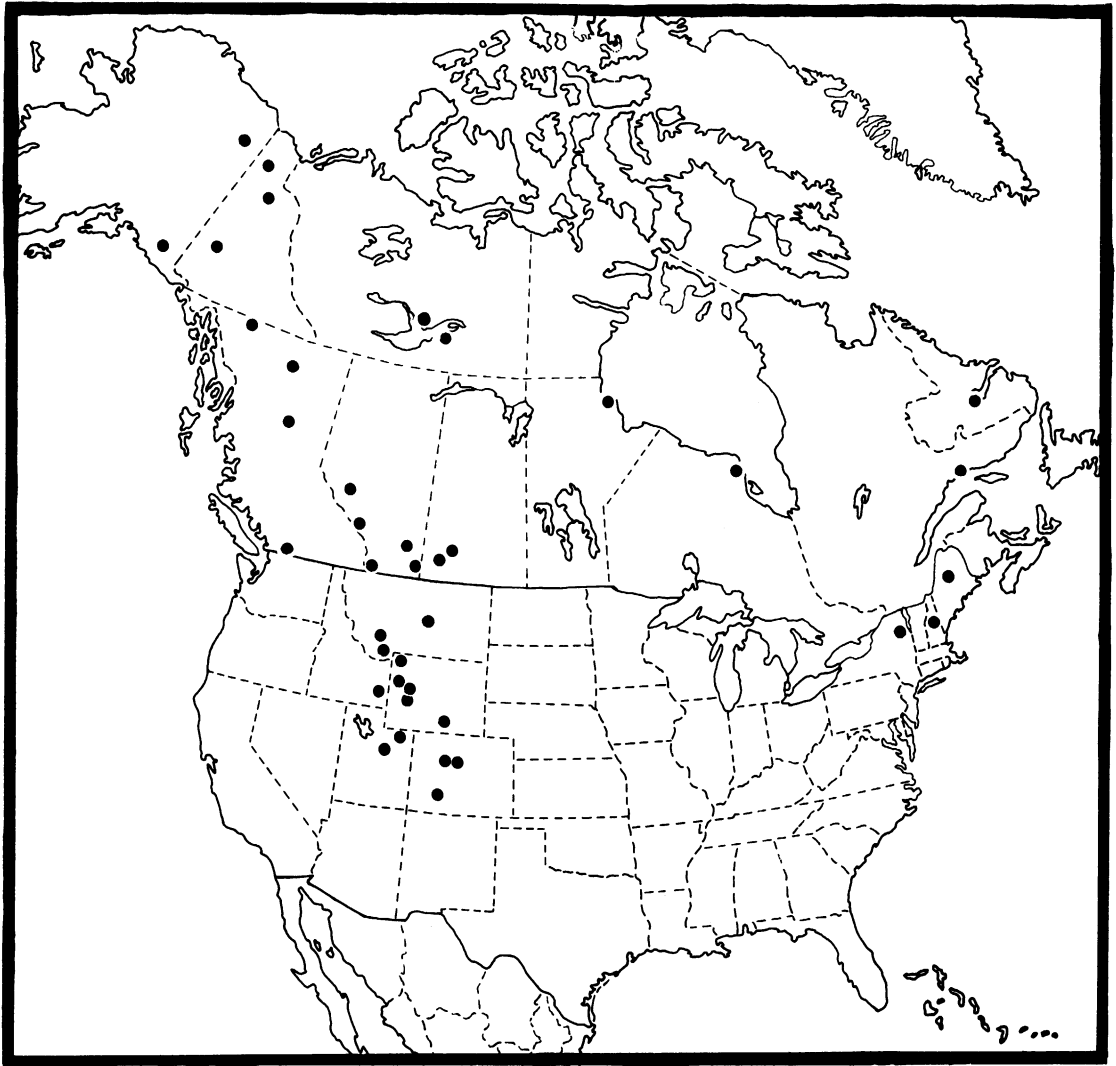
MATERIAL EXAMINED: ALASKA: moraine N Kennicott, June 3, 1955 (Berry, MCZ), 1 ♀; Sheenjek River Valley, June 26, 1956, elevation 2000–2500 feet (G. Schaller, MCZ), 1 ♀. CANADA: Alberta: Banff, summer 1919 (E. Hearle, CNC), 1 ♀; 3 mi. W E gate, Banff National Park, June 5, 1963, under stones (A. L. Turnbull, CNC), 1 ♂; Cadomin, July 30, 1966, elevation 5500 feet (R. E. Leech, REL), 1 ♂; Cypress Hills, June 15, 1969, elevation 4000 feet (B. M. Rolseth, REL), 1 ♀; Cypress Hills Provincial Park, June 8–15, 1973, pitfall, shortgrass meadow, elevation 4600 feet (J. Redner, C. Starr, CNC), 1 ♀, July 28–Aug. 12, 1978, pitfall, pasture (E. E. Lindquist, CNC), 4 ♂, 1 ♀; Medicine Hat, June 1930 (Carr), 1 ♀; Waterton Lakes National Park, June 28–July 7, 1980, pitfall (H. J. Teskey, CNC), 1 ♂, July 4, 1980, inter-



FIGS. 14–17. *Zelotes sula* Lowrie and Gertsch. 14. Palp, ventral view. 15. Palp, retrolateral view. 16. Epigynum, ventral view. 17. Epigynum, dorsal view.

ception trap (H. J. Teskey, CNC), 1 ♀. **British Columbia:** Blackwall Peak, Manning Provincial Park, June 19–July 4, 1975, pitfall, alpine meadow (C. D. Dondale, CNC), 1 ♂; Manson Creek, Sept. 1–15, 1966 (REL), 1 ♂; SE Morley River Lodge, Sept. 2, 1968 (W. Ivie), 1 ♂; Summit Lake (mile 393, Alaska Highway), June 21, 1959, elevation 5200 feet (R. E. Leech, CNC), 1 ♀. **Manitoba:** Churchill, July 16, 1950 (H. G. Edmonds, ROM), 1 ♀. **Newfoundland:** U.S. Air Force Base, Goose Bay, Labrador, Oct. 1–15, 1968 (W. H. Leech, REL), 1 ♀. **Northwest Territories:** Pearson Point, Mackenzie, July 18, 1916 (D. Rawson, ROM), 1 ♂, 1 ♀; Prelude Lake, E Yellowknife, Mackenzie, Aug. 13, 1965 (J. and W. Ivie), 2 ♀. **Ontario:** James Bay radar site 415 C, Aug. 7, 1979 (R. I. G. Morrison, CNC), 1 ♂, 3 ♀, site 415 E, July 31, 1979 (R. I. G. Morrison, CNC), 1 ♂. **Quebec:** Seven Islands, 1924 (Vaugh, CNC), 1 ♂. **Saskatchewan:** Scull Creek, 6 mi. E Piapot, May 14–June 10, 1963, pitfall, mixed grass (A. L. Turnbull, CNC), 1 ♂; E Swift Current, May 13–June 11, 1963, pitfall, mixed grass and clover, ditch (A. L. Turnbull, CNC), 1 ♀. **Yukon:** Dempster Highway, km. 260–270, talus, July 2,

1981 (C. D. Dondale, CNC), 4 ♀; Old Crow, June 28, 1981, limestone outcrops (C. D. Dondale, CNC), 2 ♀, July 8–Aug. 2, 1981 (L. Barton, CNC), 8 ♂, 5 ♀; Stewart River, July 10, 1950 (A. Ivie), 1 ♀. **UNITED STATES:** **Colorado:** *Clear Creek Co.*: Mt. Evans, Aug. 14–28, 1967, pitfall, *Carex elynoides* meadow, elevation 11,700 feet (R. Schmoller), 1 ♂, 1 ♀, Aug. 28–Sept. 21, 1967, pitfall, spruce “island,” elevation 11,700 feet (R. Schmoller), 1 ♂. *Hinsdale Co.*: Heart Lake, 40 mi. W. Creede, San Juan Mountains, July 17, 1952, elevation 11,500 feet (MCZ), 5 ♀. *Summit Co.*: Breckenridge, June 29, 1934 (C. H. Moss), 1 ♂. **Idaho:** *Caribou Co.*: no specific locality, Aug. 4, 1928 (W. J. Gertsch), 3 ♀. **Maine:** *Piscataquis Co.*: near Thoreau Spring, Mount Katahdin, Baxter State Park, July 12, 1982, elevation 4700 feet, under rock, guarding pink egg sacs (D. T. Jennings, DTJ, AMNH), 3 ♀. **Montana:** *Fergus Co.*: Big Snowy Mountains, June 27, 1961, elevation 8500 feet (S. M. Sutton, BRV), 1 ♀. *Gallatin Co.*: 5 mi. S Taylor Fork, Gallatin River, June 30, 1962 (W. Ivie), 4 ♀. *Madison Co.*: Earthquake Lake, July 27, 1979, under rock (A. R. Brady, ARB), 1 ♂. **New Hamp-**



MAP 2. North America, showing distribution of *Zelotes sula*.

shire: *Coos Co.:* Alpine Gardens, Mt. Washington, July 31–Oct. 14, 1981, pitfalls, elevation 5200 feet (R. M. Reeves, UNH, AMNH), 26 ♂, 8 ♀. **New York:** *Essex Co.:* no specific locality, July 28, 1917 (Nutman), 1 ♀; Mt. Marcy, 1918, 2 ♀, July 1918, elevation 5000 feet (CUC), 3 ♀, Aug. 26, 1930 (CUC), 1 ♀. **Utah:** *Daggett Co.:* junction, Deep and Carter creeks, Uintah Mountains, June 21, 1935 (R. V. Chamberlin), 1 ♂. *Wasatch Co.:* Strawberry Reservoir, Sept. 2, 1928 (R. V. Chamberlin), 1 ♀. **Wyoming:** *Carbon Co.:* Stratton Experimental Watershed, Sar-

atoga, June 4–11, 1975, pitfall, elevation 7800 feet (J. Schmid, DTJ), 1 ♀. *Sublette Co.:* Lower Green River Lake, Wind River Range, Aug. 1–16, 1953 (F. and P. Rindge), 1 ♀; 12 mi. N. Pinedale, Elk Horn State Park, Aug. 7, 1961 (A. R. Brady, MCZ), 1 ♀. *Teton Co.:* base of Signal Mountain, beside Snake River, Moran, Aug. 15, 1950 (D. C. Lowrie), 1 ♂, 1 ♀ (types); Grand Teton National Park, Aug. 11, 1962, pitfall, 1 ♂; mouth of Moran Creek, Grand Teton National Park, July 23, 1950, under rocks (D. C. Lowrie), 1 ♀. *Yellowstone Co.:* Bridge Bay, June 20, 1938 (W. Ivie), 1 ♀;

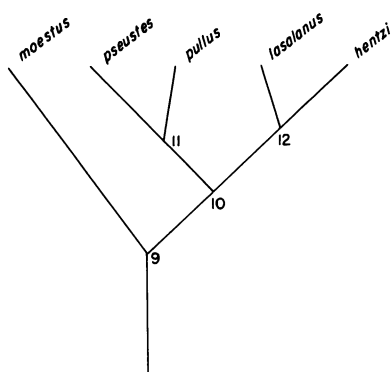


FIG. 18. Cladogram of species of the *hentzi* subgroup. Characters defining the numbered components are discussed in text.

Lewis Falls, June 24, 1928 (W. Ivie), 1 ♀; Mt. Washburn, Aug. 1927 (Hansen), 1 ♀.

DISTRIBUTION: This species, previously known only from Wyoming, is actually found from Alaska to Labrador, south to southern Colorado and northern New York and New Hampshire (map 2).

THE *hentzi* SUBGROUP

DIAGNOSIS: The *hentzi* subgroup (component 9, fig. 18) contains those species in which males have a recurved embolar tip (figs. 23, 25, 35, 37, 47) and the median epigynal ducts of females are narrow tubes forming at least one complete coil (figs. 22, 30, 34, 42, 46).

INTRARELATIONSHIPS: All the species other than *Z. moestus* (component 10, fig. 18) are united by having a blindly ending extension of the median epigynal ducts (figs. 23, 25, 35, 37). Within that group, *Z. pseustes* and *Z. pullus* are united (component 11, fig. 18) by the convex dorsal edge of the embolar base and the shortened embolar projection (figs. 31, 39), and *Z. lasalanus* and *Z. hentzi* are united (component 12, fig. 18) by their distally prolonged embolar base (figs. 19, 27).

KEY TO SPECIES

1. EB bearing an extension along almost its entire distal width (figs. 19, 23); LEM greatly widened posteriorly (fig. 21) *hentzi*
EB bearing at most a short extension on prolateral side of distal edge (as in figs. 27, 31); LEM not greatly widened posteriorly (figs. 29, 33, 41, 45) 2
2. Males 3
Females 6
3. EP relatively short, blunt (figs. 31, 39) 4
EP relatively long, sharp (figs. 27, 43) 5
4. EB with triangular prolateral extension (figs. 31, 35) *pullus*
EB without triangular prolateral extension (figs. 37, 39) *pseustes*
5. EB relatively high, narrow; EMB relatively wide at base (figs. 25, 27) *lasalanus*
EB relatively low, wide; EMB relatively narrow at base (figs. 43, 47) *moestus*
6. MED relatively short (figs. 30, 34) 7
MED relatively long (figs. 42, 46) 8
7. AEM much wider than LEM (figs. 33, 36) ..
..... *pullus*
AEM scarcely wider than LEM (figs. 26, 29)
..... *lasalanus*
8. MED with wide posterior coil (fig. 42)
..... *pseustes*
MED with narrow posterior coil (fig. 46)
..... *moestus*

Zelotes hentzi Barrows Figures 19–24; Map 3

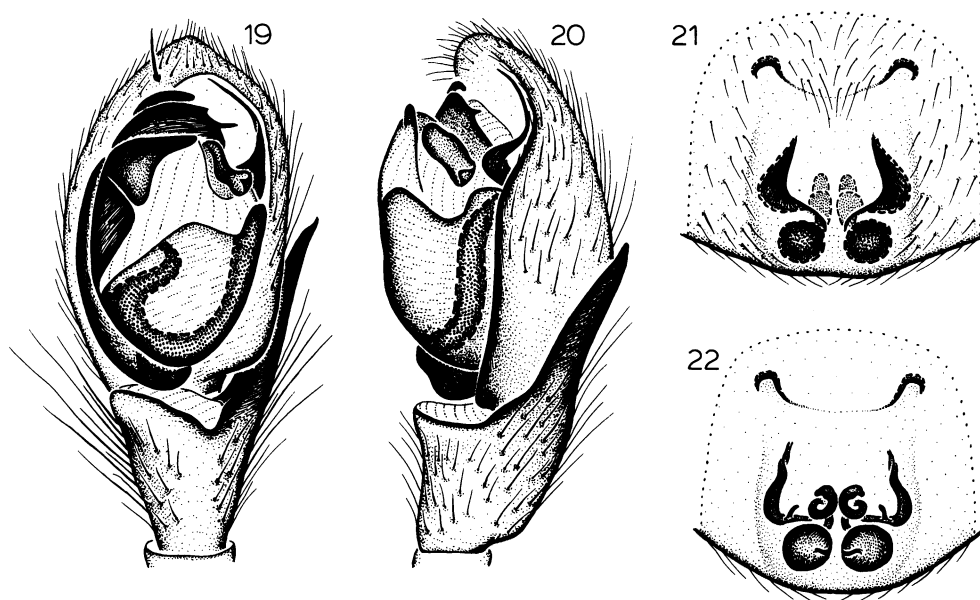
Zelotes kentzi Barrows, 1945, p. 75, pl. 2, figs. 5, 6 (male holotype from Rockbridge, Hocking County, Ohio, in OSU, examined); *lapsus*.

Zelotes hentzi: Kaston, 1948, p. 357, figs. 1242–1244. Ubick and Roth, 1973, p. 8.

DIAGNOSIS: *Zelotes hentzi* seems closest to *Z. lasalanus* but can be distinguished by the long distal extension on the EB (figs. 19, 23) of males and the posteriorly widened LEM (fig. 21) of females.

MALE: Total length 5.18 ± 0.53 . Carapace 2.32 ± 0.21 long, 1.78 ± 0.16 wide. Femur II 1.37 ± 0.10 long (190 specimens examined). Eye sizes and interdistances: AME 0.05, ALE 0.07, PME 0.06, PLE 0.06; AME–AME 0.05, AME–ALE 0.01, PME–PME 0.04, PME–PLE 0.06, ALE–PLE 0.06. MOQ length 0.20, front width 0.14, back width 0.15. EB with distinct ledgelike extension across distal edge (figs. 19, 20, 23). Leg spination: femur IV p0-0-1; tibia III r1-1-1.

FEMALE: Total length 5.94 ± 0.77 . Carapace 2.55 ± 0.23 long, 1.91 ± 0.11 wide. Femur II 1.44 ± 0.15 long (259 specimens examined). Eye sizes and interdistances: AME 0.05, ALE 0.07, PME 0.06, PLE 0.08; AME–AME 0.06, AME–ALE 0.01, PME–PME 0.07, PME–PLE 0.07, ALE–PLE 0.09. MOQ length 0.24, front width 0.15, back width 0.19. LEM

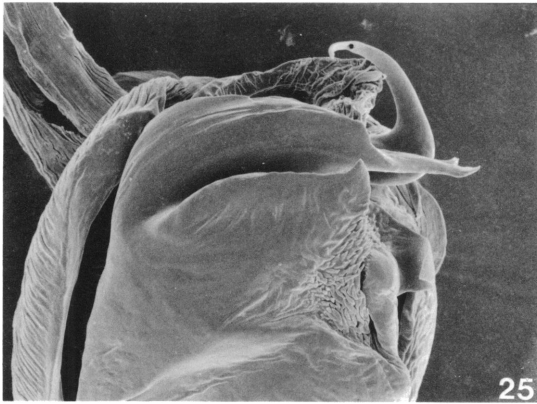
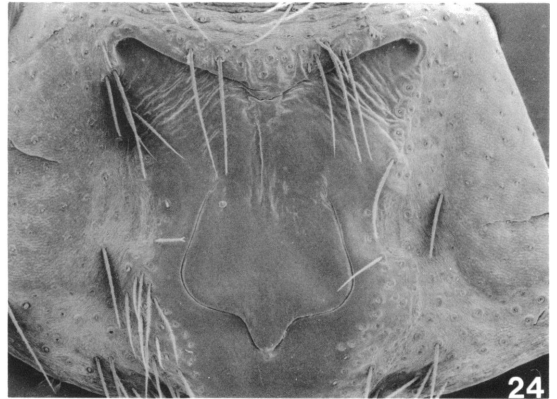


FIGS. 19–22. *Zelotes hentzi* Barrows. 19. Palp, ventral view. 20. Palp, retrolateral view. 21. Epigynum, ventral view. 22. Epigynum, dorsal view.

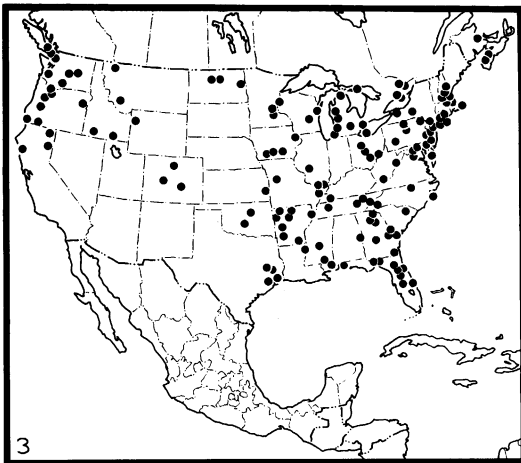
widened posteriorly; MED with blind anterior extensions (figs. 21, 22, 24). Leg spination: tibia III r-1-0-1; metatarsus II v2-1p-0.

RECORDS: CANADA: *British Columbia*: Victoria, Wellington (Vancouver Island). *New Brunswick*: Kouchibouguac National Park. *Nova Scotia*: Granville Ferry, Graywood, Hall's Harbour, Kentville. *Ontario*: Braeside, Carleton Place, Chatterton, Constance Bay, De Grassi Point, Fitzroy Township, Minde-moya (Manitoulin Island), Newburgh, Odessa, Pelee Island, Picton, Point Pelee National Park, Raymonds Corners, Rednersville, Windsor. UNITED STATES (county records only): *Alabama*: Baldwin, Lee. *Arkansas*: Bradley, Carroll, Conway, Hempstead, Marion, Mississippi, Washington, Yell. *California*: Mendocino, Modoc, Plumas. *Colorado*: Boulder, Gunnison, Pueblo. *Connecticut*: Fairfield, New Haven. *Florida*: Alachua, Indian River, Jefferson, Lake, Leon, Marion, Polk, Volusia. *Georgia*: Charlton, Chatham, Dooly, Emanuel, Habersham, Hall, Jackson, Screven. *Idaho*: Oneida, Twin Falls. *Illinois*: Jackson, Macoupin, Saline, Union. *Iowa*: Jackson, Mahaska, Union, Warren. *Kansas*: Bourbon. *Kentucky*:

Trigg. *Louisiana*: Madison. *Maryland*: Anne Arundel, Cecil, Montgomery, Wicomico. *Massachusetts*: Barnstable, Essex, Middlesex. *Michigan*: Berrien, Cheboygan, Livingston, Newaygo, Van Buren, Wexford. *Minnesota*: Hennepin, Scott. *Mississippi*: Forrest, George, Scott. *Missouri*: Johnson. *Montana*: Flathead, Silver Bow. *New Hampshire*: Carroll, Cheshire, Merrimack, Stratford. *New Jersey*: Bergen, Camden, Hunterdon. *New York*: Bronx, Genesee, Nassau, Orange, Rockland, Suffolk, Tompkins. *North Carolina*: Buncombe, Carteret, Durham, Graham, Macon. *North Dakota*: Grand Forks, McHenry, Ward. *Ohio*: Franklin, Hocking, Marion, Washington. *Oklahoma*: Cleveland, Payne. *Oregon*: Baker, Clackamas, Curry, Jackson, Lane, Marion, Multnomah. *Pennsylvania*: Bucks, Clinton, Lackawanna, Potter, Westmoreland. *South Carolina*: Darlington. *Tennessee*: Henderson, Knox, Roane, Sevier. *Texas*: Hardin, Harris, San Jacinto, Walker. *Virginia*: Fairfax. *Washington*: Grant, Kittitas, San Juan, Thurston, Yakima. *West Virginia*: Mercer, Pendleton. *Wisconsin*: Burnett, Door, Waushara. *Wyoming*: Teton.



FIGS. 23–26. 23, 24. *Zelotes hentzi* Barrows. 25, 26. *Z. lasalanus* Chamberlin. 23, 25. Palp, ventral view, 210 $\times$. 24, 26. Epigynum, ventral view, 130 $\times$.



MAP 3. North America, showing distribution of *Zelotes hentzi*.

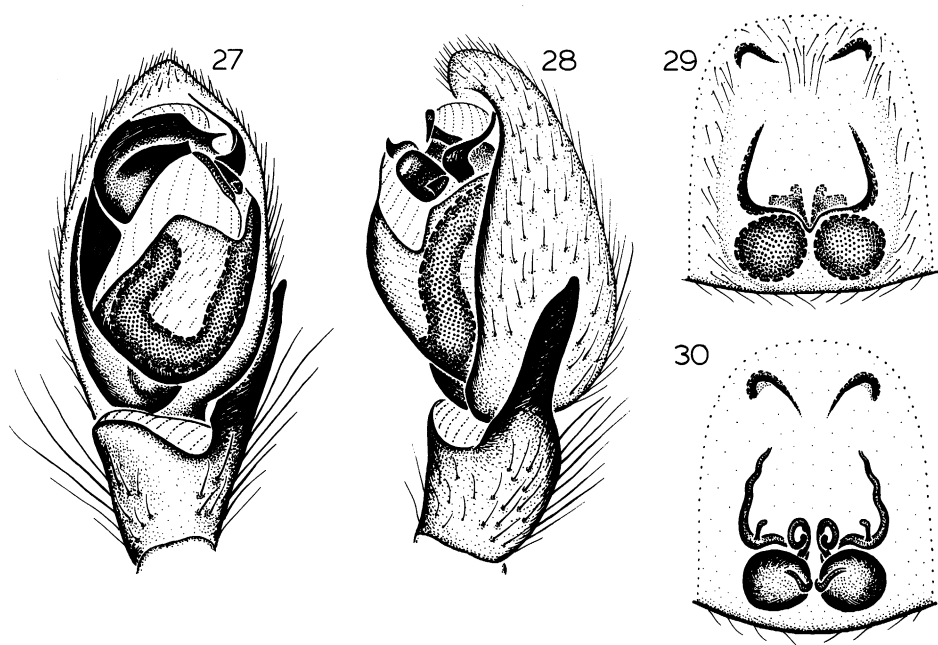
DISTRIBUTION: Southern Canada and the United States, except for the southwest (map 3).

NATURAL HISTORY: Mature males have been taken year round, mature females in every month except January. Specimens have been collected in Berlese, malt, molasses, and pitfall traps, in aspen, cottonwood, lodgepole pine, pin and scrub oak, and blue spruce forests, on beaches, sand dunes, and sandstone outcrops, in a beech-magnolia hammock, chaparral, citrus litter, cotton fields, meadows, pecan groves, prairies, and sagebrush, under boards, logs, and rocks, at elevations up to 6800 feet.

Zelotes lasalanus Chamberlin

Figures 25–30; Map 4

Zelotes lasalanus Chamberlin, 1928, p. 93 (female holotype from La Sal Mountains, San Juan



FIGS. 27–30. *Zelotes lasalanus* Chamberlin. 27. Palp, ventral view. 28. Palp, retrolateral view. 29. Epigynum, ventral view. 30. Epigynum, dorsal view.

County, Utah, in AMNH, examined). Roewer, 1954, p. 471. Bonnet, 1959, p. 4929. Ubick and Roth, 1973, p. 8.

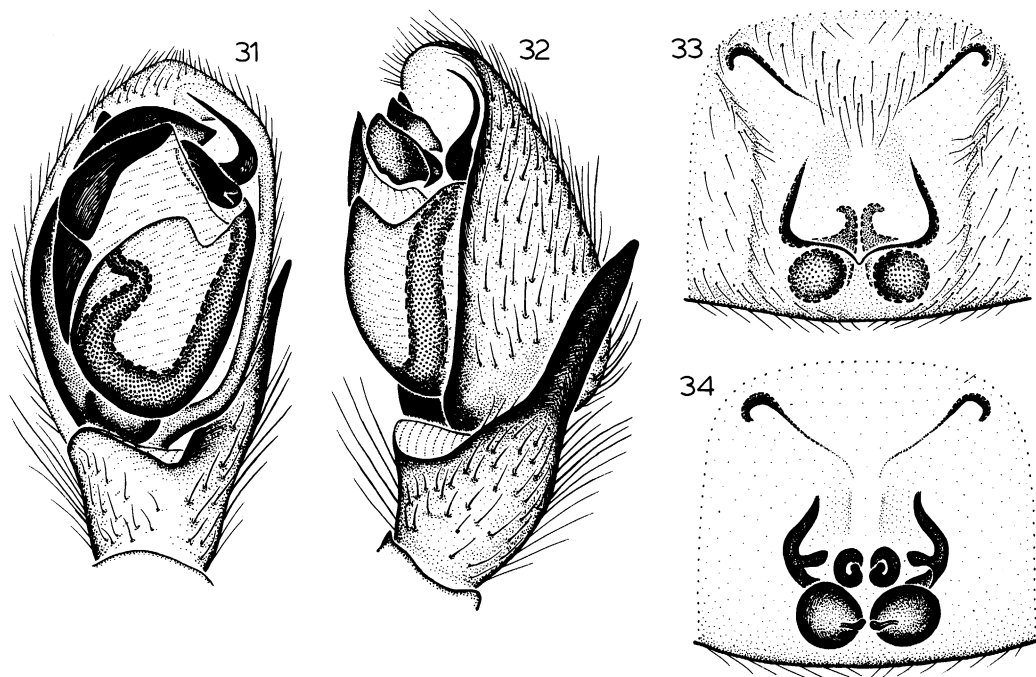
Zelotes chicano Gertsch and Riechert, 1976, p. 15, figs. 15–17 (male holotype from Malpais Lava Beds, Lincoln County, New Mexico, in AMNH, examined). NEW SYNONYMY.

DIAGNOSIS: *Zelotes lasalanus* seems closest to *Z. hentzi* but can be distinguished by the short (sometimes scarcely visible) distal extension of the EB (figs. 25, 27) of males and the narrow LEM (fig. 29) and the posteriorly situated blind extensions of the MED (fig. 30) of females.

MALE: Total length 4.54 ± 0.33 . Carapace 2.09 ± 0.21 long, 1.59 ± 0.16 wide. Femur II 1.25 ± 0.14 long (422 specimens examined). Eye sizes and interdistances: AME 0.04, ALE 0.06, PME 0.07, PLE 0.06; AME–AME 0.06, AME–ALE 0.02, PME–PME 0.04, PME–PLE 0.07, ALE–PLE 0.06. MOQ length 0.21, front width 0.14, back width 0.18. EB distally elongate, with slight (sometimes visible only in oblique view) extension on prolateral side (figs. 25, 27, 28). Leg spination typical for genus.

FEMALE: Total length 5.49 ± 0.39 . Carapace 2.14 ± 0.14 long, 1.60 ± 0.10 wide. Femur II 1.22 ± 0.09 long (544 specimens examined). Eye sizes and interdistances: AME 0.05, ALE 0.08, PME 0.08, PLE 0.09; AME–AME 0.05, AME–ALE 0.02, PME–PME 0.04, PME–PLE 0.06, ALE–PLE 0.07. MOQ length 0.25, front width 0.15, back width 0.20. MED (viewed ventrally) with anteromedian projections, with blind posterior extensions (figs. 26, 29, 30). Leg spination: femur IV p0-0-1.

RECORDS: CANADA: *Alberta*: 3 mi. W Bow Island, 12 mi E Calgary, Chin, Claresholm, 19 mi. N Elkwater, N Elkwater Provincial Park, Ft. McLeod, 10 mi. W Lethbridge, 8 mi. E Medicine Hat, Seven Persons. *Manitoba*: 23 mi. E Brandon, Spruce Woods Provincial Park. *Saskatchewan*: Chaplin, above Frenchman River near Val Marie, Herbert, Maple Creek, Mortlach Junction, 15 mi. S Robsart, 8 mi. E Saskatoon, E Swift Current. UNITED STATES (county records only): *Arizona*: Cochise, Coconino, Graham, Greenlee, Navajo, Pima, Pinal, Santa Cruz. *California*: Plumas, Santa Clara. *Colorado*: Alamosa, Boulder, Chaffee, Conejos, Cos-



FIGS. 31–34. *Zelotes pullus* (Bryant). 31. Palp, ventral view. 32. Palp, retrolateral view. 33. Epigynum, ventral view. 34. Epigynum, dorsal view.

tilla, Custer, Douglas, El Paso, Fremont, Gunnison, Larimer, Montezuma, Morgan, Pueblo, Rio Grande, Saguache. *Idaho*: Bear Lake, Bonneville, Butte, Cassia, Lemhi, Twin Falls, Washington. *Kansas*: Harper. *Montana*: Carbon, Gallatin, Treasure. *Nebraska*: Cherry, Holt. *Nevada*: Elko, Lander, Nye, White Pine. *New Mexico*: Bernalillo, Dona Ana, Grant, Hidalgo, Lincoln, Los Alamos, McKinley, Sandoval, San Miguel, Socorro, Taos, Torrance, Union, Valencia. *North Dakota*: Divide, McHenry, Ward, Williams. *Oregon*: Lake, Malheur. *Texas*: Bailey, Brewster, Cameron, Culberson, Ector, Jeff Davis, Kerr, Kleberg, Presidio, Reeves, Tarrant, Terrell, Travis. *Utah*: Beaver, Box Elder, Daggett, Davis, Emery, Salt Lake, San Juan, Sevier, Tooele, Utah. *Wyoming*: Albany, Converse, Platte. **MEXICO**: *Chihuahua*: Barranca de Río Batopilas (120 km. S Creel), Cañon Prieta (near Primavera), La Polvosa, Las Canoas Babicora, Madera, 22 mi. N Parral, summit NE San José Babicora, Santa Bárbara. *Coahuila*: 20 mi. E Saltillo. *Durango*: 10 mi. W Durango, 6 mi. E El Salto, 10.3 mi.

E La Ciudad, Palos Colorados. *Hidalgo*: Taxquillo (Río Tula), 5 mi. S Zimapán. *Jalisco*: 5.5 mi. NW Cautla, 12.4 mi. S Tecalitlán. *Oaxaca*: 1.5 mi. NE El Punto, Nochixtlan, 7 mi. W Oaxaca, 3 mi. SE Tlacolula. *Puebla*: Tehuacán, Tlacotepec. *San Luis Potosí*: Charcas (San Diego plain), 4 mi. W San Luis Potosí. *Sonora*: 108 mi. S Nogales, Rancho Los Baños, Sierra de Los Ajos, Sierra Manzanal. *Zacatecas*: 27 mi. NNW Fresnillo.

DISTRIBUTION: This species, previously known only from Utah and New Mexico, is actually widespread in western North America (map 4). One female specimen from Liberty County, Georgia (AMNH) is presumed to be either mislabeled or introduced by humans.

NATURAL HISTORY: Mature males have been taken from mid-March through early October, mature females from mid-February through late October. Specimens have been collected in pitfall traps, associated with all-thorn, clover, *Coldenia*, juniper, mesquite, nolina, oak, pinyon pine, roses, sand verbena, and yucca, in fields, grass, and prairies, on

shores, and under debris, dung, and stones, at elevations up to 9700 feet.

SYNONYMY: Gertsch and Riechert provided no characters by which to distinguish females of *Z. chicano* from those of *Z. lasalanus*, and there appear to be none.

Zelotes pullus (Bryant)

Figures 31–36; Map 5

Drassyllus pullus Bryant, 1936, p. 95, figs. 4, 5 (male holotype from Coral Gables, Dade County, Florida, in MCZ, examined). Bonnet, 1956, p. 1605.

Zelotes pullus: Kaston, 1945, p. 2. Roewer, 1954, p. 469. Ubick and Roth, 1973, p. 8.

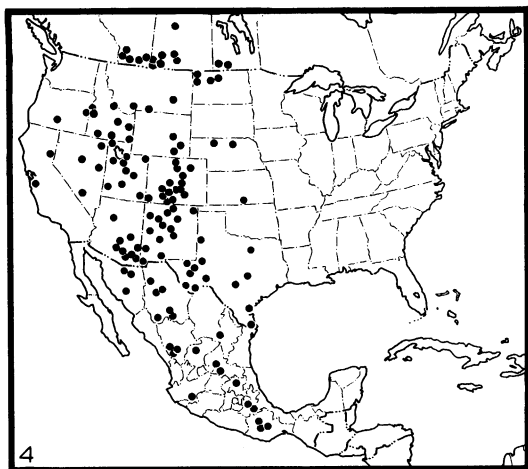
Zelotes inheritus Kaston, 1945, p. 1, figs. 6, 7 (male holotype from Mt. Carmel, New Haven County, Connecticut, in AMNH, examined; not female [= *Z. frateris*]); 1948, p. 356, figs. 1245, 1246 (male only). Roewer, 1954, p. 470. Ubick and Roth, 1973, p. 8. **NEW SYNONYMY.**

DIAGNOSIS: *Zelotes pullus* seems closest to *Z. pseustes* but can be distinguished by the triangular prolateral extension of the EB (figs. 31, 35) of males and the widely separated AEM (figs. 33, 36) of females.

MALE: Total length 5.60 ± 0.79 . Carapace 2.68 ± 0.37 long, 2.06 ± 0.33 wide. Femur II 1.63 ± 0.24 long. Eye sizes and interdistances: AME 0.05, ALE 0.07, PME 0.08, PLE 0.08; AME–AME 0.08, AME–ALE 0.02, PME–PME 0.06, PME–PLE 0.06, ALE–PLE 0.07. MOQ length 0.23, front width 0.18, back width 0.22. EB distally convex, with triangular prolateral extension; EP short, blunt (figs. 31, 32, 35). Leg spination typical for genus.

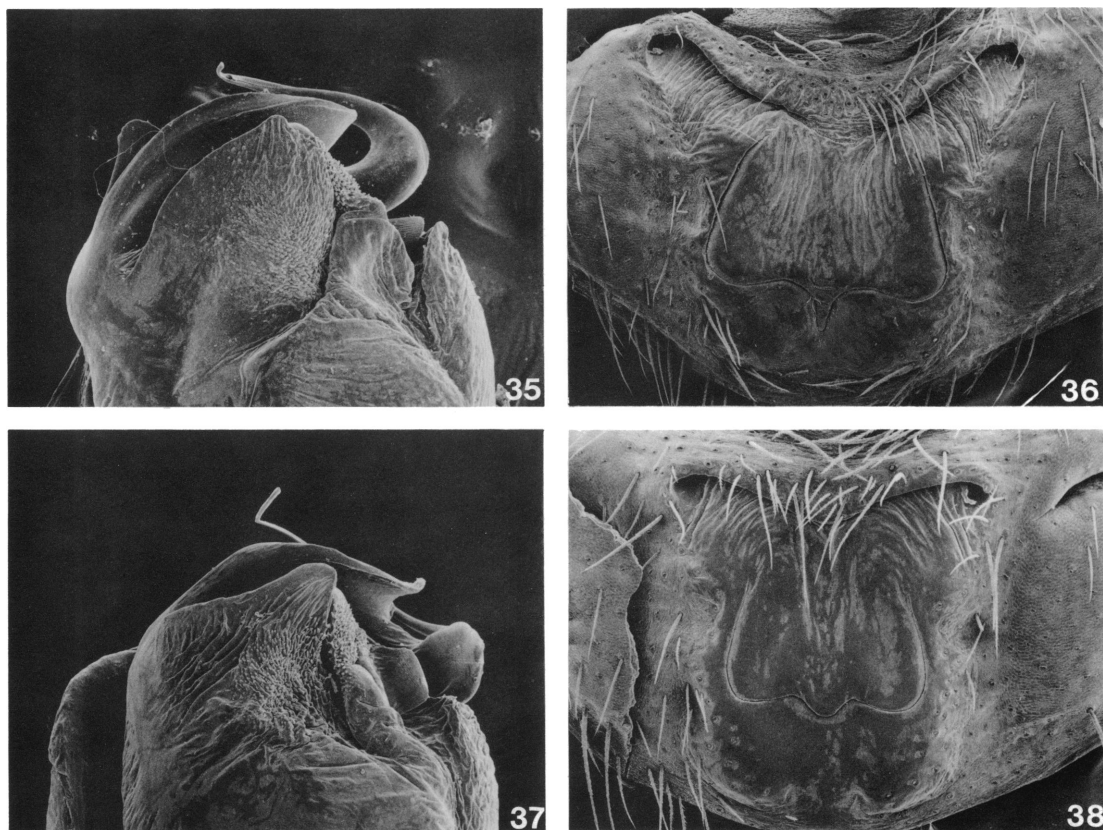
FEMALE: Total length 6.46 ± 0.87 . Carapace 2.71 ± 0.30 long, 2.07 ± 0.23 wide. Femur II 1.63 ± 0.17 long. Eye sizes and interdistances: AME 0.06, ALE 0.08, PME 0.09, PLE 0.08; AME–AME 0.06, AME–ALE 0.02, PME–PME 0.05, PME–PLE 0.06, ALE–PLE 0.08. MOQ length 0.26, front width 0.18, back width 0.23. AEM widely separated (so much so that they are frequently hidden under the posterior coxae of preserved specimens), much farther apart than LEM (figs. 33, 34, 36). Leg spination: femur IV p0-0-1.

MATERIAL EXAMINED: UNITED STATES: **Connecticut:** *New Haven Co.*: Mt. Carmel, Apr. 19, 1938 (B. J. Kaston), 1 ♂ (type). **Flor-**

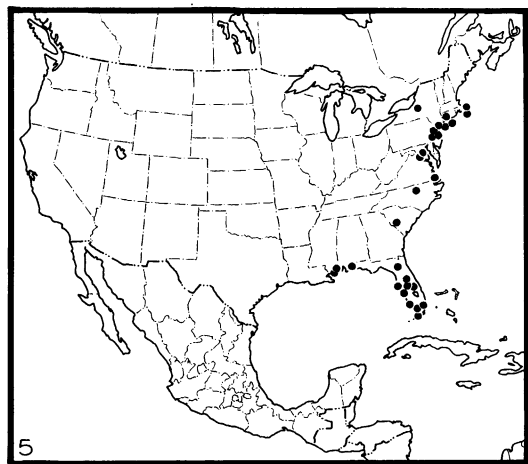


MAP 4. North America, showing distribution of *Zelotes lasalanus*.

ida: *Alachua Co.*: no specific locality, Nov. 22, 1948 (FSCA), 1 ♀; 5 mi. W Gainesville, Mar. 18, 1938 (W. J. Gertsch), 1 ♀; W side, Newnan Lake, Feb. 12, 1940 (W. Ivie), 1 ♀. *Collier Co.*: Marco Island, Jan. 1–6, 1930 (W. M. Barrows, OSU), 1 ♂; 10 mi. S Naples, Mar. 31, 1957 (W. J. Gertsch, R. R. Forster), 1 ♀. *Dade Co.*: Coral Gables, June 17, 1935 (O. C. Webb, MCZ), 1 ♂ (type); Everglades National Park, Jan. 3, 1953, under stone (M. H. Muma, FSCA), 1 ♂; Miami, Mar. 2, 1936 (S. C. Bishop), 1 ♂, Apr. 16, 1949 (H. K. Wallace, FSCA), 1 ♀; Miami Beach, Mar.–June 12, 1943–1945 (A. L. Bacon), 3 ♂. *Escambia Co.*: Pensacola, Jan. 1925 (W. M. Barrows, OSU), 1 ♀. *Lake Co.*: Leesburg, Mar. 1–11, 1954 (M. Statham), 1 ♀. *Monroe Co.*: Flamingo, Everglades National Park, Mar. 9, 1963 (H. and L. Levi, MCZ), 1 ♀; Long Pine Key Camp, Mar. 10–19, 1963–1964, under cinder blocks (H. and L. Levi, MCZ), 2 ♂, 1 ♀. *Okeechobee Co.*: Okeechobee, Mar. 26, 1938 (W. J. Gertsch), 1 ♀. *Pinellas Co.*: Largo, Mar. 28, 1964, pine-palmetto (H. Levi, MCZ), 1 ♀. *Polk Co.*: Haines City, Oct. 13, 1969, pitfall, flat pine woods (M. H. Muma, H. L. Greene, FSCA), 3 ♂; N Lake Alfred, May 27–Dec. 2, 1968–1970, pitfall, flat pine land (M. H. Muma, K. J. Stone, H. L. Greene, FSCA, AMNH), 12 ♂, 8 ♀; Winter Haven, Feb. 3, 1969, pitfall, flat pine land (M. H. Muma, K. J. Stone, FSCA), 1 ♂.

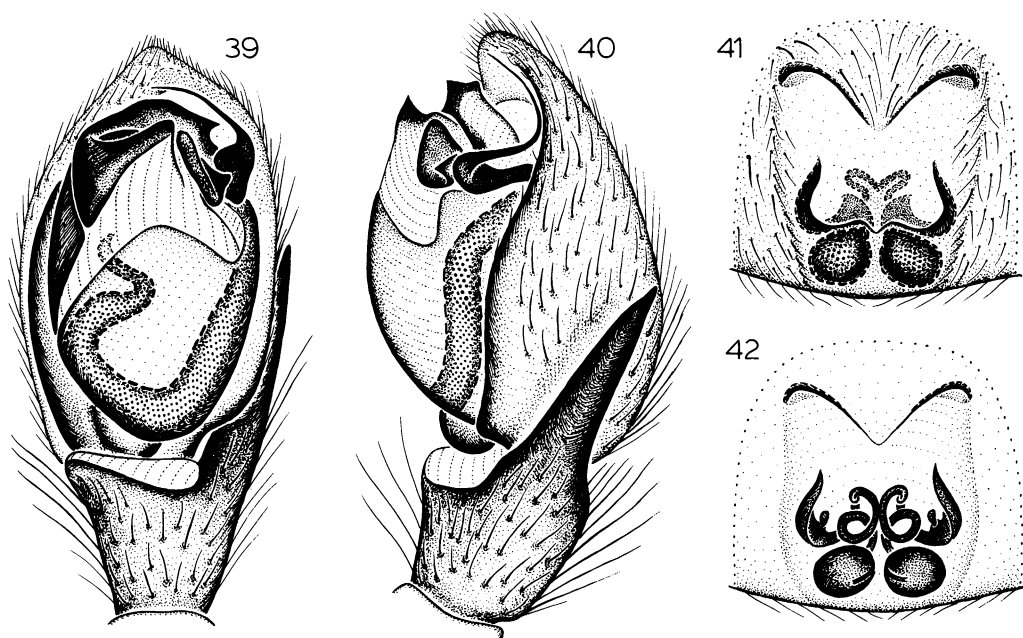


FIGS. 35–38. 35, 36. *Zelotes pullus* (Bryant). 37, 38. *Z. pseustes* Chamberlin. 35, 37. Palp, ventral view, 165X. 36, 38. Epigynum, ventral view, 110X.



MAP 5. North America, showing distribution of *Zelotes pullus*.

Sarasota Co.: Englewood, Apr. 1–5, 1938 (W. J. Gertsch), 1 ♀. **Maryland**: *Prince Georges Co.*: Berwyn, Oct. 5, 1941 (E. Ruleman), 1 ♂; College Park, Sept. 26, 1943, on ground (M. H. Muma), 1 ♂; Lanham, Sept. 9, 1941, on ground (M. H. Muma, FSCA), 1 ♂, Sept. 17, 1941 (J. Oltman), 1 ♀. **Massachusetts**: *Barnstable Co.*: Woods Hole, July 4, 1901, 1 ♀, 1910, 7 ♀. *Nantucket Co.*: Nantucket, May 18, 1928 (J. H. Emerton, MCZ), 3 ♀, Aug. 6, 1929, under board in swamp (MCZ), 1 ♂. **Mississippi**: *Harrison Co.*: Ship Island, Mar. 16, 1936 (CUC), 1 ♀. *Jackson Co.*: Ocean Springs, June 1905 (J. H. Comstock, CUC), 1 ♀. **New Jersey**: *Bergen Co.*: Ramsey, June 5, 1938 (W. J. Gertsch), 1 ♀. *Hunterdon Co.*: Lambertville, July 31, 1953 (W. Ivie), 2 ♀. *Mercer Co.*: Princeton, Oct. 14, 1939 (K. W. Cooper), 1 ♀. **New York**: *Nassau Co.*: Sea Cliff (N. Banks, MCZ), 1 ♂, 2 ♀.



FIGS. 39–42. *Zelotes pseustes* Chamberlin. 39. Palp, ventral view. 40. Palp, retrolateral view. 41. Epigynum, ventral view. 42. Epigynum, dorsal view.

Onondaga Co.: Crow Hill, Aug. 13 (H. Britcher), 2 ♂. *Suffolk Co.*: Gardiner's Island, May 25, 1924 (CUC), 1 ♀; Montauk Point, May 24, 1924 (CUC), 1 ♀. **North Carolina**: *Durham Co.*: Chapel Hill Boulevard, Sept. 20–Oct. 1, 1963, pitfall, broomsedge (J. W. Berry, JAB), 1 ♂, 1 ♀; southeast corner of county, Oct. 1, 1963, pitfall, mixed broomsedge, pine (J. W. Berry, MCZ), 1 ♀. **Pennsylvania**: *Bucks Co.*: NE Jamison, Apr.–Sept., 1953–1962 (W. Ivie), 4 ♂, 8 ♀. **South Carolina**: *Aiken Co.*: Savannah River Plant, Dec. 3, 1959–Feb. 9, 1960 (W. Tarpley), 1 ♂, 2 ♀. **Virginia**: *Fairfax Co.*: Falls Church (N. Banks, MCZ), 2 ♀. *Norfolk Co.*: Cradock, May 13–15, 1968 (E. Sabath, MCZ), 1 ♀.

DISTRIBUTION: Eastern United States (map 5).

SYNONYMY: Kaston (1945) indicated that the retrolateral tibial apophysis of *Z. inheritus* is "not as thin as in *pullus*." He was apparently misled on this point by Bryant's inadequate illustration of the tibial apophysis of *Z. pullus*, for we have not been able to separate northern and southern populations on the basis of this character.

Zelotes pseustes Chamberlin

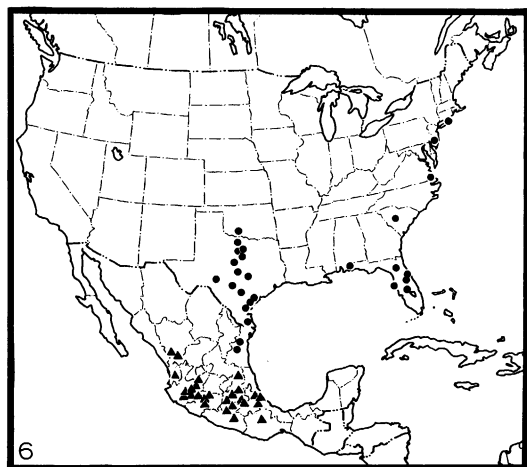
Figures 37–42; Map 6

Zelotes pseustes Chamberlin, 1922, p. 164 (male holotype from Austin, Travis County, Texas, in MCZ, examined). Roewer, 1954, p. 471. Bonnet, 1959, p. 4944. Ubick and Roth, 1973, p. 8.

DIAGNOSIS: *Zelotes pseustes* seems closest to *Z. pullus* but can be distinguished by the convex EB without a prolateral extension (figs. 37, 39) of males and the closer AEM (figs. 38, 41) and longer MED (fig. 42) of females.

MALE: Total length 5.60 ± 0.57 . Carapace 2.58 ± 0.21 long, 2.00 ± 0.16 wide. Femur II 1.46 ± 0.12 long. Eye sizes and interdistances: AME 0.05, ALE 0.08, PME 0.08, PLE 0.07; AME–AME 0.07, AME–ALE 0.01, PME–PME 0.05, PME–PLE 0.07, ALE–PLE 0.08. MOQ length 0.23, front width 0.17, back width 0.21. EB distally convex, without prolateral extension; EP short, blunt (figs. 37, 39, 40). Leg spination: metatarsus II v2-1p-0.

FEMALE: Total length 6.00 ± 1.15 . Carapace 2.59 ± 0.28 long, 1.93 ± 0.20 wide. Femur II 1.45 ± 0.17 long. Eye sizes and interdistances: AME 0.06, ALE 0.08, PME

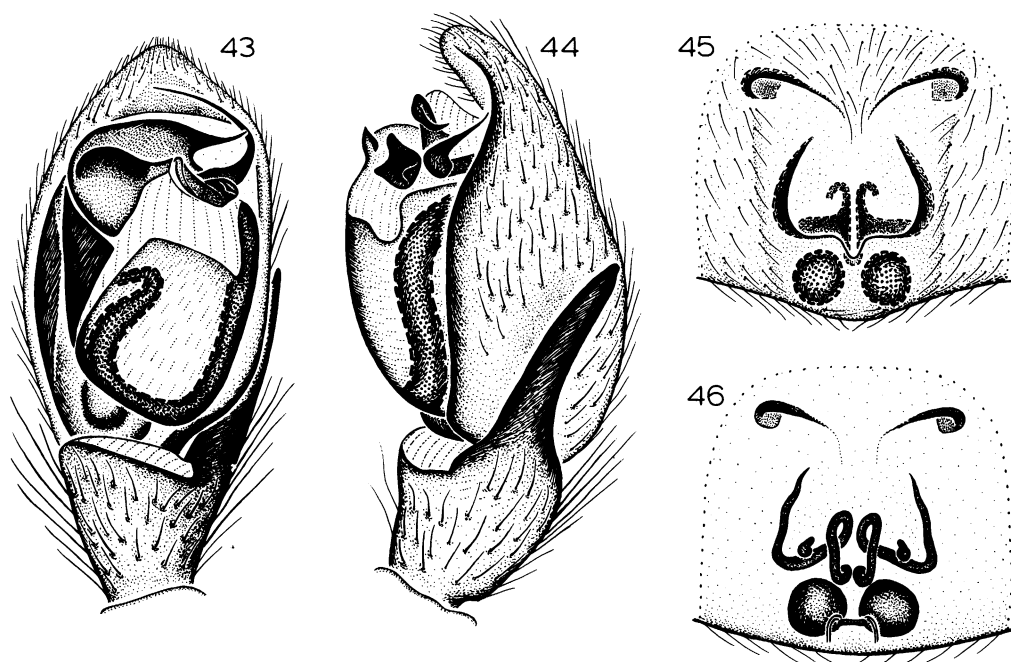


MAP 6. North America, showing distribution of *Zelotes pseustes* (circles) and *Z. moestus* (triangles).

0.08, PLE 0.08; AME-AME 0.07, AME-ALE 0.02, PME-PME 0.05, PME-PLA 0.07, ALE-PLA 0.09. MOQ length 0.25, front width 0.19, back width 0.21. AEM approximate; MED (viewed ventrally) forming broad basal triangle (figs. 38, 41, 42). Leg spination: femur IV p0-0-1.

MATERIAL EXAMINED: UNITED STATES:
Florida: *Alachua Co.*: Gainesville, June 16, 1980, dirt path in woods (G. B. Edwards, FSCA), 1 ♀. *Escambia Co.*: Pensacola, Jan. 1-8, 1925 (W. M. Barrows, OSU), 1 ♀. *Highlands Co.*: Archbold Biological Station, Lake Placid, Feb. 29-Mar. 1, 1968 (A. M. Chickering, MCZ), 1 ♀. *Orange Co.*: Wekiwa Springs State Park, Aug. 2, 1981, leaf litter, mesic hardwoods (D. Ubick, DU), 1 ♀. *Pinellas Co.*: Largo, Mar. 1, 1963, short-leaf pine (H. and L. Levi, MCZ), 1 ♂. *Volusia Co.*: 2 mi. S Orange City, Dec. 9, 1962 (W. Ivie), 1 ♀. **New Jersey:** *Burlington Co.*: Mt. Misery, Lebanon State Forest, May 12, 1949 (W. J. Gertsch), 1 ♀. **New York:** *Suffolk Co.*: Baiting Hollow (Riverhead), Sept. 9, 1961, on sand on beach (P. H. Arnaud, Jr.), 1 ♂; N Mattituck, Aug. 1949 (W. Ivie), 1 ♂; Orient, June 6, 1946 (R. Latham), 1 ♀; Orient Beach State Park, Sept. 23, 1962 (W. Ivie), 1 ♂; Southampton, Aug.-Sept. 1953 (R. Latham), 1 ♂. **Oklahoma:** *Comanche Co.*: Wichita Mountains Wildlife Refuge, Apr. 12-15,

1978, pitfall, oak litter (J. C. Cokendolpher, F. Bryce, NVH), 1 ♂, June 16, 1979 (N. I. Platnick, L. Sorkin), 1 ♀. **South Carolina:** *Lexington Co.*: 5 mi. E Leesville, Mar. 16, 1965 (L. Brodie, FMNH), 1 ♀. **Texas:** *Bexar Co.*: Somerset, Mar. 17, 1937 (A. J. Kirn), 1 ♂. *Brown Co.*: no specific locality, Apr. 11, 1981, under rock (Thornton, NVH), 1 ♀. *Erath Co.*: Stephenville, Apr. 15-Aug. 15, 1981-1982, peanuts, under board, pitfalls (C. W. Agnew, TAM), 2 ♂, 3 ♀. *Hidalgo Co.*: Bentsen-Rio Grande Valley State Park, June 18, 1963 (J. A. Beatty, JAB), 1 ♀, May 19, 1965, litter, mesquite woods (W. Peck, EPC), 1 ♀, July 7-11, 1970, carrion trap (A. Newton, MCZ), 1 ♂; Edinburg, Oct. 1934 (S. Mulaik), 3 ♂, 2 ♀, Mar. 1938 (S. Mulaik), 2 ♀, Dec. 1939 (S. and D. Mulaik), 2 ♀, Dec. 26, 1949, 1 ♂; NW Edinburg, Sept. 3, 1934 (S. Mulaik), 1 ♂; 7 mi. E Edinburg, Oct. 12-Dec. 6, 1934-1954 (S. Mulaik), 4 ♂, 2 ♀; Hidalgo, Dec. 26, 1949, 1 ♀. *Kerr Co.*: Kerrville, Oct. 11, 1975, rocks (K. Douglass, NVH), 1 ♂; Raven Ranch, Dec. 1939 (S. and D. Mulaik), 1 ♀. *Kleberg Co.*: Kingsville, May 28, 1970, *Opuntia* (J. Hallan), 1 ♂, 1 ♀. *Nueces Co.*: no specific locality, Apr. 27, 1975, grass (S. Eagleston, NVH), 1 ♂. *Palo Pinto Co.*: 4 mi. E Santo, Apr. 6, 1973 (W. Graham, TTU), 1 ♀. *Parker Co.*: Highway I-20, 2.5 mi W intersection with F.M. 113, Apr. 6, 1973 (W. Graham, TTU), 1 ♀. *San Patricio Co.*: 5 mi. SW Mathis, May 28-June 1, 1961 (R. O. Albert, MCZ), 1 ♀; 7 mi. N Sinton, Mar. 1-May 15, 1980, pitfalls, sand (D. K. Hoffmaster, DKH), 4 ♂, 3 ♀; 8 mi. NE Sinton, Apr. 5-Sept. 30, 1959-1960 (H. E. Laughlin), 11 ♂, 4 ♀. *San Saba Co.*: no specific locality, Mar. 15, 1973, under rock (H. Harry, NVH), 1 ♀. *Sutton Co.*: Sonora, May 3, 1926 (F. C. Bishopp), 1 ♀. *Travis Co.*: Austin (R. V. Chamberlin, MCZ), 1 ♂, 2 ♀ (types). *Wichita Co.*: no specific locality, Feb. 28, 1981, dead leaves (R. Wargo, NVH), 1 ♂, Aug. 18, 1981, pitfall (G. Zolnerowich, NVH), 1 ♀; Cross Tanks, Oct. 1, 1976, under rock (J. Cokendolpher, NVH), 1 ♂; 6.3 mi. N Iowa Park, Apr. 24, 1982, under board (G. Zolnerowich, NVH), 1 ♀. **Virginia:** *Norfolk Co.*: Cape Henry, June 8-13, 1970 (R. L. Hoffman), 1 ♂. **MEXICO:** *Tamaulipas:* 7 mi. S Hera, Apr. 24, 1967 (W. Peck, EPC), 1 ♀; El Tinieblo, Feb. 23, 1973 (T. R. Mollhagen,



FIGS. 43–46. *Zelotes moestus* (O. P.-Cambridge). 43. Palp, ventral view. 44. Palp, retrolateral view. 45. Epigynum, ventral view. 46. Epigynum, dorsal view.

TTU), 1 ♀; 6 mi. S Victoria, Apr. 16, 1963 (W. J. Gertsch, W. Ivie), 2 ♂.

DISTRIBUTION: This species, previously known only from Texas, actually extends north to Oklahoma, east to Florida and along the coastal plain north to Long Island, and south into Tamaulipas (map 6).

Zelotes moestus (O. P.-Cambridge)

Figures 43–48; Map 6

Prothesima moesta O. P.-Cambridge, 1898, p. 245, pl. 33, figs. 2–2f (male and female syntypes from Amula, Guerrero, Mexico, in BMNH, examined). F. O. P.-Cambridge, 1899, p. 57, pl. 4, figs. 15–15b.

Zelotes moestus: Petrunkevitch, 1911, p. 150. Roewer, 1954, p. 469. Ubick and Roth, 1973, suppl. 3, p. 2.

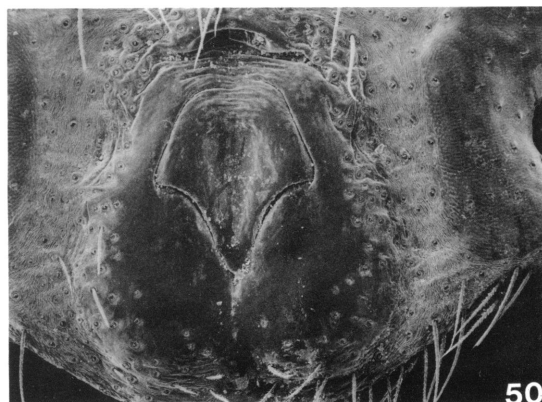
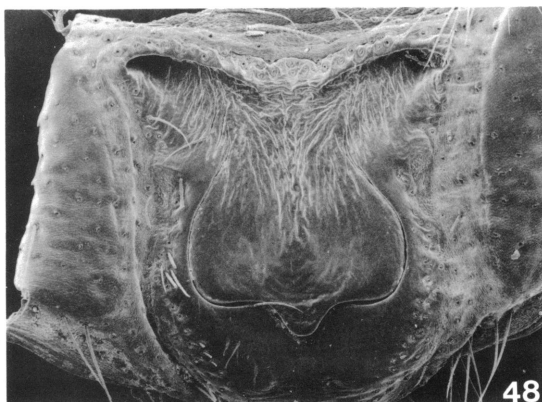
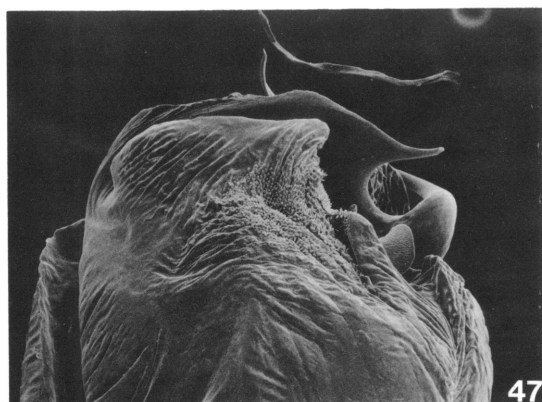
DIAGNOSIS: *Zelotes moestus* is a distinctive species easily recognized by the wide, low EB, long EP, and very long, basally narrow EMB (figs. 43, 47) of males and the very long MED (figs. 45, 46) of females.

MALE: Total length 6.00 ± 0.78 . Carapace 2.81 ± 0.42 long, 2.20 ± 0.30 wide. Femur

II 1.80 ± 0.25 long. Eye sizes and interdistances: AME 0.06, ALE 0.10, PME 0.09, PLE 0.09; AME–AME 0.08, AME–ALE 0.02, PME–PME 0.06, PME–PLE 0.07, ALE–PLE 0.09. MOQ length 0.27, front width 0.20, back width 0.24. EB wide, flattened distally; EMB narrow basally (figs. 43, 44, 47). Leg spination: femur IV p0-0-1.

FEMALE: Total length 6.05 ± 0.43 . Carapace 2.81 ± 0.14 long, 2.13 ± 0.09 wide. Femur II 1.71 ± 0.10 long. Eye sizes and interdistances: AME 0.04, ALE 0.09, PME 0.07, PLE 0.08; AME–AME 0.09, AME–ALE 0.04, PME–PME 0.08, PME–PLE 0.08, ALE–PLE 0.07. MOQ length 0.24, front width 0.17, back width 0.22. MED greatly elongated (figs. 45, 46, 48). Leg spination: femur IV p0-0-1; metatarsi: II v2-1p-0; III r1-2-2.

MATERIAL EXAMINED: MEXICO: **Durango:** Coyotes, Aug. 8, 1947, elevation 8300 feet (W. J. Gertsch), 1 ♀; 10 mi. E El Salto, Aug. 8, 1947 (W. J. Gertsch), 1 ♀. **Guerrero:** Amula (H. H. Smith, BMNH), 6 ♂, 18 ♀ (including types); 16.3 mi. SW Ixtapan, July 24, 1975 (L. R. Erickson, M. E. Soleglad), 1 ♂. **Hidalgo:** Apulco, Oct. 6, 1947 (H. M. Wagner), 1 ♀;



FIGS. 47–50. 47, 48. *Zelotes moestus* (O. P.-Cambridge). 49, 50. *Z. icenoglei*, new species. 47, 49. Palp, ventral view, 175 $\times$. 48, 50. Epigynum, ventral view, 110 $\times$.

Guerrero Mill (W. M. Mann, MCZ), 2 δ , 3 ϕ . **Jalisco:** 10 mi. N Ciudad Guzmán, Aug. 28, 1965 (W. J. Gertsch, R. Hastings), 1 ϕ ; 8–12 mi. W. Guadalajara, July 31, 1964 (W. J. Gertsch, J. Woods), 1 δ , 4 ϕ ; 25 mi. E Guadalajara, July 16, 1963 (J. A. Beatty, JAB), 1 ϕ ; 64.5 mi. SE Guadalajara, Aug. 13, 1967, elevation 4830 feet (R. E. Leech, REL), 1 ϕ ; 17 mi. SW Jalostotitlán, Aug. 30, 1965 (W. J. Gertsch, R. Hastings), 2 ϕ ; W side, Laguna de Sayula, July 30, 1964, from web of *Oecobius civitas* Shear (W. J. Gertsch, J. Woods), 1 δ , 4 ϕ ; 2 mi. N La Quemada, July 28, 1954 (W. J. Gertsch), 1 ϕ ; La Venta, July 28, 1964 (W. J. Gertsch, J. Woods), 1 ϕ ; 1 mi. E San Juan Cosalá, July 10, 1959 (C. M. Bogert), 1 ϕ ; 21 mi. NE Tepatitlán, Aug. 18, 1960 (P. H. Arnaud, Jr., E. S. Ross, D. H. Rentz, CAS), 1 ϕ ; NE slope, Volcán de Colima, Aug. 1, 1966, elevation 9900–10,300 feet (REL), 1 δ .

México: Salazar, Sept. 1946 (Bordas), 1 ϕ ; San Bartolo, Tenayuca, July 15, 1944 (C. Bolívar, M. Cardenas), 1 ϕ ; pyramids of San Juan Teotihuacán, Sept. 15, 1977 (M. Bentzien, UCB), 1 ϕ ; Teotihuacán ruins, Aug. 13, 1977, elevation 7400 feet (C. E. Griswold, T. C. Meikle, UCB), 1 ϕ . **Michoacán:** 1.1 mi. E Angahuán, Aug. 14, 1967, elevation 7500 feet (R. E. Leech, REL), 1 δ , 1 ϕ ; 4 mi. W Jiquilpan, Aug. 2, 1967, elevation 5950 feet (R. E. Leech, REL), 1 ϕ ; 9.5 mi. W Morelia, Aug. 18, 1967, elevation 6850 feet (R. E. Leech, REL), 12 ϕ ; 5 mi. NE Pátzcuaro, Sept. 5, 1966 (J. and W. Ivie), 1 ϕ ; 8.1 mi. E Quiroga, July 22, 1973 (L. R. Erickson, M. E. Sologlad), 1 ϕ ; Zamora, Aug. 1, 1956 (W. J. Gertsch, V. Roth), 4 δ , 5 ϕ . **Morelos:** Cuernavaca, Sept. 1941, elevation 1700 m. (H. Wagner), 1 ϕ ; N Cuernavaca, May 6, 1963 (W. J. Gertsch, W. Ivie), 1 δ . **Nayarit:** 19.3

mi. SE Tepic, July 31, 1967, elevation 4000 feet (R. E. Leech, REL), 1 ♂, 2 ♀; 20 mi. SE Tepic, Aug. 27, 1965 (W. J. Gertsch, R. Hastings), 1 ♀. **Oaxaca:** Santiago Otillo, near Nochistlán, Aug. 14, 1961 (M. R. Bogert), 1 ♀. **Puebla:** Atlixco, June 26, 1947 (L. I. Davis), 1 ♂, 1 ♀; 2 mi. SW Río Frío, Apr. 24, 1963 (W. J. Gertsch, W. Ivie), 1 ♀; N slope, Volcán de Popocatepetl, Nov. 20, 1946, elevation 11,000 feet (E. S. Ross), 1 ♀. **San Luis Potosí:** Tamazunchale, Apr. 15, 1946 (L. I. Davis, M. Johnston), 1 ♂. **Veracruz:** 15 mi. W Banderilla, Oct. 31, 1973 (S. C. Williams, C. L. Mullinex, CAS), 2 ♀; pass above Orizaba, June 29, 1944, elevation 6400 feet (L. I. Davis), 1 ♀; Tembladera, Volcán Cofre de Perote, 13.3 mi. S Las Vigas, Aug. 25, 1967, elevation 11,500–13,500 feet (R. E. Leech, REL), 8 ♀; N side, Volcán Cofre de Perote, Aug. 24, 1967, elevation 9650 feet (R. E. Leech, REL), 2 ♂, 3 ♀; Zempoala, June 29, 1947 (C. J. Goodnight), 1 ♀.

DISTRIBUTION: Central Mexico (map 6).

THE *tuobus* SUBGROUP

DIAGNOSIS: The *tuobus* subgroup (component 13, fig. 51) contains those species in which males have a short, sharp, pronglike extension on the prolateral side of the embolar base (figs. 56, 58, 68, 70, 80, 82, 88) and females have anteriorly thickened median epigynal ducts that are either anteriorly folded (fig. 91) or twisted (figs. 55, 63, 67, 75, 79, 87).

INTRARELATIONSHIPS: All species other than *Z. ubicki* (component 14, fig. 51) are united by having anteriorly twisted median epigynal ducts (figs. 55, 63, 67, 75, 79, 87). Within that group, all species other than *Z. rainier* are united (component 15, fig. 51) by having a narrowed epigynum, with the lateral margins much closer than in other species of the *subterraneus* group (figs. 54, 62, 66, 74, 78). Within that group, *Z. aiken* and *Z. monachus* are united (component 16, fig. 51) by having the body of the embolar base curved and almost touching the tip of the prolateral extension of the embolar base (figs. 64, 68, 70, 72), and *Z. tuobus* and *Z. anglo* are united (component 17, fig. 51) by having an elongated embolar projection and shortened embolus (figs. 52, 56, 58, 60) and anteriorly

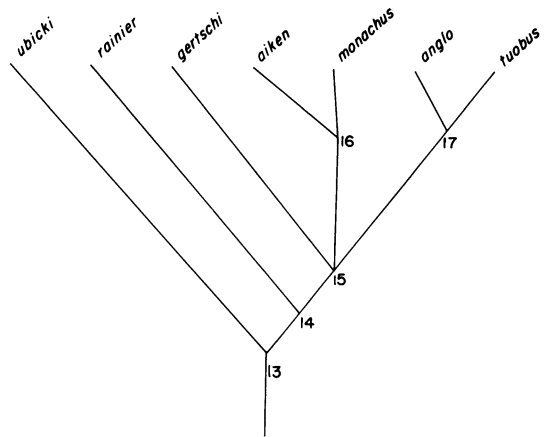
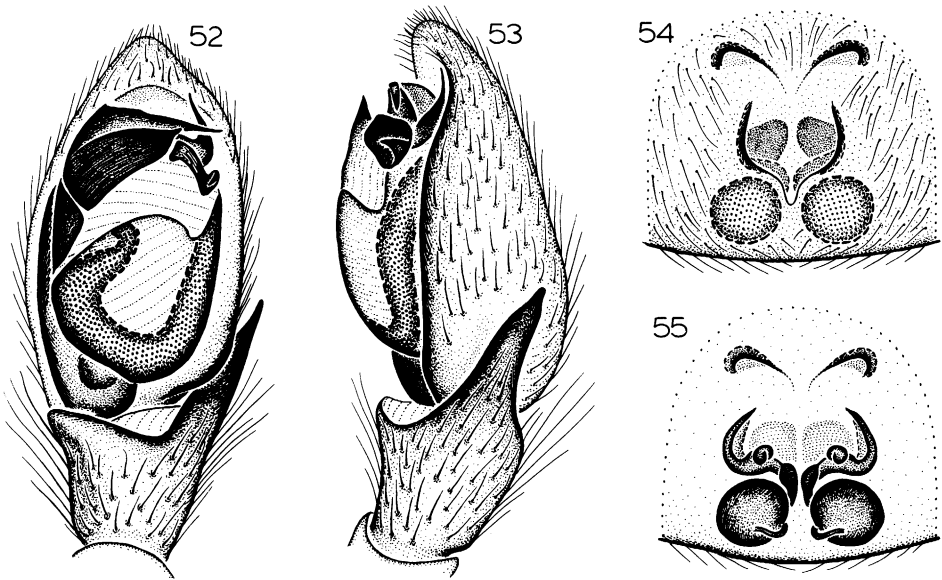


FIG. 51. Cladogram of species of the *tuobus* subgroup. Characters defining the numbered components are discussed in text.

displaced paramedian epigynal ducts (figs. 55, 63).

KEY TO SPECIES

1. EP relatively long, crossing short, thick EMB (figs. 56, 58); PED displaced anteriorly by thickened bases of LED (figs. 55, 63) .. 2
EP relatively short, EMB relatively long (as in fig. 70); PED not displaced anteriorly, bases of LED narrow (as in fig. 67) 3
2. EB highest prolaterally (fig. 52), EP with shallow distal invagination (fig. 56); LEM relatively widely separated (figs. 54, 57) *tuobus*
EB highest medially (fig. 60), EP with deep distal invagination (fig. 58); LEM relatively narrowly separated (figs. 59, 62) .. *anglo*
3. Males 4
Females 8
4. Prolateral extension of EB projecting far beyond EB (figs. 76, 80) *gertschi*
Prolateral extension of EB not projecting far beyond EB (as in fig. 68) 5
5. Prolateral extension of EB reaching almost half of EB width (figs. 64, 72) 6
Prolateral extension of EB restricted to prolateral side of EB (figs. 84, 88) 7
6. Prolateral extension of EB connected to body of EB by translucent flange (figs. 70, 72) *monachus*
Prolateral extension of EB not connected to body of EB by translucent flange (figs. 64, 68) *aiken*
7. Prolateral extension of EB relatively long (fig. 88) *ubicki*



FIGS. 52-55. *Zelotes tuobus* Chamberlin. 52. Palp, ventral view. 53. Palp, retrolateral view. 54. Epigynum, ventral view. 55. Epigynum, dorsal view.

- Prolateral extension of EB relatively short (fig. 84) *rainier*
8. LEM relatively far apart (figs. 86, 90) ... 9
 LEM relatively close (figs. 66, 74, 78) ... 10
9. MED (viewed ventrally) occupying much of epigynal width (fig. 86) *rainier*
 MED (viewed ventrally) restricted to median area of epigynum (fig. 90) *ubicki*
10. LEM with rounded medial edges (fig. 74) ..
 *monachus*
 LEM with angular medial edges (figs. 66, 78)
 11
11. MED (viewed ventrally) relatively narrow (fig. 66) *aiken*
 MED (viewed ventrally) relatively wide (fig. 78) *gertschi*

Zelotes tuobus Chamberlin

Figures 52-57; Map 7

Zelotes tuobus Chamberlin, 1919b, p. 247, pl. 16, fig. 7 (female holotype from Fillmore, Millard County, Utah, in MCZ, examined); 1920, p. 193, fig. 2. Roewer, 1954, p. 472. Bonnet, 1959, p. 4957. Ubick and Roth, 1973, p. 8. Gertsch and Riechert, 1976, p. 16, figs. 18-20.

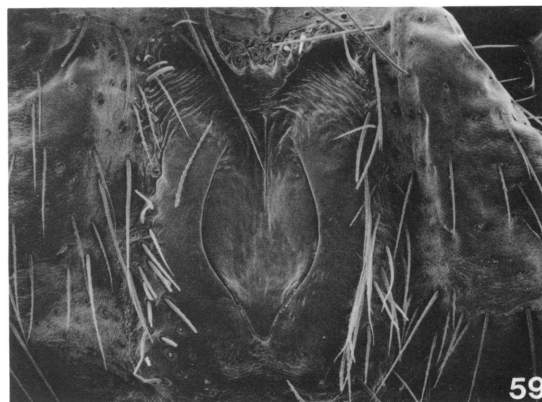
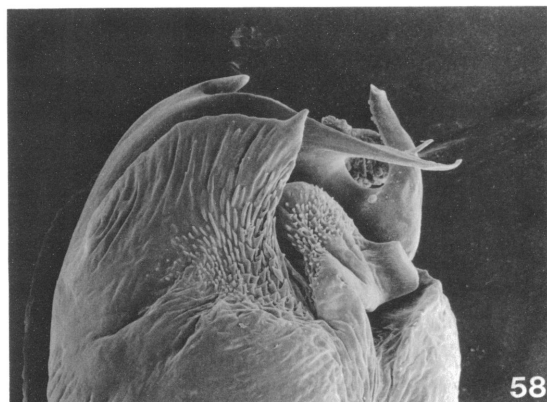
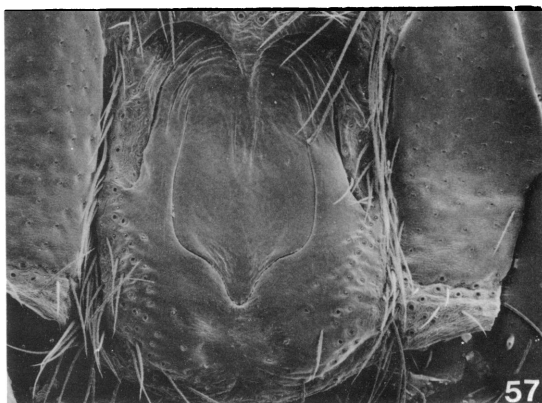
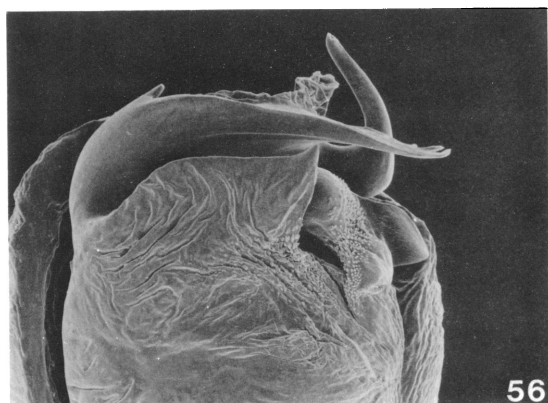
Zelotes pullatus Fox, 1938, p. 237, pl. 2, fig. 2 (female holotype from Kamloops, British Columbia, Canada, in USNM, examined). Roewer, 1954, p. 471. Bonnet, 1959, p. 4944.

Ubick and Roth, 1973, p. 8. NEW SYNONYMY.

DIAGNOSIS: *Zelotes tuobus* seems closest to *Z. anglo* but can be distinguished by the prolaterally highest EB and the shallow distal invagination of the EP (figs. 52, 56) of males and the more widely separated LEM (figs. 54, 57) of females.

MALE: Total length 6.50 ± 0.81 . Carapace 2.91 ± 0.31 long, 2.18 ± 0.25 wide. Femur II 1.90 ± 0.24 long. Eye sizes and interdistances: AME 0.06, ALE 0.10, PME 0.09, PLE 0.08; AME-AME 0.07, AME-ALE 0.01, PME-PME 0.09, PME-PLE 0.09, ALE-PLE 0.08. MOQ length 0.30, front width 0.19, back width 0.27. EB highest prolaterally, EP elongated, with shallow invagination at tip, EMB shortened (figs. 52, 53, 56). Leg spination: tibia III r1-1-1; metatarsus I v0-0-0.

FEMALE: Total length 7.86 ± 0.81 . Carapace 3.13 ± 0.27 long, 2.26 ± 0.19 wide. Femur II 1.92 ± 0.20 long. Eye sizes and interdistances: AME 0.06, ALE 0.07, PME 0.10, PLE 0.10; AME-AME 0.11, AME-ALE 0.03, PME-PME 0.06, PME-PLE 0.10, ALE-PLE 0.11. MOQ length 0.31, front width 0.23, back width 0.26. LEM long, enclosing darkened patches; PED displaced anteriorly by

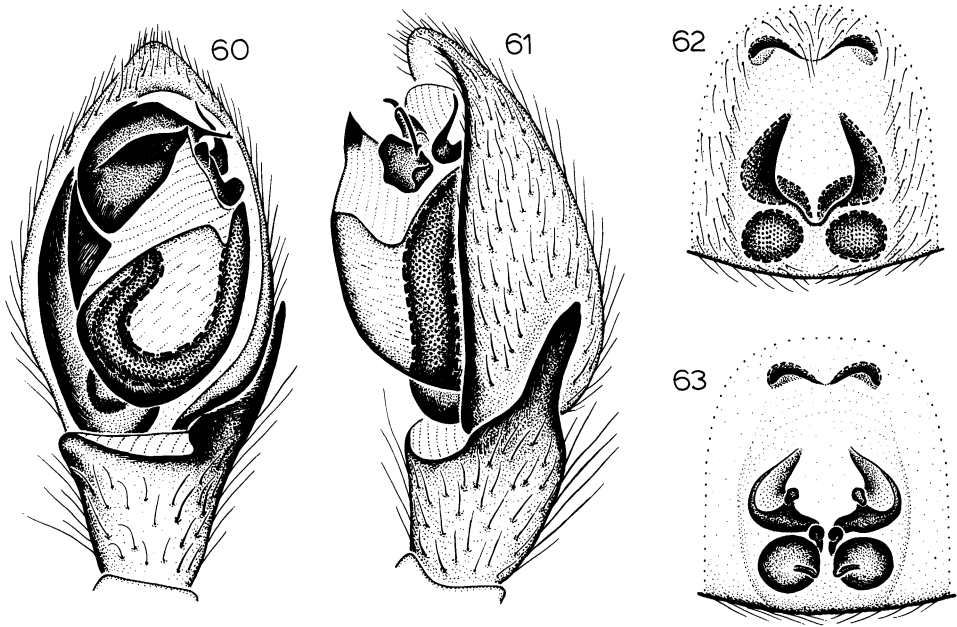


FIGS. 56–59. 56, 57. *Zelotes tuobus* Chamberlin. 58, 59. *Z. anglo* Gertsch and Riechert. 56, 58. Palp, ventral view, 215 $\times$. 57, 59. Epigynum, ventral view, 115 $\times$.

widened bases of LED (figs. 54, 55, 57). Leg spination: tibia III r1-1-1.

MATERIAL EXAMINED: CANADA: **British Columbia:** Departure Bay, Aug. 7, 1913 (ROM), 1 $\varnothing$; Kamloops, Oct. 26, 1929 (O. Bryant, USNM), 1 $\varnothing$ (type); Summerland, July 14–Oct. 24, 1979–1980, pitfall, sagebrush (W. D. Charles, CNC), 40 δ , 61 $\varnothing$. UNITED STATES: **Arizona:** Coconino Co.: Flagstaff, June 23, 1946 (S. Mulaik), 1 $\varnothing$. **California:** Alpine Co.: Ebbetts Pass, Sept. 10, 1959, elevation 8730 feet (W. J. Gertsch, V. Roth), 1 δ . Fresno Co.: Graveyard Lake, Aug. 13, 1959, elevation 10,000 feet (B. Firstman), 1 $\varnothing$. Mariposa Co.: Porcupine Flat Campground, Yosemite National Park, Sept. 22, 1961, under logs, granite chips (W. Ivie, W. J. Gertsch), 1 $\varnothing$. Mono Co.: Tioga Pass, Yosemite National Park, Aug. 9, 1931 (W. Ivie), 1 δ . Idaho: Bear Lake Co.: Blooming-

ton, Aug. 14, 1931 (W. J. Gertsch), 1 δ . Idaho Co.: Riggins, Sept. 30, 1960 (W. F. Barr), 1 $\varnothing$; 10 mi. N Riggins, Sept. 12, 1963 (J. and W. Ivie), 2 $\varnothing$. Lemhi Co.: 5 mi. N Gibbonsville, July 30, 1956, elevation 5200 feet (F. and P. Rindge), 1 δ . Kansas: Cowley Co.: Winfield, Oct. 27, 1935 (C. E. Burt), 1 $\varnothing$. Kentucky: Christian Co.: Hopkinsville, Oct., 4 $\varnothing$. Missouri: Johnson Co.: Knob Noster State Park, Sept. 6–19, 1980, pitfall, brushy prairie (W. B. Peck, J. Peaslee, EPC), 1 $\varnothing$. Nebraska: Douglas Co.: Burlington, Aug. 30, 1977 (J. R. Forwood, EPC), 1 δ . Nevada: Nye Co.: Mercury, Oct. 9, 1961, 1 $\varnothing$. Washoe Co.: Reno, Oct. 1939, 1 $\varnothing$. New Mexico: Catron Co.: 3.9 mi. S Luna, Sept. 14, 1967, elevation 7440 feet (R. E. Leech, REL), 1 $\varnothing$. Otero Co.: Cloudcroft, June 1934 (S. Mulaik), 2 δ . Valenciana Co.: Mount Taylor (C. C. Hoff), 1 δ . Oregon: Klamath Co.: Crater Lake, Sept. 7,



FIGS. 60-63. *Zelotes anglo* Gertsch and Riechert. 60. Palp, ventral view. 61. Palp, retrolateral view. 62. Epigynum, ventral view. 63. Epigynum, dorsal view.

1941 (B. Malkin), 1 ♂; Lake Trail, Crater Lake National Park, Aug. 24, 1951 (D. C. Lowrie), 1 ♀. **Wheeler Co.:** 15 mi. SW Mitchell, Aug. 9, 1948, under rock (V. Roth), 1 ♀. **Tennessee:** *Davidson Co.:* Nashville, Sept. 9, 1955 (A. R. Laskey), 1 ♀. **Texas:** *Wichita Co.:* no specific locality, Apr. 28, 1975, under rock (R. Watterschied, NVH), 1 ♂. **Utah:** *Box Elder Co.:* Dove Creek, Raft River Mountains, Sept. 9, 1932 (W. Ivie), 1 ♂. *Emery Co.:* Big Cottonwood Canyon, Storm Mountain, Oct. 22, 1939 (W. Ivie), 1 ♀. *Garfield Co.:* Aquarius Plateau, Sept. 1935, 1 ♀; Willow Spring, Henry Mountains, Sept. 11, 1929, 4 ♂, 2 ♀. *Millard Co.:* Fillmore, Sept. 1917 (R. V. Chamberlin, MCZ), 1 ♀ (type); Pine Canyon (MCZ), 1 ♂, 1 ♀. *Rich Co.:* Bear Lake, Aug., 1 ♀; 12 mi. SW Garden City, Aug. 24, 1941 (S. and D. Mulaik), 3 ♀. *Salt Lake Co.:* Emigration Canyon, Sept. 20, 1945 (S. and D. Mulaik), 1 ♀; Red Butte Canyon, Oct. 3, 1947 (K. Lafferty), 1 ♀. *Sevier Co.:* Richfield, July 20, 1 ♂. *Summit Co.:* N fork, Provo River, Sept. 24, 1932 (W. Ivie), 3 ♀; Cobble Rest Camp, Uintah Mountains, Aug. 20, 1942 (W. Ivie), 1 ♂, 2 ♀. *Utah Co.:* W side, Utah Lake, Sept. 24, 1939 (W. Ivie), 1 ♀. **Washington:**

Benton Co.: Prosser, Sept. 14, 1935 (R. V. Chamberlin, W. Ivie), 1 ♀. **Wyoming:** *Lincoln Co.:* Afton, Aug. 6, 1964 (L. D. Hale, WDF), 1 ♀. *Yellowstone Co.:* Mammoth Hot Springs, Aug. 30, 1937 (Hatch, EPC), 1 ♀.

DISTRIBUTION: British Columbia south to New Mexico, east to Kentucky and Tennessee (map 7).

SYNONYMY: Fox provided no characters by which to distinguish *Z. pullatus* from *Z. tuobus*, and there appear to be none.

Zelotes anglo Gertsch and Riechert
Figures 58-63; Map 8

Zelotes anglo Gertsch and Riechert, 1976, p. 16, fig. 21 (male holotype from Carizozo, Lincoln County, New Mexico, in AMNH, examined).

DIAGNOSIS: *Zelotes anglo* seems closest to *Z. tuobus* but can be distinguished by the deeply invaginated bifid tip of the EP (figs. 58, 60) of males and the more closely spaced LEM (figs. 59, 62) of females.

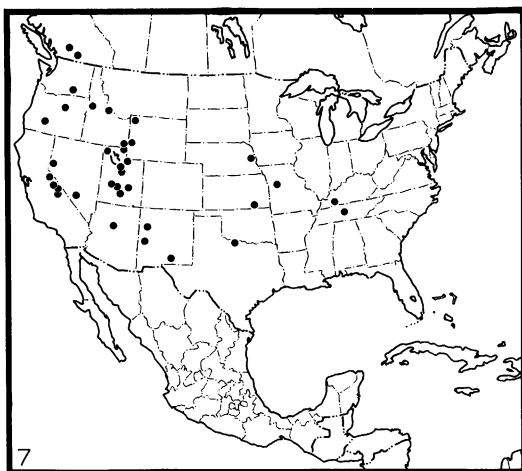
MALES: Total length 5.22 ± 0.68 . Carapace 2.43 ± 0.21 long, 1.81 ± 0.15 wide. Femur II 1.58 ± 0.11 long. Eye sizes and interdistances: AME 0.05, ALE 0.07, PME 0.09, PLE

0.08; AME-AME 0.06, AME-ALE 0.01, PME-PME 0.04, PME-PLA 0.04, ALE-PLA 0.07. MOQ length 0.22, front width 0.16, back width 0.22. EP elongated, with bifid tip; EMB shortened (figs. 58, 60, 61). Leg spination: metatarsus I v0-0-0.

FEMALE: Total length 6.03 ± 0.70 . Carapace 2.54 ± 0.22 long, 1.92 ± 0.19 wide. Femur II 1.63 ± 0.14 long. Eye sizes and interdistances: AME 0.05, ALE 0.09, PME 0.07, PLA 0.07; AME-AME 0.06, AME-ALE 0.02, PME-PME 0.07, PME-PLA 0.05, ALE-PLA 0.06. MOQ length 0.22, front width 0.17, back width 0.21. LEM closely spaced; PED displaced anteriorly by widened bases of LED (figs. 59, 62, 63). Leg spination: femur IV p0-0-1.

MATERIAL EXAMINED: UNITED STATES:

Arizona: *Apache Co.*: S end, Petrified Forest National Park, Sept. 14, 1980 (V. Roth), 1 ♂. *Cochise Co.*: Barfoot Meadow, Chiricahua Mountains, July 28, 1963, elevation 8800 feet (V. Roth, VDR), 1 ♀; Chiricahua National Monument, Sept. 21, 1951, elevation 5400 feet (W. S. Creighton), 1 ♀; Ft. Bowie, Chiricahua Mountains, Aug.-Sept. 1972 (M. Hor), 1 ♀; 2 mi. NE Portal, Sept. 21, 1960, *Allionia* patch (M. Cazier), 1 ♂; 5 mi. E Portal, Sept. 4, 1964 (W. J. Gertsch), 1 ♂; Southwestern Research Station, Chiricahua Mountains, June 9, 1968, elevation 5400 feet (V. Roth), 1 ♂. *Greenlee Co.*: Duncan, Sept. 7, 1939 (S. and D. Mulaik), 1 ♂. *Pima Co.*: Madera Canyon, Santa Rita Mountains, Sept. 3-10, 1967, elevation 3800 feet (D. E. Bixler, DEB), 2 ♀, Aug. 13, 1981, under dead yucca (D. Ubick, DU), 1 ♀. *Santa Cruz Co.*: 4 mi. SE Ruby, Sept. 5, 1950 (W. J. Gertsch), 1 ♀. **California:** *Imperial Co.*: Mountain Springs, Sept. 13, 1941 (W. Ivie), 1 ♂, 1 ♀ (penultimate). *San Bernardino Co.*: Mitchells Caverns, Oct. 25, 1969 (N. Merkel, SBM), 1 ♂. *San Diego Co.*: Borrego Springs, Nov. 13, 1960, on rock (D. E. Merkel), 1 ♂. **Colorado:** *Denver Co.*: Denver, Sept. 4, 1939 (Hatch, EPC), 1 ♀. *Mesa Co.*: Coon Creek Valley, 2 mi. N Mesa, Sept. 23, 1939, elevation 5200 feet (B. Patterson, FMNH), 1 ♀. *Pueblo Co.*: Beulah Highway, Aug. 30-Sept. 29, 1963-1965 (J. Brookhart), 4 ♂, 4 ♀. *Saguache Co.*: Hooper Cemetery Road, July 20, 1965 (J. Brookhart), 1 ♀. **Nevada:** *Nye Co.*: Mercury, July 21-Oct. 13, 1961-1963, 5 ♂. **New Mexico:** *Catron Co.*:



MAP 7. North America, showing distribution of *Zelotes tuobus*.

18 mi. E Alma, July 9, 1961, elevation 9000 feet (F., P., and J. Rindge), 1 ♀. *Eddy Co.*: 8 mi. N Carlsbad, Sept. 23, 1950 (W. J. Gertsch), 1 ♀. *Grant Co.*: Burro Mountains, Oct. 14, 1972, pitfall, pinyon pine, juniper, nolina (M. H. Muma, FSCA), 1 ♂; Hurley, Sept. 1-Dec. 3, 1972-1973, pitfall, yucca, all-thorn, mesquite (M. H. Muma, FSCA, AMNH), 22 ♂, 20 ♀; Silver City, Sept. 1-Dec. 3, 1972-1973, pitfall, pinyon pine, juniper (M. H. Muma, FSCA, AMNH), 22 ♂, 17 ♀. *Hidalgo Co.*: Lordsburg, Aug. 31-Dec. 3, 1972-1973, pitfall, yucca, ephedra (M. H. Muma, FSCA, AMNH), 9 ♂, 4 ♀. *Lincoln Co.*: Malpais Lava Beds, Carrizozo, Aug. 18, 1972 (S. Riechert), 1 ♂ (type). *Los Alamos Co.*: Los Alamos, Aug.-Nov. 1976-1977 (D. C. Lowrie), 1 ♂, 1 ♀. *Luna Co.*: 10 mi. N Columbus, Sept. 22, 1950 (W. J. Gertsch), 1 ♀. *Valencia Co.*: Grants, Sept. 6, 1933 (W. Ivie), 1 ♂, 1 ♀; W Laguna, Sept. 5, 1941 (W. Ivie), 1 ♀; Suwannee, Sept. 6, 1933 (W. Ivie), 1 ♂, 1 ♀. **South Dakota:** *Brookings Co.*: Brookings, Oct. 29, 1937 (Peterson), 1 ♀. **Texas:** *Terrell Co.*: 0.5 mi. E Dryden, June 14, 1948, 1 ♀. *Wichita Co.*: no specific locality, Sept. 13, 1981, pitfall (G. Zolnerowich, NVH), 1 ♂. *Wilbarger Co.*: 4 mi. NW Elliott, Oct. 1964 (K. W. Haller), 1 ♂. **Utah:** *Carbon Co.*: Price, Aug. 1940 (H. Higgins), 2 ♂. *Emery Co.*: Mud Springs, Sept. 2, 1941 (W. Ivie), 2 ♂. *Millard Co.*: Black Rock, Nov. 10, 1927, 1 ♀. *Utah Co.*: W side, Utah Lake, Sept.

2, 1941 (W. Ivie), 1 ♂. **MEXICO: Chihuahua:** 16 mi. NNW Chihuahua, Sept. 8, 1964 (J. and W. Ivie), 1 ♂, 1 ♀; Sierra del Nido, Arroyo del Álamo, Oct. 14, 1969, elevation 7000 feet (V. Roth), 2 ♀. **Coahuila:** Gloria, Aug. 24, 1947 (W. J. Gertsch), 1 ♀. **Distrito Federal:** El Xitla, Oct. 12, 1942 (C. Tellez), 1 ♀; Teotihuacán, Aug. 20, 1946 (C. J. Goodnight), 1 ♂; Tlalpan, July 21, 1943, elevation 2300 m. (H. Wagner), 1 ♂. **Durango:** 6 mi. N Nombre de Dios, Aug. 20, 1960 (P. H. Arnaud, Jr., E. S. Ross, D. C. Rentz, CAS), 1 ♀; San Isidro, 60 mi. NW Durango, Aug. 19, 1947 (W. J. Gertsch), 1 ♂; Yerbánis, 80 mi. NW Durango, Aug. 19, 1947 (W. J. Gertsch), 1 ♂. **Hidalgo:** El Tablón, 7 mi. SE Zimapán, Aug. 19, 1964 (J. and W. Ivie), 1 ♂. **Jalisco:** Lagos de Moreno, Aug. 3, 1954 (W. J. Gertsch), 1 ♂. **México:** San Juan Teotihuacán, Aug. 28, 1947 (B. Malkin), 2 ♂. **Puebla:** 3 mi. NE Zacatepec, June 30, 1963, pine-oak woodland with madrono, *Tillandsia* (J. A. Beatty, JAB), 1 ♂. **Zacatecas:** Canutillo, Aug. 14, 1947 (W. J. Gertsch), 6 ♂; 4.9 mi. NW Zacatecas, Sept. 7, 1967, elevation 7500 feet (R. E. Leech, REL), 1 ♀; 10 mi. E Zacatecas, Aug. 3, 1954 (W. J. Gertsch), 2 ♂.

DISTRIBUTION: Colorado and South Dakota south to central Mexico (map 8).

***Zelotes aiken*, new species**

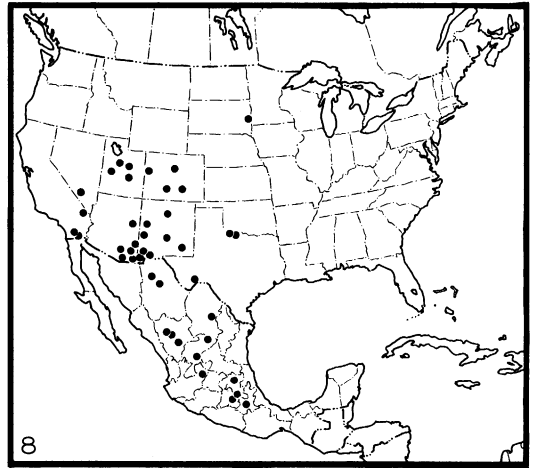
Figures 64–69; Map 9

TYPES: Male holotype and female paratype from Savannah River Plant, Aiken County, South Carolina (male, April 10, 1959; female, May 29, 1959; W. Tarpley), deposited in AMNH.

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

DIAGNOSIS: *Zelotes aiken* seems closest to *Z. monachus* but can be distinguished by the absence of a translucent flange along the distal edge of the EB (figs. 64, 68) of males and the angular medial edges of the LEM (figs. 66, 69) of females.

MALE: Total length 4.41 ± 0.63 . Carapace 2.08 ± 0.33 long, 1.60 ± 0.26 wide. Femur II 1.30 ± 0.23 long. Eye sizes and interdistances: AME 0.05, ALE 0.07, PME 0.07, PLE 0.07; AME–AME 0.06, AME–ALE 0.01, PME–PME 0.06, PME–PLE 0.06, ALE–PLE



MAP 8. North America, showing distribution of *Zelotes anglo*.

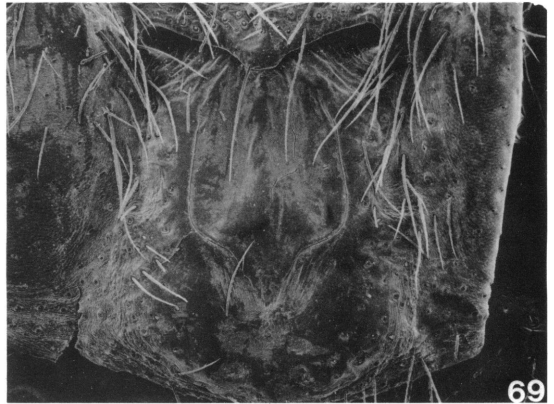
0.08. MOQ length 0.23, back width 0.16, front width 0.20. EB with long extension reaching almost to middle of EB width; EMB wide basally (figs. 64, 65, 68). Leg spination: femur IV p0-0-1.

FEMALE: Total length 5.35 ± 0.57 . Carapace 2.20 ± 0.17 long, 1.66 ± 0.13 wide. Femur II 1.27 ± 0.08 long. Eye sizes and interdistances: AME 0.05, ALE 0.07, PME 0.08, PLE 0.07; AME–AME 0.06, AME–ALE 0.01, PME–PME 0.03, PME–PLE 0.06, ALE–PLE 0.08. MOQ length 0.24, front width 0.16, back width 0.19. LEM long, angular posteriorly; MED stalklike posteriorly (figs. 66, 67, 69). Leg spination: femur IV p0-0-1.

OTHER MATERIAL EXAMINED: **UNITED STATES:** **Arkansas:** *Benton Co.*: no specific locality, May 14, 1965, pitfall, prairie (CAS), 10 ♂, 2 ♀. *Bradley Co.*: no specific locality, Apr. 28–May 21, 1963–1965 (A. Wares, W. Whitcomb, EPC), 3 ♂; near Hermitage, Apr. 19, 1963 (EPC), 4 ♂. *Conway Co.*: no specific locality, July 24, 1961 (EPC), 1 ♀. *Pulaski Co.*: Little Rock, May 9, 1944 (L. Hook), 1 ♂. *Washington Co.*: Cove Creek, May 6, 1963 (O. and M. Hite, EPC), 1 ♂; Cove Creek Valley, Boston Mountains, 15 mi. W Prairie Grove, May–June 1956–1967, elevation 1000 feet (M. Hite, MCZ), 2 ♂, 2 ♀. **Missouri:** *Johnson Co.*: Knob Noster State Park, May 23–June 5, 1980, pitfall, brushy prairie (W. Peck, J. Peaslee, EPC), 1 ♂; Warrensburg,



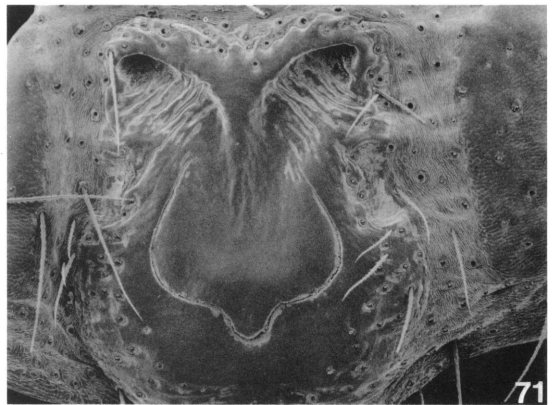
68



69



70



71

FIGS. 68–71. 68, 69. *Zelotes aiken*, new species. 70, 71. *Z. monachus* Chamberlin. 68, 70. Palp, ventral view, 250 $\times$. 69, 71. Epigynum, ventral view, 140 $\times$.

Mexico, in CAS, examined). Roewer, 1954, p. 469. Bonnet, 1959, p. 4943. Ubick and Roth, 1973, p. 8. NEW SYNONYMY.

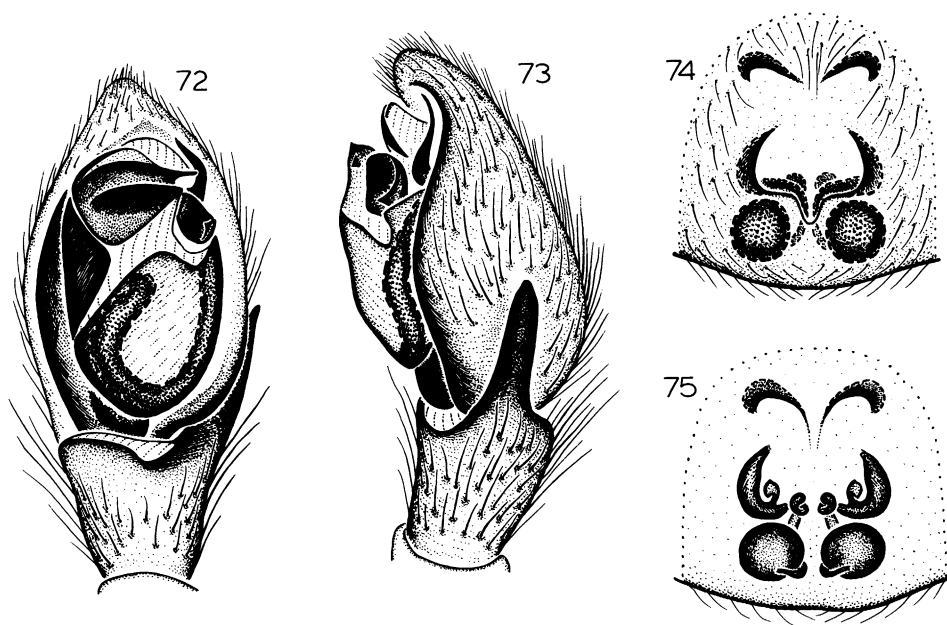
DIAGNOSIS: *Zelotes monachus* seems closest to *Z. aiken* but can be distinguished by the presence of a translucent flange along the distal edge of the EB connecting the body of the EB with its prolateral extension (figs. 70, 72) in males and the rounded medial edges of the LEM (figs. 71, 74) of females.

MALE: Total length 5.27 ± 0.75 . Carapace 2.40 ± 0.34 long, 1.82 ± 0.25 wide. Femur II 1.39 ± 0.23 long (95 specimens examined). Eye sizes and interdistances: AME 0.04, ALE 0.08, PME 0.07, PLE 0.07; AME–AME 0.07, AME–ALE 0.03, PME–PME 0.09, PME–PLE 0.07, ALE–PLE 0.09. MOQ length 0.25, front width 0.15, back width 0.23. TA rounded; EB with distal translucent flange

(figs. 70, 72, 73). Leg spination: tibia III r1-1-1.

FEMALE: Total length 5.81 ± 0.85 . Carapace 2.68 ± 0.28 long, 2.01 ± 0.19 wide. Femur II 1.51 ± 0.12 long (129 specimens examined). Eye sizes and interdistances: AME 0.06, ALE 0.10, PME 0.09, PLE 0.10; AME–AME 0.09, AME–ALE 0.02, PME–PME 0.06, PME–PLE 0.09, ALE–PLE 0.09. MOQ length 0.28, front width 0.21, back width 0.24. LEM rounded posteriorly; MED stalklike posteriorly (figs. 71, 74, 75). Leg spination: tibia III r1-1-1; metatarsus II v2-2-0.

RECORDS: UNITED STATES (county records only): *Arizona*: Cochise, Maricopa, Pima, Pinal, Santa Cruz, Yuma. *California*: Imperial, Inyo, Riverside, San Bernardino, San Diego. *Nevada*: Clark, Nye. *New Mexico*: Hidalgo. *Utah*: Washington. MEXICO: *Baja*



FIGS. 72–75. *Zelotes monachus* Chamberlin. 72. Palp, ventral view. 73. Palp, retrolateral view. 74. Epigynum, ventral view. 75. Epigynum, dorsal view.

California Norte: Algodones, Bahía de Los Ángeles, 10 mi. E El Rosario, 2 mi. N Ensenada, 2 mi. S Laguna Chapala, Meling Ranch (5 mi. E San José), W end Punta Banda, San Telmo de Arriba, 16.6 km. N Santo Tomás, Tecate. **Baja California Sur:** Isla Ballena, San Ignacio, San José del Cabo. **Jalisco:** 5–8 mi. E Magdalena, near Tequila. **Nayarit:** Arroyo Canaveral, Jesús María. **Sinaloa:** 6 mi. S Culiacán, 1 mi. E Highway 15 on Río Piaxtla, 20 mi. E Mazatlán, 30 mi. N Mazatlán, 2 mi. N Piaxtla. **Sonora:** 4 mi. W Álamos, 44 mi. NW Caborca, Campo Dolor (S Punta Tepoca), El Coyote (148 mi. E Moctezuma), El Desemboque, Guaymas, Hermosillo, Isla Pelicano, 11.5 mi. SW Mazocahui, Rancho Los Baños, E side Sierra Álamos.

DISTRIBUTION: Southwestern United States and northwestern Mexico (map 9).

NATURAL HISTORY: Mature males have been taken every month except February, October, and November; mature females every month except January and October. Specimens have been collected in pitfall traps, associated with ephedra, mesquite, and yucca, in climax chaparral, deserts, a peach orchard, poplar duff, and thorn thickets, on sand on

beaches, and under reeds, stones, and trash, at elevations up to 8800 feet.

SYNONYMY: Numerous simultaneous collections of both sexes indicate that *Z. calvanisticus* is the female of *Z. monachus*. Chamberlin distinguished *Z. protestans* from *Z. calvanisticus* only on the basis of the number of promarginal cheliceral teeth and spines on metatarsus II, characters that can vary between the right and left sides of a single individual.

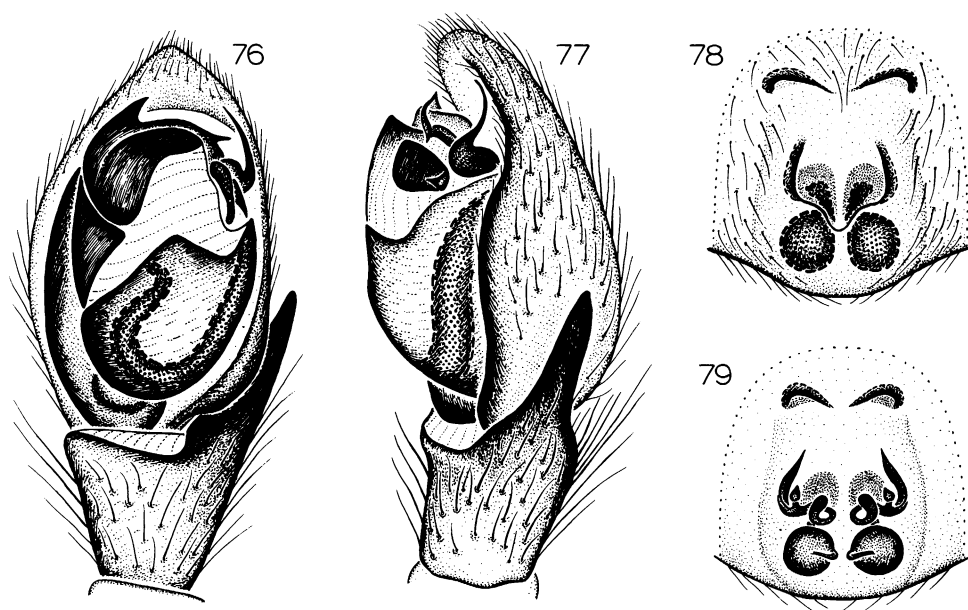
***Zelotes gertschi*, new species**

Figures 76–81; Map 10

TYPES: Male holotype and female paratype from 8 miles northeast of Sinton, San Patricio County, Texas (August 4, 1960; H. E. Laughlin), deposited in AMNH.

ETYMOLOGY: The specific name is a patronym in honor of Dr. Willis J. Gertsch, who first recognized the species as new.

DIAGNOSIS: *Zelotes gertschi* is a distinctive species easily recognized by the prolonged prolateral extension of the EB (figs. 76, 80) of males and the elongated epigynum containing a pair of dark patches surrounding the MED (fig. 78) of females.



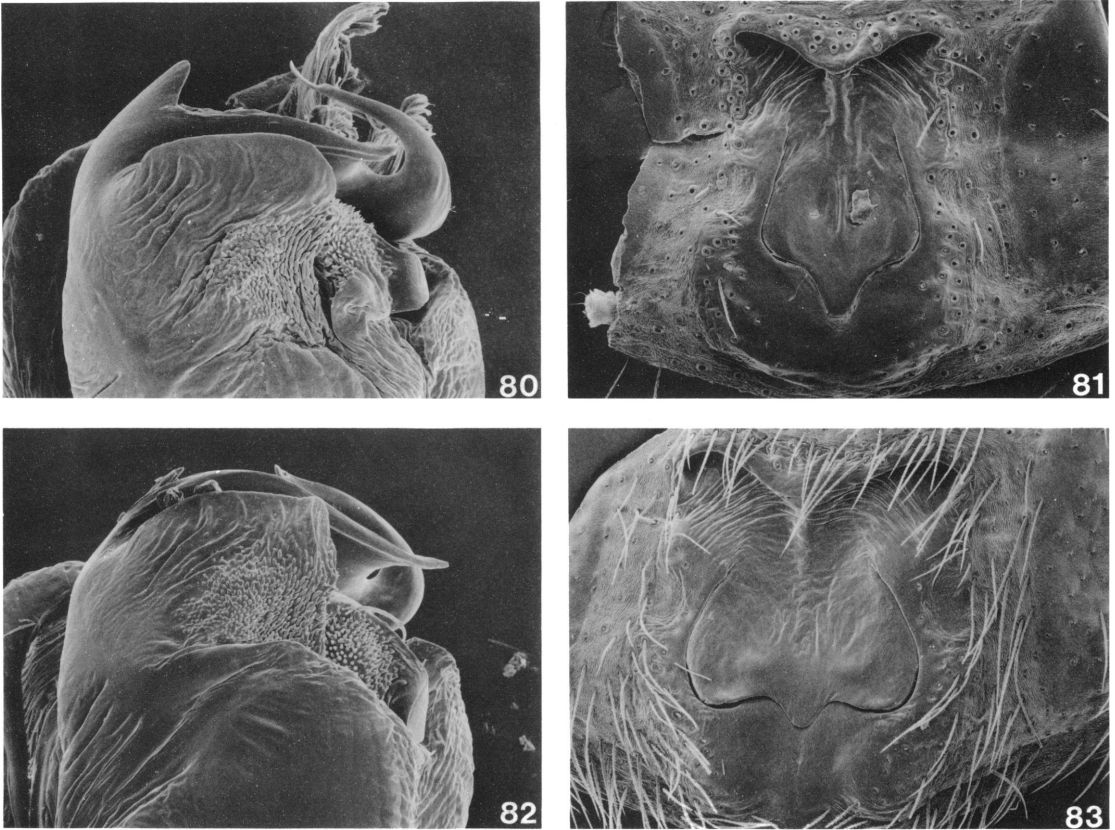
FIGS. 76–79. *Zelotes gertschi*, new species. 76. Palp, ventral view. 77. Palp, retrolateral view. 78. Epigynum, ventral view. 79. Epigynum, dorsal view.

MALE: Total length 4.83 ± 0.49 . Carapace 2.23 ± 0.23 long, 1.70 ± 0.18 wide. Femur II 1.31 ± 0.12 long. Eye sizes and interdistances: AME 0.04, ALE 0.07, PME 0.07, PLE 0.06; AME–AME 0.05, AME–ALE 0.01, PME–PME 0.04, PME–PLE 0.05, ALE–PLE 0.06. MOQ length 0.19, front width 0.13, back width 0.18. EB bearing long, erect prolateral extension; EP short (figs. 76, 77, 80). Leg spination typical for genus.

FEMALE: Total length 4.87 ± 0.72 . Carapace 2.06 ± 0.24 long, 1.55 ± 0.29 wide. Femur II 1.17 ± 0.10 long. Eye sizes and interdistances: AME 0.05, ALE 0.08, PME 0.08, PLE 0.07; AME–AME 0.06, AME–ALE 0.03, PME–PME 0.05, PME–PLE 0.08, ALE–PLE 0.07. MOQ length 0.21, front width 0.16, back width 0.21. LEM long; MED (viewed ventrally) surrounded by darkened areas (figs. 78, 79, 81). Leg spination: femur IV p0–0–1.

OTHER MATERIAL EXAMINED: UNITED STATES: **Arizona:** *Cochise Co.*: 3 mi. E Apache, Apr. 19, 1961, under trash (W. J. Gertsch), 1 ♂. **Colorado:** *Boulder Co.*: White Rocks, 3 mi. E Valmont, May 28, 1961 (B. Vogel, Bucy, Sutton, BRV), 1 ♂. **Oklahoma:** *Comanche Co.*: Wichita Mountains Wildlife

Refuge, May 20, 1978, pitfall (F. Bryce, NVH), 1 ♂. **Texas:** *Archer Co.*: no specific locality, Apr. 4, 1981, under rock (G. Zolnerowich, NVH), 1 ♂. *Bandera Co.*: no specific locality, Dec. 1939 (S. and D. Mulaik), 1 ♀. *Brown Co.*: no specific locality, Apr. 10, 1981, under rock (G. Zolnerowich, NVH), 1 ♀. *Clay Co.*: no specific locality, Nov. 2, 1973, under rock (H. Horry, NVH), 1 ♀. *Erath Co.*: Stephenville, June 8, 1981, in peanuts (C. W. Agnew, TAM), 1 ♀, Aug. 11, 1981 (C. W. Agnew, TAM), 1 ♀. *Hays Co.*: no specific locality, Apr. 15, 1939 (S. and D. Mulaik), 1 ♀. *Kerr Co.*: Raven Ranch, Aug.–Dec. 1939 (S. and D. Mulaik), 1 ♂, 3 ♀. *Kimble Co.*: Junction, Apr. 7, 1966 (L. Pinter, MCZ), 1 ♀. *Kleberg Co.*: Kingsville, Nov. 3–4, 1934 (S. Mulaik), 1 ♀. *Lubbock Co.*: Lubbock, July 29, 1972 (J. M. Rowland, TTU), 3 ♀. *San Patricio Co.*: 8 mi. NE Sinton, Mar. 22–Apr. 28, Aug. 4–Dec. 4, 1959–1960 (H. E. Laughlin), 10 ♂, Aug. 4, 1960 (H. E. Laughlin), 2 ♀. *Travis Co.*: Austin, Oct. 22, 1968 (B. Vogel, BRV), 1 ♀. *Val Verde Co.*: Del Rio, Mar. 26, 1946 (C. D. Michener), 1 ♀. *Wichita Co.*: Buffalo Lake, Apr. 13, 1982, under rock (G. Zolnerowich, NVH), 1 ♂; 6.3 mi. N Iowa Park,



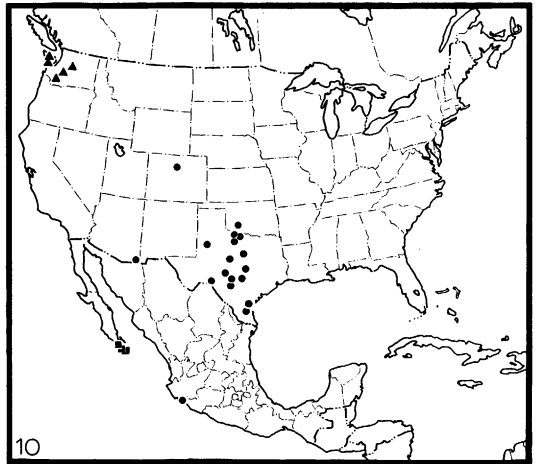
FIGS. 80–83. 80, 81. *Zelotes gertschi*, new species. 82, 83. *Z. rainier*, new species. 80, 82. Palp, ventral view, 240 $\times$. 81, 83. Epigynum, ventral view, 130 $\times$.

Apr. 24, 1982, under board (G. Zolnerowich, NVH), 3 $\varnothing$; 4.6 mi. NW Kamay, Mar. 21–Apr. 1, 1982, under rock (G. Zolnerowich, NVH), 3 δ ; Tanglewood, May 3, 1981, under rock (G. Zolnerowich, NVH), 1 $\varnothing$. MEXICO: Colima: 12 mi. E Manzanillo, May 11, 1963 (W. J. Gertsch, W. Ivie), 2 δ ; Santiago, NW Manzanillo, May 11, 1963 (W. J. Gertsch, W. Ivie), 3 δ .

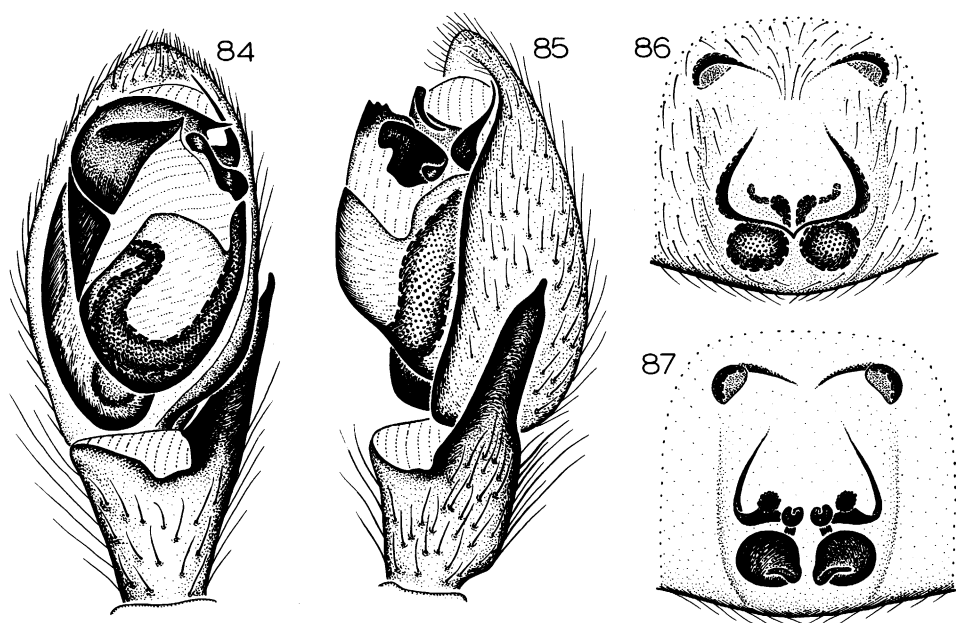
DISTRIBUTION: Colorado south to Texas and Colima (map 10).

***Zelotes rainier*, new species**
Figures 82–87; Map 10

TYPES: Male holotype and female paratype from Paradise Park, Mount Rainier National Park, Pierce County, Washington (male, July 1922, Jones; female, September 12, 1965, J. and W. Ivie), deposited in AMNH.



MAP 10. North America, showing distribution of *Zelotes gertschi* (circles), *Z. rainier* (triangles), and *Z. ubicki* (squares).



FIGS. 84–87. *Zelotes rainier*, new species. 84. Palp, ventral view. 85. Palp, retrolateral view. 86. Epigynum, ventral view. 87. Epigynum, dorsal view.

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

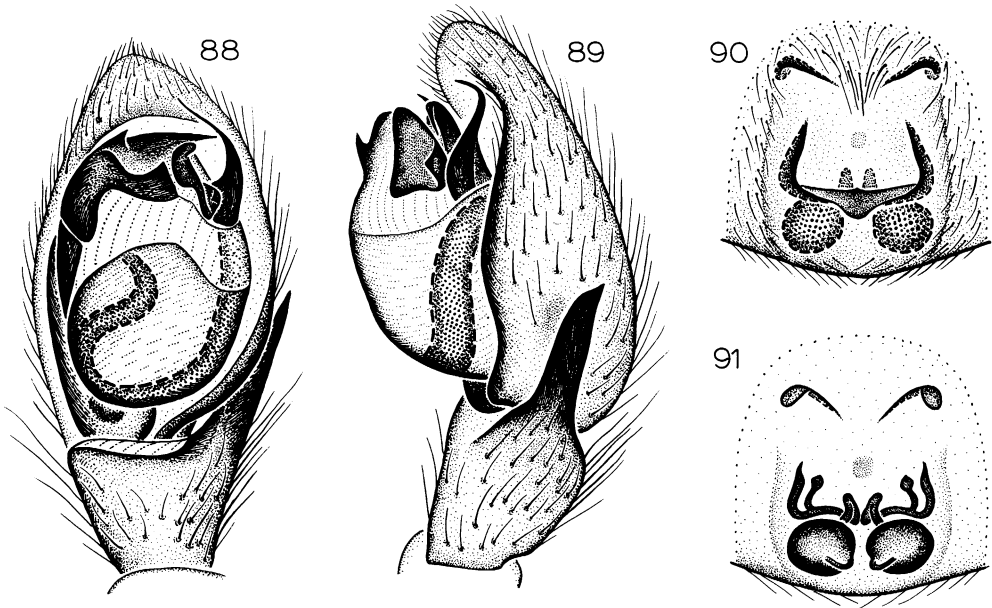
DIAGNOSIS: *Zelotes rainier* is a distinctive species easily recognized by the long, rounded EB (figs. 82, 84) of males and the wide epigynum enclosing very angular MED (fig. 86) of females.

MALE: Total length 4.81 ± 0.56 . Carapace 2.04 ± 0.18 long, 1.61 ± 0.14 wide. Femur II 1.29 ± 0.12 long. Eye sizes and interdistances: AME 0.04, ALE 0.07, PME 0.07, PLE 0.06; AME–AME 0.06, AME–ALE 0.01, PME–PME 0.05, PME–PLE 0.04, ALE–PLE 0.05. MOQ length 0.20, front width 0.15, back width 0.19. EB elongated, rounded distally, with short prolateral extension (figs. 82, 84, 85). Leg spination: femur IV p0-0-0; metatarsus II v2-1p-0.

FEMALE: Total length 5.62 ± 0.95 . Carapace 2.27 ± 0.22 long, 1.73 ± 0.16 wide. Femur II 1.36 ± 0.11 long. Eye sizes and interdistances: AME 0.05, ALE 0.08, PME 0.06, PLE 0.06; 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 0.15, back width 0.18. LEM widely separated; MED

(viewed ventrally) step-shaped (figs. 83, 86, 87). Leg spination: femur IV p0-0-1; metatarsi I, II v2-1p-0.

OTHER MATERIAL EXAMINED: UNITED STATES: **Washington:** *Chelan Co.*: Three Brothers Mountain, elevation 5000 feet (CUC), 1 ♀. *Clallam Co.*: Deer Park, Olympic National Park, July 23, 1978, elevation 5411 feet (R. Crawford, UWA), 1 ♀. *Jefferson Co.*(?): Olympic Mountains, 1 ♀; Bogerhill Park, Olympic Mountains, Aug. 15, 1937 (M. E. Schwartz, EPC), 1 ♂. *Pierce Co.*: Mount Rainier National Park: no specific locality, July 1, 1964, elevation 4600 feet, in dry bluegrass clumps (L. Louise), 1 ♀; Mt. Rainier, July 1932, 1 ♀; Panorama Point, Sept. 24, 1976, elevation 6680 feet, pitfall (D. H. Mann, UWA), 3 ♂; Paradise Park, July 18–Aug. 24, 1934–1937 (Hatch, EPC), 3 ♀; N Squally Trail, Aug. 11, 1932 (H. Exline, EPC), 2 ♀. *Skamania Co.*: N Butte Camp, SW side, Mount Saint Helens, June 2–Oct. 1, 1981, elevation 4520–5600 feet, pitfalls in talus, pine woods, and alpine meadows (D. H. Mann, UWA), 6 ♂, 7 ♀; Pine Creek, E side, Mount Saint Helens, Aug. 13–Sept. 26, 1981,



FIGS. 88–91. *Zelotes ubicki*, new species. 88. Palp, ventral view. 89. Palp, retrolateral view. 90. Epigynum, ventral view. 91. Epigynum, dorsal view.

elevation 4400–4500 feet, pitfall in volcano-impacted woods (D. H. Mann, UWA), 3 ♂.

DISTRIBUTION: Known only from Washington (map 10).

***Zelotes ubicki*, new species**

Figures 88–91; Map 10

TYPES: Male holotype from pitfall trap at Playa Los Cerritos, El Pescadero, Baja California Sur, Mexico (April 16, 1979; M. Wasbauer) and female paratype from thorn scrub 6 miles west of San José del Cabo, Baja California Sur, Mexico (January 11, 1982; D. Ubick), deposited in CAS.

ETYMOLOGY: The specific name is a patronym in honor of Mr. Darrell Ubick, collector of the paratype and many other interesting *Zelotes* specimens.

DIAGNOSIS: *Zelotes ubicki* is a distinctive species easily recognized by the sharp prolateral extension of the distally flattened EB (fig. 88) of males and the anteriorly folded MED and laterally displaced PED (fig. 91) of females.

MALE: Total length 3.02. Carapace 1.46 long, 1.13 wide. Femur II 0.83 long. Eye sizes and interdistances: AME 0.04, ALE 0.06,

PME 0.06, PLE 0.06; AME–AME 0.04, AME–ALE 0.01, PME–PME 0.03, PME–PLE 0.04, ALE–PLE 0.04. TA sinuous distally; EB flattened, with sharp, semi-erect prolateral extension (figs. 88, 89). Leg spination: tibia III r1-1-1; metatarsus II v2-2-0.

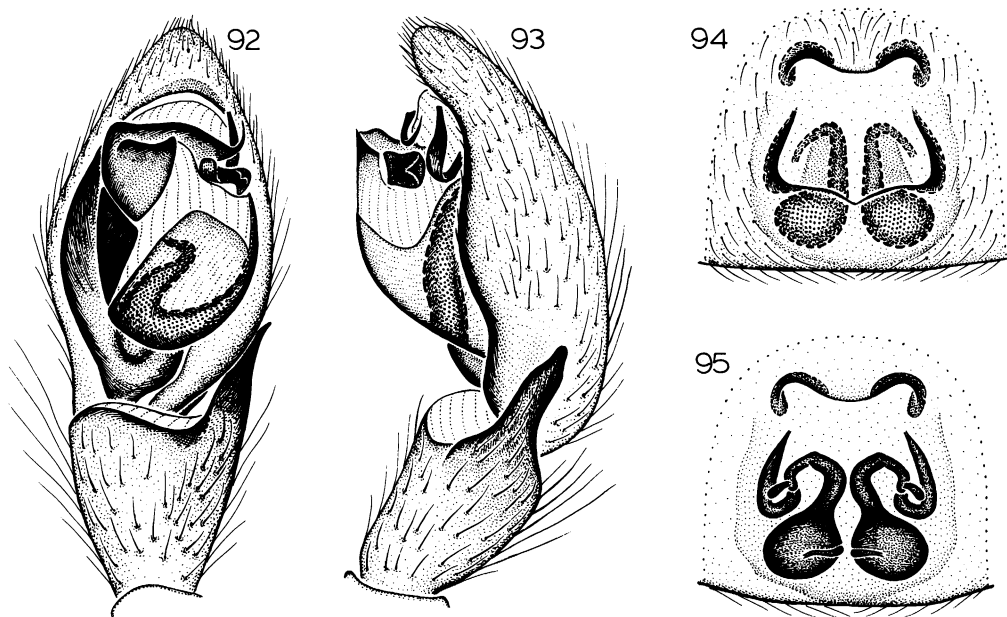
FEMALE: Total length 4.75, 4.93. Carapace 2.09, 2.59 long, 1.66, 1.90 wide. Femur II 1.22, 1.51 long. Eye sizes and interdistances: AME 0.06, ALE 0.06, PME 0.06, PLE 0.06; AME–AME 0.05, AME–ALE 0.01, PME–PME 0.06, PME–PLE 0.06, ALE–PLE 0.07. MOQ length 0.21, front width 0.17, back width 0.18. LEM widely separated; MED folded anteriorly, PED near LED (figs. 90, 91). Leg spination: femur IV p0-0-1.

OTHER MATERIAL EXAMINED: MEXICO: **Baja California Sur:** Sierra Laguna, 17 mi. ENE Todos Santos, Dec. 12–18, 1979, elevation 6000 feet (C. E. Griswold, UCB), 1 ♀.

DISTRIBUTION: Known only from Baja California Sur, Mexico (map 10).

THE *catholicus* SUBGROUP

DIAGNOSIS: The *catholicus* subgroup contains those species in which males have a long, curved embolar projection that crosses



FIGS. 92–95. 92, 93. *Zelotes union*, new species. 94, 95. *Z. catholicus* Chamberlin. 92. Palp, ventral view. 93. Palp, retrolateral view. 94. Epigynum, ventral view. 95. Epigynum, dorsal view.

over a peculiarly short, squared embolus and then twists distally (figs. 92, 96, 100, 104) and females have transversely oriented paramedian epigynal ducts (figs. 95, 99, 103).

INTRARELATIONSHIPS: With only one out of six species known from both sexes, a discussion of their interrelationships is premature.

KEY TO SPECIES

1. Males (those of *Z. catholicus* and *Z. santos* unknown) 2
 Females (those of *Z. union*, *Z. grovus*, and *Z. piercy* unknown) 5
2. EB high, extending far beyond TA (figs. 100, 104) 3
 EB low, not extending far beyond TA (figs. 92, 96) 4
3. EB highest prolaterally; EP not paralleling EMB (fig. 104) *piercy*
 EB highest at middle; EP paralleling EMB (fig. 100) *gabriel*
4. TA and EMB relatively narrow (fig. 92) *union*
 TA and EMB relatively wide (fig. 96) .. *grovus*
5. MED anteriorly folded (fig. 103) *gabriel*
 MED not anteriorly folded (figs. 95, 99) .. 6
6. MED relatively wide posteriorly (fig. 95) *catholicus*
 MED relatively narrow posteriorly (fig. 99) .. *santos*

Zelotes catholicus Chamberlin

Figures 94, 95; Map 11

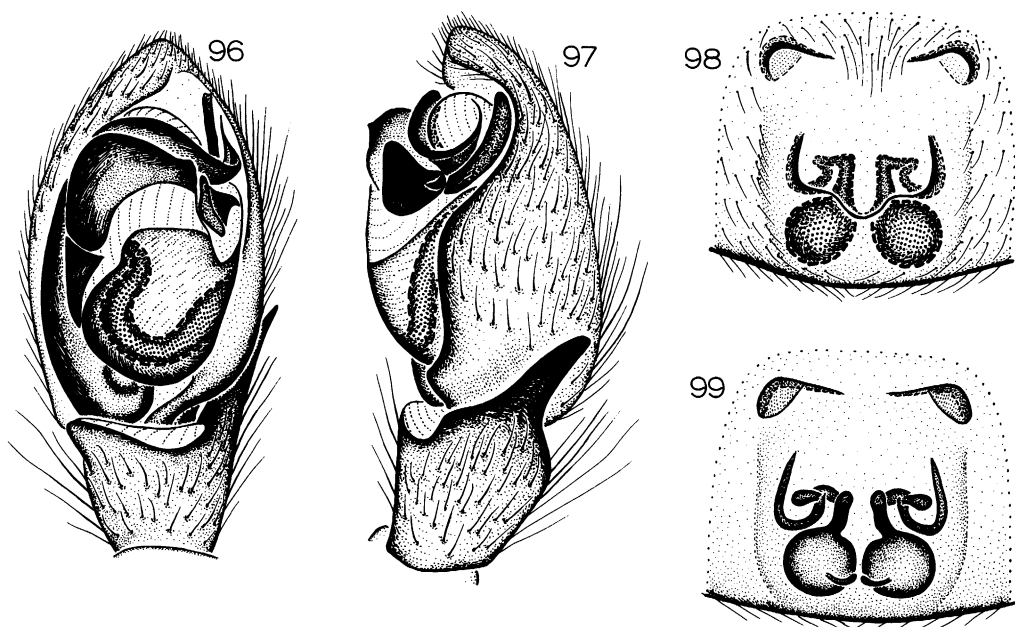
Zelotes catholicus Chamberlin, 1924, p. 622, fig. 62 (female holotype from Isla Partida, Isla del Espíritu Santo, Baja California Sur, Mexico, in CAS, examined). Roewer, 1954, p. 467. Bonnet, 1959, p. 4916. Ubick and Roth, 1973, suppl. 3, p. 2.

DIAGNOSIS: *Zelotes catholicus* resembles *Z. santos* in having the MED and PED displaced anteriorly but can be distinguished by the posteriorly widened MED (fig. 95).

MALE: Unknown.

FEMALE: Total length 4.28. Carapace 2.16 long, 1.55 wide. Femur II 1.16 long. Eye sizes and interdistances: AME 0.05, ALE 0.08, PME 0.07, PLE 0.08; AME–AME 0.08, AME–ALE 0.02, PME–PME 0.09, PME–PLE 0.07, ALE–PLE 0.07. MOQ length 0.23, front width 0.19, back width 0.23. LEM convergent anteriorly; MED expanded posteriorly, rounded anteriorly (figs. 94, 95). Leg spination: tibia III r1-1-1; metatarsi: I v0-0-0; II v2-2-0.

MATERIAL EXAMINED: Only the holotype, collected on May 30, 1921, by J. C. Chamberlin.



FIGS. 96-99. 96, 97. *Zelotes grovus*, new species. 98, 99. *Z. santos*, new species. 96. Palp, ventral view. 97. Palp, retrolateral view. 98. Epigynum, ventral view. 99. Epigynum, dorsal view.

DISTRIBUTION: Known only from Baja California Sur, Mexico (map 11).

***Zelotes santos*, new species**

Figures 98, 99; Map 11

TYPE: Female holotype from an elevation of 6000 feet at Sierra Laguna, 17 miles east-northeast of Todos Santos, Baja California Sur, Mexico (December 12-18, 1979; C. E. Griswold), deposited in UCB, on permanent loan to CAS.

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

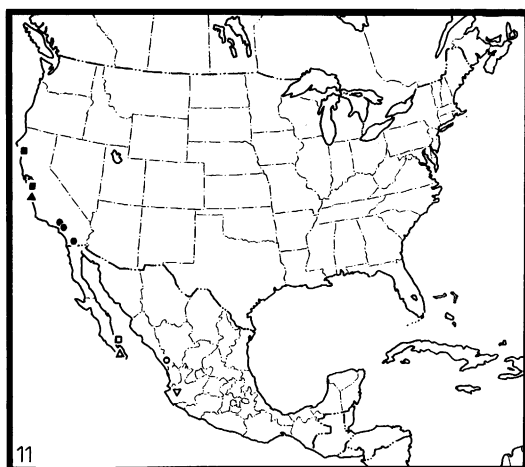
DIAGNOSIS: *Zelotes santos* resembles *Z. catholicus* but can be distinguished by the posteriorly narrow and anteriorly angular MED (fig. 99).

MALE: Unknown.

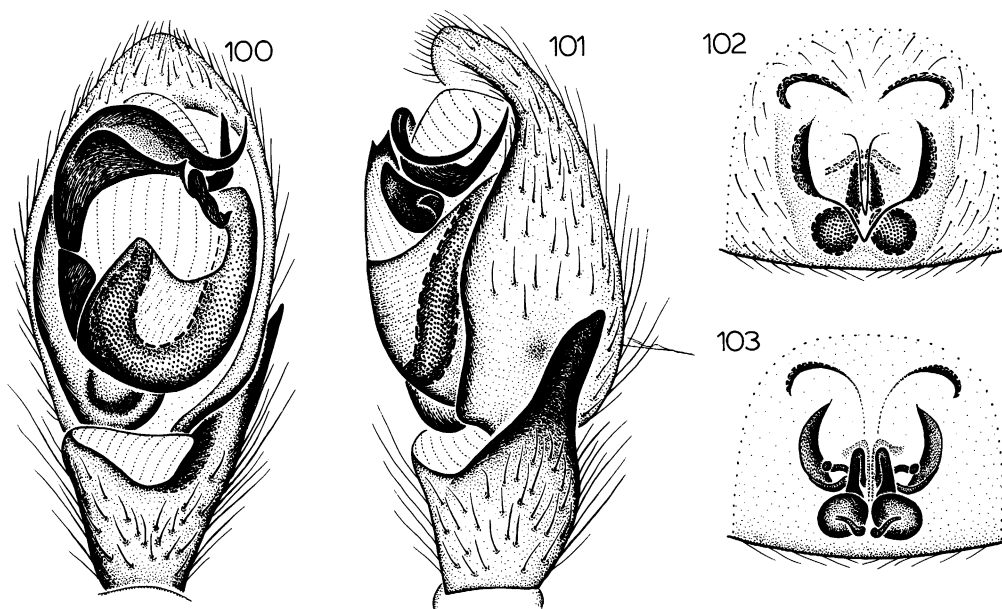
FEMALE: Total length 4.30-6.84. Carapace 1.89-2.59 long, 1.49-2.05 wide. Femur II 1.19-1.73 long. Eye sizes and interdistances: AME 0.05, ALE 0.07, PME 0.06, PLE 0.07; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.06, PME-PLE 0.07, ALE-PLE 0.08. MOQ length 0.23, front width 0.14, back width 0.18. LEM straight; MED narrow pos-

teriorly, angular anteriorly (figs. 98, 99). Leg spination: femur IV p0-0-1, r0-0-1; tibia II v0-1r-0.

OTHER MATERIAL EXAMINED: Three



MAP 11. North America, showing distribution of *Zelotes catholicus* (open square), *Z. santos* (open upright triangle), *Z. union* (open circle), *Z. grovus* (closed triangle), *Z. gabriel* (closed circles), *Z. piercy* (closed squares), and *Z. talpa* (inverted triangle).



FIGS. 100–103. *Zelotes gabriel*, new species. 100. Palp, ventral view. 101. Palp, retrolateral view. 102. Epigynum, ventral view. 103. Epigynum, dorsal view.

females taken with the holotype (UCB, AMNH).

DISTRIBUTION: Known only from Baja California Sur, Mexico (map 11).

***Zelotes union*, new species**

Figures 92, 93; Map 11

TYPE: Male holotype from an elevation of 6200 feet 52 miles east of Villa Union, Sinaloa, Mexico (August 25, 1965; W. J. Gertsch and R. Hastings), deposited in AMNH.

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

DIAGNOSIS: *Zelotes union* resembles *Z. grovus* in having a low EB but can be distinguished by the much narrower TA (fig. 92).

MALE: Total length 5.41. Carapace 2.39 long, 1.86 wide. Femur II 1.45 long. Eye sizes and interdistances: AME 0.04, ALE 0.07, PME 0.06, PLE 0.08; AME–AME 0.07, AME–ALE 0.03, PME–PME 0.06, PME–PLE 0.05, ALE–PLE 0.06. MOQ length 0.21, front width 0.15, back width 0.18. EB with slight prolateral hump, otherwise low; TA greatly narrowed (figs. 92, 93). Leg spination: femur IV p0-0-1, r0-0-1; tibiae: II v0-1r-0; IV r2-1-1; metatarsi I, II v2-2-0.

FEMALE: Unknown.

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Known only from Sinaloa, Mexico (map 11).

***Zelotes grovus*, new species**

Figures 96, 97; Map 11

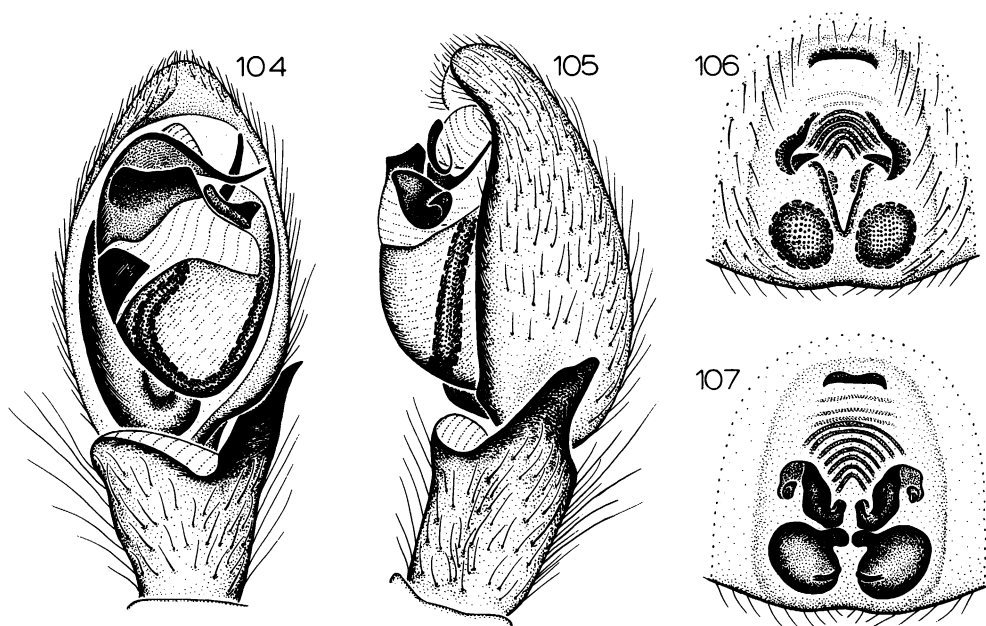
TYPE: Male holotype from Pacific Grove, Monterey County, California (April 3, 1960; W. J. Gertsch, W. Ivie, R. Schrammel), deposited in AMNH.

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

DIAGNOSIS: *Zelotes grovus* resembles *Z. union* but can be distinguished by the wider TA and EMB (fig. 96).

MALE: Total length 5.06. Carapace 2.26 long, 1.86 wide. Femur II 1.55 long. Eye sizes and interdistances: AME 0.05, ALE 0.08, PME 0.07, PLE 0.08; AME–AME 0.05, AME–ALE 0.01, PME–PME 0.05, PME–PLE 0.05, ALE–PLE 0.05. MOQ length 0.22, front width 0.15, back width 0.20. EMB greatly widened below tip (figs. 96, 97). Leg spination: femur IV p0-0-0, r0-0-1; metatarsi I, II v2-2-0.

FEMALE: Unknown.



FIGS. 104–107. 104, 105. *Zeletes piercy*, new species. 106, 107. *Z. funestus* (Keyserling). 104. Palp, ventral view. 105. Palp, retrolateral view. 106. Epigynum, ventral view. 107. Epigynum, dorsal view.

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Known only from Monterey County, California (map 11).

***Zeletes gabriel*, new species**

Figures 100–103; Map 11

TYPES: Male holotype and female paratype from manzanita chaparral at an elevation of 1000 meters at the Coldbrook Ranger Station, San Gabriel Canyon, Los Angeles County, California (May 8, 1965; L. Pinter), deposited in MCZ.

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

DIAGNOSIS: *Zeletes gabriel* resembles *Z. piercy* in having a high EB but can be distinguished by having the EB highest medially and the EP and EMB parallel (fig. 100) in males and the anteriorly folded MED (fig. 103) of females.

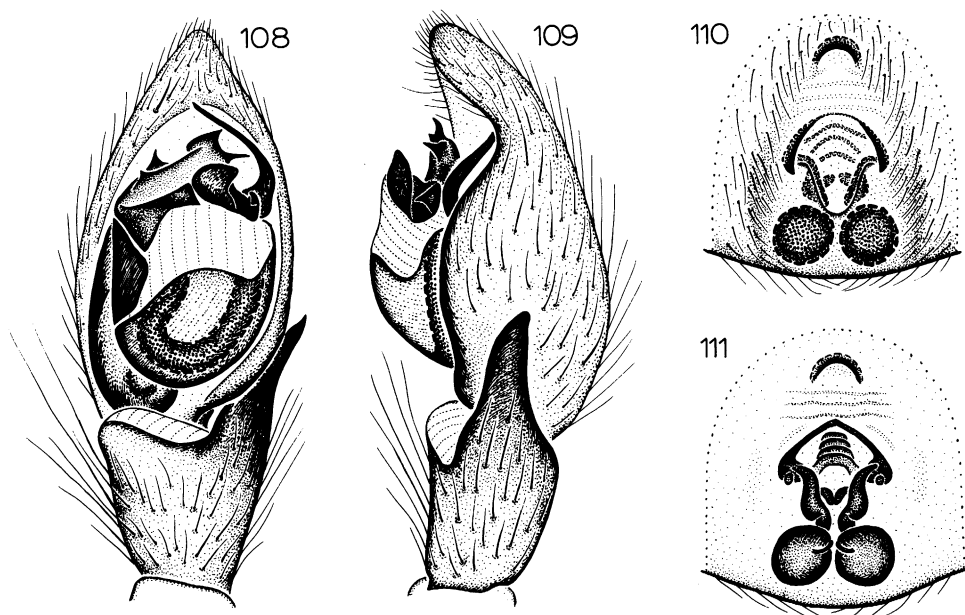
MALE: Total length 3.36, 3.49. Carapace 1.30, 1.46 long, 0.91, 1.12 wide. Femur II 0.86, 0.88 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.06, PLE 0.06; AME–AME 0.03, AME–ALE 0.01, PME–PME 0.02, PME–PLE 0.04, ALE–PLE 0.05.

MOQ length 0.14, front width 0.11, back width 0.14. TA relatively wide; EB distally elongated at middle (figs. 100, 101). Leg spination: femora: II p0-0-0; IV p0-0-0, r0-0-1; tibia III v1p-2-2; metatarsi: II v1r-0-0; III v2-0-0.

FEMALE: Total length 3.06, 3.46. Carapace 1.31, 1.62 long, 0.96, 1.22 wide. Femur II 0.85, 0.97 long. Eye sizes and interdistances: AME 0.03, ALE 0.06, PME 0.05, PLE 0.05; AME–AME 0.05, AME–ALE 0.01, PME–PME 0.04, PME–PLE 0.04, ALE–PLE 0.04. MOQ length 0.14, front width 0.11, back width 0.14. LEM widened; MED folded anteriorly (figs. 102, 103). Leg spination: femur IV p0-0-0, r0-0-1; tibia III v1p-2-2; metatarsi: I, II v1r-0-0; III v1p-0-0, r0-1-2; IV v2-1p-0.

OTHER MATERIAL EXAMINED: UNITED STATES: **California:** *Los Angeles Co.*: Old Ridge Route, 13 mi. N Castaic, May 15, 1965, elevation 1000 m., chamise chaparral (L. Pinter, MCZ), 1 ♂. *San Diego Co.*: Lyons Valley, May 10, 1958 (F. Raney), 1 ♀.

DISTRIBUTION: Known only from southern California (map 11).



FIGS. 108–111. 108, 109. *Zelotes talpa*, new species. 110, 111. *Z. mesa*, new species. 108. Palp, ventral view. 109. Palp, retrolateral view. 110. Epigynum, ventral view. 111. Epigynum, dorsal view.

***Zelotes piercy*, new species**

Figures 104, 105; Map 11

TYPE: Male holotype from 5 miles north of Piercy, Humboldt County, California (April 6, 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: *Zelotes piercy* resembles *Z. gabriel* but can be distinguished by the prolaterally higher EB and the retrolaterally directed EP (fig. 104).

MALE: Total length 4.59–5.90. Carapace 2.07–2.33 long, 1.75–1.92 wide. Femur II 1.55–1.73 long. Eye sizes and interdistances: AME 0.03, ALE 0.06, PME 0.06, PLE 0.06; AME–AME 0.07, AME–ALE 0.02, PME–PME 0.05, PME–PLE 0.06, ALE–PLE 0.07. MOQ length 0.21, front width 0.13, back width 0.17. TA relatively wide; EB distally elongated on prolateral side; EP not paralleling EMB (figs. 104, 105). Leg spination: femur IV p0-0-1, r0-0-1; tibiae: I v0-2-0; II v0-1r-0; III r1-1-1; metatarsi I, II v2-2-0.

FEMALE: Unknown.

OTHER MATERIAL EXAMINED: Three males taken with the holotype and one male taken

in oak leaf litter at San Jose, Santa Clara County, California (May 1, 1977, D. Ubick, DU).

DISTRIBUTION: Known only from Humboldt and Santa Clara counties, California (map 11).

THE *talpa* SUBGROUP

DIAGNOSIS: The *talpa* subgroup contains a single species, known only from males, that can be easily recognized by the convoluted embolar base bearing a bifid embolar projection (fig. 108).

***Zelotes talpa*, new species**

Figures 108, 109; Map 11

TYPE: Male holotype from an elevation of 4900 feet 10.8 miles south of Talpa de Allende, Jalisco, Mexico (August 8, 1967; R. E. Leech), deposited in AMNH courtesy of Dr. Leech.

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

DIAGNOSIS: With the characters of the subgroup.

MALE: Total length 4.72. Carapace 2.23 long, 1.75 wide. Femur II 1.64 long. Eye sizes

and interdistances: AME 0.06, ALE 0.09, PME 0.08, PLE 0.06; AME-AME 0.06, AME-ALE 0.02, PME-PME 0.06, PME-PLE 0.05, ALE-PLE 0.05. MOQ length 0.23, front width 0.17, back width 0.22. TA relatively narrow; EB convoluted; EP bifid (figs. 108, 109). Leg spination: femur IV r0-0-1; tibiae: I v0-2-0; II v1p-2-0; III r1-1-1; IV p1-0-1, r2-1-1; metatarsi: I, II v2-2-0; III v2-0-0.

FEMALE: Unknown.

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Known only from Jalisco, Mexico (map 11).

THE *funestus* GROUP

DIAGNOSIS: The *funestus* group (component 5, fig. 1) contains those species in which males have a greatly elongated and recurved embolus (as in fig. 117) and females have epigyna with a sinuous posterior margin, usually reaching posteriorly a considerable distance further at its middle than at its sides (as in fig. 106).

INTRARELATIONSHIPS: The five subgroups recognized here fall into two sets. The *funestus*, *petrophilus*, and *gynethus* subgroups are united (component 6, fig. 1) by having a narrow embolar base bearing a long prolateral extension and a beaklike embolar projection (as in fig. 121) in males and epigynal ducts that are longitudinally arranged and anteriorly expanded (as in figs. 128, 151) in females. The *mayanus* and *jamaicensis* subgroups are united (component 7, fig. 1) by having the epigynal ducts of females enormously elongated and convoluted (as in fig. 154).

THE *funestus* SUBGROUP

DIAGNOSIS: The *funestus* subgroup (component 18, fig. 112) contains those species in which males have a long, sharp, distally directed prolateral extension on the embolar base (figs. 113, 117, 121, 125) and females have the anterior epigynal margins fused (at least along their posterior edges) into a single hood (figs. 106, 110, 115, 119, 123, 127).

INTRARELATIONSHIPS: All the species other than *Z. perditus* (component 19, fig. 112) are united by having the anterior epigynal margins fused along both their anterior and pos-

terior edges (figs. 106, 110, 115, 123, 127; this character is predicted to be present in the unknown female of *Z. foresta*). Within that group, *Z. icenoglei* and *Z. yosemite* are united (component 20, fig. 112) by having the embolar projection borne on a narrow, erect retrolateral extension of the embolar base (figs. 121, 125) in males and lobelike median epigynal ducts (figs. 124, 128) in females. The remaining four species are united (component 21, fig. 112) by having the embolus expanded into a flat plate proximally (figs. 113, 117) in the known males and the lateral epigynal ducts expanded into an anterior plate (figs. 107, 111, 116) in the known females. Within that group, *Z. funestus* and *Z. mesa* are united (component 22, fig. 112) by having transverse ridges on a depression between the lateral epigynal margins (figs. 106, 110) of females; *Z. foresta* may prove to be a member of component 22 when females are discovered.

KEY TO SPECIES

1. Males (those of *Z. funestus*, *Z. mesa*, and *Z. perditus* unknown) 2
Females (those of *Z. foresta* unknown) ... 5
2. EP borne on narrow, erect retrolateral extension of EB, reaching almost as far distally as prolateral extension of EB (figs. 121, 125) 3
EP borne on body of EP, not reaching almost as far distally as prolateral extension of EB (figs. 113, 117) 4
3. Prolateral extension of EB and proximal half of EMB relatively wide (fig. 121) *icenoglei*
Prolateral extension of EB and proximal half of EMB relatively narrow (fig. 125) *yosemite*
4. Prolateral extension of EB relatively long; EP not raised distally from EB (fig. 113) *tulare*
Prolateral extension of EB relatively short; EP raised distally from EB (fig. 117) .. *foresta*
5. AEM fused only along their posterior margins (fig. 119); MED simple, uniformly wide (fig. 120) *perditus*
AEM fused along both their anterior and posterior margins (as in fig. 106); MED expanded anteriorly (as in figs. 107, 124) 6
6. LED elaborated into anterior plate (figs. 107, 111, 116) 7
LED not elaborated into anterior plate (figs. 124, 128) 9

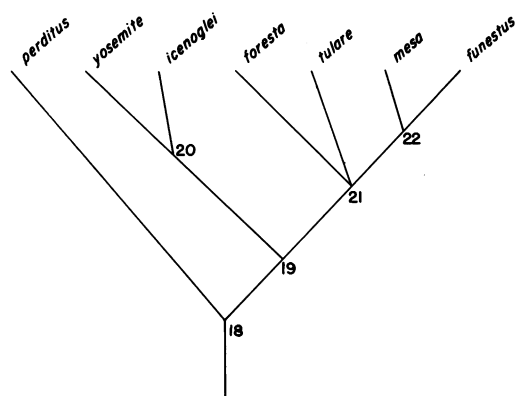


FIG. 112. Cladogram of species of the *funestus* subgroup. Characters defining the numbered components are discussed in text.

7. Transverse ridges present between LEM (figs. 106, 110) 8
- Transverse ridges absent (fig. 115) *tulare*
8. AEM and MED relatively wide (figs. 106, 107) *funestus*
- AEM and MED relatively narrow (figs. 110, 111) *mesa*
9. PEM relatively short (fig. 123) *icenoglei*
- PEM relatively long (fig. 127) *yosemite*

Zelotes funestus (Keyserling)

Figures 106, 107; Map 12

Prothesima funesta Keyserling, 1887, p. 431, fig. 8 (female holotype from Santa Barbara, Santa Barbara County, California, in MCZ, examined).

Zelotes funestus: Chamberlin, 1922, p. 165. Roewer, 1954, p. 470. Bonnet, 1959, p. 4924. Ubick and Roth, 1973, p. 8.

DIAGNOSIS: *Zelotes funestus* seems closest to *Z. mesa* but can be distinguished by the presence of sharp projections at the posterior corners of the LEM (fig. 106) and the much wider MED (fig. 107).

MALE: Unknown.

FEMALE: Total length 4.43–7.07. Carapace 2.25–3.20 long, 1.66–2.29 wide. Femur II 1.30–1.84 long. Eye sizes and interdistances: AME 0.05, ALE 0.09, PME 0.09, PLE 0.08; AME–AME 0.08, AME–ALE 0.02, PME–PME 0.07, PME–PLE 0.06, ALE–PLE 0.07. MOQ length 0.24, front width 0.18, back width 0.25. AEM relatively wide, LEM separated by depression, transverse ridges, and

posterior projections; MED wide, sinuous (figs. 106, 107). Leg spination: femur IV p0-0-1, r0-0-1; metatarsi: I v0-0-0; III r1-2-2.

MATERIAL EXAMINED: UNITED STATES:

California: *San Luis Obispo Co.:* Cambria, Apr. 2, 1960 (W. J. Gertsch, W. Ivie, R. Schrammel), 1 ♀. *Santa Barbara Co.:* Happy Canyon, near Solvang, Dec. 22, 1975, in nest with egg shells of *Phidippus* (R. R. Jackson, UCB), 1 ♀; Santa Barbara (MCZ), 1 ♀ (type), Apr. 1913 (MCZ), 1 ♀, 1966 (SBM), 1 ♀. *County unknown:* quadrant around lat. 35° N, long. 120° W (W. Ivie), 1 ♀.

DISTRIBUTION: Known only from San Luis Obispo and Santa Barbara counties, California (map 12).

Zelotes mesa, new species

Figures 110, 111; Map 12

TYPE: Female holotype from 0.1 miles north of the end of Harvest Road in Otay Mesa, Johnson Canyon, San Diego County, California (April 22, 1978; S. C. Johnson), deposited in AMNH courtesy of Mr. Johnson.

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

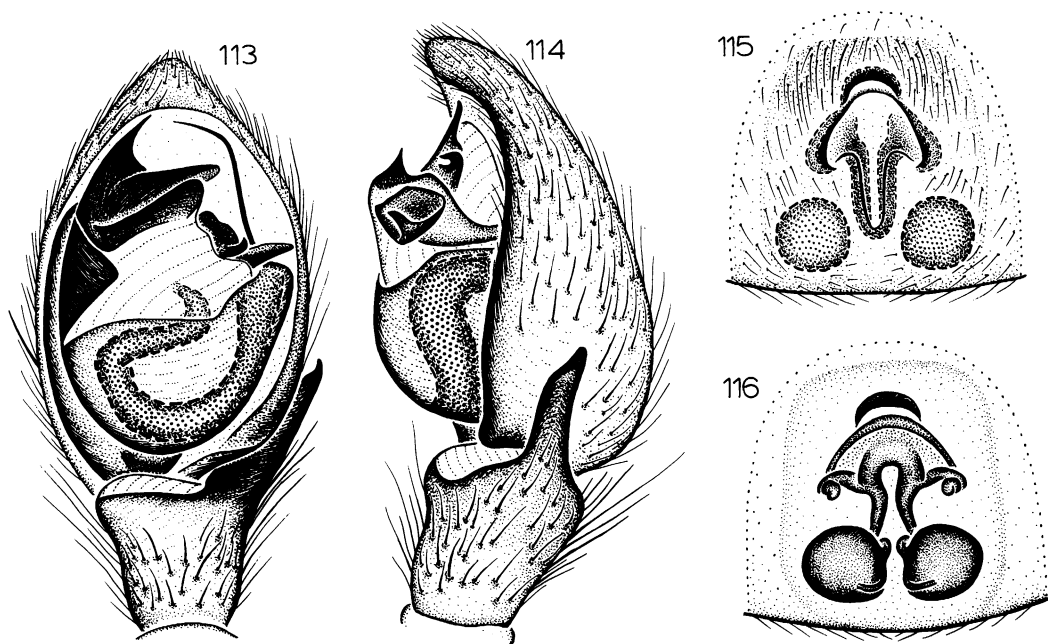
DIAGNOSIS: *Zelotes mesa* seems closest to *Z. funestus* but can be distinguished by the absence of projections at the posterior corners of the LEM (fig. 110) and the narrower MED (fig. 111).

MALE: Unknown.

FEMALE: Total length 6.26–8.44. Carapace 2.84–3.24 long, 2.16–2.40 wide. Femur II 1.58–1.80 long. Eye sizes and interdistances: AME 0.05, ALE 0.08, PME 0.08, PLE 0.09; AME–AME 0.08, AME–ALE 0.03, PME–PME 0.08, PME–PLE 0.08, ALE–PLE 0.07. MOQ length 0.23, front width 0.18, back width 0.24. AEM narrow, recurved, LEM separated by depression and transverse ridges; MED narrow (figs. 110, 111). Leg spination: femur IV p0-0-1; metatarsi: I v0-0-0; III r1-2-2.

OTHER MATERIAL EXAMINED: MEXICO: **Baja California Norte:** 15 mi. N Ensenada, Apr. 10, 1937, 1 ♀; Rosarito Beach, Apr. 5, 1939 (E. S. Ross, AMNH, CAS), 2 ♀; Tecate, Mar. 14, 1968 (J. Y. Sandoval, BJK), 1 ♀.

DISTRIBUTION: Known only from southern San Diego County, California, and adjacent



FIGS. 113–116. *Zelotes tulare*, new species. 113. Palp, ventral view. 114. Palp, retrolateral view. 115. Epigynum, ventral view. 116. Epigynum, dorsal view.

areas in Baja California Norte, Mexico (map 12).

***Zelotes tulare*, new species**
 Figures 113–116; Map 12

TYPES: Male holotype and female paratype from 10 miles west of Johnsondale, Tulare County, California (September 15, 1959; W. J. Gertsch and V. Roth), deposited in AMNH.

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

DIAGNOSIS: *Zelotes tulare* is a distinctive species easily recognized by the long prolateral extension and long, flat body of the EB (fig. 113) of males and the anteriorly connected LEM and LED (figs. 115, 116) of females.

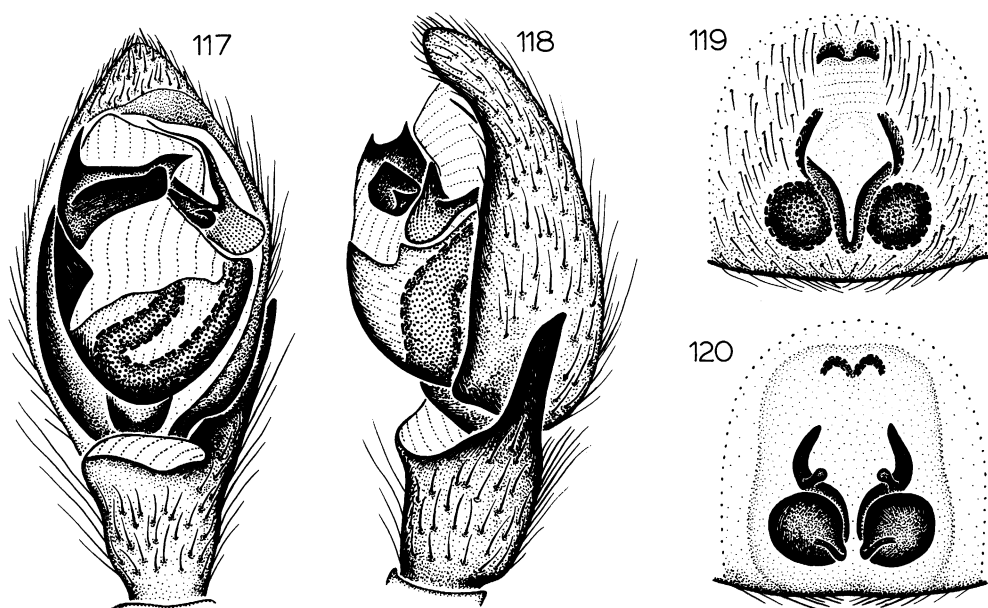
MALE: Total length 5.83. Carapace 2.69 long, 2.02 wide. Femur II 1.69 long. Eye sizes and interdistances: AME 0.05, ALE 0.09, PME 0.09, PLE 0.09; AME–AME 0.05, AME–ALE 0.02, PME–PME 0.05, PME–PLE 0.07, ALE–PLE 0.07. MOQ length 0.26, front width 0.15, back width 0.22. EMB with enlarged proximal plate oriented dorsoventrally so that only its proximal edge is visible

in ventral view (figs. 113, 114). Leg spination: femur IV p0-0-1; tibia III r1-1-1; metatarsus I v0-0-0.

FEMALE: Total length 6.30–8.66. Carapace 2.40–3.37 long, 1.69–2.54 wide. Femur II 1.37–1.94 long. Eye sizes and interdistances: AME 0.07, ALE 0.11, PME 0.11, PLE 0.10; AME–AME 0.10, AME–ALE 0.02, PME–PME 0.06, PME–PLE 0.11, ALE–PLE 0.10. MOQ length 0.34, front width 0.24, back width 0.28. LEM and LED fused into anterior plate (figs. 115, 116). Leg spination as in male.

OTHER MATERIAL EXAMINED: UNITED STATES: **California:** *Fresno Co.*: Cherry Gap, near Hume, July 16, 1952 (W. J. Gertsch, M. Cazier, R. Schrammel), 1 ♀. *Kern Co.*: Green Mountain, near Lake Isabella, May 31, 1969, elevation 6200 feet (D. E. Bixler, DEB), 1 ♀. *San Bernardino Co.*: Lytle Creek Canyon, Sept. 10, 1973 (D. E. Bixler, DEB), 1 ♀. *Tulare Co.*: Double Bunk Meadows, 6 mi. W Johnsondale, Sept. 15, 1959 (W. J. Gertsch, V. Roth), 1 ♀; Quaking Aspen Camp, Sept. 5, 1959 (W. J. Gertsch, V. Roth), 1 ♀.

DISTRIBUTION: Known only from Fresno



FIGS. 117–120. 117, 118. *Zelotes foresta*, new species. 119, 120. *Z. perditus* Chamberlin. 117. Palp, ventral view. 118. Palp, retrolateral view. 119. Epigynum, ventral view. 120. Epigynum, dorsal view.

to San Bernardino counties, California (map 12).

***Zelotes foresta*, new species**
Figures 117, 118; Map 12

TYPE: Male holotype from Foresta, Yosemite National Park, Mariposa County, California (August 17, 1971; M. E. Thompson), deposited in AMNH courtesy of Mr. Thompson.

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

DIAGNOSIS: *Zelotes foresta* resembles *Z. tulara* in having a proximal, platelike enlargement on the EMB but can be distinguished by having that plate oriented longitudinally and visible in ventral view (fig. 117).

MALE: Total length 5.47. Carapace 2.63 long, 1.96 wide. Femur II 1.57 long. Eye sizes and interdistances: AME 0.05, ALE 0.09, PME 0.08, PLE 0.08; AME–AME 0.07, AME–ALE 0.02, PME–PME 0.06, PME–PLE 0.07, ALE–PLE 0.08. MOQ length 0.27, front width 0.17, back width 0.22. EP on slightly elevated retrolateral extension of EB; EMB with proximal plate oriented longitudinally (figs. 117, 118). Leg spination: tibia III r1-1-1; metatarsus I v0-0-0.

FEMALE: Unknown.

OTHER MATERIAL EXAMINED: None

DISTRIBUTION: Known only from Mariposa County, California (map 12).

***Zelotes icenoglei*, new species**
Figures 49, 50, 121–124; Map 12

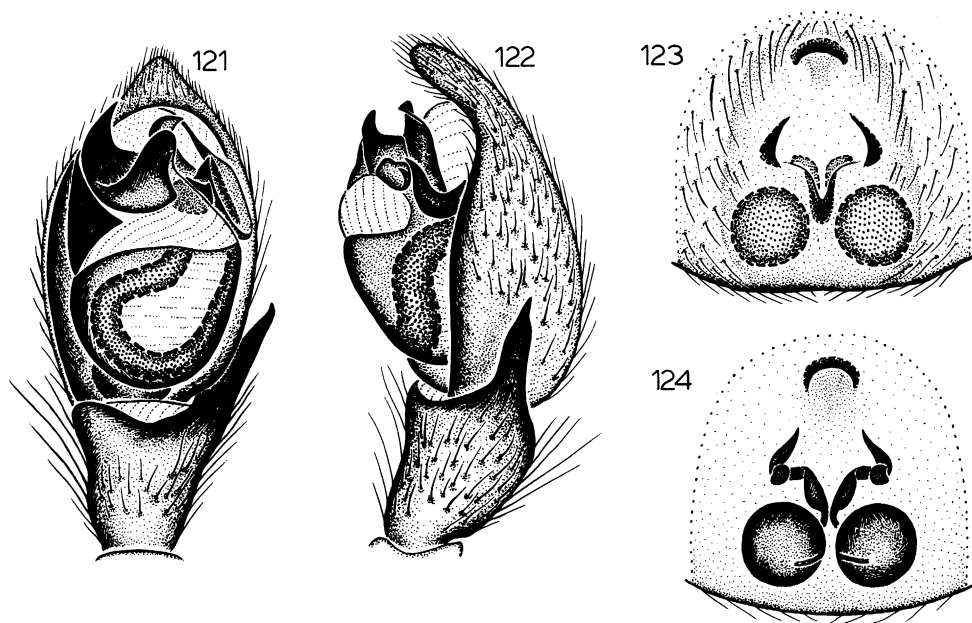
Zelotes funestus (misidentification): Chamberlin, 1936a, p. 19.

TYPES: Male holotype and female paratype from Los Angeles, Los Angeles County, California (November–December 1922; G. Grant), deposited in AMNH.

ETYMOLOGY: The specific name is a patronym in honor of Mr. Wendell R. Ice-nogle, collector of several specimens of this species and many other interesting Californian *Zelotes*.

DIAGNOSIS: *Zelotes icenoglei* seems closest to *Z. yosemite* but can be distinguished by the characters listed in couplets 3 and 9 of the key.

MALE: Total length 4.00–7.45. Carapace 1.91–3.38 long, 1.32–2.59 wide. Femur II 1.12–2.03 long. Eye sizes and interdistances: AME 0.05, ALE 0.09, PME 0.08, PLE 0.08; AME–AME 0.06, AME–ALE 0.02, PME–



FIGS. 121–124. *Zelotes icenoglei*, new species. 121. Palp, ventral view. 122. Palp, retrolateral view. 123. Epigynum, ventral view. 124. Epigynum, dorsal view.

PME 0.05, PME–PLE 0.06, ALE–PLE 0.06. MOQ length 0.23, front width 0.15, back width 0.22. Prolateral extension of EB, EP, TA, and EMB all widened (figs. 49, 121, 122). Leg spination: metatarsi: I v0-0-0; III r1-2-2.

FEMALE: Total length 6.94 ± 0.91 . Carapace 2.87 ± 0.30 long, 2.12 ± 0.28 wide. Femur II 1.66 ± 0.19 long. Eye sizes and interdistances: AME 0.04, ALE 0.07, PME 0.08, PLE 0.09; AME–AME 0.07, AME–ALE 0.02, PME–PME 0.07, PME–PLE 0.09, ALE–PLE 0.11. MOQ length 0.29, front width 0.15, back width 0.23. PEM relatively short; MED short, lobelike (figs. 50, 123, 124). Leg spination: tibia III r1-1-1; metatarsus I v0-0-0.

OTHER MATERIAL EXAMINED: UNITED STATES: **California:** *Los Angeles Co.:* Chatsworth, Aug. 7–Sept. 18, 1966, crawling on ground (W. R. Icenogle, AMNH, WRI), 3 ♂, Oct. 23, 1966, crawling on side of ravine (W. R. Icenogle), 1 ♀; Los Angeles, Feb. 27, 1918, 1 ♀; Placerita, Mar. 22, 1969 (M. E. Thompson, MET), 1 ♀; Saddle Peak, Santa Monica Mountains, Feb. 11, 1953 (R. X. Schick), 1 ♀; Santa Monica, 3 ♀; 3 mi. E Santa Monica, Mar. 17, 1934 (W. Ivie), 3 ♀; Sepulveda Can-

yon, Santa Monica Mountains, Mar. 1956 (R. X. Schick), 1 ♀. *Santa Barbara Co.:* N end Carpinteria Beach, Sept. 27, 1967 (W. J. Gertsch, W. Ivie), 1 ♂, 1 ♀ (penultimate). *Ventura Co.:* Oxnard Beach, Mar. 31, 1960 (W. J. Gertsch, W. Ivie, R. Schrammel), 1 ♀; Point Mugu Naval Air Station, Feb.–July 1981 (C. D. Nagano, J. N. Hogue, LACM), 1 ♀, Sept. 20–Oct. 15, 1981 (C. D. Nagano, J. N. Hogue, LACM, CNC), 3 ♂; Ventura, Apr. 1, 1960 (W. J. Gertsch, W. Ivie, R. Schrammel), 2 ♀.

DISTRIBUTION: Known only from southern Santa Barbara to Los Angeles counties, California (map 12).

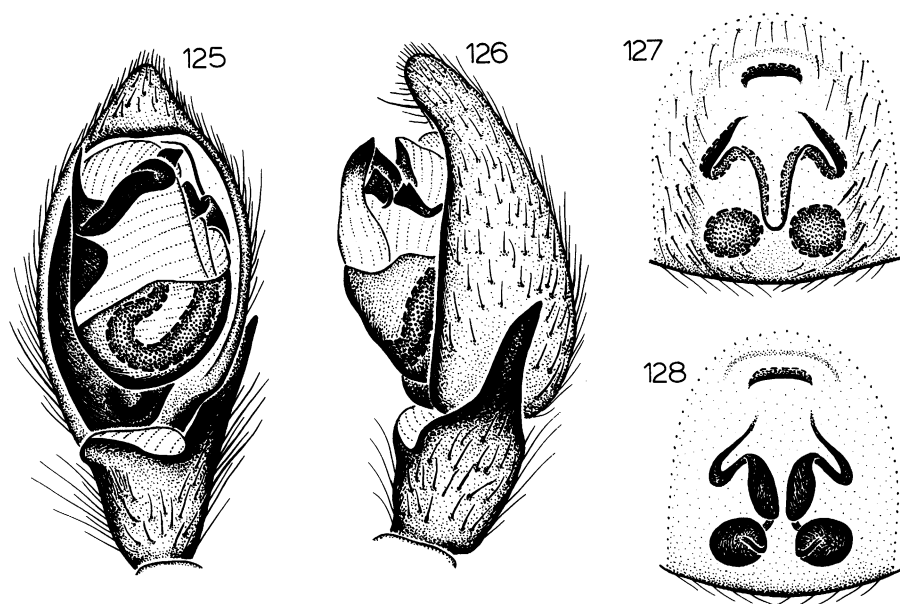
Zelotes yosemite, new species

Figures 125–128; Map 12

TYPES: Male holotype and female paratype from Yosemite National Park (no specific locality or county), California (August 1), deposited in AMNH.

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

DIAGNOSIS: *Zelotes yosemite* seems closest to *Z. icenoglei* but can be distinguished by



FIGS. 125–128. *Zelotes yosemite*, new species. 125. Palp, ventral view. 126. Palp, retrolateral view. 127. Epigynum, ventral view. 128. Epigynum, dorsal view.

the characters listed in couplets 3 and 9 of the key.

MALE: Total length 5.99. Carapace 2.65 long, 1.91 wide. Femur II 1.55 long. Eye sizes and interdistances: AME 0.06, ALE 0.09, PME 0.07, PLE 0.09; AME–AME 0.07, AME–ALE 0.02, PME–PME 0.06, PME–PLE 0.06, ALE–PLE 0.08. MOQ length 0.27, front width 0.19, back width 0.20. Prolateral extension of EB spikelike; TA oblique (figs. 125, 126). Leg spination: femur IV p0-0-1; metatarsus I v0-0-0.

FEMALE: Total length 6.57, 7.62. Carapace 2.76, 3.24 long, 2.09, 2.41 wide. Femur II 1.58 long. Eye sizes and interdistances: AME 0.04, ALE 0.09, PME 0.07, PLE 0.08; AME–AME 0.09, AME–ALE 0.02, PME–PME 0.07, PME–PLE 0.07, ALE–PLE 0.07. MOQ length 0.24, front width 0.17, back width 0.22. PEM long, wide; MED long, lobelike (figs. 127, 128). Leg spination as in male.

OTHER MATERIAL EXAMINED: One female taken at an elevation of 4082 feet at Kyburz, El Dorado County, California, on June 29, 1977, by C. E. Griswold (UCB).

DISTRIBUTION: Known only from El Dorado County and Yosemite National Park, California (map 12).

Zelotes perditus Chamberlin

Figures 119, 120, 270; Map 12

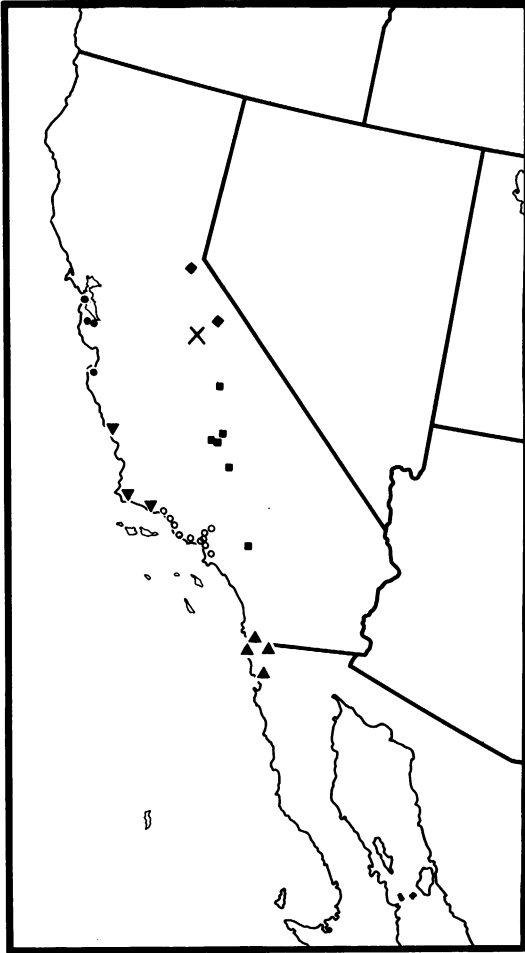
Zelotes perditus Chamberlin, 1922, p. 165 (female holotype from Stanford, Santa Clara County, California, in MCZ, examined). Roewer, 1954, p. 471. Bonnet, 1959, p. 4940. Ubick and Roth, 1973, p. 8.

Zelotes omissus Chamberlin, 1936a, p. 19, fig. 26 (female holotype purportedly from Los Angeles, Los Angeles County, California, probably mislabeled, in AMNH, examined). Roewer, 1954, p. 471. Bonnet, 1959, p. 4938. Ubick and Roth, 1973, p. 8. **NEW SYNONYMY.**

DIAGNOSIS: *Zelotes perditus* is a distinctive species easily recognized by the incompletely fused AEM, long PEM, and simple, thick MED (figs. 119, 120, 270).

MALE: Unknown.

FEMALE: Total length 7.95 ± 0.62 . Carapace 3.54 ± 0.28 long, 2.61 ± 0.23 wide. Femur II 2.07 ± 0.18 long. Eye sizes and interdistances: AME 0.04, ALE 0.10, PME 0.09, PLE 0.11; AME–AME 0.09, AME–ALE 0.03, PME–PME 0.10, PME–PLE 0.09, ALE–PLE 0.10. MOQ length 0.29, front width 0.17, back width 0.28. AEM fused only along posterior margins; MED and LED simple, wide



MAP 12. Western North America, showing distribution of *Zelotes funestus* (inverted triangles), *Z. mesa* (upright triangles), *Z. tulare* (squares), *Z. foresta* (cross), *Z. icenoglei* (open circles), *Z. yosemite* (diamonds), and *Z. perditus* (closed circles).

tubes (figs. 119, 120, 270). Leg spination: tibia III r1-1-1; metatarsus II v0-0-0.

MATERIAL EXAMINED: UNITED STATES: **California:** "Los Angeles Co.: Los Angeles, Nov.-Dec. 1922 (G. Grant)," 1 ♀ (type, probably mislabeled). **Monterey Co.:** Monterey, Mar. 1926, 2 ♀. **San Francisco Co.:** San Francisco, 3 ♀. **San Mateo Co.:** Jasper Ridge, 1920-1921 (J. C. Chamberlin, MCZ), 3 ♀; near Woodside, Nov. 24, 1928 (J. C. Chamberlin), 4 ♀. **Santa Clara Co.:** Palo Alto, Nov. 9, 1941 (E. S. Ross), 2 ♀; Stanford (R.

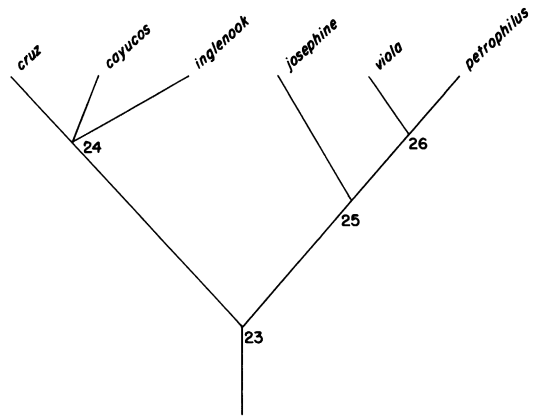


FIG. 129. Cladogram of species of the *petrophilus* subgroup. Characters defining the numbered components are discussed in text.

V. Chamberlin, MCZ), 1 ♀ (type), Nov. 24, 1928 (J. C. Chamberlin), 3 ♀; Stanford University, winter 1920-1921 (J. C. Chamberlin, MCZ), 4 ♀.

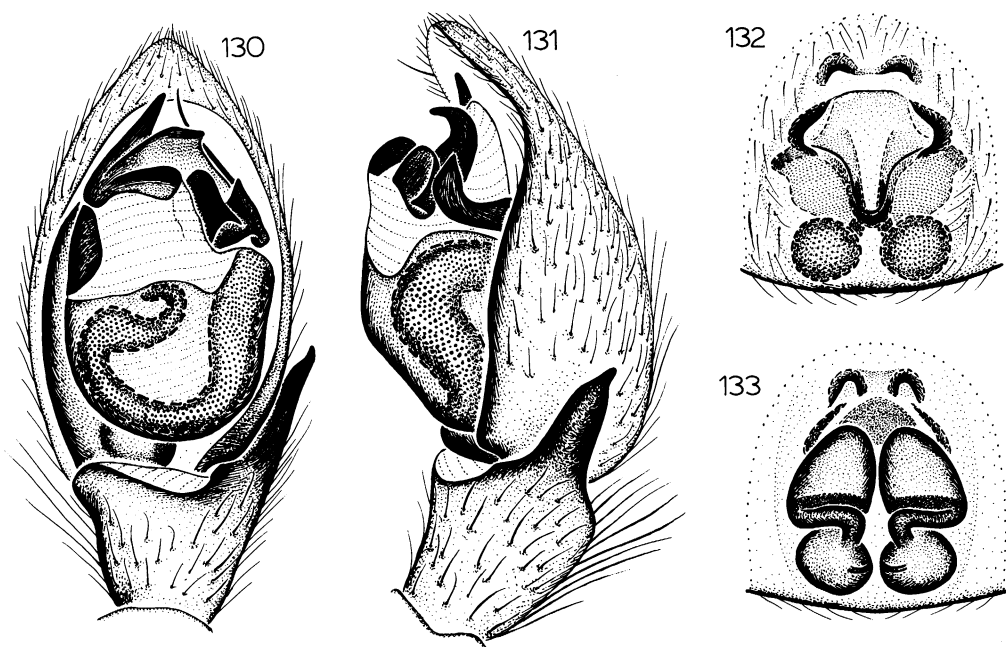
DISTRIBUTION: Known only from San Francisco to Monterey counties, California (map 12). The type locality of *Z. omissus* is here presumed to be erroneous; Chamberlin evidently mislabeled the type specimen with collection data from his specimens (now the types) of *Z. icenoglei* (one wonders whether Chamberlin's choice of name does not reflect an omission in keeping locality data with the specimen).

SYNONYMY: Chamberlin provided no characters by which to distinguish *Z. omissus* from *Z. perditus*, and there appear to be none.

THE *petrophilus* SUBGROUP

DIAGNOSIS: The *petrophilus* subgroup (component 23, fig. 129) contains those species in which males have a small terminal apophysis situated at the very tip of the palpal bulb and covering much of the embolar base (figs. 130, 140, 144, 148, 156) and females have short, convergent, anteriorly situated lateral epigynal margins enclosing a pair of rounded elevations situated behind the posterior epigynal margin (figs. 132, 142, 146, 150, 152, 158).

INTRARELATIONSHIPS: The species fall into two sets. *Zelotes inglenook*, *Z. cayucos*, and *Z. cruz* are united (component 24, fig. 129)



FIGS. 130–133. *Zelotes petrophilus* Chamberlin. 130. Palp, ventral view. 131. Palp, retrolateral view. 132. Epigynum, ventral view. 133. Epigynum, dorsal view.

by having the enlargements of the median epigynal ducts of females reflexed posteriorly, toward the spermathecae (figs. 151, 153, 159). The remaining species are united (component 25, fig. 129) by having the lateral epigynal ducts of females enlarged into oval bulbs (figs. 133, 143, 147). Within that set, *Z. petrophilus* and *Z. viola* are united (component 26, fig. 129) by having the retrolateral tibial apophysis of males shortened (figs. 131, 141) and the median epigynal ducts of females elongated and extending across the posterior edge of the epigynal bulbs (figs. 133, 143).

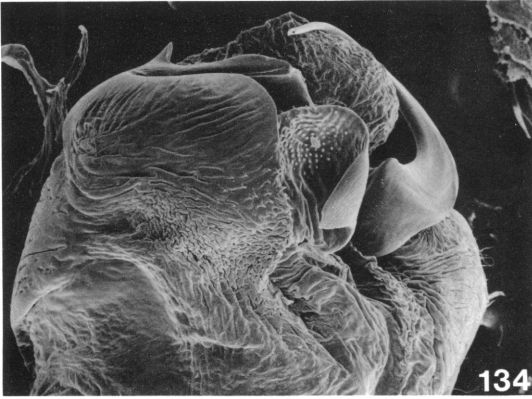
KEY TO SPECIES

1. Males (those of *Z. cayucos* unknown) . . . 2
Females 6
2. Prolateral extension of EB finger-like (figs. 130, 140, 144) 3
Prolateral extension of EB not finger-like, not visible in ventral view (figs. 148, 156) . . . 5
3. EMB relatively short (fig. 144); RTA relatively long (fig. 145) *joephine*
EMB relatively long (figs. 130, 140); RTA relatively short (figs. 131, 141) 4
4. Prolateral extension of EB protruding beyond body of EB and EP (fig. 130) . . . *petrophilus*
- Body of EB and EP protruding beyond prolateral extension of EB (fig. 140) . . . *viola*
5. EMB relatively short (fig. 148) . . . *inglenook*
EMB relatively long (fig. 156) *cruz*
6. LED expanded into oval bulbs (figs. 133, 143, 147) 7
LED not expanded into oval bulbs (figs. 151, 153, 159) 9
7. MED extending across posterior edge of epigynal bulbs (figs. 133, 143) 8
MED not extending across posterior edge of epigynal bulbs (fig. 147) *joephine*
8. LEM situated near AEM (fig. 132) *petrophilus*
LEM situated far from AEM (fig. 142) *viola*
9. MED greatly enlarged (fig. 159) *cruz*
MED not greatly enlarged (figs. 151, 153) 10
10. Enlargements of MED oriented longitudinally (fig. 153) *cayucos*
Enlargements of MED oriented transversely (fig. 151) *inglenook*

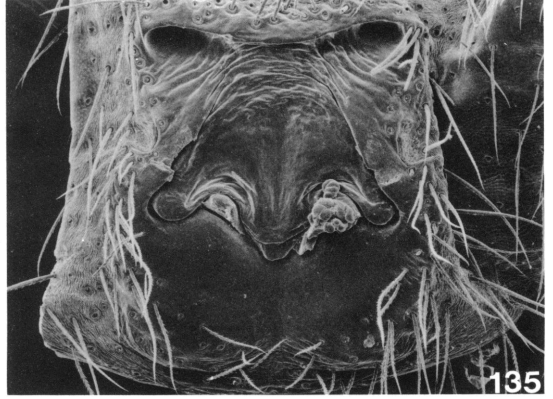
Zelotes petrophilus Chamberlin

Figures 130–133, 136; Map 13

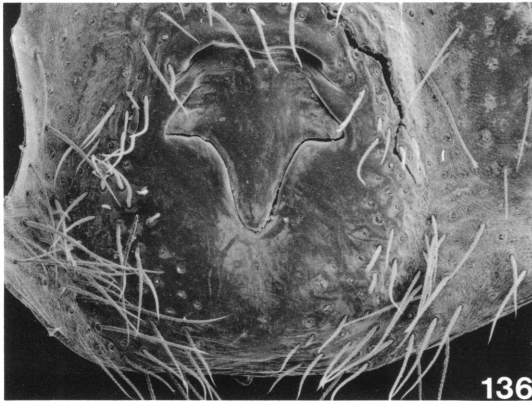
Zelotes petrophilus Chamberlin, 1936b, p. 11, figs. 45, 46 (male holotype from Petrified Forest,



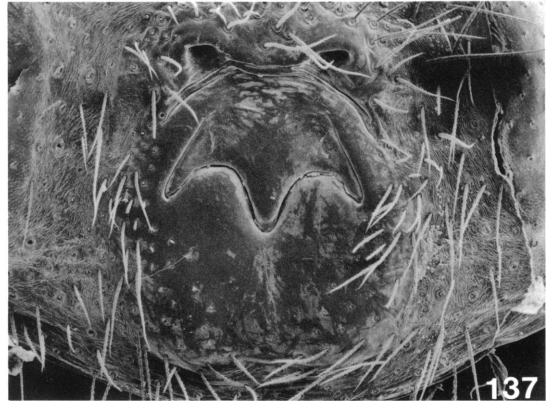
134



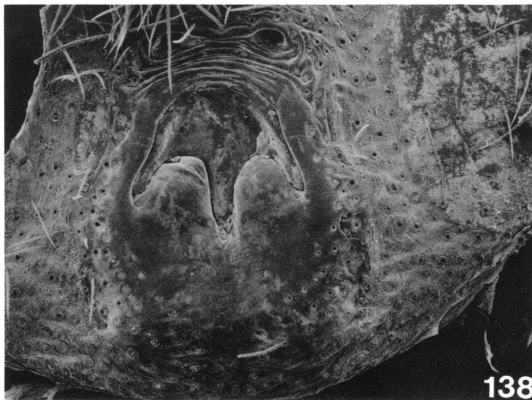
135



136



137



138



139

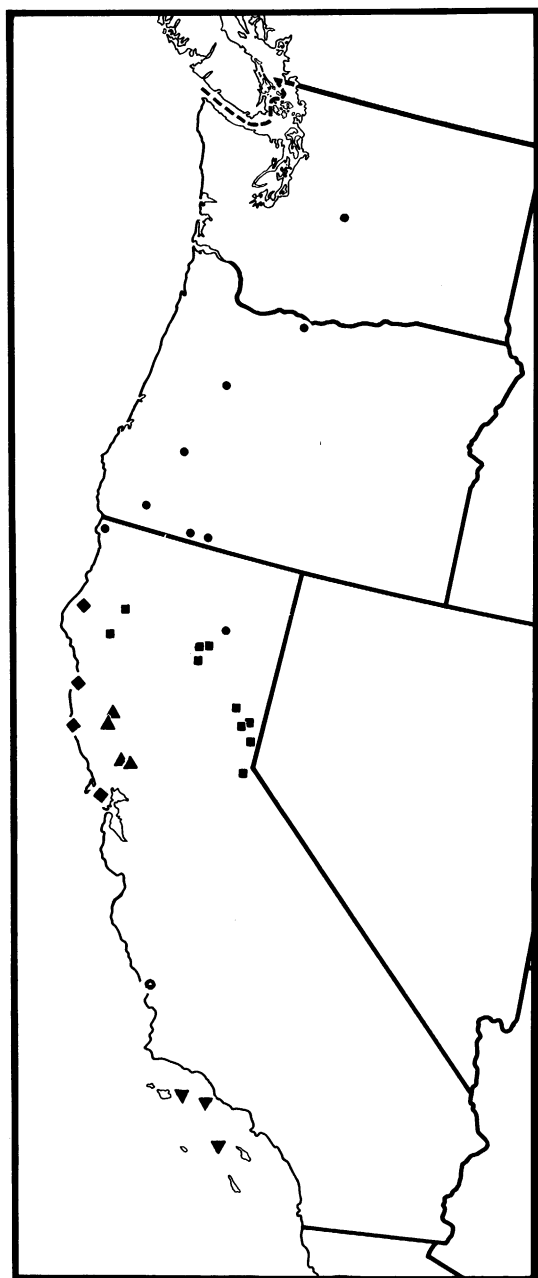
FIGS. 134–139. 134, 135. *Zelotes inglenook*, new species. 136. *Z. petrophilus* Chamberlin. 137. *Z. viola*, new species. 138. *Z. josephine*, new species. 139. *Z. cruz*, new species. 134. Palp, ventral view, 210 $\times$. 135–139. Epigynum, ventral view, 115 $\times$.

Napa County, California, in AMNH, examined). Roewer, 1954, p. 471. Bonnet, 1959, p. 4941. Ubick and Roth, 1973, p. 8.

DIAGNOSIS: *Zelotes petrophilus* seems closest to *Z. viola* but can be distinguished by

the larger prolateral extension of the EB (fig. 130) of males and the more anteriorly situated LEM (fig. 132) of females.

MALE: Total length 6.73. Carapace 3.15 long, 2.39 wide. Femur II 1.98 long. Eye sizes



MAP 13. Western North America, showing distribution of *Zelotes petrophilus* (upright triangles), *Z. viola* (squares), *Z. josephine* (closed circles), *Z. inglenook* (diamonds), *Z. cayucos* (open circle), and *Z. cruz* (inverted triangles).

0.08, ALE–PLE 0.08. MOQ length 0.28, front width 0.20, back width 0.25. Prolateral extension of EB large, erect, finger-like; RTA short (figs. 130, 131). Leg spination: tibia III r1-1-1; metatarsi: I v0-0-0; II v2-1p-0.

FEMALE: Total length 5.74–7.70. Carapace 2.53–3.47 long, 1.85–2.57 wide. Femur II 1.50–1.91 long. Eye sizes and interdistances: AME 0.05, ALE 0.10, PME 0.07, PLE 0.09; AME–AME 0.10, AME–ALE 0.02, PME–PME 0.08, PME–PLE 0.10, ALE–PLE 0.10. MOQ length 0.29, front width 0.20, back width 0.22. LEM near AEM; MED extending across posterior edge of oval bulbs (figs. 132, 133, 136). Leg spination: femur IV p0-0-1; tibia III r1-1-1; metatarsus I v0-0-0.

MATERIAL EXAMINED: UNITED STATES: **California:** *Lake Co.:* between Lakeport and Nice, Clear Lake, Apr. 5, 1960 (W. J. Gertsch, W. Ivie, R. Schrammel), 3 ♀; Middle Creek, 6 mi. NW Upper Lake, Feb. 12, 1955 (D. Burdick), 1 ♀. *Napa Co.:* N side, Howell Mountain, 3 km. NNE Angwin, May 24, 1980, elevation 396 m., under pile of rotting weeds in garden (H. B. Leech, CAS), 1 ♀; Petrified Forest, Calistoga, Aug. 27, 1931 (W. Ivie), 1 ♂, 1 ♀ (penultimate; types).

DISTRIBUTION: Known only from Lake and Napa counties, California (map 13).

Zelotes viola, new species

Figures 137, 140–143; Map 13

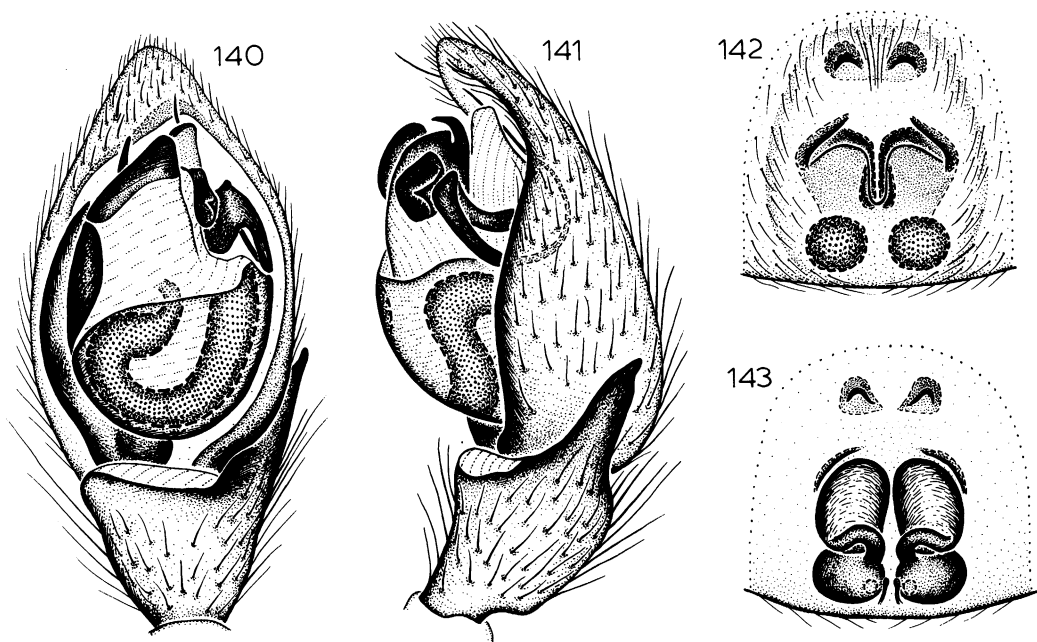
TYPES: Male holotype from Viola, Shasta County, California (August 2, 1953; W. J. Gertsch and J. W. Gertsch), and female paratype from the north side of Lassen Volcanic National Park, Shasta County, California (July 1, 1940; W. M. Pearce), deposited in AMNH.

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

DIAGNOSIS: *Zelotes viola* seems closest to *Z. petrophilus* but can be distinguished by the smaller prolateral extension of the EB (fig. 140) of males and the more posteriorly situated LEM (fig. 142) of females.

MALE: Total length 4.81–5.93. Carapace 2.24–2.94 long, 1.67–2.21 wide. Femur II 1.29–1.62 long. Eye sizes and interdistances: AME 0.05, ALE 0.09, PME 0.08, PLE 0.08; AME–AME 0.06, AME–ALE 0.01, PME–PME 0.05, PME–PLE 0.07, ALE–PLE 0.07.

and interdistances: AME 0.06, ALE 0.09, PME 0.09, PLE 0.10; AME–AME 0.08, AME–ALE 0.02, PME–PME 0.07, PME–PLE



FIGS. 140–143. *Zelotes viola*, new species. 140. Palp, ventral view. 141. Palp, retrolateral view. 142. Epigynum, ventral view. 143. Epigynum, dorsal view.

MOQ length 0.23, front width 0.16, back width 0.21. Body of EB and EP projecting beyond prolateral extension of EB; RTA short (figs. 140, 141). Leg spination: tibia III r1-1-1.

FEMALE: Total length 6.33 ± 0.79 . Carapace 2.71 ± 0.19 long, 2.03 ± 0.17 wide. Femur II 1.55 ± 0.09 long. Eye sizes and interdistances: AME 0.05, ALE 0.09, PME 0.08, PLE 0.08; AME–AME 0.06, AME–ALE 0.01, PME–PME 0.05, PME–PLE 0.07, ALE–PLE 0.07. MOQ length 0.23, front width 0.16, back width 0.21. LEM far from AEM; MED extending across posterior edges of oval bulbs (figs. 137, 142, 143). Leg spination: femur IV p0-0-1; metatarsus I v0-0-0.

OTHER MATERIAL EXAMINED: UNITED STATES: **California:** *El Dorado Co.:* Echo Summit, Lake Tahoe, S Meyers, Sept. 2, 1961, elevation 7382 feet (W. J. Gertsch, W. Ivie), 2 ♀, Sept. 19, 1963, elevation 7377 feet (W. J. Gertsch), 1 ♀. *Nevada Co.:* Bennett Flat, July 10, 1981, under rock (D. Ubick, DU), 1 ♂; Truckee, July 5, 1927 (H. Van Duzee), 1 ♀, July 9, 1981, under rock (D. Ubick, DU), 1 ♀. *Plumas Co.:* Johnsville, Apr. 5, 1960, in

pine needles (J. S. Buckett), 1 ♀. *Sierra Co.:* Gold Lake, July 7, 1952 (W. J. Gertsch, M. Cazier, R. Schrammel), 2 ♀; Monarch Mine, Sierra City, Sept. 7, 1959 (W. J. Gertsch, V. Roth), 1 ♀. *Tehama Co.:* junction, highways 89 and 36, S Lassen Volcanic National Park, Aug. 8, 1963, elevation 5700 feet (R. E. Leech, REL), 1 ♀. *Trinity Co.:* 5 mi. W Forest Glen, Aug. 21, 1959 (W. J. Gertsch, V. Roth), 1 ♂; Little French Creek, 2 mi. E Del Loma, Apr. 6, 1960 (W. J. Gertsch, W. Ivie, R. Schrammel), 3 ♀.

DISTRIBUTION: Known only from Trinity to El Dorado counties, California (map 13).

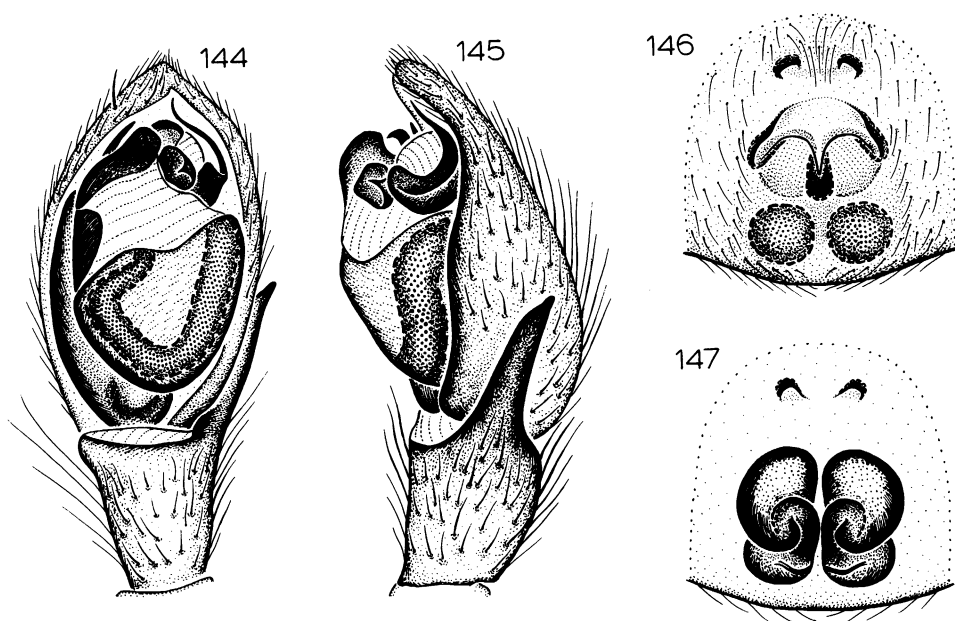
***Zelotes josephine*, new species**

Figures 138, 144–147; Map 13

TYPES: Female holotype from Grants Pass, Josephine County, Oregon (July 2, 1952; W. J. Gertsch), deposited in AMNH, and male paratype from the same locality (fall 1973), deposited in MCZ.

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

DIAGNOSIS: *Zelotes josephine* seems closest



FIGS. 144–147. *Zelotes josephine*, new species. 144. Palp, ventral view. 145. Palp, retrolateral view. 146. Epigynum, ventral view. 147. Epigynum, dorsal view.

to *Z. petrophilus* and *Z. viola* but can be distinguished by the shorter EMB (fig. 144) of males and the anteriorly rounded MED (fig. 147) of females.

MALE: Total length 3.68. Carapace 2.06 long, 1.53 wide. Femur II 1.22 long. Eye sizes and interdistances: AME 0.03, ALE 0.06, PME 0.07, PLE 0.07; AME–AME 0.05, AME–ALE 0.02, PME–PME 0.04, PME–PLE 0.05, ALE–PLE 0.06. MOQ length 0.19, front width 0.12, back width 0.18. Prolateral extension of EB and RTA long, EMB short (figs. 144, 145). Leg spination: metatarsus I v0-0-0.

FEMALE: Total length 7.60 ± 0.89 . Carapace 3.00 ± 0.11 long, 2.31 ± 0.16 wide. Femur II 1.77 ± 0.10 long. Eye sizes and interdistances: AME 0.07, ALE 0.11, PME 0.10, PLE 0.11; AME–AME 0.08, AME–ALE 0.01, PME–PME 0.05, PME–PLE 0.08, ALE–PLE 0.08. MOQ length 0.31, front width 0.22, back width 0.25. LEM far from AEM; MED rounded anteriorly (figs. 138, 146, 147). Leg spination: tibia III r1-1-1.

OTHER MATERIAL EXAMINED: UNITED STATES: **California:** *Del Norte Co.*: Middle Fork of Smith River, Sept. 4, 1963 (J. and

W. Ivie), 1 ♀. *Lassen Co.*: 18 mi. S Pittville, July 2, 1940 (W. M. Pearce), 1 ♀. **Oregon:** *Douglas Co.*: Idleld Park, Aug. 23, 1959 (W. J. Gertsch, V. Roth), 1 ♀. *Jackson Co.*: Pinehurst, May 20, 1961 (J. Schuh), 1 ♀. *Klamath Co.*: Frain Ranch, Klamath River, Apr. 26, 1962 (J. Schuh, J. D. Vertrees), 1 ♀. *Linn Co.*: Cascadia, May 24, 1947 (V. Roth), 1 ♀. *Wasco Co.*: The Dalles, Apr. 7, 1954 (B. Malkin), 1 ♀. *County unknown*: Triangle Lake, July 16, 1952 (B. Malkin), 1 ♀. **Washington:** *Kittitas Co.*: Taneum Canyon, Apr. 27, 1975, elevation 2440 feet, under rocks (J. Pelham, L. Lew, UWA), 3 ♀.

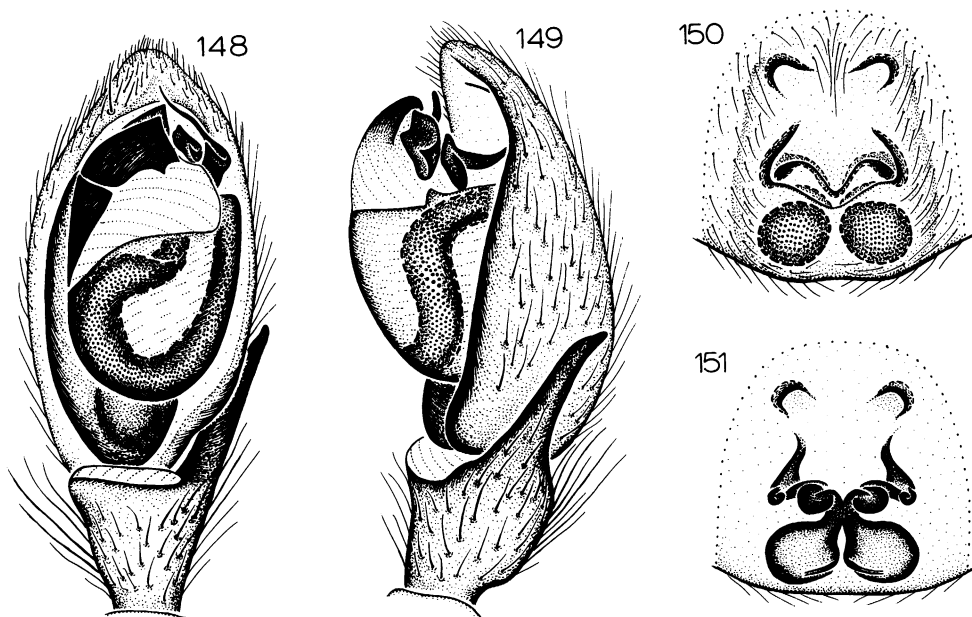
DISTRIBUTION: Washington south to Del Norte and Lassen counties, California (map 13).

Zelotes inglenook, new species

Figures 134, 135, 148–151; Map 13

TYPES: Male holotype and female paratype from Inglenook Fen, 4 miles north of Fort Bragg, Mendocino County, California (January 1975; R. R. Jackson), deposited in UCB, on permanent loan to CAS.

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



FIGS. 148–151. *Zelotes inglenook*, new species. 148. Palp, ventral view. 149. Palp, retrolateral view. 150. Epigynum, ventral view. 151. Epigynum, dorsal view.

DIAGNOSIS: *Zelotes inglenook* is a distinctive species easily recognized by the EB being almost entirely covered by the TA in ventral view (fig. 148) in males and the transversely oriented enlargements of the MED (fig. 181) of females.

MALE: Total length 4.79–6.24. Carapace 2.22–2.81 long, 1.67–2.13 wide. Femur II 1.24–1.62 long. Eye sizes and interdistances: AME 0.05, ALE 0.09, PME 0.08, PLE 0.08; AME–AME 0.05, AME–ALE 0.01, PME–PME 0.05, PME–PLE 0.06, ALE–PLE 0.06. MOQ length 0.24, front width 0.15, back width 0.21. EB recessed behind TA; EMB relatively short (figs. 134, 148, 149). Leg spination: metatarsi: II v2-1p-0; IV r1-1-2.

FEMALE: Total length 5.35 ± 1.29 . Carapace 2.31 ± 0.22 long, 1.70 ± 0.15 wide. Femur II 1.30 ± 0.13 long. Eye sizes and interdistances: AME 0.05, ALE 0.07, PME 0.06, PLE 0.08; AME–AME 0.05, AME–ALE 0.01, PME–PME 0.06, PME–PLE 0.07, ALE–PLE 0.07. MOQ length 0.21, front width 0.15, back width 0.18. LEM widely separated posteriorly; MED with transversely oriented enlargements (figs. 135, 150, 151). Leg spination: femur IV p0-0-1; metatarsi: II v2-1p-0; III r1-2-2.

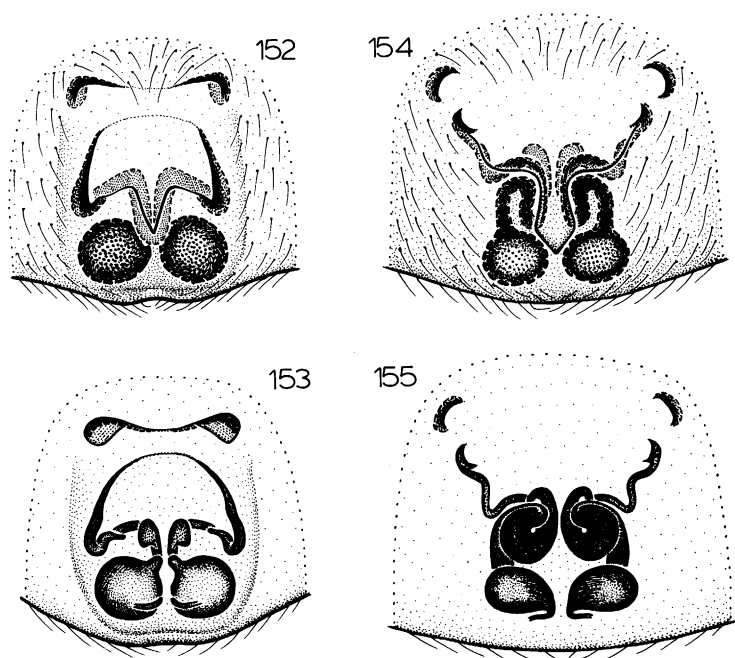
OTHER MATERIAL EXAMINED: UNITED STATES: **California:** *Humboldt Co.:* 5 mi. S Pepperwood, Apr. 6, 1960 (W. J. Gertsch, W. Ivie, R. Schrammel), 1 ♀. *Marin Co.:* 1 mi. S Inverness, Dec. 25, 1960, Berlese, Bishop pine duff (C. W. O'Brien, UCB), 1 ♀. *Mendocino Co.:* Anchor Bay, Sept. 12, 1961 (W. J. Gertsch, W. Ivie), 1 ♀; Inglenook Fen, 4 mi. N Ft. Bragg, July 12–Aug. 1973–1975, elevation 30–50 feet, fen area (C. E. Griswold, R. R. Jackson, E. I. Schlinger, UCB, AMNH), 5 ♂, Jan. 1975 (R. R. Jackson, UCB), 4 ♀, Apr. 30, 1973, elevation 30–50 feet, dune area (E. I. Schlinger, UCB), 1 ♀, Aug. 11–Sept. 1974, in nest of *Phidippus johnsoni* with egg shells (R. R. Jackson, UCB), 2 ♀.

DISTRIBUTION: Known only from Humboldt to Marin counties, California (map 13).

Zelotes cayucos, new species

Figures 152, 153; Map 13

TYPE: Female holotype from an elevation of 300 feet at Cayucos, San Luis Obispo County, California (November 15, 1939; O. Bryant), deposited in CAS.



FIGS. 152–155. 152, 153. *Zelotes cayucos*, new species. 154, 155. *Z. mayanus* Chamberlin and Ivie. 152, 154. Epigynum, ventral view. 153, 155. Epigynum, dorsal view.

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

DIAGNOSIS: *Zelotes cayucos* is a distinctive species easily recognized by the small, posteriorly reflexed expansions of the MED (fig. 153).

MALE: Unknown.

FEMALE: Total length 5.02. Carapace 2.07 long, 1.48 wide. Femur II 1.22 long. Eye sizes and interdistances: AME 0.05, ALE 0.07, PME 0.07, PLE 0.07; AME–AME 0.05, AME–ALE 0.01, PME–PME 0.04, PME–PLE 0.06, ALE–PLE 0.07. MOQ length 0.21, front width 0.15, back width 0.18. LEM widely separated, almost connected anteriorly; MED with small enlargements (figs. 152, 153). Leg spination: femur IV p0-0-1; metatarsus I v0-0-0.

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Known only from San Luis Obispo County, California (map 13).

***Zelotes cruz*, new species**

Figures 139, 156–159; Map 13

TYPES: Male holotype and female paratype from Santa Cruz Island, Santa Barbara

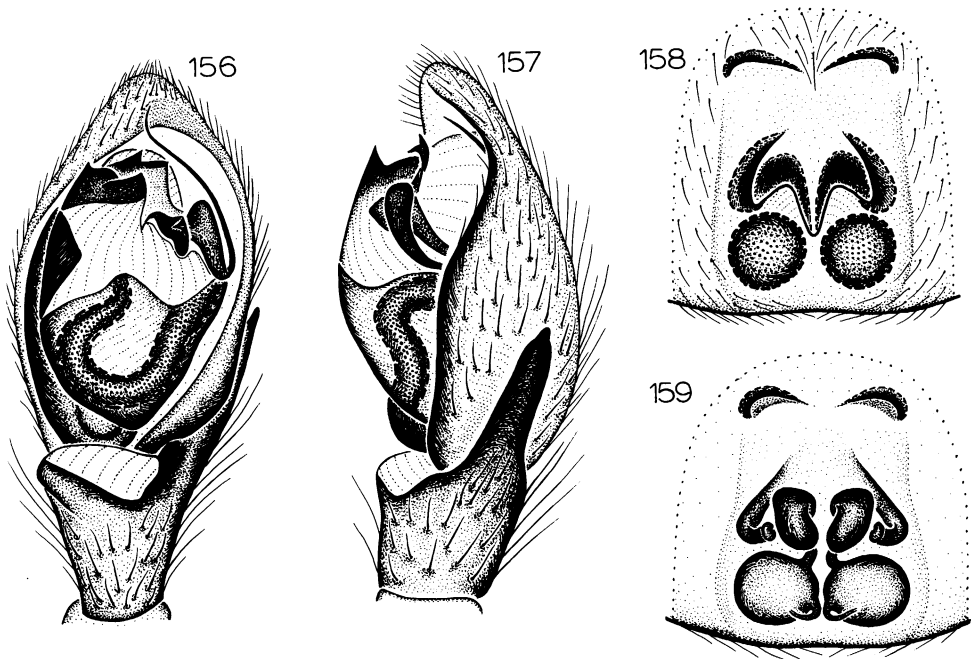
County, California (male, collected August 18, 1968, matured November 2, 1968, M. E. Thompson; female, April 1913, R. V. Chamberlin), deposited in AMNH (male courtesy of Mr. Thompson).

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

DIAGNOSIS: *Zelotes cruz* is a distinctive species easily recognized by the high EB and long, sinuous EMB (fig. 156) of males and the large, sinuous enlargements of the MED (fig. 159) of females.

MALE: Total length 4.82. Carapace 2.23 long, 1.64 wide. Femur II 1.30 long. Eye sizes and interdistances: AME 0.05, ALE 0.08, PME 0.07, PLE 0.07; AME–AME 0.07, AME–ALE 0.02, PME–PME 0.05, PME–PLE 0.06, ALE–PLE 0.08. MOQ length 0.22, front width 0.17, back width 0.19. Prolateral extension of EB short; EP bifid; EMB whip-like (figs. 156, 157). Leg spination: femur IV p0-0-1; tibia IV p1-0-1; metatarsus I v0-0-0.

FEMALE: Total length 5.11–8.62. Carapace 2.32–3.60 long, 1.69–2.76 wide. Femur II 1.31–2.15 long. Eye sizes and interdistances: AME 0.05, ALE 0.07, PME 0.07, PLE 0.06;



FIGS. 156–159. *Zelotes cruz*, new species. 156. Palp, ventral view. 157. Palp, retrolateral view. 158. Epigynum, ventral view. 159. Epigynum, dorsal view.

AME–AME 0.04, AME–ALE 0.01, PME–PME 0.05, PME–PLE 0.05, ALE–PLE 0.08. MOQ length 0.24, front width 0.14, back width 0.19. LEM wide; MED with bulky, posteriorly lobe-like enlargements (figs. 139, 158, 159). Leg spination: femur IV p0-0-1, r0-0-1; metatarsus I v0-0-0.

OTHER MATERIAL EXAMINED: UNITED STATES: **California:** *Santa Barbara Co.:* Central Valley, 3 mi. W Stanton Ranch, Santa Cruz Island, Feb. 8, 1971, pine duff (J. D. Pinto, UCR), 1 ♀; *Santa Barbara Island*, Sept. 22, 1978 (S. Miller, SBM), 1 ♀. *Ventura Co.:* Anacapa Island, Apr. 11, 1968 (M. E. Thompson, MET, AMNH), 4 ♀.

DISTRIBUTION: Known only from the Channel Islands of California (map 13).

THE *gynethus* SUBGROUP

DIAGNOSIS: The *gynethus* subgroup (component 27, fig. 160) contains those species in which males have a translucent flange on the embolus (figs. 161, 169, 173, 177, 185) and an elongated retrolateral tibial apophysis (figs. 162, 170, 174, 178, 186) and females have

median epigynal ducts that are heavily sclerotized posteriorly but greatly expanded and unsclerotized anteriorly (figs. 164, 172, 176, 180, 188).

INTRARELATIONSHIPS: The five known species fall into two sets. *Zelotes discens*, *Z. anthereus*, and *Z. griswoldi* are united (com-

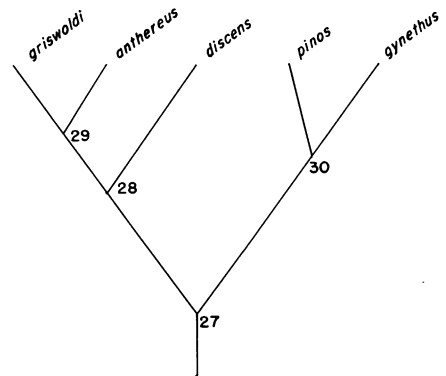
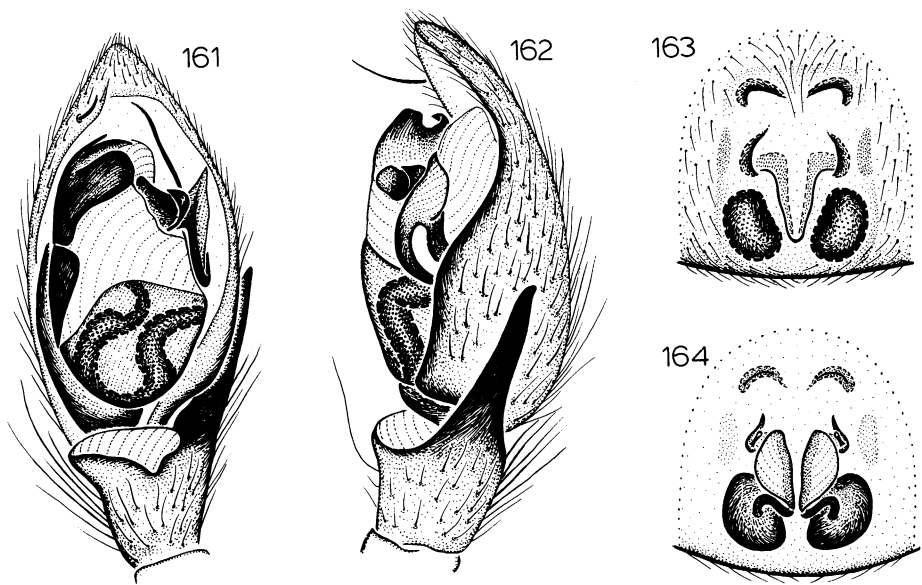


FIG. 160. Cladogram of species of the *gynethus* subgroup. Characters defining the numbered components are discussed in text.



FIGS. 161–164. *Zelotes gynethus* Chamberlin. 161. Palp, ventral view. 162. Palp, retrolateral view. 163. Epigynum, ventral view. 164. Epigynum, dorsal view.

ponent 28, fig. 160) by having the anterior expansions of the median epigynal ducts of females widened, being fully as wide as the spermathecae (figs. 176, 180, 188). Within that group, *Z. anthereus* and *Z. griswoldi* are united (component 29, fig. 160) by having the embolus recurved (figs. 177, 185) in males and the anterior expansions of the median epigynal ducts coiled (figs. 180, 188) in females. The remaining species are united (component 30, fig. 160) by having a prong protruding distally from the embolus (figs. 161, 169) in males and a greatly elongated epigynum (figs. 163, 171) in females.

KEY TO SPECIES

- 1. Males with a prong protruding distally from EMB (figs. 161, 169); anterior expansions of MED narrower than SP (figs. 164, 172) .. 2
Males without such a prong (figs. 173, 177, 185); anterior expansions of MED as wide as SP or wider (figs. 176, 180, 188) 3
- 2. Prong on EMB relatively long (fig. 169); expansions of MED not overlapping SP (fig. 172) *pinos*
Prong on EMB relatively short (fig. 161); expansions of MED overlapping SP (fig. 164) *gynethus*

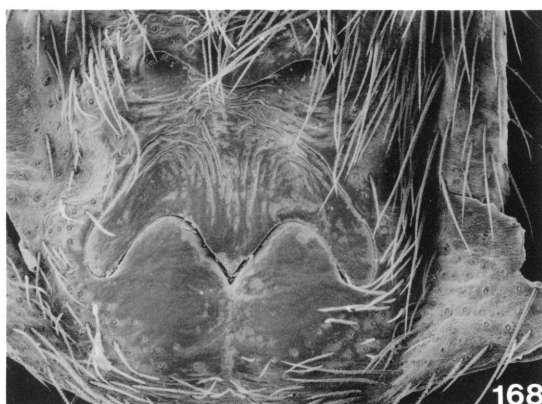
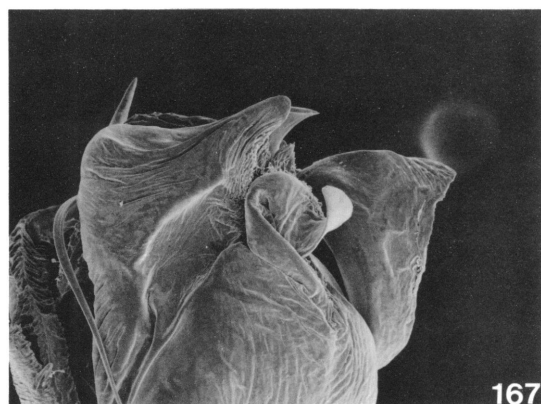
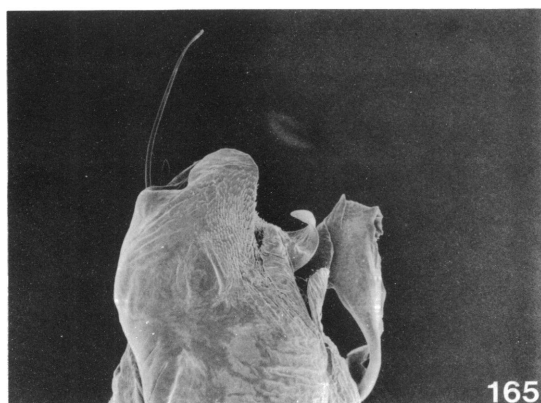
- 3. EMB recurved (figs. 177, 185); epigynum widest anteriorly (figs. 179, 187) 4
EMB not recurved (fig. 173); epigynum widest posteriorly (fig. 176) *discens*
- 4. EMB relatively large (figs. 177, 178); expansions of MED reaching almost to AEM (fig. 180) *anthereus*
EMB relatively small (figs. 185, 186); expansions of MED not reaching almost to AEM (fig. 188) *griswoldi*

Zelotes gynethus Chamberlin
Figures 161–166; Map 14

Zelotes gynethus Chamberlin, 1919a, p. 7, pl. 3, fig. 1 (female holotype from Claremont, Los Angeles County, California, in MCZ, examined). Roewer, 1954, p. 470. Bonnet, 1959, p. 4926. Ubick and Roth, 1973, p. 8.

DIAGNOSIS: *Zelotes gynethus* seems closest to *Z. pinos* but can be distinguished by the shorter prong on the EMB (figs. 161, 162) of males and the more posteriorly situated expansions of the MED (fig. 164) of females.

MALE: Total length 5.37 ± 0.46 . Carapace 2.48 ± 0.25 long, 1.81 ± 0.22 wide, Femur II 1.47 ± 0.15 long. Eye sizes and interdistances: AME 0.05, ALE 0.07, PME 0.08, PLE 0.07; AME–AME 0.06, AME–ALE 0.01,



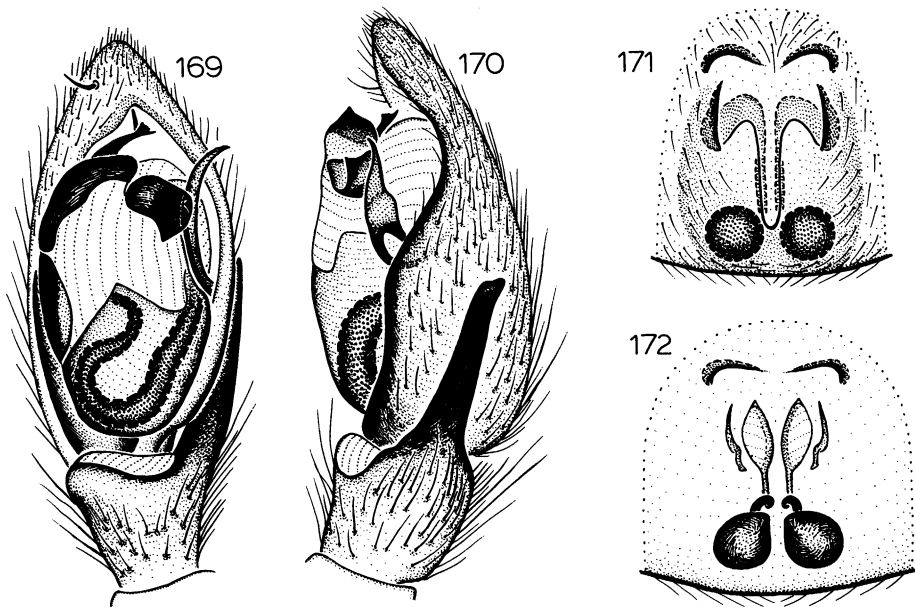
FIGS. 165–168. 165, 166. *Zelotes gynethus* Chamberlin. 167, 168. *Z. discens* Chamberlin. 165, 167. Palp, ventral view, 140 $\times$. 166, 168. Epigynum, ventral view, 120 $\times$.

PME–PME 0.05, PME–PLE 0.06, ALE–PLE 0.09. MOQ length 0.25, front width 0.15, back width 0.21. EB with short prolateral extension; EMB with short distal prong (figs. 161, 162, 165). Leg spination: tibia III r1-1-1; metatarsus I v0-0-0.

FEMALE: Total length 5.86 ± 0.66 . Carapace 2.56 ± 0.24 long, 1.88 ± 0.14 wide. Femur II 1.46 ± 0.12 long. Eye sizes and interdistances: AME 0.05, ALE 0.09, PME 0.08, PLE 0.08; AME–AME 0.09, AME–ALE 0.02, PME–PME 0.05, PME–PLE 0.08, ALE–PLE 0.07. MOQ length 0.24, front width 0.19, back width 0.22. Anterior expansions of MED covering anterior part of SP (figs. 163, 164, 166). Leg spination: femur IV p0-0-1; metatarsus I v0-0-0.

MATERIAL EXAMINED: UNITED STATES: **California:** *Los Angeles Co.:* Claremont, 1918 (N. A. Hilton, MCZ), 6 ♀ (including type),

Feb. 14, 1975 (M. E. Thompson, MET), 2 ♀; Eaton Canyon, 1913 (R. V. Chamberlin), 1 ♀; Eaton Canyon Park, Dec. 3, 1969 (P. H. Sullivan, MET), 1 ♂, Dec. 12–Apr. 8, 1967–1968 (M. E. Thompson, MET), 6 ♀; Evey Canyon, Mt. Baldy Road, May 1–12, 1969, elevation 2000 feet (D. E. Bixler, DEB), 1 ♀; Hermosa Beach, Mar. 18, 1941 (W. Ivie), 1 ♀; Live Oak Creek Canyon, N Pomona, Oct. 20, 1956 (V. Roth), 2 ♀; Los Angeles, 1 ♀; Pomona, Sept. 23, 1956 (V. Roth), 2 ♀; Redondo Beach, Mar. 18, 1941 (W. Ivie), 1 ♀; Whittier Narrows Recreation Area, Feb. 23–25, 1972 (M. E. Thompson, MET), 1 ♂, 1 ♀. *Orange Co.:* Laguna Beach, Dec. 28, 1932 (W. Ivie), 1 ♀. *Riverside Co.:* Lake Fulmor, 4 ♀, (MCZ), 3 ♀, Apr.–Aug. 1969, pitfall (D. Hagstrum, UCR), 1 ♀; 2.5 mi. S Murrieta, Mar. 16–May 2, 1977–1978, elevation 1200 feet, under rocks (W. R. Icenogle, WRI), 3 ♀; Riverside



FIGS. 169–172. *Zelotes pinos*, new species. 169. Palp, ventral view. 170. Palp, retrolateral view. 171. Epigynum, ventral view. 172. Epigynum, dorsal view.

end of Jackrabbit Trail to Beaumont, Nov. 1925, in hollow yucca stem (J. C. Chamberlin), 1 ♀; Winchester, Oct. 5–Dec. 29, 1967–1979, elevation 1500 feet, pitfall, on driveway, on barren ground (W. R. Icenogle, WRI, AMNH), 6 ♂, Jan 24–Apr. 3, 1967–1979, pitfall, under trash (W. R. Icenogle, W. Rapp, WRI, AMNH), 3 ♀. *San Bernardino Co.*: Alta Loma, Apr. 1–May 14, 1969–1972, chaparral (D. E. Bixler, DEB), 5 ♀; Fontana, July 16, 1942 (E. I. Schlinger), 1 ♀; Forest Falls, San Bernardino Mountains, Oct. 19, 1968, elevation 5500 feet (D. E. Bixler, DEB), 1 ♂; Lytle Creek Canyon, Oct. 4, 1971 (D. E. Bixler, DEB), 1 ♂; San Antonio Canyon, May 28, 1969, elevation 2000 feet, coastal sage, oak woodland (D. E. Bixler, DEB), 2 ♀. *San Diego Co.*: Alpine, Feb. 22, 1968 (M. U. Evans, BJK), 1 ♀; Del Mar, Dec. 1957–Jan. 1958 (J. A. Comstock), 1 ♀; Pine Valley, Sept. 13, 1941 (W. Ivie), 1 ♀; Point Loma, Apr. 21, 1977 (S. C. Johnson, SCJ), 1 ♀; San Diego, Feb.–Nov. 1970–1972, pitfalls (B. J. Kaston, BJK, AMNH), 40 ♂, 33 ♀; Wildcat Canyon, Apr. 7, 1963, pitfall (S. C. Williams), 1 ♀.

DISTRIBUTION: Known only from southwestern California (map 14).

Zelotes pinos, new species

Figures 169–172; Map 14

TYPE: Male holotype from an elevation of 8800 feet on the summit of Mt. Piños, Kern County, California (August 15, 1980; C. E. Griswold), and female paratype from an elevation of 7500 feet at McGill Campground, Mt. Piños, Kern County, California (May 7, 1980; C. E. Griswold), deposited in UCB, on permanent loan to CAS.

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

DIAGNOSIS: *Zelotes pinos* seems closest to *Z. gynethus* but can be distinguished by the longer prong on the EMB (figs. 169, 170) of males and the more anteriorly situated expansions of the MED (fig. 172) of females.

MALE: Total length 5.11. Carapace 2.34 long, 1.81 wide. Femur II 1.46 long. Eye sizes and interdistances: AME 0.06, ALE 0.09, PME 0.08, PLE 0.08; AME–AME 0.06, AME–ALE 0.02, PME–PME 0.06, PME–PLE 0.08, ALE–PLE 0.07. MOQ length 0.24, front width 0.18, back width 0.22. EMB with long, sinuous distal prong (figs. 169, 170). Leg spination: metatarsus I v0-0-0.

FEMALE: Total length 4.71–10.91. Carapace 2.30–3.24 long, 1.69–2.40 wide. Femur II 1.32–1.81 long. Eye sizes and interdistances: AME 0.05, ALE 0.09, PME 0.07, PLE 0.08; AME–AME 0.08, AME–ALE 0.02, PME–PME 0.06, PME–PLE 0.08, ALE–PLE 0.09. MOQ length 0.27, front width 0.18, back width 0.20. Expansions of MED long, anterior to SP (figs. 171, 172). Leg spination as in male.

OTHER MATERIAL EXAMINED: UNITED STATES: California: *Los Angeles Co.:* Old Ridge Route, 13 mi. N Castaic, Oct. 10, 1964–Jan. 30, 1965, elevation 1000 m., chamise chaparral (L. Pinter, MCZ), 2 ♀; 8 mi. S Palmdale on Highway N3, Mar. 23, 1970 (M. E. Thompson, MET), 1 ♀; San Gabriel Mountains, Mar. 1953 (R. X. Schick), 1 ♀. *Ventura Co.:* Rose Valley Falls, 18 mi. NE Ojai, May 9, 1980, elevation 3400 feet (C. E. Griswold, UCB), 1 ♀.

DISTRIBUTION: Known only from Kern, Ventura, and northern Los Angeles counties, California (map 14).

Zelotes discens Chamberlin

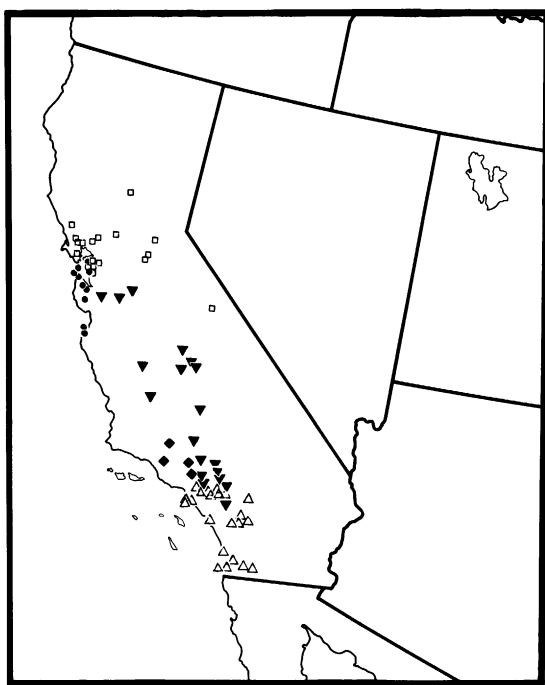
Figures 167, 168, 173–176; Map 14

Zelotes discens Chamberlin, 1922, p. 164 (female holotype from Stanford, Santa Clara County, California, in MCZ, examined). Roewer, 1954, p. 470. Bonnet, 1959, p. 4920. Ubick and Roth, 1973, p. 8.

Zelotes montereus Chamberlin, 1922, p. 166 (female holotype from Pacific Grove, Monterey County, California, in MCZ, examined). Roewer, 1954, p. 471. Bonnet, 1959, p. 4935. Ubick and Roth, 1973, p. 8. **NEW SYNONYMY.**

DIAGNOSIS: *Zelotes discens* is a distinctive species easily recognized by the wide TA, EB, and EMB (fig. 173) of males and the posteriorly widened epigynum (fig. 175) of females.

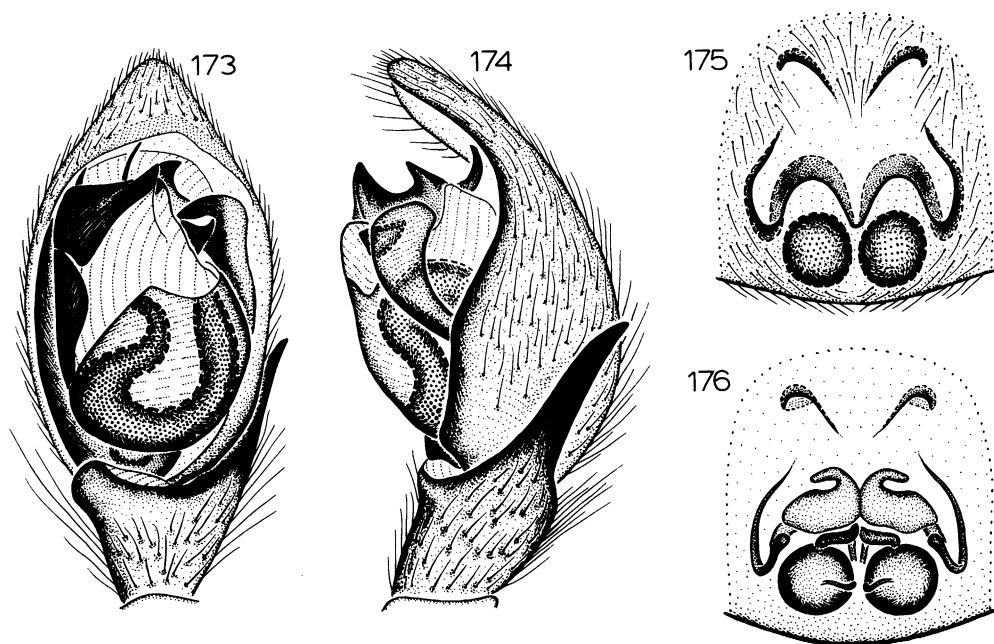
MALE: Total length 4.25–7.07. Carapace 2.00–2.99 long, 1.47–2.24 wide. Femur II 1.21–1.84 long. Eye sizes and interdistances: AME 0.06, ALE 0.09, PME 0.09, PLE 0.09; AME–AME 0.10, AME–ALE 0.01, PME–PME 0.07, PME–PLE 0.08, ALE–PLE 0.09. MOQ length 0.30, front width 0.22, back width 0.25. TA and EB wide, flat; EMB greatly widened at base (figs. 167, 173, 174). Leg spination: femur IV p0-0-1; metatarsi: I v0-0-0; II v2-1p-0.



MAP 14. Western North America, showing distribution of *Zelotes gynethus* (upright triangles), *Z. pinos* (diamonds), *Z. discens* (circles), *Z. anthereus* (squares), and *Z. griswoldi* (inverted triangles).

FEMALE: Total length 7.23 ± 1.12 . Carapace 3.08 ± 0.34 long, 2.28 ± 0.24 wide. Femur II 1.76 ± 0.21 long. Eye sizes and interdistances: AME 0.07, ALE 0.10, PME 0.11, PLE 0.10; AME–AME 0.08, AME–ALE 0.01, PME–PME 0.04, PME–PLE 0.09, ALE–PLE 0.10. MOQ length 0.30, front width 0.22, back width 0.26. Epigynum widened posteriorly; expansions of MED with narrow anterior lobes (figs. 168, 175, 176). Leg spination: femur IV p0-0-1; tibia III r1-1-1; metatarsus II v2-1p-0.

MATERIAL EXAMINED: UNITED STATES: California: *Alameda Co.:* Piedmont, Apr. 4, 1907 (J. C. Bradley), 1 ♀. *Contra Costa Co.:* Tilden Park, Aug. 15, 1980 (J. B. Fraser), 1 ♂, June 20, 1980 (J. B. Fraser), 2 ♀. *Monterey Co.:* Carmel, June 28, 1953 (B. Malkin), 1 ♀; Hastings Natural History Reservation, Robles del Rio, Jan. 19–Apr. 8, 1941–1946, under rocks (Linsdale), 7 ♀, Oct. 2, 1938 (W. M. Pearce), 1 ♂; Pacific Grove, Mar. 1913 (R.



FIGS. 173–176. *Zelotes discens* Chamberlin. 173. Palp, ventral view. 174. Palp, retrolateral view. 175. Epigynum, ventral view. 176. Epigynum, dorsal view.

V. Chamberlin, MCZ), 2 ♀ (including type), Aug. 15–17, 1931 (W. Ivie), 2 ♂, 2 ♀; Presidio of Monterey, Aug. 5, 1972 (R. Johnson, Jr., MCZ), 1 ♂, 1 ♀. *San Francisco Co.*: California Academy of Sciences, Jan. 27, 1965, on desk at night (P. H. Arnaud, Jr., CAS), 1 ♀; Fort Funston, Mar. 4, 1979, under *Eucalyptus* bark (D. Ubick, DU), 1 ♀; Fort Mason, May 8, 1972 (D. Ubick, DU), 1 ♀; Golden Gate Park, May 3, 1981, on ground (D. Ubick, DU), 1 ♀; San Francisco, Apr. 9, 1935 (R. F. Sternitzky), 2 ♀. *San Mateo Co.*: Atherton, Dec. 11, 1927 (R. V. Chamberlin), 1 ♀, Dec. 1929 (J. C. Chamberlin), 1 ♂, 1 ♀; San Bruno Mountain, Mar. 26–May 6, 1979, under rocks (D. Ubick, DU), 2 ♀; Thornton Beach, June 30, 1980, under rock (D. Ubick), 1 ♀. *Santa Clara Co.*: Stanford University, 1909 (R. V. Chamberlin, MCZ), 2 ♀ (including type), winter 1920–1921, under bark (J. C. Chamberlin, MCZ), 1 ♀, 1928 (J. C. Chamberlin), 1 ♀, Sept. 24, 1951 (P. H. Arnaud, Jr.), 2 ♂. *Santa Cruz Co.*: Castle Rock State Park, July 3, 1976 (C. E. Griswold, UCB), 2 ♀.

DISTRIBUTION: Known only from Contra Costa to Monterey counties, California (map 14).

SYNONYMY: We have been unable to separate populations of *Z. monterei* by the differences in the AEM cited by Chamberlin (1922), which are subject to individual variation in virtually all species of *Zelotes*.

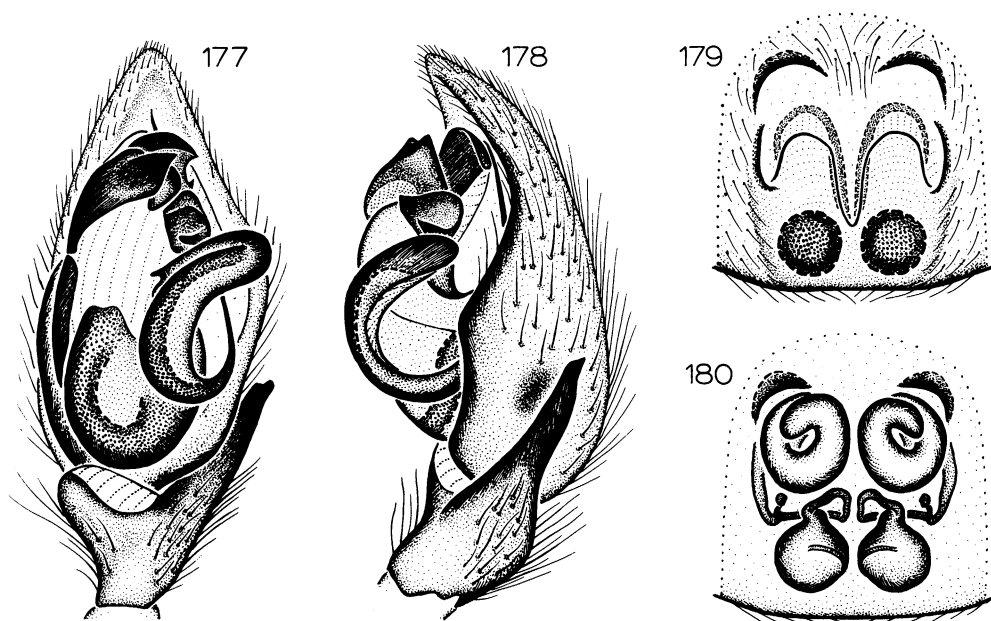
Zelotes anthereus Chamberlin

Figures 177–182; Map 14

Zelotes anthereus Chamberlin, 1936b, p. 8, figs. 37–39 (male holotype from Berkeley, Alameda County, California, in AMNH, examined). Roewer, 1954, p. 470. Bonnet, 1959, p. 4912. Ubick and Roth, 1973, p. 8.

DIAGNOSIS: *Zelotes anthereus* seems closest to *Z. griswoldi* but can be distinguished by the larger EMB (figs. 177, 178) of males and the wider expansions of the MED (fig. 180) of females.

MALE: Total length 4.75–7.67. Carapace 2.27–4.03 long, 1.66–2.89 wide. Femur II 1.45–2.57 long. Eye sizes and interdistances: AME 0.07, ALE 0.11, PME 0.10, PLE 0.11; AME–AME 0.09, AME–ALE 0.02, PME–PME 0.10, PME–PLE 0.09, ALE–PLE 0.10. MOQ length 0.35, front width 0.23, back



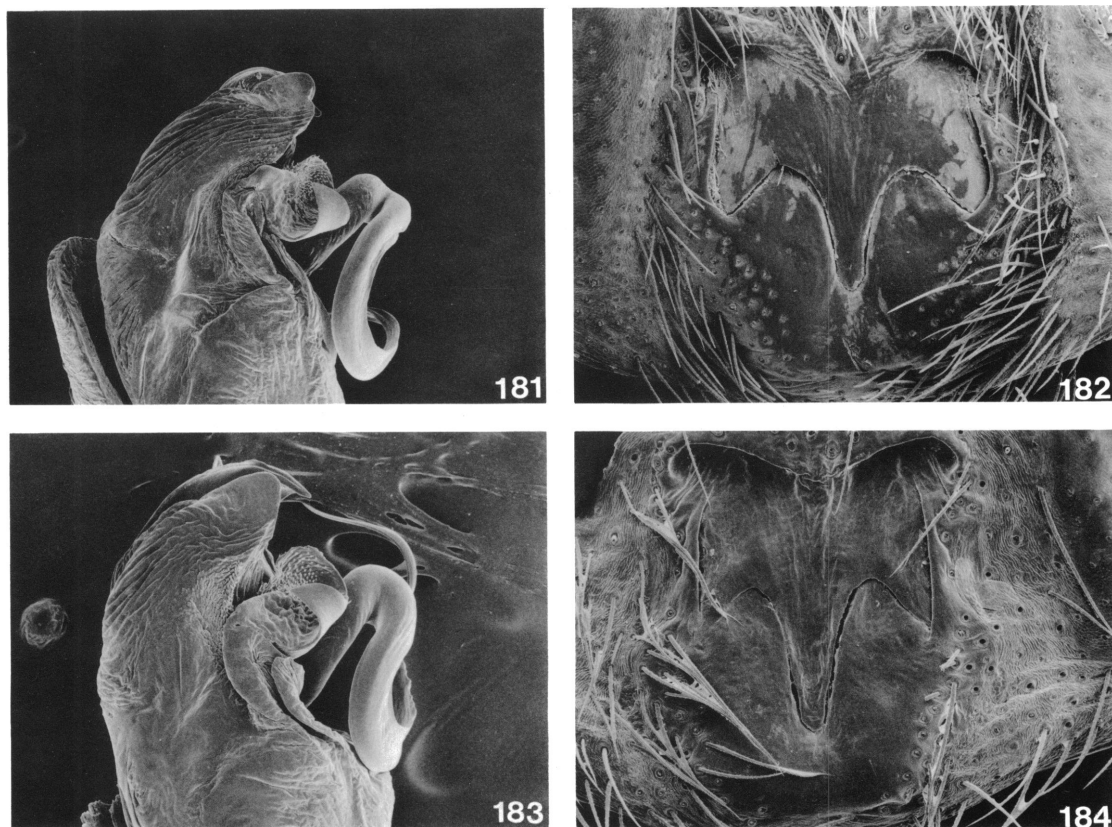
FIGS. 177–180. *Zelotes anthereus* Chamberlin. 177. Palp, ventral view. 178. Palp, retrolateral view. 179. Epigynum, ventral view. 180. Epigynum, dorsal view.

width 0.30. EMB recurved, large (figs. 177, 178, 181). Leg spination: tibiae: III r1-1-1; IV r1-1-0; metatarsus I v0-0-0.

FEMALE: Total length 6.69 ± 1.13 . Carapace 2.96 ± 0.37 long, 2.20 ± 0.32 wide. Femur II 1.71 ± 0.23 long. Eye sizes and interdistances: AME 0.06, ALE 0.10, PME 0.09, PLE 0.09; AME–AME 0.07, AME–ALE 0.01, PME–PME 0.06, PME–PLE 0.08, ALE–PLE 0.08. MOQ length 0.27, front width 0.19, back width 0.24. Expansions of MED occupying most of anterior half of epigynum (figs. 179, 180, 182). Leg spination: tibia III r1-1-1; metatarsus I v0-0-0.

MATERIAL EXAMINED: UNITED STATES: California: *Alameda Co.:* Berkeley, Dec. 1919, 3 ♂, 3 ♀ (including types); Castro Valley, Sept. 9–Oct. 9, 1938 (W. M. Pearce, UCR, AMNH), 1 ♂, 1 ♀; Corral Hollow, Mar. 23, 1945 (B. Malkin, D. G. Kelley), 1 ♀. *Amador Co.:* Chrome Cave area, Pardee Reserve, Jan. 24, 1981, under limestone rocks (D. Ubick, DU), 1 ♀; 6 mi. W Jackson, Mar. 27, 1941 (S. and D. Mulaik), 2 ♀; Ranger Station, Pardee Reserve, Jan. 24, 1981, under rock (D. Ubick, DU), 1 ♀. *Butte Co.:* Feather River Canyon, 10 mi. E Oroville, Apr. 12, 1960

(W. J. Gertsch, W. Ivie, R. Schrammel), 1 ♀. *Contra Costa Co.:* Briones Reservoir, July 4, 1980 (J. B. Fraser), 1 ♀, Nov. 8, 1980 (J. B. Fraser), 1 ♂; Clayton, Apr. 3–28, 1940–1941 (W. M. Pearce), 7 ♀; 0.5 mi. W Juniper Campground, Mt. Diablo State Park, Feb. 1973, elevation 2700 feet, in *Phidippus johnsoni* nest (R. R. Jackson, UCB), 1 ♀; Mt. Diablo, Mar. 25, 1947 (B. Malkin, D. G. Kelley), 1 ♂, 1 ♀; Russell Tree Farm, 4 mi. NE Orinda, May 19–26, 1967, pitfall (G. L. Rotramel, UCB), 2 ♀. *El Dorado Co.:* Placerville, Apr. 9, 1960 (W. J. Gertsch, W. Ivie, R. Schrammel), 2 ♀. *Marin Co.:* Manzaneto, Oct. 27 (CUC), 1 ♂, 1 ♀. *Mono Co.:* Mammoth Lakes, June 26, 1941 (W. M. Pearce), 1 ♀. *Napa Co.:* 9 mi. S Monticello, Dec. 28, 1958 (R. O. Schuster), 2 ♀; Napa, Dec. 28, 1959–Feb. 24, 1959, abandoned prune orchard (R. O. Schuster, S. F. Bailey), 9 ♀. *Sonoma Co.:* Guerneville, Apr. 4, 1960 (W. J. Gertsch, W. Ivie, R. Schrammel), 2 ♀; Penngrove, Mar. 1973, under bark (D. Ubick, DU), 1 ♀; 4 mi. S Petaluma, Feb. 11, 1960, on damp bark of fallen oak (J. S. Buckett), 1 ♀; Sonoma, Feb. 5, 1955 (B. Malkin), 1 ♀. *Yolo Co.:* Davis, Nov. 4, 1952 (E. I. Schlenger), 1 ♂, May 13,



FIGS. 181–184. 181, 182. *Zelotes anthereus* Chamberlin. 183, 184. *Z. griswoldi*, new species. 181, 183. Palp, ventral view. 130 $\times$. 182, 184. Epigynum, ventral view, 115 $\times$.

1954 (E. I. Schlinger), 1 ♀, 1960–1961 (W. Miller, MCZ), 1 ♂, 1 ♀.

DISTRIBUTION: Known only from Sonoma to Mono counties, California (map 14).

***Zelotes griswoldi*, new species**

Figures 183–188; Map 14

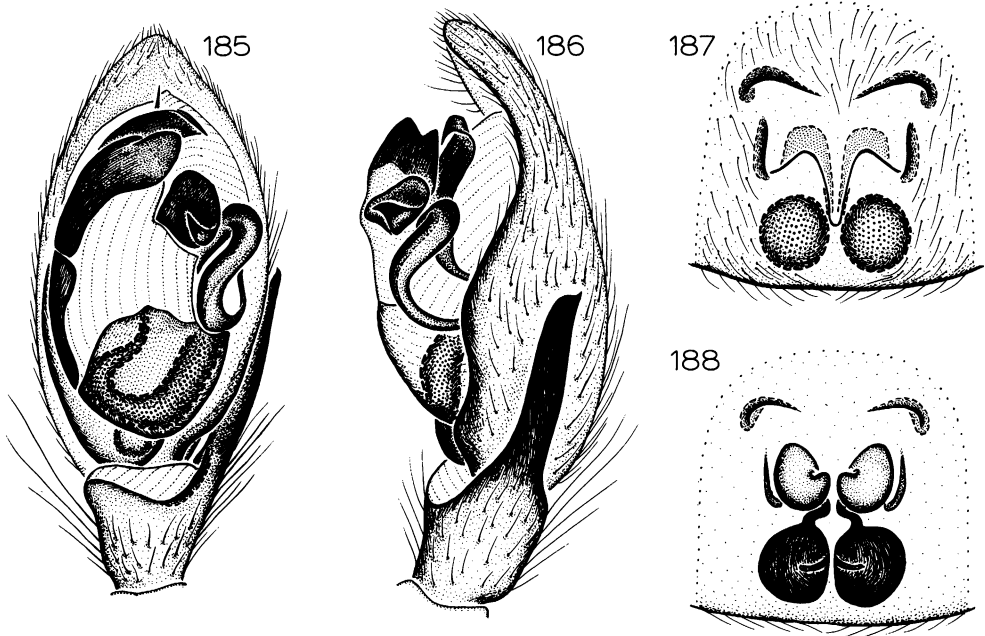
TYPES: Male holotype from an elevation of 6000 feet in Tehachapi Mountain Park, 8 miles southwest of Tehachapi, Kern County, California (August 13, 1980; C. E. Griswold), and female paratype from Del Puerto Canyon, North Fork of Del Puerto Creek, Stanislaus County, California (February 25, 1975; C. E. Griswold), deposited in UCB, on permanent loan to CAS.

ETYMOLOGY: The specific name is a patronym in honor of Mr. Charles E. Griswold, collector of the types and many other interesting Californian *Zelotes*.

DIAGNOSIS: *Zelotes griswoldi* seems closest to *Z. anthereus* but can be distinguished by the smaller EMB (figs. 185, 186) of males and the narrower expansions of the MED (fig. 188) of females.

MALE: Total length 4.36–6.62. Carapace 2.00–2.65 long, 1.44–1.94 wide. Femur II 1.19–1.64 long. Eye sizes and interdistances: AME 0.04, ALE 0.07, PME 0.07, PLE 0.08; AME–AME 0.07, AME–ALE 0.03, PME–PME 0.07, PME–PLE 0.05, ALE–PLE 0.07. MOQ length 0.22, front width 0.15, back width 0.21. EMB recurved, small (figs. 183, 185, 186). Leg spination: metatarsi: I v0-0-0; IV v2-2-1p.

FEMALE: Total length 8.00 ± 2.45 . Carapace 2.74 ± 0.35 long, 2.00 ± 0.24 wide. Femur II 1.53 ± 0.19 long. Eye sizes and interdistances: AME 0.05, ALE 0.10, PME 0.09, PLE 0.10; AME–AME 0.09, AME–ALE



FIGS. 185–188. *Zeletes griswoldi*, new species. 185. Palp, ventral view. 186. Palp, retrolateral view. 187. Epigynum, ventral view. 188. Epigynum, dorsal view.

0.03, PME–PME 0.07, PME–PLE 0.09, ALE–PLE 0.09. MOQ length 0.28, front width 0.19, back width 0.25. Expansions of MED far from AEM (figs. 184, 187, 188). Leg spination: femur IV p0-0-1.

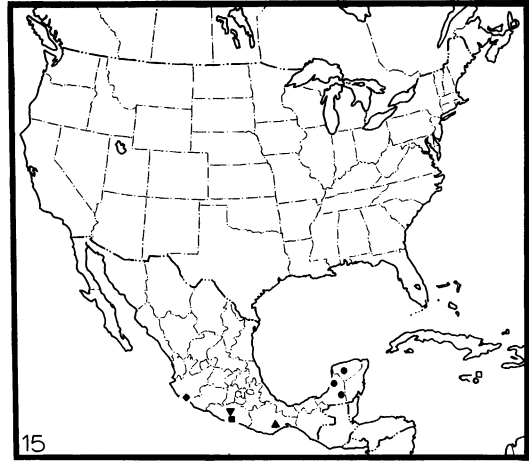
OTHER MATERIAL EXAMINED: UNITED STATES: **California:** *Fresno Co.:* Coalinga, Oct. 16, 1949 (W. M. Pearce), 1 ♀; Dalton Creek, May 1920, elevation 4800 feet (Dietrich, CUC), 1 ♀. *Kern Co.:* near Devil's Den, Aug. 13, 1969, under burlap bag (M. J. Moody, C. S. Fenwick, CDFA), 1 ♂. *Los Angeles Co.:* Big Tujunga Canyon, San Gabriel Mountains, Jan. 1953 (R. X. Schick), 1 ♀; Coldbrook Ranger Station, San Gabriel Canyon, June 27, 1964, elevation 1000 m., manzanita chaparral (L. Pinter, MCZ), 1 ♀; Eaton Canyon Park, Mar. 8, 1968 (M. E. Thompson, MET), 1 ♀; Lovejoy Lake, Mohave Desert, Feb. 1953 (R. X. Schick), 1 ♀; Mt. Baden Powell, San Gabriel Mountains, July 30, 1976 (M. E. Thompson, MET, AMNH), 4 ♂; Palmdale, May 2, 1960 (W. J. Gertsch, W. Ivie, R. Schrammel), 1 ♀; San Gabriel Mountains, Apr. 1953 (R. X. Schick), 1 ♀; Table Mountain, near Big Pines, June 1,

1957, montane forest (R. X. Schick), 1 ♀. *Riverside Co.:* Box Springs Park, Riverside, Dec. 29, 1976 (B. Carroll, UCR), 1 ♀. *San Bernardino Co.:* Cajon Pass, Apr. 15, 1960, soil under juniper (U. Nur), 1 ♀. *Santa Clara Co.:* Smith Creek Ranger Station, Mt. Hamilton, Apr. 23, 1960 (P. H. Arnaud, Jr., CAS), 1 ♀. *Stanislaus Co.:* 1 mi. W end of Beckwith Road, Modesto, Dec. 28, 1976, river bottom in oak forest (J. Holmquist, SCJ), 1 ♀; Frank Raines Park, 18 mi. W Patterson, May 21–Apr. 4, 1970, elevation 1200 feet (S. C. and C. F. Williams, P. H. Arnaud, Jr., T. Gable, CAS), 2 ♀. *Tulare Co.:* Lemoncove, Mar. 5, 1957, under stones, grassy hillside (H. B. Leech, CAS), 1 ♀; Visalia, Mar. 19–Apr. 5, 1975–1978, under box, board (M. J. Moody, CDFA), 2 ♀; 9 mi. N Woodlake, Mar. 22, 1941 (S. and D. Mulaik), 1 ♀.

DISTRIBUTION: Central California (map 14).

THE *mayanus* SUBGROUP

DIAGNOSIS: The *mayanus* subgroup contains those species in which males have a high



MAP 15. North America, showing distribution of *Zelotes mayanus* (closed circles), *Z. acapulcoanus* (closed square), *Z. bajo* (inverted triangle), *Z. ivieorum* (upright triangle), *Z. miramar* (diamond), *Z. jamaicensis* (open circle), and *Z. hardwar* (open square).

embolar base bearing a long embolar projection (figs. 195, 271) and females resemble those of the *jamaicensis* subgroup in having enormously elongated epigynal ducts but differ in retaining the typical *Zelotes* epigynal morphology, with paired anterior, lateral, and posterior margins (figs. 154, 189, 191, 193).

INTRARELATIONSHIPS: With most of the species known from only one sex, a discussion of their interrelationships is premature.

KEY TO SPECIES

- 1. Males (those of *Z. acapulcoanus*, *Z. bajo*, and *Z. ivieorum* unknown) 2
- Females (those of *Z. miramar* unknown) .. 3
- 2. EP relatively narrow (figs. 195, 196)
 *miramar*
- EP relatively wide (figs. 271, 272)
 *mayanus*
- 3. Epigynal ducts with bulbous enlargements (figs. 155, 192, 194) 4
- Epigynal ducts without bulbous enlargements (fig. 190) *acapulcoanus*
- 4. PEM near AEM (fig. 154) *mayanus*
- PEM far from AEM (figs. 191, 193) 5
- 5. MED near AEM (figs. 191, 192) *bajo*
- MED far from AEM (figs. 193, 194)
 *ivieorum*

Zelotes mayanus Chamberlin and Ivie
Figures 154, 155, 271, 272; Map 15

Zelotes mayanus Chamberlin and Ivie, 1938, p. 128, fig. 7 (female holotype from Sabacha Cave, Yucatán, Mexico, in AMNH, examined). Roewer, 1954, p. 469. Bonnet, 1959, p. 4935. Ubick and Roth, 1973, suppl. 3, p. 2.

DIAGNOSIS: *Zelotes mayanus* is a distinctive species easily recognized by the pronglike EP (figs. 271, 272) of males and the anteriorly advanced PEM (fig. 154) of females.

MALE: Total length 2.99. Carapace 1.45 long, 1.13 wide. Femur II 0.83 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.06, PLE 0.06; AME-AME 0.03, AME-ALE 0.01, PME-PME 0.04, PME-PLE 0.03, ALE-PLE 0.04. MOQ length 0.16, front width 0.11, back width 0.16. EP pronglike, protruding ventrally (figs. 271, 272). Leg spination: femur IV p0-0-1, r0-0-1; tibiae: II v1p-1p-0; III v1p-1p-2; IV p1-0-1; metatarsus III v2-0-0.

FEMALE: Total length 2.99-3.40. Carapace 1.22-1.38 long, 0.90-0.97 wide. Femur II 0.70-0.74 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.05, PLE 0.06; AME-AME 0.03, AME-ALE 0.01, PME-PME 0.04, PME-PLE 0.04, ALE-PLE 0.05. MOQ length 0.17, front width 0.11, back width 0.14. AEM widely separated; PEM near AEM (figs. 154, 155). Leg spination: femora: II p0-0-0; IV p0-0-0, r0-0-1; tibia IV p1-0-1; metatarsi: I v0-0-0; II v1p-0-0; III v2-0-0, r1-2-2.

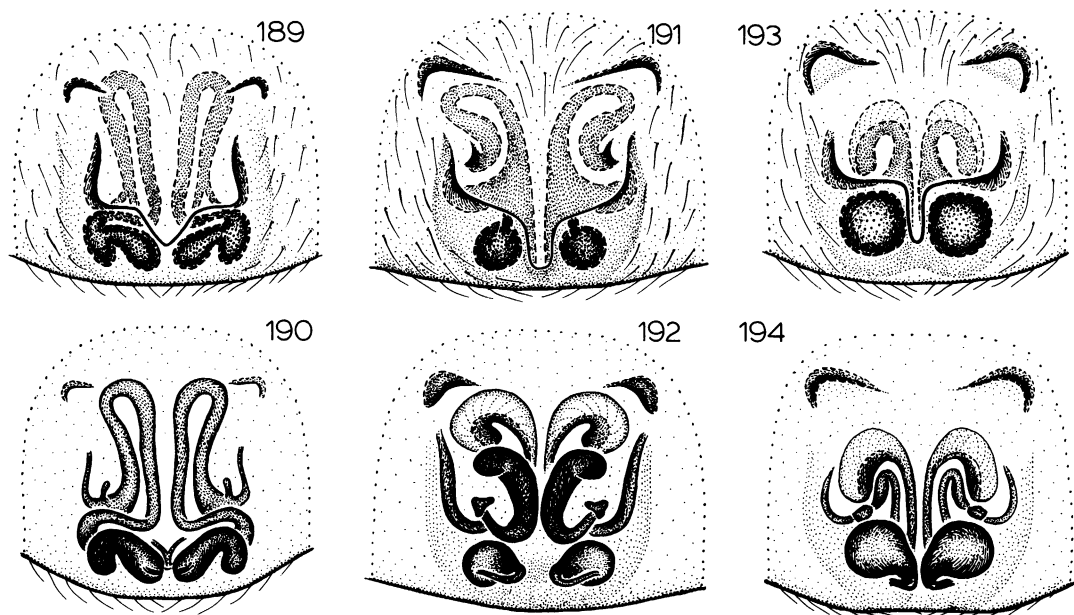
MATERIAL EXAMINED: MEXICO: **Campeche:** Campeche, July 5-6, 1951 (L. J. Stannard), 3 ♀; ruins of Chicanna, Xpujil, Dec. 3, 1974, suction sample (R. B. Waide), 1 ♂. **Yucatán:** Sabacha Cave, Tekax, July 30, 1936 (A. S. Pearse), 1 ♀ (type).

DISTRIBUTION: Known only from the Yucatán peninsula of Mexico (map 15).

Zelotes acapulcoanus Gertsch and Davis
Figures 189, 190; Map 15

Zelotes acapulcoanus Gertsch and Davis, 1940, p. 8, fig. 13 (female holotype from Acapulco, Guerrero, Mexico, in AMNH, examined). Roewer, 1954, p. 467. Ubick and Roth, 1973, suppl. 3, p. 2.

DIAGNOSIS: *Zelotes acapulcoanus* is a dis-



FIGS. 189–194. 189, 190. *Zelotes acapulcoanus* Gertsch and Davis. 191, 192. *Z. bajo*, new species. 193, 194. *Z. ivieorum*, new species. 189, 191, 193. Epigynum, ventral view. 190, 192, 194. Epigynum, dorsal view.

tinctive species easily recognized by having the MED running the entire length of the epigynum (figs. 189, 190).

MALE: Unknown.

FEMALE: Total length 3.65. Carapace 1.43 long, 1.08 wide. Femur II 0.76 long. Eye sizes and interdistances: AME 0.04, ALE 0.06, PME 0.05, PLE 0.06; AME–AME 0.05, AME–ALE 0.01, PME–PME 0.05, PME–PLE 0.05, ALE–PLE 0.05. MOQ length 0.16, front width 0.13, back width 0.15. AEM widely separated; MED long, longitudinal (figs. 189, 190). Leg spination: femur IV p0-0-1, r0-0-1; metatarsus I v0-0-0.

MATERIAL EXAMINED: Only the holotype, collected on June 17, 1936, by L. I. Davis.

DISTRIBUTION: Known only from Guerrero, Mexico (map 15).

***Zelotes bajo*, new species**

Figures 191, 192; Map 15

TYPE: Female holotype from Lo Bajo, Guerrero, Mexico (June 30, 1941; L. I. Davis), deposited in AMNH.

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

DIAGNOSIS: *Zelotes bajo* resembles *Z. ivieorum* in having a pair of anterior bulbous epigynal enlargements but can be distinguished by the enlargements being more anteriorly situated (figs. 191, 192).

MALE: Unknown.

FEMALE: Total length 4.45. Carapace 1.60 long, 1.37 wide. Femur II 1.25 long. Eye sizes and interdistances: AME 0.04, ALE 0.06, PME 0.05, PLE 0.06; AME–AME 0.04, AME–ALE 0.01, PME–PME 0.07, PME–PLE 0.05, ALE–PLE 0.04. MOQ length 0.19, front width 0.12, back width 0.17. AEM near each other and enlargements of epigynal ducts (figs. 191, 192). Leg spination: femur IV r0-0-1; tibia IV p1-0-1; metatarsi: III v2-0-0; IV v2-1p-0.

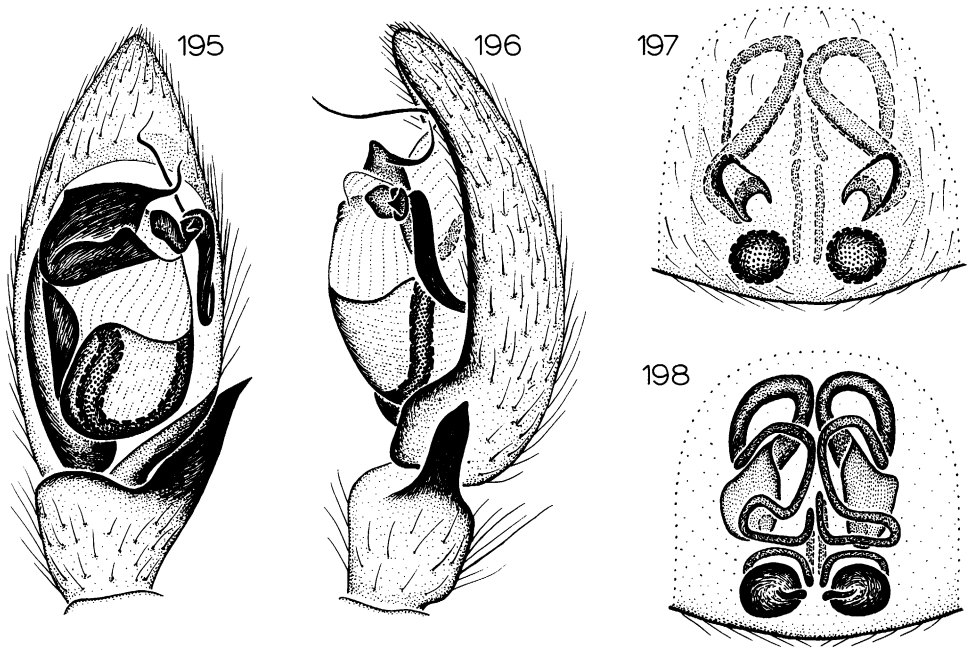
OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Known only from Guerrero, Mexico (map 15).

***Zelotes ivieorum*, new species**

Figures 193, 194; Map 15

TYPE: Female holotype from 12 miles west-northwest of Tehuantepec, lat. 16°22' N, long.



FIGS. 195–198. 195, 196. *Zelotes miramar*, new species. 197, 198. *Z. hardwar*, new species. 195. Palp, ventral view. 196. Palp, retrolateral view. 197. Epigynum, ventral view. 198. Epigynum, dorsal view.

95°22' W, Oaxaca, Mexico (September 1, 1964; J. and W. Ivie), deposited in AMNH.

ETYMOLOGY: The specific name is a patronym in honor of the collectors of the holotype.

DIAGNOSIS: *Zelotes ivieorum* resembles *Z. bajo* but can be distinguished by the more posteriorly situated epigynal duct enlargements (figs. 193, 194).

MALE: Unknown.

FEMALE: Total length 4.07, 4.79. Carapace 1.51, 1.73 long, 1.19, 1.33 wide. Femur II 0.94, 1.15 long. Eye sizes and interdistances: AME 0.05, ALE 0.06, PME 0.05, PLE 0.06; AME–AME 0.06, AME–ALE 0.01, PME–PME 0.05, PME–PLE 0.05, ALE–PLE 0.04. MOQ length 0.19, front width 0.15, back width 0.15. AEM near each other, far from enlargements of epigynal ducts (figs. 193, 194). Leg spination: metatarsus III v2-0-0.

OTHER MATERIAL EXAMINED: One female taken with the holotype.

DISTRIBUTION: Known only from Oaxaca, Mexico (map 15).

Zelotes miramar, new species

Figures 195, 196; Map 15

TYPE: Male holotype from Miramar, Manzanillo, Colima, Mexico (January 15, 1943; F. Bonet), deposited in AMNH.

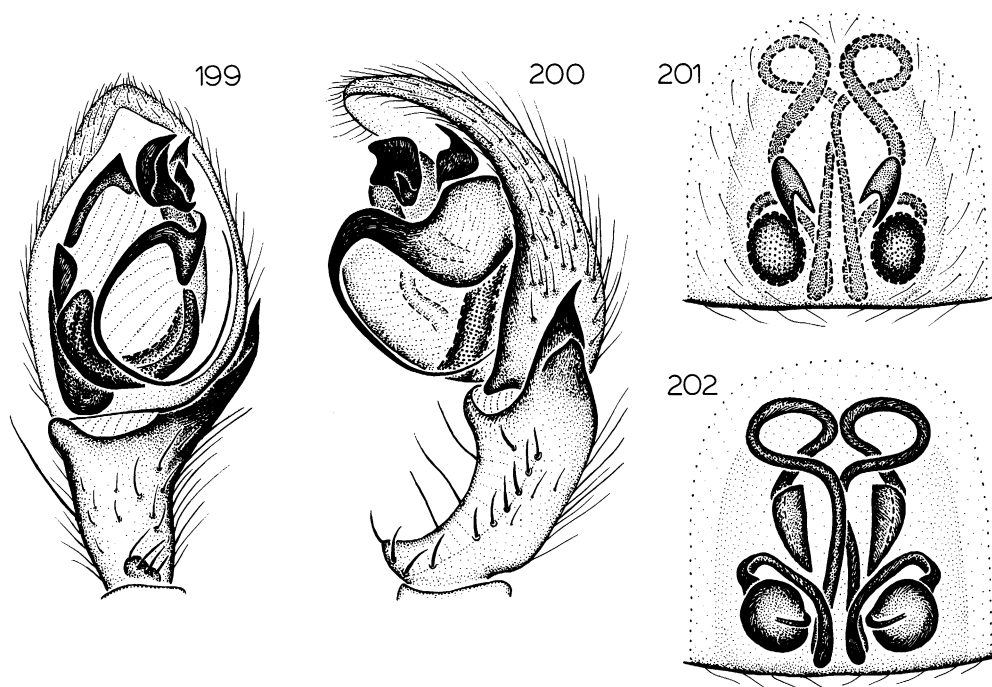
ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: *Zelotes miramar* is a distinctive species easily recognized by the high EB and the elongated EP and EMB (figs. 195, 196).

MALE: Total length 3.68. Carapace 1.76 long, 1.32 wide. Femur II 1.12 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 0.19, front width 0.13, back width 0.16. EB twice as high as TA, bearing long, curved EP and EMB (figs. 195, 196). Leg spination: tibia IV p1-0-1; metatarsi: I, II v2-2-0; III v2-0-0.

FEMALE: Unknown.

OTHER MATERIAL EXAMINED: None.



FIGS. 199–202. *Zeletes jamaicensis*, new species. 199. Palp, ventral view. 200. Palp, retrolateral view. 201. Epigynum, ventral view. 202. Epigynum, dorsal view.

DISTRIBUTION: Known only from Colima, Mexico (map 15).

THE *jamaicensis* SUBGROUP

DIAGNOSIS: The *jamaicensis* subgroup contains those species in which males have a long embolus reaching to the proximal edge of the palpal bulb (fig. 199) and females have a pair of tubular epigynal openings (figs. 197, 201). As only two species are known, a key is omitted.

Zeletes jamaicensis, new species

Figures 199–202; Map 15

TYPES: Male holotype and female paratype from pitfall trap at the Jamaica School of Agriculture, Spanish Town, St. Catherine Parish, Jamaica (October 24–30, 1968; M. H. Muma), deposited in FSCA.

ETYMOLOGY: The specific name refers to the type locality.

DIAGNOSIS: Females of *Z. jamaicensis* can be distinguished from those of *Z. hardwar*

by the narrower epigynal openings and less convoluted epigynal ducts (figs. 201, 202); males of *Z. hardwar* are unknown, but those of *Z. jamaicensis* have a peculiarly excavated palpal tibia (fig. 200).

MALE: Total length 2.29. Carapace 1.13 long, 0.83 wide. Femur II 0.68 long. Eye sizes and interdistances: AME 0.03, ALE 0.05, PME 0.04, PLE 0.05; AME–AME 0.03, AME–ALE 0.01, PME–PME 0.03, PME–PLE 0.03, ALE–PLE 0.03. MOQ length 0.13, front width 0.09, back width 0.11. EB shifted retrolaterally; EMB greatly elongated; palpal tibia excavated ventrally (figs. 199, 200). Leg spination: femur IV r0-0-1; tibia III r1-1-1; metatarsus II v2-1p-0.

FEMALE: Total length 3.22. Carapace 1.17 long, 0.86 wide. Femur II 0.72 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.04, PLE 0.05; AME–AME 0.04, AME–ALE 0.01, PME–PME 0.05, PME–PLE 0.04, ALE–PLE 0.04. MOQ length 0.15, front width 0.12, back width 0.13. Epigynal openings narrow; ducts with two lateral extensions

(figs. 201, 202). Leg spination: femur II p0-0-0; tibiae: III v1p-2-2; IV p1-0-1; metatarsi: I v0-0-0; II v1p-0-0; III v2-0-0; IV v2-1p-0.

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Known only from St. Catherine Parish, Jamaica (map 15).

***Zelotes hardwar*, new species**

Figures 197, 198; Map 15

TYPE: Female holotype from Berlese sample of concentrated forest floor litter taken at an elevation of 4000 feet at Hardwar Gap, Blue Mountains, St. Andrew Parish, Jamaica (December 6, 1975; H. S. Dybas), deposited in FMNH.

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

DIAGNOSIS: *Zelotes hardwar* can be distinguished from *Z. jamaicensis* by the wider epigynal openings and more convoluted epigynal ducts (figs. 197, 198).

MALE: Unknown.

FEMALE: Total length 3.96. Carapace 1.79 long, 1.30 wide. Femur II 1.19 long. Eye sizes and interdistances: AME 0.05, ALE 0.07, PME 0.06, PLE 0.07; AME-AME 0.05, AME-ALE 0.03, PME-PME 0.05, PME-PLE 0.04, ALE-PLE 0.04. MOQ length 0.20, front width 0.15, back width 0.18. Epigynal openings wide; ducts with three lateral extensions (figs. 197, 198). Leg spination: femur IV p0-0-1, r0-0-1; tibiae: III v1p-2-2, r1-1-1; IV p1-0-1, v1p-2-2; metatarsi: I v0-0-0; III v2-0-0.

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Known only from St. Andrew Parish, Jamaica (map 15).

THE *duplex* GROUP

DIAGNOSIS: The *duplex* group (component 8, fig. 1) contains three very distinct subgroups that are united by having male palpi with an enlarged median apophysis that extends further proximally than in the *subterraneus* or *funestus* groups (as in fig. 203). No comparable synapomorphy has been found for females, whose genitalic morphology is atypical and peculiar to each subgroup.

THE *duplex* SUBGROUP

DIAGNOSIS: The *duplex* subgroup contains those species in which the intercalary sclerite

of males has been covered by extensions of the tegulum and terminal apophysis (figs. 203, 211, 215) and the epigynum of females has become greatly elongated and bears transverse ridges anteriorly (figs. 205, 213, 217).

INTRARELATIONSHIPS: Of the three known species, *Z. duplex* and *Z. ocala* are evidently closest relatives; they share a convex tip of the distal extension of the intercalary sclerite (figs. 203, 211) in males and a depressed epigynal atrium (figs. 205, 213) in females.

KEY TO SPECIES

1. Distal extension of IS straight (fig. 215); epigynum raised medially (fig. 217) *lymnophilus*
Distal extension of IS convex (figs. 203, 211); epigynum depressed medially (figs. 205, 213) 2
2. TA rounded distally (fig. 203); LEM relatively long (fig. 205) *duplex*
TA angular distally (fig. 211); LEM relatively short (fig. 213) *ocala*

Zelotes duplex Chamberlin

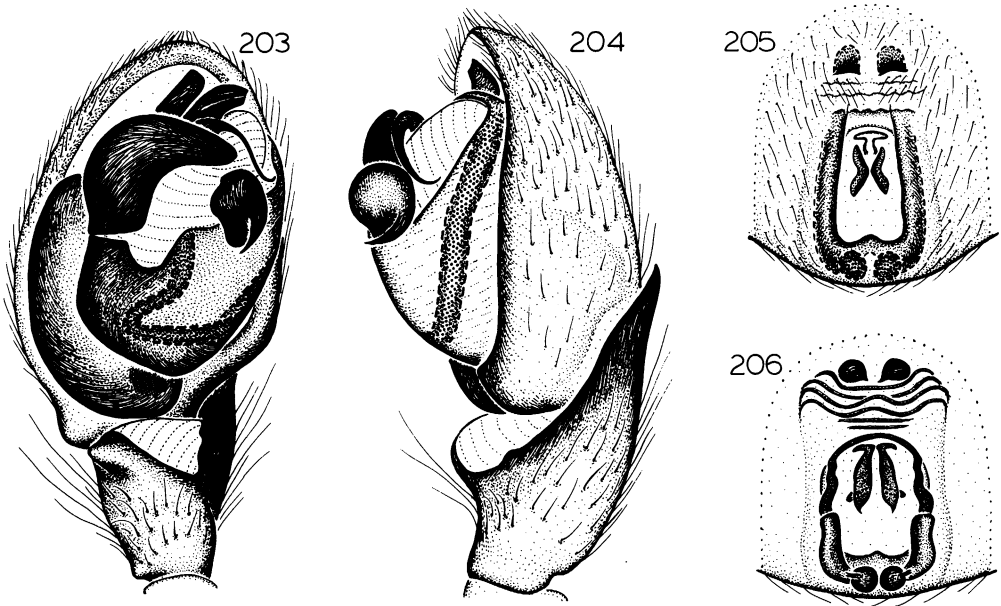
Figures 203-208, 269; Map 16

Zelotes duplex Chamberlin, 1922, p. 164 (male holotype from Fairfax County, Virginia, in MCZ, examined). Kaston, 1948, p. 355, figs. 1233-1235. Roewer, 1954, p. 470. Bonnet, 1959, p. 4921. Ubick and Roth, 1973, p. 8.

Zelotes sylvanus Chamberlin and Ivie, 1944, p. 176, figs. 202, 203 (female holotype from Sylvania, Screven County, Georgia, in AMNH, examined). First synonymized by Kaston, 1945, p. 2.

DIAGNOSIS: *Zelotes duplex* seems closest to *Z. ocala* but can be distinguished by the characters listed in couplet 2 of the key.

MALE: Total length 5.13 ± 0.54 . Carapace 2.22 ± 0.17 long, 1.77 ± 0.10 wide. Femur II 1.46 ± 0.07 long (249 specimens examined). Eye sizes and interdistances: AME 0.04, ALE 0.06, PME 0.07, PLE 0.07; AME-AME 0.04, AME-ALE 0.01, PME-PME 0.04, PME-PLE 0.05, ALE-PLE 0.05. MOQ length 0.22, front width 0.12, back width 0.18. TA rounded distally; EB broad, paralleling distal extension of IS (figs. 203, 204, 207, 208). Leg spination: patella IV r0-1-0; tibiae: I v1r-2-0; II v1r-1r-0; III d1-0-0, p1-1-0, r1-1-1; IV



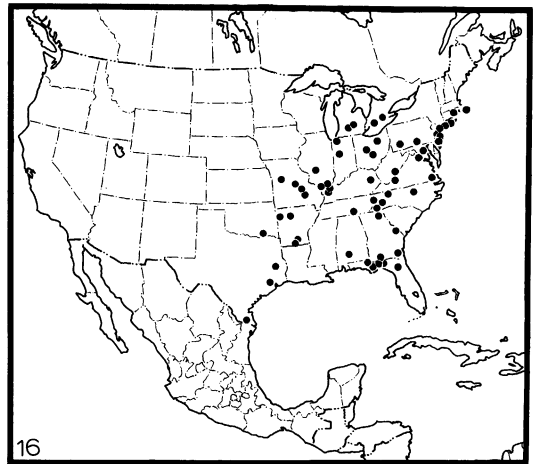
FIGS. 203–206. *Zelotes duplex* Chamberlin. 203. Palp, ventral view. 204. Palp, retrolateral view. 205. Epigynum, ventral view. 206. Epigynum, dorsal view.

d1-0-0; metatarsi: I, II v2-2-0; III r1-2-2; IV r2-2-2.

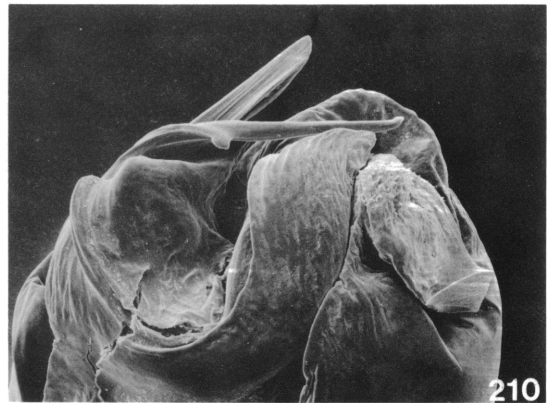
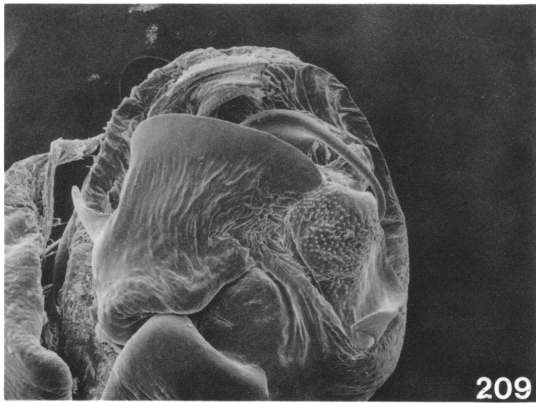
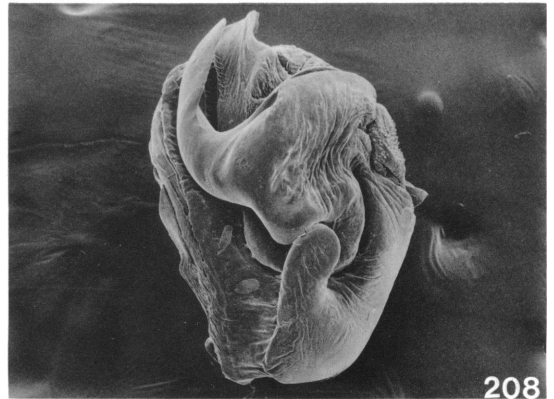
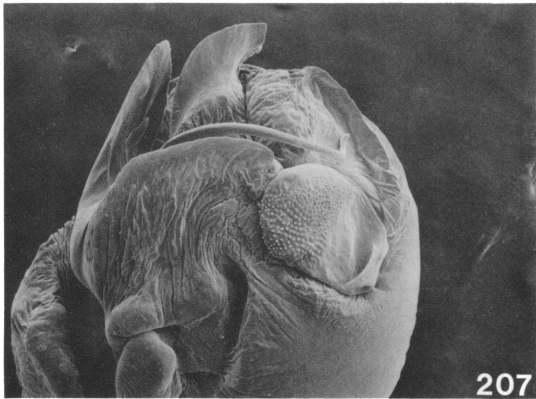
FEMALE: Total length 5.03 ± 1.00 . Carapace 2.03 ± 0.19 long, 1.60 ± 0.20 wide. Femur II 1.25 ± 0.10 long (167 specimens examined). Eye sizes and interdistances: AME 0.05, ALE 0.07, PME 0.05, PLE 0.07; AME–AME 0.06, AME–ALE 0.02, PME–PME 0.05, PME–PLE 0.07, ALE–PLE 0.05. MOQ length 0.21, front width 0.16, back width 0.15. LEM long, enclosing depressed atrium (figs. 205, 206, 269). Leg spination: femur IV p0-0-1; patella IV r0-1-0; tibiae: III d1-0-0, r1-1-1; IV d1-0-0; metatarsi: I, II v2-2-0; III r1-2-2; IV r2-2-2.

RECORDS: CANADA: *Ontario:* Rondeau Provincial Park, Walsingham. UNITED STATES (county records only): *Alabama:* Monroe. *Arkansas:* Bradley, Newton, Union, Washington. *Connecticut:* New London. *Florida:* Alachua, Jackson, Jefferson, Leon, Liberty. *Georgia:* Charlton, Habersham, Screven, Thomas. *Illinois:* Jackson, Macoupin, Massac, Pope, Saline. *Indiana:* La Porte, Tippecanoe. *Kentucky:* Wolfe. *Maryland:* Prince Georges. *Massachusetts:* Barnstable.

Michigan: Calhoun, Clinton. *Missouri:* Cole, Dent, Johnson, Phelps. *New Jersey:* Burlington, Middlesex, Ocean. *New York:* Nassau, Richmond, Suffolk. *North Carolina:* Buncombe, Durham, Macon, Watauga. *Ohio:*



MAP 16. North America, showing distribution of *Zelotes duplex*.



FIGS. 207–210. 207, 208. *Zelotes duplex* Chamberlin. 209. *Z. ocala*, new species. 210. *Z. lymnophilus* Chamberlin. 207, 209, 210. Palp, ventral view, 200 $\times$. 208. Palp, prolateral view, 125 $\times$.

Franklin, Hocking, Wayne. *Oklahoma*: Bryan. *Pennsylvania*: Franklin, Westmoreland. *Tennessee*: Franklin, Sevier. *Texas*: Angelina, Harris, Hidalgo. *Virginia*: Fairfax, Giles, Nansemond. *West Virginia*: Greenbrier.

DISTRIBUTION: Eastern United States and Canada (map 16). One female specimen from Sevier County, Utah (AMNH) is presumed to be either mislabeled or introduced by humans.

NATURAL HISTORY: Mature males have been taken from April through October, mature females from February through October. Specimens have been collected in pitfall traps, in hickory, oak, and pine forests, a beech-magnolia hammock, pastures, and prairies, and in buildings, at elevations up to 3000 feet.

***Zelotes ocala*, new species**

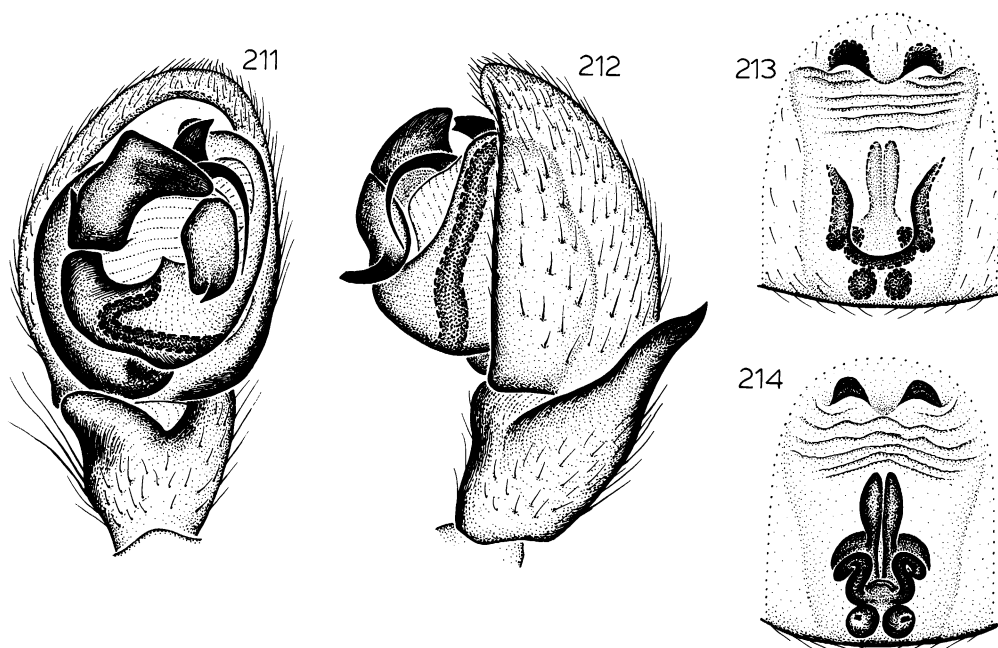
Figures 209, 211–214; Map 17

TYPES: Male holotype and female paratype from a Berlese sample of *Pinus elliotti* litter and from mixed oak litter, respectively, at the Archbold Biological Station, Lake Placid, Highlands County, Florida (April 1956; C. C. Hoff), deposited in AMNH.

ETYMOLOGY: The specific name is a noun in apposition taken from the Ocala National Forest, where the species has been collected.

DIAGNOSIS: *Zelotes ocala* seems closest to *Z. duplex* but can be distinguished by the characters listed in couplet 2 of the key.

MALE: Total length 3.13–4.72. Carapace 1.71–2.18 long, 1.33–1.71 wide. Femur II 0.92–1.44 long. Eye sizes and interdistances: AME 0.04, ALE 0.06, PME 0.07, PLE 0.06;



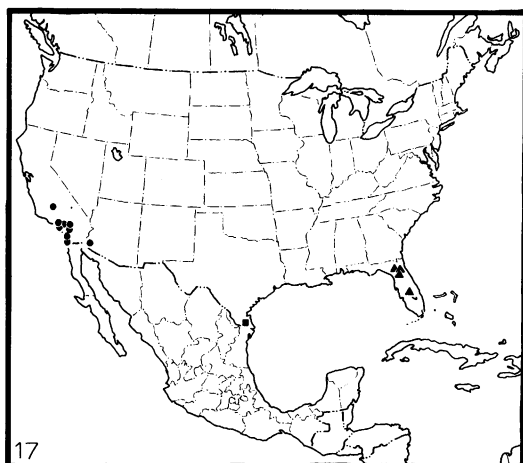
FIGS. 211–214. *Zelotes ocala*, new species. 211. Palp, ventral view. 212. Palp, retrolateral view. 213. Epigynum, ventral view. 214. Epigynum, dorsal view.

AME–AME 0.06, AME–ALE 0.01, PME–PME 0.04, PME–PLE 0.05, ALE–PLE 0.05. MOQ length 0.17, front width 0.14, back width 0.18. TA angular distally; RTA sinuous (figs. 209, 211, 212). Leg spination: patella IV r0-1-0; tibiae: I, II v1r-1r-0; III d1-0-0, r1-1-1; IV d1-0-0, r2-1-1; metatarsi: I, II v2-2-0; III r1-2-2; IV r2-2-2.

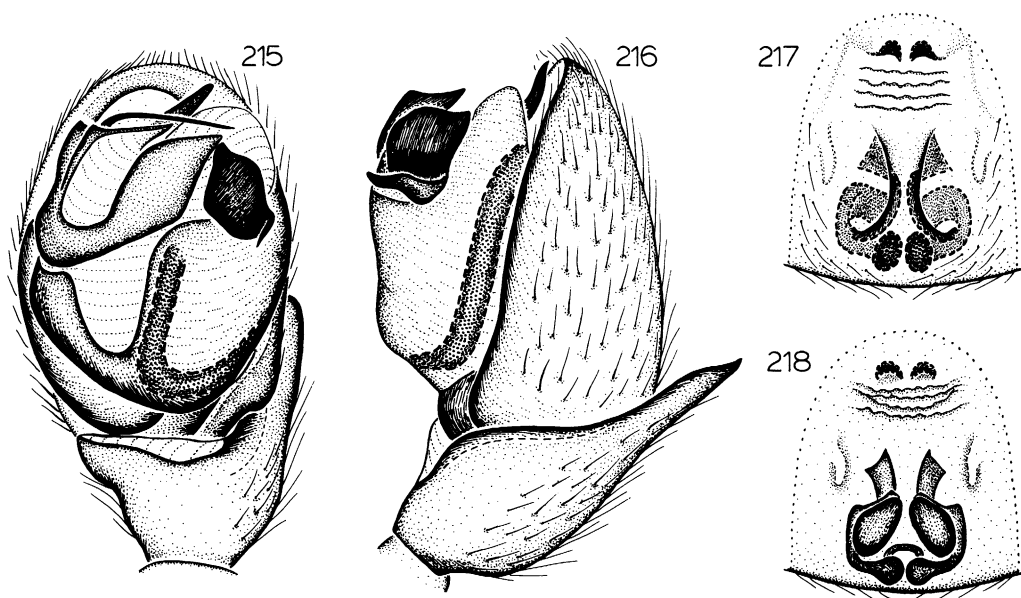
FEMALE: Total length 4.07–4.85. Carapace 1.87–2.19 long, 1.43–1.81 wide. Femur II 1.10–1.16 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.05, PLE 0.05; AME–AME 0.05, AME–ALE 0.02, PME–PME 0.05, PME–PLE 0.05, ALE–PLE 0.05. MOQ length 0.18, front width 0.14, back width 0.14. LEM short, enclosing depressed atrium (figs. 213, 214). Leg spination: tibiae: III d1-0-0, r1-1-1; IV d1-0-0, r2-1-1; metatarsi: I, II v2-1r-0; III r1-2-2; IV r2-2-2.

OTHER MATERIAL EXAMINED: UNITED STATES: **Florida:** *Alachua Co.*: no specific locality, May 4, 1950 (FSCA), 1 ♂. *Highlands Co.*: Archbold Biological Station, Lake Placid, April 1956, *Carya floridana* litter (C. C. Hoff), 1 ♂. *Marion Co.*: Juniper Springs, May 20, 1960, *Pinus clausa* litter (H. A. Denmark,

FSCA), 1 ♂, 1 ♀; *Ocala National Forest*, 10 mi. E Lynne, June 24, 1978 (C. E. Griswold, L. S. Vincent, UCB), 1 ♂; no specific locality, June 12, 1938 (T. H. Hubbell), 1 ♂, 1 ♀. *Putnam Co.*: no specific locality, June 2, 1947 (H. K. Wallace), 1 ♀.



MAP 17. North America, showing distribution of *Zelotes ocala* (triangles), *Z. monodens* (square), and *Z. nilicola* (circles).



FIGS. 215–218. *Zelotes lymnophilus*, new species. 215. Palp, ventral view. 216. Palp, retrolateral view. 217. Epigynum, ventral view. 218. Epigynum, dorsal view.

DISTRIBUTION: Known only from Florida (map 17).

Zelotes lymnophilus Chamberlin

Figures 210, 215–218; Map 18

Zelotes lymnophilus Chamberlin, 1936b, p. 9, fig. 47 (female holotype from Okefenokee Swamp, Charlton County, Georgia, in AMNH, examined). Roewer, 1954, p. 471. Bonnet, 1959, p. 4934. Ubick and Roth, 1973, p. 8.

Zelotes cymbiolus Chamberlin, 1936b, p. 12 (male holotype from Alachua County, Florida, in AMNH, examined). Bonnet, 1959, p. 4919. First synonymized by Chamberlin and Ivie, 1944, p. 175.

Zelotes lymnophilus: Chamberlin and Ivie, 1944, p. 175 (*lapsus*).

DIAGNOSIS: *Zelotes lymnophilus* is a distinctive species easily recognized by the long, dorsally directed RTA (fig. 216) of males and the medially elevated epigynum (fig. 217) of females.

MALE: Total length 3.24 ± 0.41 . Carapace 1.55 ± 0.22 long, 1.20 ± 0.11 wide. Femur II 0.97 ± 0.11 long. Eye sizes and interdistances: AME 0.03, ALE 0.05, PME 0.05, PLE 0.05; AME–AME 0.04, AME–ALE 0.02, PME–PME 0.04, PME–PLE 0.04, ALE–PLE

0.04. MOQ length 0.15, front width 0.11, back width 0.13. EB and EP oriented longitudinally; distal extension of IS straight (figs. 210, 215, 216). Leg spination: patella IV r0-1-0; tibiae: I v2-2-0; II v1r-1r-0; III d1-0-0, r1-1-1; IV d1-0-0, r2-1-1; metatarsi: I, II v2-2-0; III r1-2-2; IV r2-2-2.

FEMALE: Total length 2.66–3.44. Carapace 1.27–1.74 long, 1.00–1.13 wide. Femur II 0.79–0.90 long. Eye sizes and interdistances: AME 0.03, ALE 0.05, PME 0.04, PLE 0.05; AME–AME 0.04, AME–ALE 0.02, PME–PME 0.03, PME–PLE 0.05, ALE–PLE 0.05. MOQ length 0.14, front width 0.11, back width 0.11. Epigynum elevated medially (figs. 217, 218). Leg spination: femur IV p0-0-1; patella IV r0-1-0; tibiae: I, II v1r-1r-0; III d1-0-0; IV d1-0-0, r2-1-1; metatarsi: III r1-2-2; IV r2-2-2.

MATERIAL EXAMINED: UNITED STATES: **Florida:** *Alachua Co.*: no specific locality, Apr. 14, 1934 (H. K. Wallace), 1♂ (type), May 8, 1934 (H. K. Wallace, FSCA), 1♂, Apr. 17–24, 1949 (FSCA), 1♂. *Baker Co.*: no specific locality, May 8, 1959, in malt trap (E. W. Holder, FSCA), 1♂. *Lake Co.*: Umatilla, Mar. 11, 1933 (H. K. Wallace), 1♂. *Lee Co.*: Fort Myers, winter 1931 (W. M. Barrows),

1 ♂. *Leon Co.*: Tall Timbers Research Station, June 1, 1969 (W. W. Baker, E. V. Komarek, FSCA), 1 ♂, 1 ♀, May 18–25, 1970, pitfall, annually burned pine woods (D. L. Harris, FSCA), 1 ♂. *Liberty Co.*: Torreya Ravine, Apr. 16, 1938 (W. J. Gertsch), 2 ♂. **Georgia**: *Charlton Co.*: Billy's Island, Okefenokee Swamp, June 1912, 1 ♀ (type). *Chatham Co.*: 3 mi. SE Savannah, Apr. 14, 1943 (W. Ivie), 1 ♀. *Fulton Co.*: Atlanta, May 1899 (J. H. Emerton), 1 ♂. *Liberty Co.*: Saint Catharines Island, July 4–11, 1972 (J. A. L. Cooke), 1 ♀. *Screven Co.*: N Sylvania, Apr. 15, 1943 (W. Ivie), 1 ♀; 4 mi. NE Sylvania, Apr. 9, 1943 (W. Ivie), 1 ♂. **Texas**: *Kerr Co.*: Raven Ranch, June–Aug. 1939–1941 (D. Mulaik, R. Scott), 2 ♀.

DISTRIBUTION: Southeastern United States (map 18).

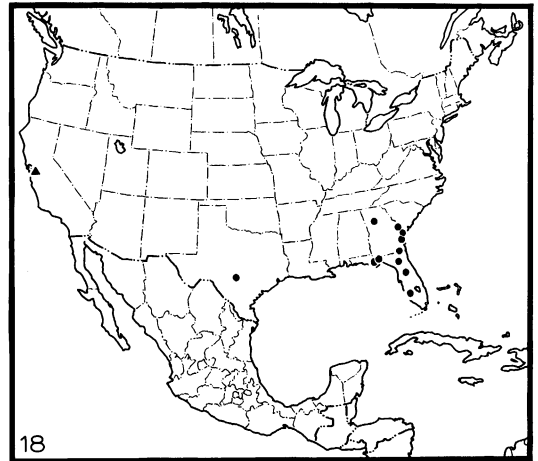
THE *laccus* SUBGROUP

DIAGNOSIS: The *laccus* subgroup contains those species in which males have a transverse embolus extending across the distal edge of the palpal bulb (figs. 219, 227, 231, 239, 243); females of each species have differently constructed epigyna (figs. 221, 229, 233, 241, 245). All the species are much smaller than most *Zelotes*.

INTRARELATIONSHIPS: Two species pairs can be recognized among the five known species. *Zelotes laccus* and *Z. exiguides* are united by having males with a bifid median apophysis (figs. 220, 228), whereas *Z. nannodes* and *Z. florodes* are united by having males with a shortened retrolateral tibial apophysis (figs. 232, 240) and females with a triangular median epigynal plate (figs. 233, 241).

KEY TO SPECIES

1. RTA proximal, doubled (figs. 243, 244); SP anterior (figs. 245, 246) *monodens*
RTA distal, single (as in fig. 220); SP posterior (as in fig. 221) 2
2. RTA relatively long (figs. 220, 228); epigynum without a median plate (figs. 221, 229) ... 3
RTA relatively short (figs. 232, 240); epigynum with a median plate (figs. 233, 241) 4
3. Palpal tibia with brush of stiff setae (fig. 220); LEM widely separated (fig. 221) ... *laccus*
Palpal tibia without such a brush (fig. 228); LEM not widely separated (fig. 229) *exiguoides*



MAP 18. North America, showing distribution of *Zelotes lynnophilus* (circles) and *Z. pallidus* (triangle).

4. EMB relatively long (fig. 231); median epigynal plate relatively small (fig. 233) ... *nannodes*
EMB relatively short (fig. 239); median epigynal plate relatively large (fig. 241) *florodes*

Zelotes laccus (Barrows)

Figures 219–224; Map 19

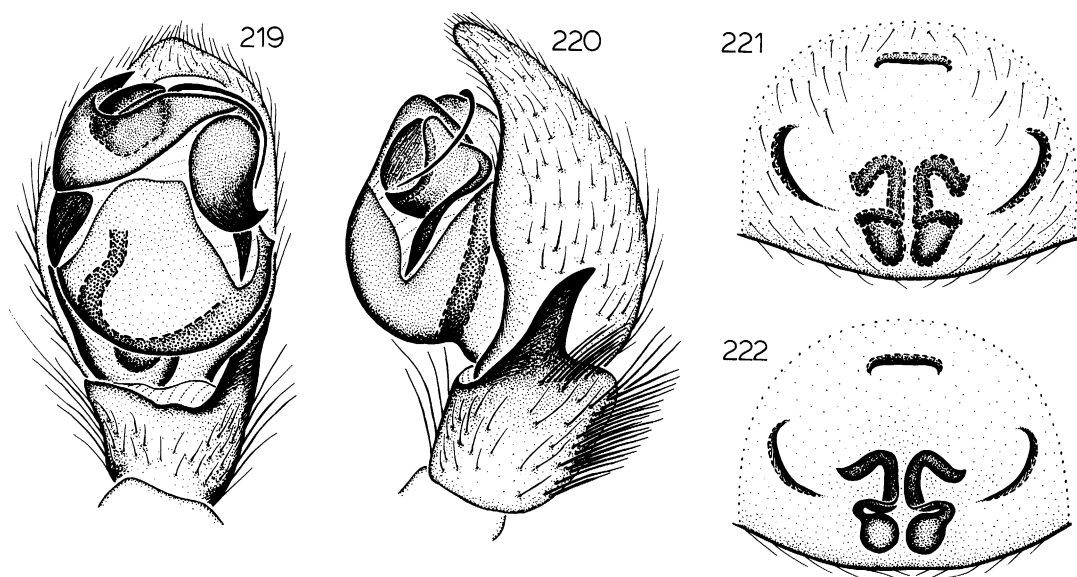
Prothesima lacca Barrows, 1919, p. 355, fig. 3 (male holotype [lacking both palpi] from Columbus, Franklin County, Ohio, in OSU, examined).

Drassyllus laccus: Chamberlin, 1922, p. 167.

Zelotes laccus: Kaston, 1938, p. 193; 1948, p. 355, figs. 1236–1238. Roewer, 1954, p. 471. Bonnet, 1959, p. 4929. Ubick and Roth, 1973, p. 8.

DIAGNOSIS: *Zelotes laccus* seems closest to *Z. exiguides* but can be distinguished by the shorter RTA (fig. 220) of males and the wider epigynum (fig. 221) of females.

MALE: Total length 2.02 ± 0.13 . Carapace 0.84 ± 0.03 long, 0.62 ± 0.04 wide. Femur II 0.50 ± 0.03 long. Eye sizes and interdistances: AME 0.03, ALE 0.05, PME 0.04, PLE 0.04; AME–AME 0.02, AME–ALE 0.01, PME–PME 0.02, PME–PLE 0.03, ALE–PLE 0.03. MOQ length 0.10, front width 0.07, back width 0.09. RTA short, tibia with dorsal brush of stiff setae (figs. 219, 220, 223). Leg spination: femora: I, II p0-0-0; III p0-0-1, r0-0-1; IV p0-0-0; patella III r0-0-0; tibiae: I v1r-1r-0; II v0-1r-0; III d1-0-0, p0-1-1, v0-1p-2; IV v1p-2-2; metatarsi: I v0-2-2; II v0-



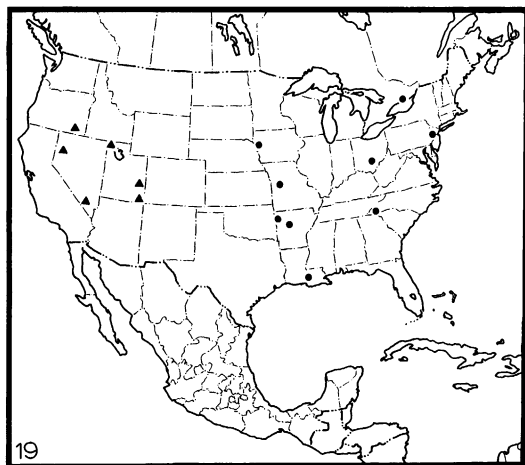
FIGS. 219-222. *Zelotes laccus* (Barrows). 219. Palp, ventral view. 220. Palp, retrolateral view. 221. Epigynum, ventral view. 222. Epigynum, dorsal view.

1r-2; III p0-1-2, v0-0-0, r0-1-2; IV p0-2-2, v2-0-0, r0-2-1.

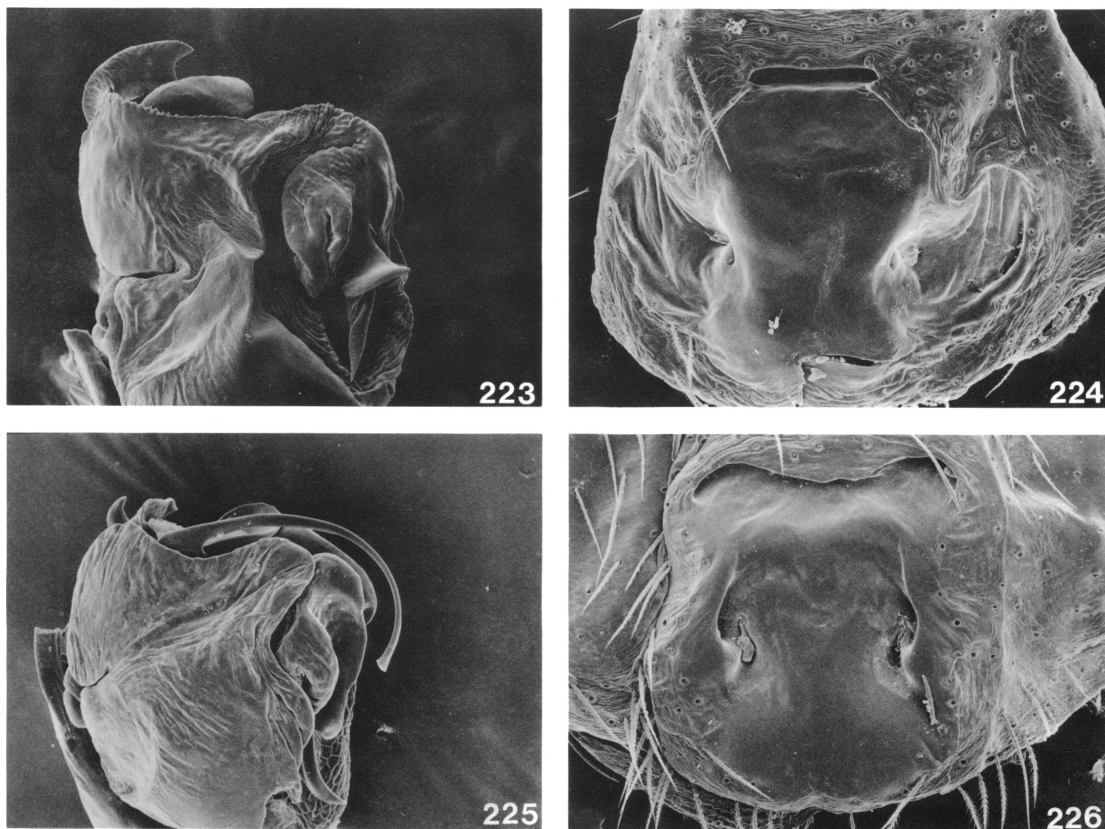
FEMALE: Total length 2.43 ± 0.32 . Carapace 0.89 ± 0.04 long, 0.67 ± 0.04 wide. Femur II 0.52 ± 0.02 long. Eye sizes and interdistances: AME 0.03, ALE 0.04, PME 0.04, PLE 0.04; AME-AME 0.02, AME-ALE 0.01, PME-PME 0.03, PME-PLE 0.03, ALE-

PLE 0.04. MOQ length 0.12, front width 0.09, back width 0.11. AEM fused, LEM widely separated (figs. 221, 222, 224). Leg spination: femora II, IV p0-0-0; tibiae: I, II v1r-1r-0; III d1-0-0, p0-1-1, v0-1p-2; IV d1-0-0, v1p-1p-2; metatarsi: I, II v0-2-2; III v0-0-0, r0-2-2; IV p1-2-1, v0-0-0, r1-2-1.

MATERIAL EXAMINED: CANADA: **Ontario:** Chatterton, 13 mi. N Belleville, June 20-July 10, 1967-1968, pitfall (C. D. Dondale, CNC), 3 ♀; Foxboro, June 21, 1960 (CNC), 1 ♂. **UNITED STATES:** **Arkansas:** Conway Co.: Morrilton, June 29, 1962, pitfall, cotton (EPC), 1 ♀; no specific locality, July 10, 1963 (EPC), 1 ♂. **Washington Co.:** Cove Creek Valley, June 1956, elevation 1000 feet (M. Hite, MCZ), 1 ♀. **Iowa:** Woodbury Co.: Sioux City, summer 1938 (C. N. Ainsler), 1 ♂. **Louisiana:** Iberville Par.: St. Gabriel, July 1-Sept. 5, 1972-1975, pitfall, Bermuda grass pasture (F. W. Howard), 20 ♂, 6 ♀. **Missouri:** Johnson Co.: Knob Noster State Park, June 4-Aug. 16, 1978-1980, pitfall, brushy prairie (W. Peck, J. Peaslee, EPC), 83 ♂, 25 ♀. **New Jersey:** Hunterdon Co.: Lambertville, May 19-31, 1953 (W. Ivie), 2 ♂, 2 ♀. **North Carolina:** Macon Co.: Callasaja River Gorge, Highlands, June 19, 1961 (J. E. Carico, JEC), 1 ♀; 7.5 mi. SE Highlands, June 28, 1976, ele-



MAP 19. North America, showing distribution of *Zelotes laccus* (circles) and *Z. nannodes* (triangles).



FIGS. 223–226. 223, 224. *Zelotes laccus* (Barrows). 225, 226. *Z. exiguoides*, new species. 223, 225. Palp, ventral view, 270X. 224, 226. Epigynum, ventral view, 260X.

vation 2900 feet (F. A. Coyle, FAC), 1 ♀. **Ohio:** *Hocking Co.*: Cantwell Cliffs, June 12, 1940 (OSU), 2 ♂, 1 ♀; Rockbridge, June 1–7, 1922–1925 (MCZ, OSU), 11 ♂, 6 ♀.

DISTRIBUTION: Eastern United States and Canada (map 19).

***Zelotes exiguoides*, new species**

Figures 225–230; Map 20

TYPES: Male holotype and female paratype from Halsey, Thomas County, Nebraska (July 1–8, 1957; R. Henzlik), deposited in AMNH.

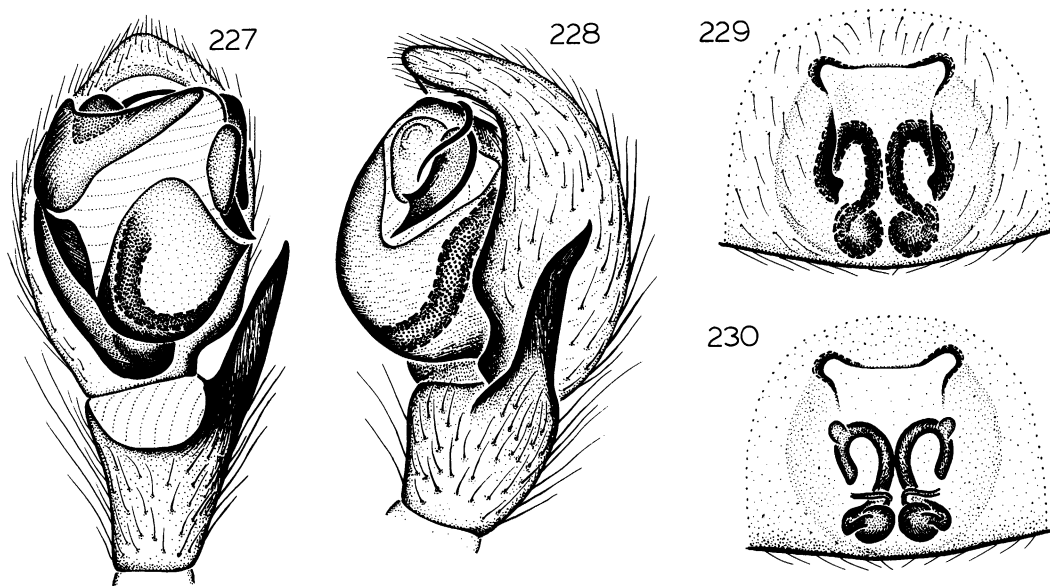
ETYMOLOGY: The specific name refers to the close relationship between this species and the European species *Z. exiguus* (Müller and Schenkel).

DIAGNOSIS: Among American species, *Z. exiguoides* seems closest to *Z. laccus* but can be distinguished by the longer RTA (fig. 228)

of males and the narrower epigynum (fig. 229) of females. However, the species is probably more closely related to the European *Z. exiguus* (see Miller and Buchar, 1977, figs. 10–17), from which it can be distinguished by the same characters.

MALE: Total length 2.30 ± 0.28 . Carapace 0.98 ± 0.10 long, 0.77 ± 0.11 wide. Femur II 0.61 ± 0.07 long. Eye sizes and interdistances: AME 0.03, ALE 0.04, PME 0.05, PLE 0.05; AME–AME 0.04, AME–ALE 0.01, PME–PME 0.03, PME–PLE 0.03, ALE–PLE 0.04. MOQ length 0.12, front width 0.10, back width 0.12. RTA long, sinuous distally (figs. 225, 227, 228). Leg spination: femora: III r0-0-1; IV p0-0-0, r0-0-0; patella III r0-0-0; tibiae: I, II v1r-1r-0; III, IV v1p-2-2; metatarsi: I, II v0-2-2; III p0-1-2, v0-0-0, r0-1-2; IV p1-1-2, v0-0-0, r1-2-1.

FEMALE: Total length 2.55 ± 0.28 . Cara-

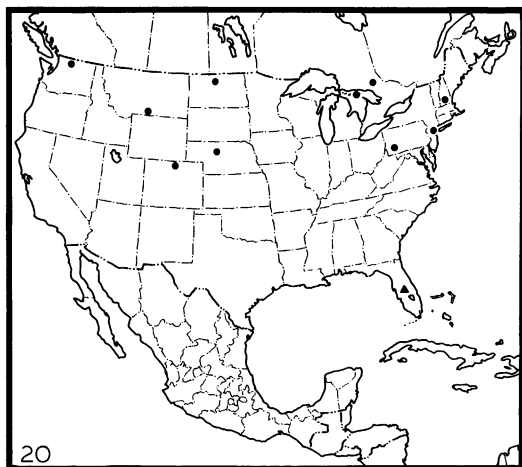


FIGS. 227–230. *Zelotes exiguoides*, new species. 227. Palp, ventral view. 228. Palp, retrolateral view. 229. Epigynum, ventral view. 230. Epigynum, dorsal view.

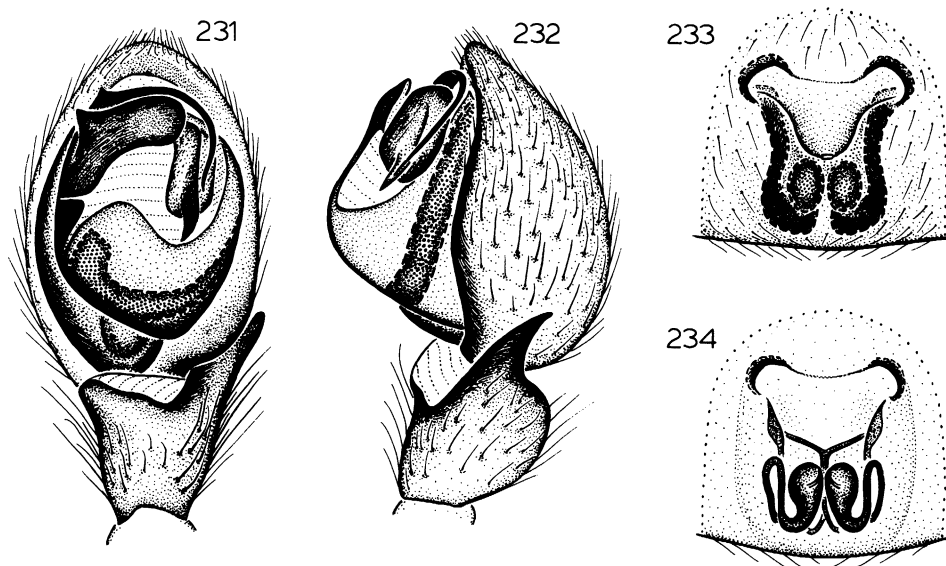
pace 0.95 ± 0.08 long, 0.78 ± 0.05 wide. Femur II 0.58 ± 0.05 long. Eye sizes and interdistances: AME 0.03, ALE 0.04, PME 0.05, PLE 0.05; AME–AME 0.02, AME–ALE 0.01, PME–PME 0.03, PME–PLE 0.03, ALE–PLE 0.05. MOQ length 0.13, front width 0.07, back width 0.12. LEM approximate, straight

(figs. 226, 229, 230). Leg spination: femora: III r0-0-0; IV p0-0-0, r0-0-1; tibiae: I, II v1r-1r-0; III v0-2-2, r0-1-0; IV v1p-2-2; metatarsi: I, II v0-2-2; III p0-2-2, v0-0-0, r0-1-2; IV v0-0-0, r1-2-1.

OTHER MATERIAL EXAMINED: CANADA: **Ontario:** Deer Island, Lake Opeongo, Algonquin Provincial Park, July 10, 1965 (R. E. and A. V. Leech, CNC), 1 ♀; Mindemoya, Manitoulin Island, July 17–Aug. 10, 1939, 2 ♀. **UNITED STATES:** **Colorado:** Larimer Co.: Rustic, Aug. 7, 1941 (S. and D. Mulaik), 1 ♀. **Montana:** Carbon Co.: East Rosebud Lake, July 11, 1966, elevation 6200 feet (B. and C. Durden, BRV), 1 ♂. **Nebraska:** Thomas Co.: Halsey, July 22–29, 1957 (R. Henzlik), 1 ♂, 1 ♀. **New Hampshire:** Merrimack Co.: Concord, June 22, 1981, pitfall (R. M. Reeves, UNH), 1 ♀. **New Jersey:** Bergen Co.: Ramsey, June 5, 1938 (W. J. Gertsch), 1 ♂. **North Dakota:** McHenry Co.: 2.5 mi. W Denbigh, May 21–Aug. 10, 1970–1971, pitfalls, Colorado blue spruce and cottonwood, sand dune area (K. J. Stone, P. D. Tobin, FSCA), 6 ♂, 5 ♀. **Pennsylvania:** Westmoreland Co.: 3 mi. S Rector, June 20, 1967, pitfall (B. Vogel), 1 ♂. **Utah:** County unknown: quadrant around lat. 38° N, long. 112° W,



MAP 20. North America, showing distribution of *Zelotes exiguoides* (circles) and *Z. florodes* (triangle).



FIGS. 231–234. *Zelotes nannodes* Chamberlin. 231. Palp, ventral view. 232. Palp, retrolateral view. 233. Epigynum, ventral view. 234. Epigynum, dorsal view.

1934 (W. Ivie), 1 ♀. **Washington:** *Okanogan Co.*: Alta Lake, July 13, 1963, elevation 1200 feet (J. R. Thomson, UWA), 1 ♀.

DISTRIBUTION: Northern United States and southern Canada (map 20).

Zelotes nannodes Chamberlin

Figures 231–236; Map 19

Zelotes nannodes Chamberlin, 1936b, p. 10, fig. 35 (female holotype from Tremonton, Box Elder County, Utah, in AMNH, examined). Roewer, 1954, p. 471. Ubick and Roth, 1973, p. 8.

Zelotes nannus Chamberlin and Gertsch, 1940, p. 18, figs. 16, 17 (male holotype from Richardson, Grand County, Utah, in AMNH, examined). Roewer, 1954, p. 471. Ubick and Roth, 1973, p. 8. **NEW SYNONYMY.**

Zelotes nanodes: Bonnet, 1959, p. 4936 (unjustified emendation).

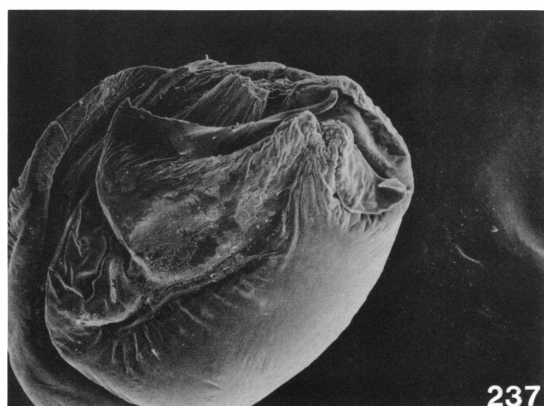
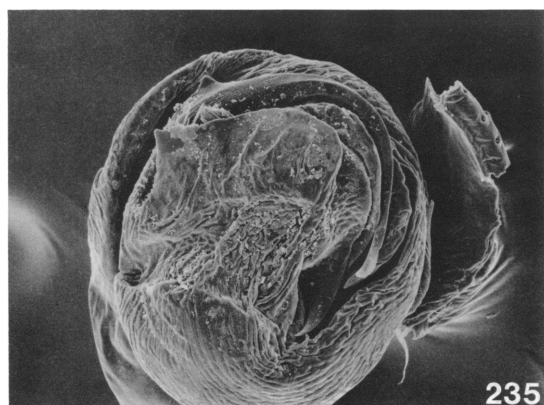
DIAGNOSIS: *Zelotes nannodes* seems closest to *Z. florodes* but can be distinguished by the longer EMB and larger MA (fig. 231) of males and the smaller epigynal plate (fig. 233) of females.

MALE: Total length 1.93–3.30. Carapace 0.90–1.24 long, 0.61–1.14 wide. Femur II 0.50–0.76 long. Eye sizes and interdistances: AME 0.03, ALE 0.05, PME 0.04, PLE 0.05;

AME–AME 0.03, AME–ALE 0.01, PME–PME 0.05, PME–PLE 0.03, ALE–PLE 0.03. MOQ length 0.14, front width 0.09, back width 0.13. EMB long, with prolateral hump (figs. 231, 232, 235). Leg spination: tibia II v1r-1r-0; metatarsus III p0-2-2, v2-0-0, r1-2-2.

FEMALE: Total length 2.27–3.15. Carapace 0.94–1.24 long, 0.70–0.95 wide. Femur II 0.52–0.73 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 0.04, ALE–PLE 0.05. MOQ length 0.14, front width 0.11, back width 0.14. Epigynum with small, triangular median plate (figs. 233, 234, 236). Leg spination: femur IV p0-0-1, r0-0-1; tibia III v1p-2-2; metatarsi: III p0-2-2, v2-0-0, r0-1-2; IV v2-1p-0.

MATERIAL EXAMINED: **UNITED STATES:** **Nevada:** *Nye Co.*: Mercury, June 2–23, 1961, 1 ♂, 2 ♀. *Pershing Co.*: Oreana, June 12, 1964 (NDA), 3 ♀. **Oregon:** *Harney Co.*: Alvord Basin, 1979, pitfall (J. D. Lattin, CNC), 1 ♂. **Utah:** *Box Elder Co.*: 10 mi. W Tremonton, June 8, 1931, under rock on dry hillside (W. Ivie), 1 ♀ (type). *Grand Co.*: Moab, May 8, 1933, 1 ♀; Richardson, May 13, 1933 (W.



FIGS. 235–238. 235, 236. *Zelotes nannodes* Chamberlin. 237, 238. *Z. florodes*, new species. 235, 237. Palp, ventral view, 275 $\times$. 236, 238. Epigynum, ventral view, 250 $\times$.

Ivie), 1 δ (type). *San Juan Co.*: Bluff, Apr. 14, 1928 (W. J. Gertsch), 1 δ . *County unknown*: quadrant around lat. 38° N, long. 109° W, 1933 (W. Ivie), 1 δ , 1 ϕ ; quadrant around lat. 38° N, long. 112° W, 1934 (W. Ivie), 1 δ ; quadrant around lat. 39° N, long. 111° W, 1934 (W. Ivie), 1 ϕ .

DISTRIBUTION: Known only from Utah, Nevada, and southeastern Oregon (map 19).

SYNONYMY: Simultaneous collections of both sexes indicate that *Z. nannus* is the male of *Z. nannodes*.

***Zelotes florodes*, new species**

Figures 237–242; Map 20

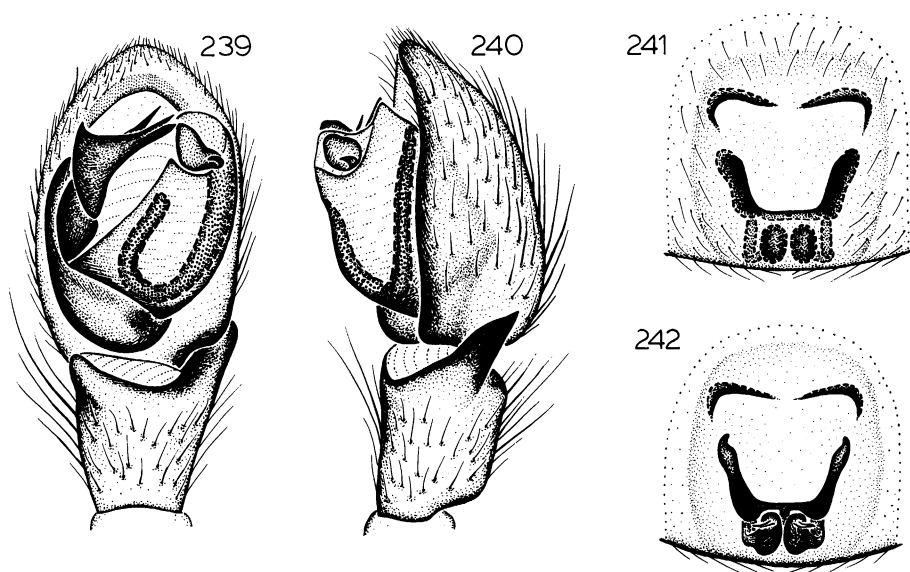
TYPES: Male holotype from pitfall trap on sand pine dune at Winter Haven, Polk County, Florida (May 12, 1969; K. J. Stone), deposited in FSCA.

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

DIAGNOSIS: *Zelotes florodes* seems closest to *Z. nannodes* but can be distinguished by the shorter EMB and smaller MA (fig. 239) of males and the larger epigynal plate (fig. 241) of females.

MALE: Total length 3.55 $\pm$ 0.36. Carapace 1.66 $\pm$ 0.20 long, 1.29 $\pm$ 0.17 wide. Femur II 0.97 $\pm$ 0.12 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.06, PLE 0.05; AME–AME 0.05, AME–ALE 0.02, PME–PME 0.04, PME–PLE 0.05, ALE–PLE 0.04. MOQ length 0.15, front width 0.13, back width 0.16. EMB not extending along MA (figs. 237, 239, 240). Leg spination: femur IV r0-0-1; tibiae: III d1-0-0; IV r2-1-1; metatarsi: I, II v2-2-0; III, IV r2-2-2.

FEMALE: Total length 3.39 $\pm$ 0.16. Carapace 1.54 $\pm$ 0.12 long, 1.17 $\pm$ 0.10 wide.



FIGS. 239–242. *Zelotes florodes*, new species. 239. Palp, ventral view. 240. Palp, retrolateral view. 241. Epigynum, ventral view. 242. Epigynum, dorsal view.

Femur II 0.88 ± 0.04 long. Eye sizes and interdistances: AME 0.03, ALE 0.05, PME 0.05, PLE 0.06; AME–AME 0.05, AME–ALE 0.01, PME–PME 0.04, PME–PLE 0.04, ALE–PLE 0.03. MOQ length 0.15, front width 0.11, back width 0.13. Epigynum with large, triangular median plate (figs. 238, 241, 242). Leg spination: patella IV r0-1-0; tibiae: III d1-0-0; IV d1-0-0, r2-1-1; metatarsi III, IV r-2-2-2.

OTHER MATERIAL EXAMINED: UNITED STATES: **Florida:** *Highlands Co.:* Archbold Biological Station, Lake Placid, July 1, 1978 (J. A. Murphy, JAM), 1 ♀. *Polk Co.:* Lake Alfred, Apr. 14, 1970, pitfall, citrus (M. H. Muma, H. L. Greene, FSCA), 1 ♀; Waverly, Sept. 2, 1969, sand pine dune (M. H. Muma, FSCA), 2 ♀; Winter Haven, Feb. 12–Dec. 6, 1967–1970, pitfalls, sand pine dune (M. H. Muma, H. L. Greene, K. J. Stone, FSCA, AMNH), 44 ♂, 60 ♀; no specific locality, Apr. 17, 1949 (H. K. Wallace, FSCA), 1 ♀.

DISTRIBUTION: Known only from Florida (map 20).

Zelotes monodens Chamberlin

Figures 243–246; Map 17

Zelotes monodens Chamberlin, 1936b, p. 9, fig. 36 (female holotype from Edinburg, Hidalgo

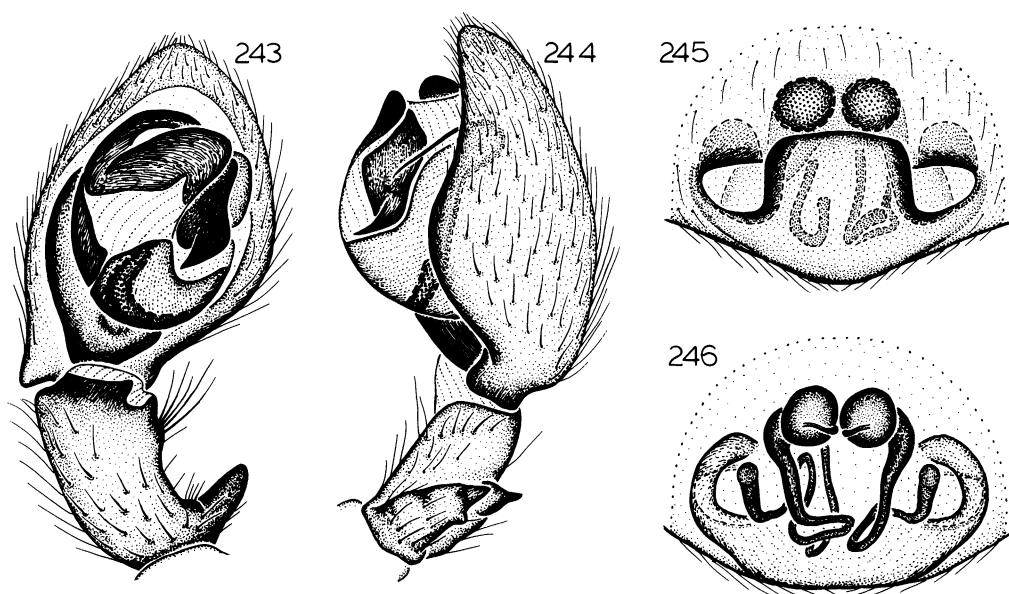
County, Texas, in AMNH, examined). Roewer, 1954, p. 471.

Zelotes monodon: Bonnet, 1959, p. 4935 (unjustified emendation). Ubick and Roth, 1973, p. 8.

DIAGNOSIS: *Zelotes monodens* is a bizarre species easily recognized by the proximally situated, doubled RTA (figs. 243, 244) of males and the anteriorly situated SP (figs. 245, 246) of females.

MALE: Total length 2.59. Carapace 1.21 long, 0.92 wide. Femur II 0.79 long. Eye sizes and interdistances: AME 0.03, ALE 0.05, PME 0.04, PLE 0.05; AME–AME 0.05, AME–ALE 0.01, PME–PME 0.05, PME–PLE 0.05, ALE–PLE 0.05. MOQ length 0.12, front width 0.11, back width 0.13. EMB extending along MA; RTA doubled, shifted proximally (figs. 243, 244). Leg spination: femur IV p0-0-0, r0-0-1; metatarsi: III p0-2-2, v2-0-0; IV r1-2-1.

FEMALE: Total length 3.56. Carapace 1.33 long, 0.92 wide. Femur II 0.79 long. Eye sizes and interdistances: AME 0.03, ALE 0.05, PME 0.04, PLE 0.05; AME–AME 0.04, AME–ALE 0.01, PME–PME 0.04, PME–PLE 0.05, ALE–PLE 0.05. MOQ length 0.12, front width 0.10, back width 0.12. Epigynum with pair of lateral pockets; SP anterior (figs. 245,



FIGS. 243–246. *Zelotes monodens* Chamberlin. 243. Palp, ventral view. 244. Palp, retrolateral view. 245. Epigynum, ventral view. 246. Epigynum, dorsal view.

246). Leg spination: femora: I p0-0-0; IV p0-0-0, r0-1-0; tibia IV p1-0-1; metatarsi: I v0-0-0; III p0-2-2, v2-0-0.

MATERIAL EXAMINED: UNITED STATES: Texas: *Hidalgo Co.*: Edinburg, May 3, 1935 (S. Mulaik), 1 ♀ (type), Apr. 6, 1936 (S. Mulaik), 1 ♂.

DISTRIBUTION: Known only from Hidalgo County, Texas (map 17).

THE *puritanus* SUBGROUP

DIAGNOSIS: The *puritanus* subgroup contains those species in which males have an elongated palp bulb with the median apophysis facing retrolaterally (figs. 247, 248, 255, 256) and females have an elongated epigynum with a single anterior margin and wide, longitudinally arranged ducts (figs. 249, 250, 257, 258). The bulk of the members of this group occur in Africa; as only two species are known from America, a key is omitted.

Zelotes puritanus Chamberlin

Figures 247–252; Map 21

Zelotes puritanus Chamberlin, 1922, p. 164 (female holotype from Wellfleet, Barnstable County, Massachusetts, in MCZ, examined). Kaston,

1948, p. 356, figs. 1239–1241. Roewer, 1954, p. 472. Bonnet, 1959, p. 4944. Ubick and Roth, 1973, p. 8.

Zelotes shoshoneus Chamberlin, 1936b, p. 11, figs. 42, 43 (male holotype from Burley, Cassia County, Idaho, in AMNH, examined). Bonnet, 1959, p. 4951. First synonymized by Kaston, 1948, p. 356.

Zelotes kodaensis Miller and Buchar, 1977, p. 157, pl. 1, figs. 1–9 (male holotype from Koda, Středočeský, Czechoslovakia, not examined). Thaler, 1981, p. 115, figs. 23–27. **NEW SYNONYMY.**

DIAGNOSIS: *Zelotes puritanus* can be distinguished from *Z. reformans* by the rounded TA (fig. 247) of males and the more widely separated LEM (fig. 249) of females.

MALE: Total length 4.66 ± 0.48 . Carapace 2.15 ± 0.20 long, 1.66 ± 0.15 wide. Femur II 1.27 ± 0.13 long (127 specimens examined). Eye sizes and interdistances: AME 0.06, ALE 0.08, PME 0.08, PLE 0.07; AME–AME 0.08, AME–ALE 0.05, PME–PME 0.09, PME–PLE 0.06, ALE–PLE 0.08. MOQ length 0.23, front width 0.20, back width 0.25. TA rounded distally; MA with proximal lobe (figs. 247, 248, 251). Leg spination: femur IV p0-0-0, r0-0-1; tibia IV p1-0-1; metatarsi: I, II v0-0-0; III v2-0-0.

FEMALE: Total length 5.78 ± 0.80 . Cara-

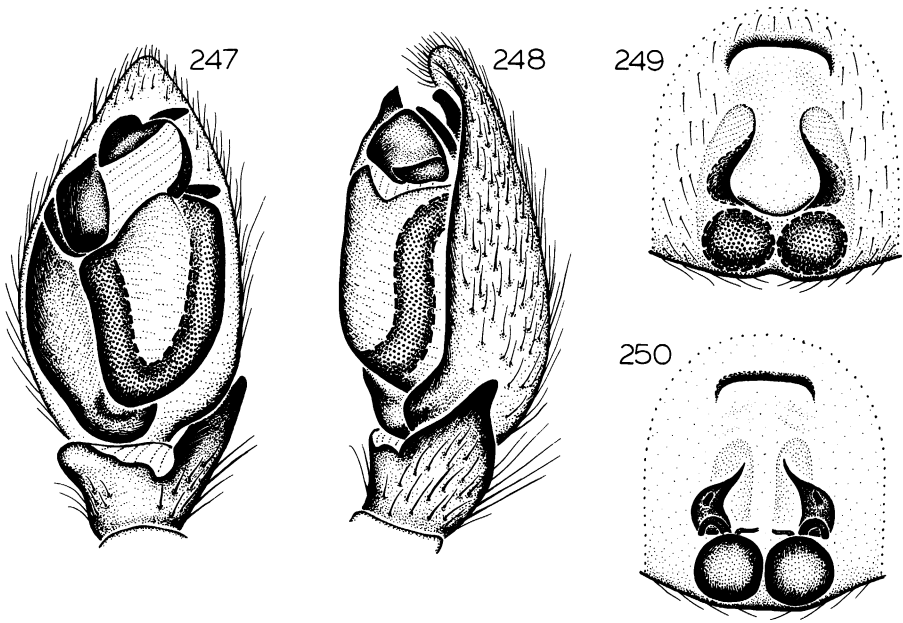
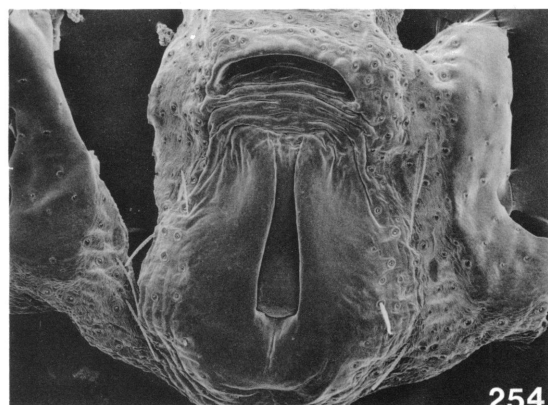
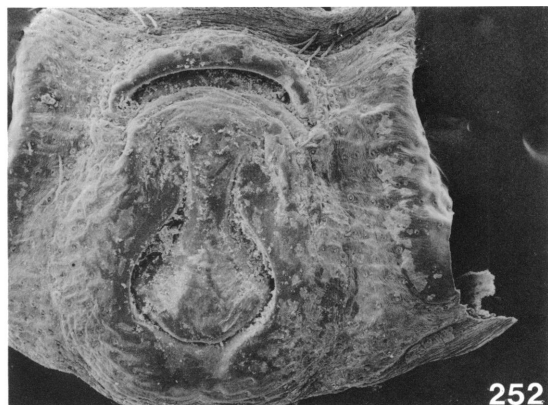


FIG. 247–250. *Zelotes puritanus* Chamberlin. 247. Palp, ventral view. 248. Palp, retrolateral view. 249. Epigynum, ventral view. 250. Epigynum, dorsal view.

pace 2.30 ± 0.27 long, 1.80 ± 0.21 wide. Femur II 1.34 ± 0.18 long (308 specimens examined). Eye sizes and interdistances: AME 0.06, ALE 0.06, PME 0.07, PLE 0.07; AME–AME 0.07, AME–ALE 0.03, PME–PME 0.08, PME–PLE 0.07, ALE–PLE 0.06. MOQ length 0.22, front width 0.19, back width 0.22. LEM widely separated; LED wide, PED small (figs. 249, 250, 252). Leg spination: femur IV p0-0-0, r0-0-1; tibia IV p1-0-1, r1-0-1; metatarsi: I, II v0-0-0; III v2-0-0.

RECORDS: ALASKA: Fort Yukon. CANADA: *Alberta*: Calgary, E Fitzgerald, Lake Edith (Jasper National Park), Manyberries, Seven Persons, Vermilion Lakes (near Banff), Waterton Lakes National Park. *British Columbia*: Goldstream Provincial Park (near Victoria), Kamloops, 15 mi. W Revelstoke, Summerland. *Manitoba*: Riding Mountain National Park, Spruce Woods Provincial Park. *New Brunswick*: Kedgwick River, Kouchibouguac National Park. *Northwest Territories*: Fort Smith, Wrigley, Yellowknife. *Ontario*: Black Sturgeon Lake, Deer Island and Sproule Bay (Lake Opeongo, Algonquin Provincial Park), Hepworth, 15 mi. NW Marathon, Mindemoya (Manitoulin

Island), Shea's Bay (Lake Abitibi), Sioux Lookout. *Quebec*: Gaspé Provincial Park. *Saskatchewan*: Chaplin, Estevan, Herbert, Lady Lake, McLean, Moose Jaw, 6 mi. E Piapot, E Regina, 15 mi. S Robsart, Saskatoon, Sintaluta, Strasbourg, Val Marie, 5 mi. W Whitewood, Wollaston Lake. *Yukon*: Sheep Mountain (Kluane National Park), Whitehorse. UNITED STATES (county records only): *Arizona*: Coconino. *California*: Contra Costa, Mariposa, Mono, Nevada, San Francisco, Santa Clara, Siskiyou, Stanislaus, Tulare. *Colorado*: Alamosa, Archuleta, Boulder, Chaffee, Clear Creek, Costilla, Custer, Delta, Fremont, Garfield, Gunnison, Hinsdale, Jackson, La Plata, Larimer, Park, Rio Grande, Saguache, San Miguel. *Idaho*: Bear Lake, Bonneville, Cassia, Payette, Twin Falls, Valley. *Maine*: Piscataquis. *Massachusetts*: Barnstable. *Michigan*: Alger, Keweenaw, Marquette. *Minnesota*: Itasca, Koochiching, Washington. *Montana*: Carbon, Lake, Ravalli, Sanders. *Nevada*: Eureka, Humboldt, Nye. *New Mexico*: Bernalillo, San Miguel, Santa Fe. *North Dakota*: Divide, McLean, Ward. *Oregon*: Baker, Coos, Deschutes, Harney, Klamath, Lake, Lane,



FIGS. 251–254. 251, 252. *Zelotes puritanus* Chamberlin. 253, 254. *Z. reformans* Chamberlin. 251, 253. Palp, ventral view. 260 $\times$. 252, 254. Epigynum, ventral view. 130 $\times$.

Wheeler. *South Dakota*: Custer, Pennington. *Utah*: Beaver, Box Elder, Daggett, Emery, Salt Lake, San Juan, Sevier, Summit, Uintah, Utah, Wasatch. *Washington*: Cowlitz, Douglas, Grant, King, Kittitas, Lincoln, Pierce, San Juan, Skamania, Spokane, Stevens. *Wisconsin*: Douglas, Vilas. *Wyoming*: Albany, Carbon, Fremont, Goshen, Platte, Yellowstone, Teton.

DISTRIBUTION: Alaska to New Brunswick, south to New Mexico, South Dakota, and Massachusetts (map 21); Czechoslovakia, Poland, and Austria.

NATURAL HISTORY: Mature males have been taken from late April through July, mature females from early May through late October. Specimens have been collected in pitfall traps, in aspen, fir, scrub oak, lodgepole and ponderosa pine, and black spruce forests, in beach litter, meadows, pastures,

prairies, sagebrush, and under logs and rocks, at elevations up to 12,300 feet.

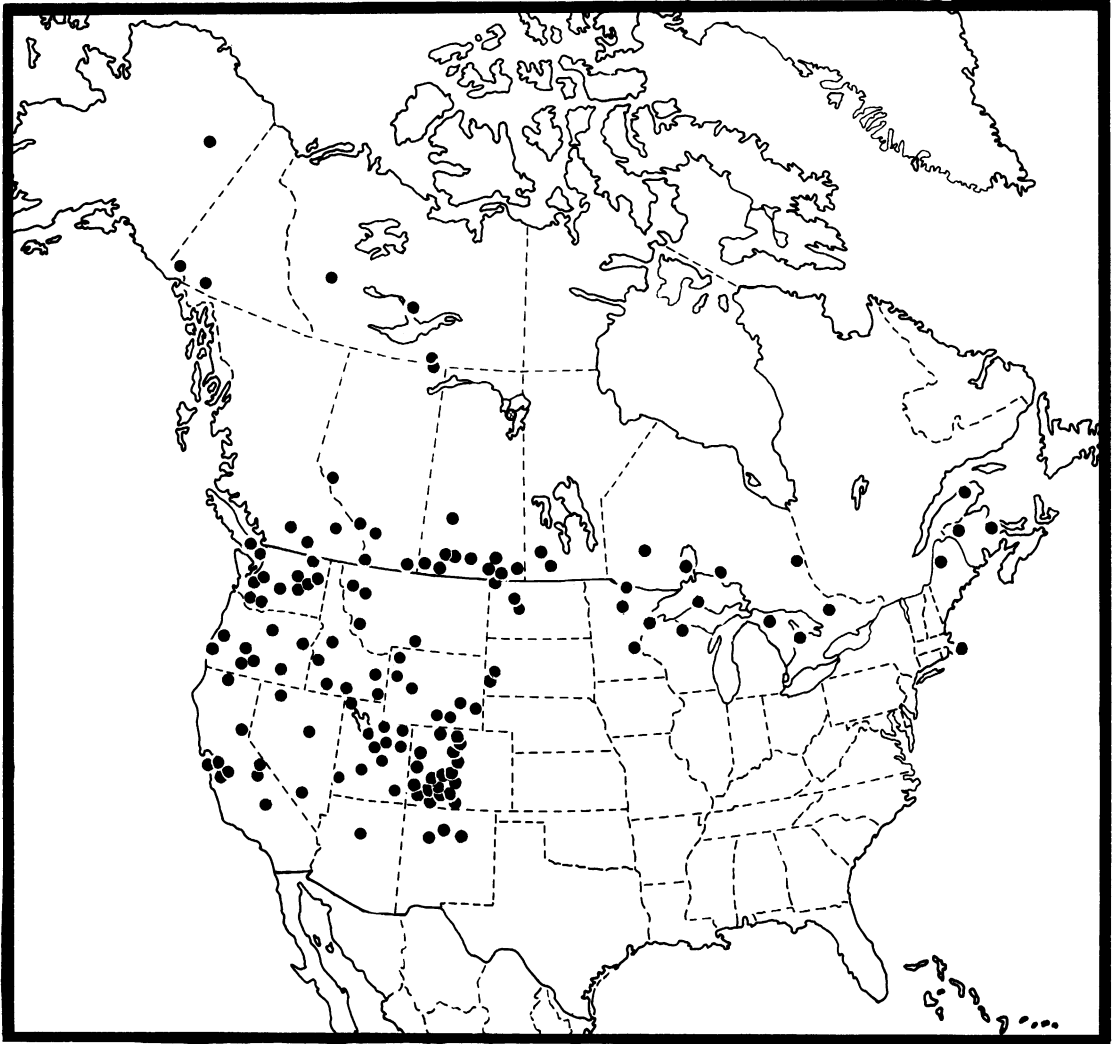
SYNONYMY: No significant differences were detected between American specimens of *Z. puritanus* and Czechoslovakian representatives of *Z. kodaensis* lent by Dr. Jan Buchar.

Zelotes reformans Chamberlin

Figures 253–258; Map 22

Zelotes reformans Chamberlin, 1924, p. 625, fig. 65 (female holotype from Guaymas, Sonora, Mexico, in CAS, examined). Roewer, 1954, p. 469. Bonnet, 1959, p. 4947. Ubick and Roth, 1973, p. 8.

DIAGNOSIS: *Zelotes reformans* can be distinguished from *Z. puritanus* by the more angular TA and longer RTA (figs. 255, 256) of males and the more closely spaced LEM (fig. 257) of females. The species seems clos-



MAP 21. North America, showing distribution of *Zelotes puritanus*.

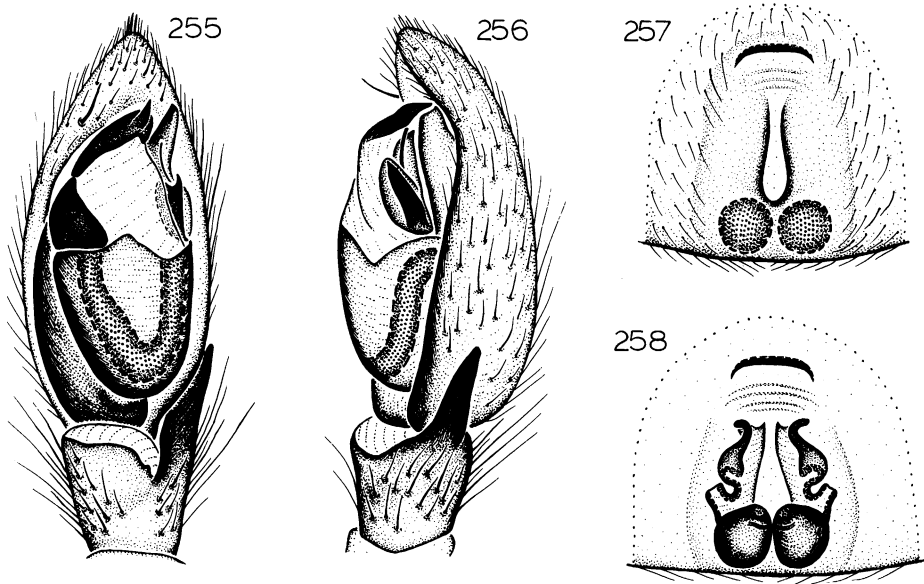
est to *Z. inauratus* (O. P.-Cambridge) of Egypt, which is probably a senior synonym of both *Z. antiope* (Simon) of France and *Z. simplex* Denis of Algeria, but has a shorter EMB and less highly coiled MED.

MALE: Total length 4.66 ± 0.72 . Carapace 2.15 ± 0.26 long, 1.70 ± 0.20 wide. Femur II 1.30 ± 0.17 long. Eye sizes and interdistances: AME 0.05, ALE 0.09, PME 0.08, PLE 0.08; AME-AME 0.08, AME-ALE 0.03, PME-PME 0.07, PME-PLE 0.06, ALE-PLE 0.07. MOQ length 0.24, front width 0.18, back width 0.23. MA with long retrolateral process (figs. 253, 255, 256). Leg spination:

femur IV r0-0-1; tibia IV p1-0-1, r2-1-1; metatarsi: I, II v0-0-0; III v2-1p-0.

FEMALE: Total length 5.52 ± 0.42 . Carapace 2.31 ± 0.16 long, 1.81 ± 0.12 wide. Femur II 1.37 ± 0.08 long. Eye sizes and interdistances: AME 0.05, ALE 0.09, PME 0.08, PLE 0.08; AME-AME 0.08, AME-ALE 0.03, PME-PME 0.07, PME-PLE 0.06, ALE-PLE 0.09. MOQ length 0.24, front width 0.18, back width 0.23. LEM approximate; LED sinuous laterally (figs. 254, 257, 258). Leg spination: femur IV r0-0-1; tibia IV p1-0-1; metatarsi: I, II v0-0-0; III v2-0-0.

MATERIAL EXAMINED: UNITED STATES:



FIGS. 255–258. *Zelotes reformans* Chamberlin. 255. Palp, ventral view. 256. Palp, retrolateral view. 257. Epigynum, ventral view. 258. Epigynum, dorsal view.

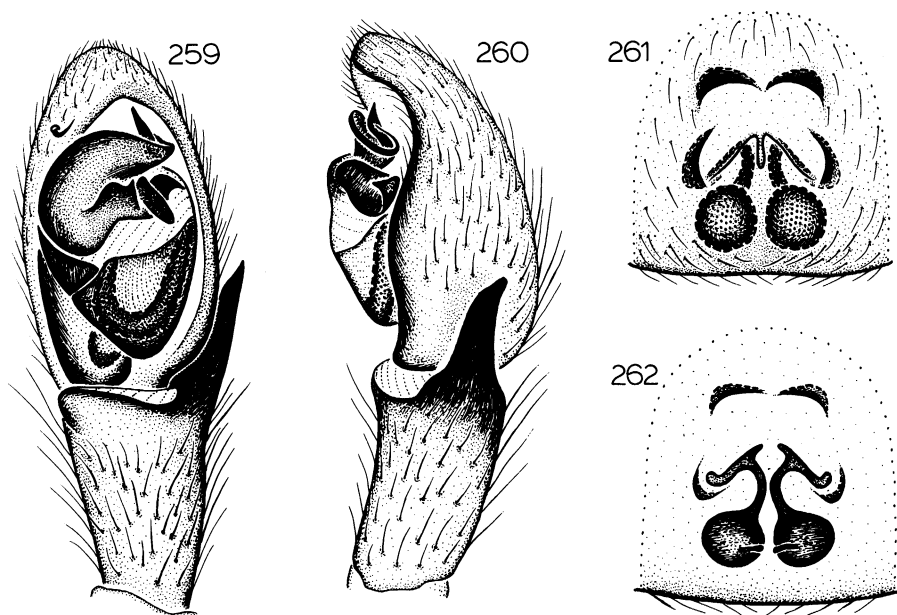
Arizona: *Maricopa Co.*: Mesa, Aug. 23, 1956 (V. Roth), 1 ♀; Phoenix, Sept. 1964 (W. Eberhard, MCZ), 2 ♀, July 20–28, 1965 (W. Eberhard, MCZ), 1 ♂. *Mohave Co.*: shore of Colorado River, May 1976 (K. Conry, MCZ), 1 ♂. *Pima Co.*: Tucson, May 20–Aug. 18, 1968 (D. E. Bixler, DEB), 2 ♂. *Pinal Co.*: Casa Grande, June 12, 1956 (V. Roth), 1 ♂. *Yuma Co.*: Yuma, Oct. 26–Dec. 3, 1955–1956, in house (V. Roth), 2 ♂, 2 ♀, Mar. 22, 1973, in house (R. Ackley), 1 ♂; 5 mi. W Yuma, Oct. 1957 (V. Roth), 1 ♀; Yuma Experiment Station, July 25, 1958, on open ground in sunlight (V. Roth), 1 ♂, 1 ♀; Yuma Valley, Oct. 12, 1956, on dry soil (V. Roth), 1 ♂, July 17, 1966, under concrete (D. Richman), 1 ♂. **California:** *Imperial Co.*: Brawley, Sept. 24, 1956, on dry soil (V. Roth), 1 ♂, Apr. 20, 1961 (D. Thompson), 1 ♀; El Centro, Mar. 13–Sept. 14, 1961–1962 (V. Roth), 2 ♂, May 22, 1961, on sidewalk (V. Roth), 1 ♀; Imperial Valley, May–June 1960 (V. Roth), 1 ♂, 1 ♀, June 19, 1979, pitfall, cotton (L. A. Hickie, WRI), 4 ♂, 6 ♀; Meloland Field Station, Sept. 1978, cotton (L. A. Hickie, UCR), 3 ♂, 6 ♀. *Riverside Co.*: 1 mi. E Blythe, May 24, 1970, pitfall (M. Wasbauer, CDFA), 1 ♂; N shore, Salton Sea, Oct. 1960, 1 ♂, 1 ♀. **Texas:** *El Paso Co.*: El Paso, Apr. 18, 1965

(J. Hallan), 1 ♂, 1 ♀. **MEXICO:** **Baja California Norte:** Puerto Santo Tomás, July 14–15, 1956 (R. X. Schick), 1 ♂. **Baja California Sur:** La Paz, Feb. 1–3, 1965 (V. Roth), 1 ♂. **Sonora:** El Desemboque, Aug. 15–Sept. 10, 1953 (B. Malkin), 1 ♂, 1 ♀; Guaymas, Apr. 14, 1921 (J. C. Chamberlin, CAS), 1 ♀ (type), July 26, 1952 (P. and C. Vaurie), 1 ♂; Viñedo del Sol, May 22, 1977 (R. Lopez, CDFA), 1 ♂. **PERU:** **Lima:** Quebrada Verde, Aug. 1948, elevation 200–300 m. (W. Weyrauch, EPC), 1 ♀. **Piura:** Cerros de Amotape, between Quebrada Pasul and Quebrada del Muerto, Oct. 27, 1940 (H. E. Frizzell, EPC), 1 ♀; Quebrada Charanal, May 11, 1941 (H. E. Frizzell, EPC), 1 ♀. **HAWAII:** **Oahu:** Honolulu, Feb. 21, 1950, on ground (M. Adachi), 1 ♂; Kaho Head, Jan. 15, 1945, elevation 200 feet (C. T. Parsons, MCZ), 1 ♂.

DISTRIBUTION: Southwestern United States and northwestern Mexico (map 22); Peru; Hawaii.

INTRODUCED SPECIES

NOTE: The two species treated below seem not to be native members of the American fauna, and belong to species groups that are otherwise unrepresented in America.



FIGS. 259–262. *Zelotes pallidus* (O. P.-Cambridge). 259. Palp, ventral view. 260. Palp, retrolateral view. 261. Epigynum, ventral view. 262. Epigynum, dorsal view.

Zelotes pallidus (O. P.-Cambridge)

Figures 259–262; Map 18

Prothesima pallida O. P.-Cambridge, 1874, p. 383, pl. 51, figs. 11a, 11b (male and female syntypes from Alexandria, Egypt, in HEC, examined).

Prothesima circumspecta Simon, 1878, p. 94, pl. 14, figs. 26, 27 (male and female syntypes from France and Corsica, in MNHN, not examined).
NEW SYNONYMY.

Zelotes circumspectus: Simon, 1914, p. 157, figs. 295, 296, 342, 343. Roewer, 1954, p. 447. Bonnet, 1959, p. 4917.

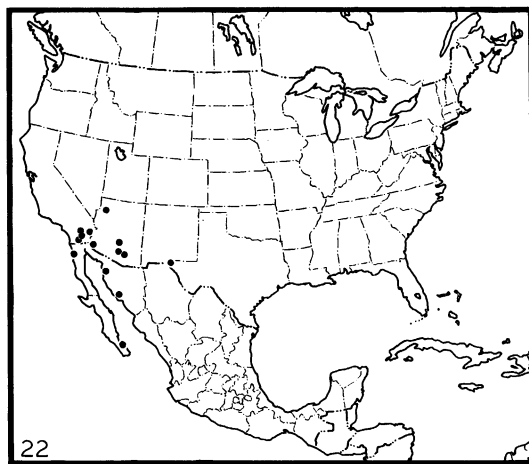
Zelotes pallidus: Reimoser, 1919, p. 169. Roewer, 1954, p. 454. Bonnet, 1959, p. 4938.

DIAGNOSIS: *Zelotes pallidus* is a distinctive species easily recognized by the greatly expanded EB (fig. 259) of males and the narrow MED (fig. 262) of females.

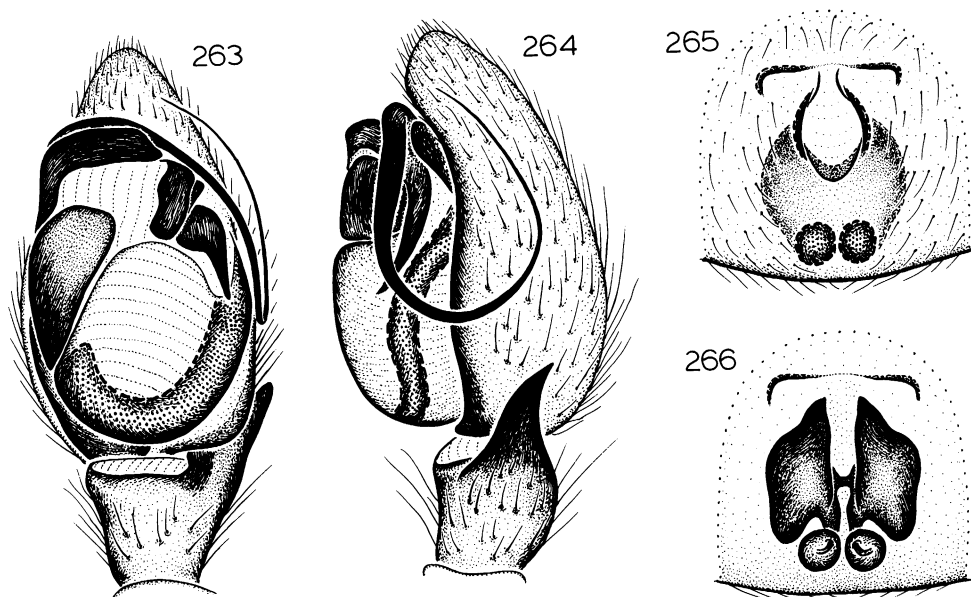
MALE: Total length 4.15 ± 0.84 . Carapace 1.98 ± 0.39 long, 1.47 ± 0.28 wide. Femur II 1.33 ± 0.24 long. Eye sizes and interdistances: AME 0.06, ALE 0.09, PME 0.10, PLE 0.08; AME–AME 0.06, AME–ALE 0.02, PME–PME 0.05, PME–PLE 0.05, ALE–PLE 0.06. MOQ length 0.26, front width 0.18, back width 0.25. EB enlarged, wrapped around EMB retrolaterally (figs. 259, 260).

Leg spination: femur IV p0-0-1, r0-0-1; tibiae: III r1-1-1; IV p1-0-1, r2-1-1; metatarsi: I v0-0-0; II v2-1p-0; III r1-2-2; IV r1-2-1.

FEMALE: Total length 4.68–6.57. Carapace 1.50–2.41 long, 1.17–1.79 wide. Femur II 0.87–1.51 long. Eye sizes and interdistances: AME 0.07, ALE 0.09, PME 0.10, PLE 0.10;



MAP 22. North America, showing distribution of *Zelotes reformans*.



FIGS. 263–266. *Zelotes nilicola* (O. P.-Cambridge). 263. Palp, ventral view. 264. Palp, retrolateral view. 265. Epigynum, ventral view. 266. Epigynum, dorsal view.

AME–AME 0.07, AME–ALE 0.02, PME–PME 0.05, PME–PLE 0.05, ALE–PLE 0.07. MOQ length 0.28, front width 0.21, back width 0.25. PEM extending as far anteriorly as LEM (figs. 261, 262). Leg spination: femur IV p0-0-1; tibiae: III r1-1-1; IV r2-1-1; metatarsi: I v0-0-0; III r1-2-2; IV r1-2-1.

MATERIAL EXAMINED: UNITED STATES: **California:** *Contra Costa Co.*: Briones Reservoir, June 22–July 4, 1980 (J. B. Fraser), 2 ♂, 2 ♀. **SPAIN:** **Alicante:** Benidorm, 1961 (K. W. Haller), 1 ♂, 1 ♀ (penultimate). **Madrid:** Madrid, 1961 (K. W. Haller), 1 ♂, 2 ♀. **Valencia:** Saler, 7 km. SE Valencia, 1961 (K. W. Haller), 1 ♂, 1 ♀. **FRANCE:** **Corsica:** no specific locality (E. Simon, BMNH), 2 ♂, 1 ♀. **Var:** La Garde (P. Veyret, MNHN), 1 ♂; Port Cros (MNHN), 2 ♂. **ITALY:** **Basilicata:** *Potenza:* Potenza, June 4, 1962, rocks, field, streamside (H. Levi, P. Tongiorgi, MCZ), 1 ♂. **GREECE:** **Crete:** *Akrotiri:* Kalathas Pond, Apr. 19–20, 1981 (J. A. Murphy, JAM), 2 ♂. **YUGOSLAVIA:** **Croatia:** Split, June 17, 1962, under stones in garden (H. Levi, MCZ), 1 ♂. **EGYPT:** **Alexandria:** Alexandria, Apr. 1864 (O. P.-Cambridge, HEC), 1 ♂, 1 ♀ (types).

DISTRIBUTION: This Mediterranean species

is known in America only from Contra Costa County, California (map 18).

SYNONYMY: Simon provided no characters by which to distinguish *Z. circumspetus* from *Z. pallidus*, and there appear to be none.

Zelotes nilicola (O. P.-Cambridge)

Figures 263–268; Map 17

Prothesima nilicola O. P.-Cambridge, 1874, p. 380, pl. 51, fig. 8 (male holotype from Alexandria, Egypt, in HEC, examined).

Prothesima tantula Simon, 1878, p. 88, pl. 14, fig. 21 (male holotype from Corsica, in MNHN, not examined). First synonymized by Dalmás, 1922, p. 84.

Prothesima nilotica: Simon, 1878, p. 99 (*lapsus*).

Melanophora nilotica: Simon, 1893, p. 366 (*lapsus*).

Melanophora tantula: Simon, 1893, p. 366.

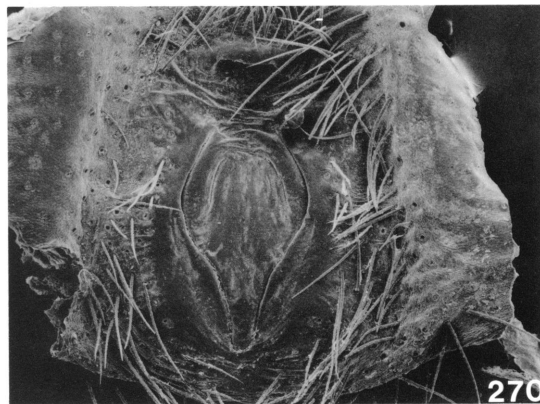
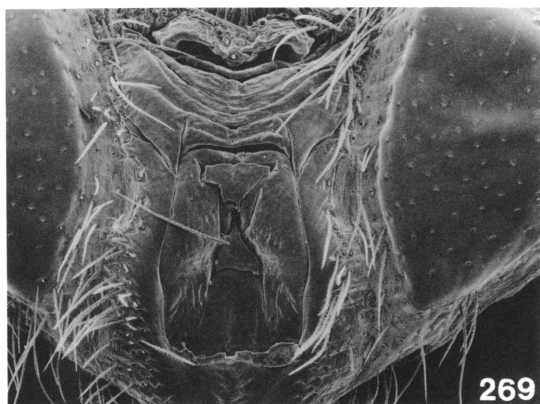
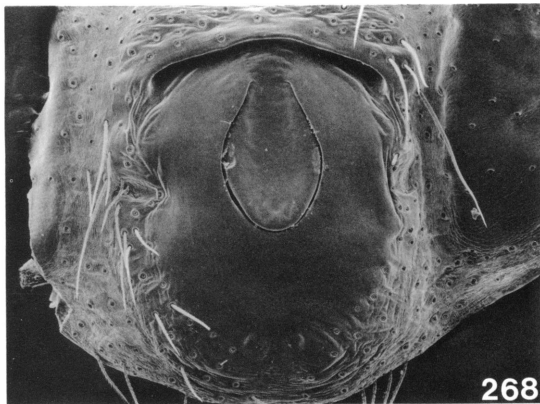
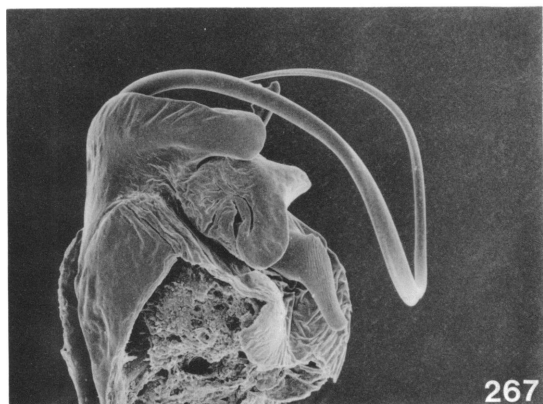
Zelotes tantulus: Simon, 1914, p. 160, fig. 312.

Zelotes nilicolus: Reimoser, 1919, p. 169.

Zelotes nilicola: Dalmás, 1922, p. 84. Roewer, 1954, p. 454. Bonnet, 1959, p. 4937.

DIAGNOSIS: *Zelotes nilicola* is a bizarre species easily recognized by the enormously elongated EMB (fig. 263) of males and the massive epigynal ducts (fig. 266) of females.

MALE: Total length 2.75 ± 0.43 . Carapace



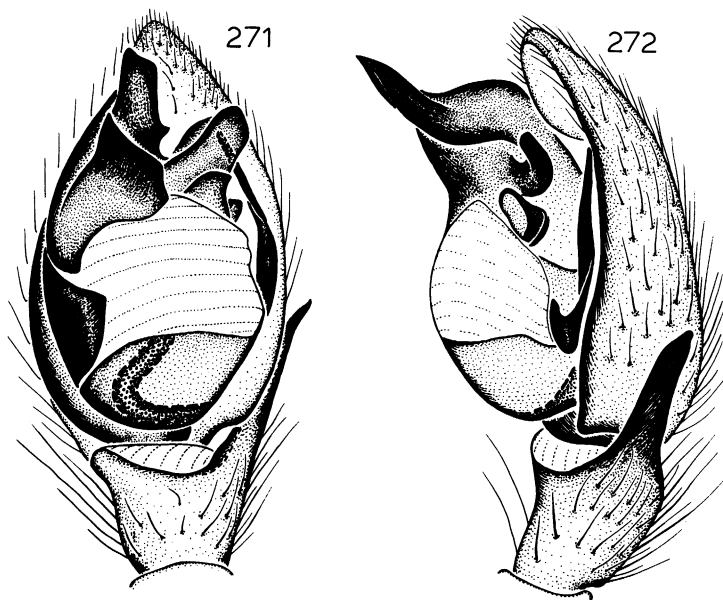
FIGS. 267–270. 267, 268. *Zelotes nilicola* (O. P.-Cambridge). 269. *Z. duplex* Chamberlin. 270. *Z. perditus* Chamberlin. 267. Palp, ventral view, 210 $\times$. 268–270. Epigynum, ventral view, 120 $\times$.

1.27 $\pm$ 0.13 long, 0.96 $\pm$ 0.10 wide. Femur II 0.73 $\pm$ 0.08 long. Eye sizes and interdistances: AME 0.03, ALE 0.05, PME 0.05, PLE 0.05; AME–AME 0.03, AME–ALE 0.01, PME–PME 0.03, PME–PLE 0.04, ALE–PLE 0.04. MOQ length 0.13, front width 0.09, back width 0.13. EMB wrapped around CYM retrolaterally (figs. 263, 264, 267). Leg spination: femur IV r0-0-1; tibiae: III r1-1-1; IV p1-0-1; metatarsi: I v0-0-0; III v2-0-0.

FEMALE: Total length 2.95 $\pm$ 0.28. Carapace 1.28 $\pm$ 0.12 long, 0.95 $\pm$ 0.07 wide. Femur II 0.71 $\pm$ 0.09 long. Eye sizes and interdistances: AME 0.03, ALE 0.05, PME 0.04, PLE 0.06; AME–AME 0.05, AME–ALE 0.01, PME–PME 0.04, PME–PLE 0.04, ALE–PLE 0.04. MOQ length 0.13, front width 0.11, back width 0.12. Epigynum with short, anteriorly situated median plate, ducts massive (figs. 265, 266, 268). Leg spination: femora:

I, II p0-0-0; IV p0-0-1, r0-0-1; tibia IV p1-0-1; metatarsi: I v0-0-0; III v2-1p-0.

MATERIAL EXAMINED: UNITED STATES: **Arizona:** *Yuma Co.*: N Gila Valley, July 23, 1958, poplar duff (V. Roth), 4 δ ; Yuma, Apr. 22, 1965 (J. Hallan), 1 δ . **California:** *Kern Co.*: Bakersfield, Aug. 6, 1974, cotton (Byerly, UCR), 1 φ . *Los Angeles Co.*: Ballona Wetlands, near Playa del Rey, Feb. 25, 1981 (C. Nagano, J. Hogue, LACM), 1 δ , Aug. 24–Sept. 5, 1980 (C. Nagano, J. Hogue, E. Birdsell, C. Chapelle, LACM), 1 φ ; San Dimas Park, Jan. 15, 1972 (M. E. Thompson, MET), 1 δ ; San Fernando, Sept. 25, 1965 (J. and W. Ivie), 1 φ . *Riverside Co.*: Riverside, Sept. 4, 1975, 1 φ , June 3–Aug. 15, 1975–1976, citrus litter (D. P. Carroll, DPC), 7 δ , 11 φ ; University of California campus, Riverside, May 12, 1976, in building (D. P. Carroll, UCR), 1 δ ; Winchester, Jan. 20–Oct. 5, 1968–



FIGS. 271, 272. *Zelotes mayanus* Chamberlin and Ivie. 271. Palp, ventral view. 272. Palp, retrolateral view.

1981, pitfalls, *Eucalyptus* litter, in buildings, under rocks, in Bermuda grass lawn, elevation 1500 feet (W. R. Icenogle, WRI, AMNH), 46 ♂, 35 ♀; no specific locality, Aug. 5, 1964 (E. F. Legner, MCZ), 1 ♀. *San Bernardino Co.*: Lytle Creek Canyon, May 10, 1972 (D. E. Bixler, DEB), 1 ♀; Redlands, Sept. 10, 1968 (D. E. Bixler, DEB), 1 ♂. *San Diego Co.*: Camp Pendleton Reserve, 8 mi. N Ocean-side, Mar. 30, 1960 (W. J. Gertsch, W. Ivie, R. Schrammel), 1 ♀; San Diego, Aug. 1955 (P. H. Arnaud, Jr., CAS), 1 ♀, May 1971,

pitfall (B. J. Kaston, BJK), 1 ♀. CANARY ISLANDS: *Fuerteventura*: Valle de Pecenescal, Mar. 18, 1974, under stone (B. Malkin), 1 ♂. GREECE: *Greater Athens*: Athens, June 1-3, 1981 (B. Malkin), 2 ♀. CYPRUS: *Pis-souri*, May 1982, on beach (A. Stubbs, JAM), 1 ♂, 1 ♀ (penultimate). EGYPT: *Alexandria*: Alexandria (MNHN), 1 ♂, 1 ♀, Apr. 1864 (O. P.-Cambridge, HEC), 1 ♂ (type).

DISTRIBUTION: This Mediterranean species is known in America only from southern California and adjacent Arizona (map 17).

LITERATURE CITED

Banks, Nathan

1898. Arachnida from Baja California, and other parts of Mexico. *Proc. California Acad. Sci.*, ser. 3, vol. 1, pp. 205-308, pls. 13-17.

Barrows, William Morton

1919. New spiders from Ohio. *Ohio Jour. Sci.*, vol. 19, pp. 355-360, figs. 1-9.

1945. New spiders from the Great Smoky Mountain National Park. *Ann. Ent. Soc. Amer.*, vol. 38, pp. 70-76, pls. 1, 2.

Berland, Lucien

1919. Note sur le peigne métatarsal que possèdent certaines araignées de la famille des Drassidae. *Bull. Mus. Hist. Nat.*, pp. 458-463, 1 fig.

- Bonnet, Pierre
 1956. *Bibliographia araneorum*. Toulouse, vol. 2, pt. 2, pp. 919–1926.
 1959. *Bibliographia araneorum*. Toulouse, vol. 2, pt. 5, pp. 4231–5058.
- Bryant, Elizabeth B.
 1936. New species of southern spiders. *Psyche*, vol. 43, pp. 87–101, figs. 1–9.
- Cambridge, Frederick Octavius Pickard-
 1899. *Arachnida-Araneida*. In Godman, F. D., and O. Salvin, *Biologia Centrali-Americana*. London, vol. 2, pp. 41–88, pls. 3–6.
- Cambridge, Octavius Pickard-
 1874. On some new species of drassides. *Proc. Zool. Soc. London*, pp. 370–419, pls. 51, 52.
 1898. *Arachnida-Araneida*. In Godman, F. D., and O. Salvin, *Biologia Centrali-Americana*. London, vol. 1, pp. 233–238, pls. 30–33.
- Chamberlin, Ralph V.
 1919a. New Californian spiders. *Pomona College Jour. Ent. Zool.*, vol. 12, no. 1, pp. 1–17, pls. 1–6.
 1919b. New western spiders. *Ann. Ent. Soc. Amer.*, vol. 12, pp. 239–260, pls. 14–19.
 1920. New spiders from Utah. *Canadian Ent.*, vol. 52, pp. 193–201.
 1922. The North American spiders of the family Gnaphosidae. *Proc. Biol. Soc. Washington*, vol. 35, pp. 145–172.
 1924. The spider fauna of the shores and islands of the Gulf of California. *Proc. California Acad. Sci.*, ser. 4, vol. 12, pp. 561–694, figs. 1–140.
 1928. Notes on spiders from the La Sal Mountains of Utah. *Canadian Ent.*, vol. 60, pp. 93–95.
 1936a. Records of North American Gnaphosidae with descriptions of new species. *Amer. Mus. Novitates*, no. 841, pp. 1–30, figs. 1–45.
 1936b. Further records and descriptions of North American Gnaphosidae. *Ibid.*, no. 853, pl. 1–25, figs. 1–47.
- Chamberlin, Ralph V., and Willis J. Gertsch
 1940. Descriptions of new Gnaphosidae from the United States. *Amer. Mus. Novitates*, no. 1068, pp. 1–19, figs. 1–34.
- Chamberlin, Ralph V., and Wilton Ivie
 1938. *Araneida* from Yucatan. *Carnegie Inst. Washington Publ.*, no. 491, pp. 123–126, figs. 1–24.
 1944. Spiders of the Georgia region of North America. *Bull. Univ. Utah*, vol. 35, no. 9, pp. 1–267, pls. 1–14.
- Dalmas, Raymond de
 1922. Catalogue des araignées récoltées par le Marquis G. Doria dans l'île Giglio (archipel toscan). *Ann. Mus. Civ. Stor. Nat. Genova*, vol. 50, pp. 79–96.
- Fox, Irving
 1938. Notes on North American spiders of the families Gnaphosidae, Anyphaenidae, and Clubionidae. *Iowa State College Jour. Sci.*, vol. 38, pp. 227–243, pls. 1, 2.
- Gertsch, Willis J., and L. Irby Davis
 1940. Report on a collection of spiders from Mexico. III. *Amer. Mus. Novitates*, no. 1069, pp. 1–22, figs. 1–35.
- Gertsch, Willis J., and Susan E. Riechert
 1976. The spatial and temporal partitioning of a desert spider community, with descriptions of new species. *Amer. Mus. Novitates*, no. 2604, pp. 1–25, figs. 1–41, 1 table.
- Gistel, Johannes
 1848. *Naturgeschichte des Thierreichs für höhere Schulen*. Stuttgart, 220 pp., 32 pls.
- Hentz, Nicholas Marcellus
 1832. On North American spiders. *Amer. Jour. Sci.*, vol. 21, pp. 99–109.
- Kaston, Benjamin J.
 1938. Check-list of the spiders of Connecticut. *Bull. Connecticut Geol. Nat. Hist. Surv.*, no. 60, pp. 175–201.
 1945. New spiders in the group *Dionycha* with notes on other species. *Amer. Mus. Novitates*, no. 1290, pp. 1–25, figs. 1–85.
 1948. Spiders of Connecticut. *Bull. Connecticut Geol. Nat. Hist. Surv.*, no. 70, pp. 1–874, pls. 1–144.
 1978. How to know the spiders, third edition. Dubuque, 272 pp., 700 figs.
- Keyserling, Graf Eugen
 1887. *Neue Spinnen aus Amerika*. VII. *Verhandl. Zool. Bot. Gesell. Wien*, vol. 37, pp. 421–490, pl. 6.
- Koch, Carl Ludwig
 1833. *Arachniden*. In Herrich-Schäffer, G. W. (ed.), *Faunae insectorum Germaniae initia*. Regensburg, pts. 111–190.
- Koch, Ludwig
 1872. *Apterologisches aus dem fränkischen Jura*. *Abhandl. Naturhist. Gesell. Nürnberg*, vol. 6, pp. 127–152, figs. 1–32.
- Latreille, Pierre André
 1806. *Genera crustaceorum et insectorum*. Paris, vol. 1, pp. 82–127.

- Lohmander, Hans
1944. Vorläufige Spinnennotizen. *Arkiv Zool.*, vol. 35, no. 16, pp. 1–21.
- Lowrie, Donald C., and Willis J. Gertsch
1955. A list of the spiders of the Grand Teton Park area, with descriptions of some new North American spiders. *Amer. Mus. Novitates*, no. 1736, pp. 1–29, figs. 1–32.
- Marinero, Jean-Yves
1967. Les araignées d'Afrique du Nord. I. Sur une collection de Drassidae a peigne metatarsal d'Algérie. *Bull. Soc. Zool. France*, vol. 92, pp. 687–704, figs. 1–22.
- Mello-Leitão, Candido Firmino de
1938. Algunas arañas nuevas de la Argentina. *Rev. Mus. La Plata*, new ser., Zool., vol. 1, pp. 89–118, figs. 1–39.
- Miller, František
1967. Studien über die Kopulationsorgane der Spinnengattung *Zelotes*, *Micaria*, *Robertus* und *Dipoena* nebst Beschreibung einiger neuen oder unvollkommen bekannten Spinnenarten. *Acta Sci. Nat. Brno*, vol. 1, pp. 251–298, pls. 1–14.
- Miller, František, and Jan Buchar
1977. Neue Spinnenarten aus der Gattung *Zelotes* Distel [sic] und *Haplodrassus* Chamberlin (Araneae, Gnaphosidae). *Acta Univ. Carolinae, Biol.* 1974, pp. 157–171, pls. 1–4.
- Petrunkovitch, Alexander
1911. A synonymic index-catalogue of spiders of North, Central and South America. *Bull. Amer. Mus. Nat. Hist.*, vol. 29, pp. 1–791.
- Platnick, Norman I.
1975. A revision of the spider genus *Eilica* (Araneae, Gnaphosidae). *Amer. Mus. Novitates*, no. 2578, pp. 1–19, figs. 1–35, maps 1–4.
1977. Notes on Brazilian *Eilica* (Araneae, Gnaphosidae). *Rev. Brasileira Biol.*, vol. 37, pp. 395–397, figs. 1–6.
- Platnick, Norman I., and Mohammad U. Shadab
1975. A revision of the spider genus *Gnaphosa* (Araneae, Gnaphosidae) in America. *Bull. Amer. Mus. Nat. Hist.*, vol. 155, pp. 1–66, figs. 1–150, maps 1–15.
1980. A revision of the North American spider genera *Nodocion*, *Litopyllus*, and *Synaphosus* (Araneae, Gnaphosidae). *Amer. Mus. Novitates*, no. 2691, pp. 1–26, figs. 1–52.
- 1982a. A revision of the American spiders of the genus *Drassyllus* (Araneae, Gnaphosidae). *Bull. Amer. Mus. Nat. Hist.*, vol. 173, pp. 1–97, figs. 1–281, maps 1–41.
1982b. A revision of the American spiders of the genus *Camillina* (Araneae, Gnaphosidae). *Amer. Mus. Novitates*, no. 2748, pp. 1–38, figs. 1–120.
- Reimoser, Eduard
1919. Katalog der echten Spinnen (Araneae) des Paläarktischen Gebietes. *Abhandl. Zool. Bot. Gesell. Wien*, vol. 10, no. 2, pp. 1–280.
- Roewer, Carl F.
1954. Katalog der Araneae. *Bremen*, vol. 2, pt. 1, 923 pp.
- Roth, Vincent D., and Wynne Brown
1973. Illustrated key to Nearctic Gnaphosidae. *Amer. Arachnol.*, no. 9, suppl. 1, pp. 1–5, figs. 1–25.
- Schenkel, Ehrenfried
1950. Spinnentiere aus dem westlichen Nordamerika. *Verhandl. Naturf. Gesell. Basel*, vol. 61, pp. 28–92, figs. 1–34.
- Simon, Eugène
1878. Les arachnides de France. *Paris*, vol. 4, 334 pp., pls. 12–16.
1893. Histoire naturelle des araignées. *Paris*, vol. 1, pt. 2, pp. 257–488, figs. 216–490.
1914. Les arachnides de France. *Paris*, vol. 6, 308 pp., 537 figs.
- Starega, Wojciech
1976. Pająki (Aranei) Pienin. *Fragmenta Faunistica*, vol. 21, pp. 233–330, figs. 1–8.
- Thaler, Konrad
1981. Bemerkenswerte Spinnenfunde in Nordtirol (Österreich) (Arachnida: Aranei). *Veröffentl. Mus. Ferdinandeum*, vol. 61, pp. 105–150, figs. 1–86.
- Thorell, Tamerlan
1877. Descriptions of the Araneae collected in Colorado in 1875, by A. S. Packard, jun., M.D. *Bull. U.S. Geol. Surv.*, vol. 3, pp. 477–529.
- Ubick, Darrell, and Vincent D. Roth
1973. Nearctic Gnaphosidae including species from adjacent Mexican states. *Amer. Arachnol.*, no. 9, suppl. 2, pp. 1–12; suppl. 3, pp. 1–6.

INDEX OF SPECIFIC NAMES

(Valid names are printed in italics)

acapulcoanus, 164
adolescens, 104
aiken, 128
anglo, 102, 126
anthereus, 160
antiope, 183
apricorum, 105
ater, 104, 105, 106
bajo, 165
calvanisticus, 129
catholicus, 136
cayucos, 153
chicano, 115
circumspectus, 101, 185
cruz, 154
cyanescens, 105
cymbiolus, 172
directus, 104
discens, 159
duplex, 168
exiguoides, 175
exiguus, 175
fidelis, 104
flavens, 101
florodes, 178
foresta, 144
fratris, 101, 106
funesta, 142
funestus, 142
gabriel, 138
gallicus, 101, 105, 106
gentilis, 104
gertschi, 131
griseus, 104
griswoldi, 162

grovus, 138
gynethus, 156
hardwar, 168
hentzi, 112
icenoglei, 144
inauratus, 183
indecisus, 104
inglenook, 152
inheritus, 106, 117
ivieorum, 165
jamaicensis, 167
josephine, 151
kentzi, 112
kodaensis, 101, 180
lacca, 173
laccus, 173
lasalanus, 102, 114
limnophilus, 172
lymnophilus, 172
mayanus, 164
melancholicus, 104
mesa, 142
miramar, 166
moesta, 121
moestus, 121
monachus, 102, 129
monodens, 179
monodon, 179
montereus, 159
nannodes, 177
nannus, 177
nanodes, 177
nilicola, 101, 186
nilicolus, 186

nilotica, 186
ocala, 170
omissus, 146
pallidenotatus, 101
pallidus, 101, 185
paludis, 104
perditus, 146
petrophilus, 148
piercy, 140
pinos, 158
protestans, 129
pseustes, 119
pullatus, 124
pullus, 117
puritanus, 101, 180
rainier, 133
reformans, 101, 182
rusticus, 100
santos, 137
shoshoneus, 180
simplex, 183
subterranea, 105, 106
subterraneus, 99, 101, 105, 106
sula, 109
sylvanus, 168
talpa, 140
tantula, 186
tantulus, 186
tulare, 143
tuobus, 124
ubicki, 135
union, 138
viola, 150
yosemite, 145

