

AMERICAN MUSEUM *Novitates*

PUBLISHED BY THE AMERICAN MUSEUM OF NATURAL HISTORY
CENTRAL PARK WEST AT 79TH STREET, NEW YORK, N.Y. 10024

Number 2848, pp. 1–22, figs. 1–78

June 27, 1986

A Review of the Zelotine Spiders (Araneae, Gnaphosidae) of China

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ABSTRACT

The known Chinese zelotine spiders include 2 cosmopolitan and probably introduced species, *Trachyzelotes jaxartensis* (Kroneberg) and *Urozelotes rusticus* (L. Koch), 6 species of *Drassyllus*, and 17 species of *Zelotes*. Thirteen new species are described: *Z. hui*, *Z. yinae*, *Z. barkol*, *Z. liaozi*, *Z. zhaoi*, *Z. sanmen*, *Z. cantonensis*, *Z. zhengi*, *Z. yutian*, *Z. tsaii*, *D. yunnanensis*, *D. sanmenensis*, and *D. shaanxiensis*. Three European species

are newly recorded from China: *Z. longipes* (L. Koch), *D. pusillus* (C. L. Koch), and *D. vinealis* (Kulczyński), which is transferred from *Zelotes*. *Zelotes excavatus* Schenkel is also transferred to *Drassyllus*. *Zelotes foveolatus* (Simon) is transferred to *Trachyzelotes* and newly synonymized with *T. jaxartensis*. The males of *Z. wuchangensis* Schenkel and *Z. potanini* Schenkel are described for the first time.

INTRODUCTION

The present paper, the twenty-third in a series on gnaphosoid spiders, is the fifth dealing with the zelotine Gnaphosidae, an informal group containing those gnaphosids with a preening comb situated ventrodistally on metatarsi III and IV (Platnick and Shadab, 1982, figs. 1, 2). We provide here a review

of those zelotine species previously or newly reported from China.

Although previously published Chinese records all pertain to the genus *Zelotes* (see Zhu, 1983), three other zelotine genera occur within China. Two of these genera, *Trachyzelotes* and *Urozelotes*, are each represented

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by a single cosmopolitan, synanthropic species. The third, *Drassyllus*, includes several apparently endemic species that supply the first authenticated records of the genus from eastern Asia. As species of *Drassyllus* are known from Europe and western Asia, as well as North America (where they abound), the presence of the genus in eastern Asia is not unexpected. No specimens of *Camillina*, the southern sister group of *Drassyllus*, have been found in the Chinese material available to us, although that genus could well occur in the southern provinces.

The Chinese zelotine fauna, although certainly still rather incompletely known, appears more similar to that of Europe than to that of North America. As in Europe, many more species are known in *Zelotes* than in *Drassyllus* (in North America, the numbers are almost equal). Also, ignoring the synanthropic and cosmopolitan species, three Chinese species seem to be shared with Europe, but we have found none shared with North America. However, if and when the interrelationships of the numerous species of *Zelotes* and *Drassyllus* become understood cladistically on a worldwide basis, there may even be a predominance of sister-group relationships linking parts of China with parts of North America. The immense size and poorly understood generic diversity of the world's zelotine fauna preclude any quick answer to such questions.

We would like to express our gratitude first to the Weatherhead Fund for Asian Studies of the American Museum of Natural History for the financial assistance that has enabled our collaboration, both in Beijing and New York. In addition to material belonging to the American Museum of Natural History (AMNH) and Institute of Zoology, Academia Sinica, Beijing (IZB), we have used specimens kindly supplied by the following curators and collectors: Mr. P. Hillyard, British Museum (Natural History), London (BMNH); Mr. Tsai Beji, Xinxian Normal College, Henan Province, China (CTB); Mr. Toshio Hayashi, Yamada-gun, Japan (CTH); Dr. Takahide Kamura, Kyōto Prefectural University, Shimogamo (CTK); Prof. Yin Changmin, Department of Biology, Hunan Normal University, Changsha (CYC); Dr. Kap Yong Paik, Taegu, Korea (KYP); Dr. H. W. Levi, Mu-

seum of Comparative Zoology, Harvard University, Cambridge (MCZ); Dr. J. Heurtault, Muséum National d'Histoire Naturelle, Paris (MNHN); Dr. W. Wittmer, Naturhistorisches Museum, Basel (NMB); Dr. M. Grashoff, Forschungsinstitut Senckenberg, Frankfurt (NMS); Dr. T. Kronestedt, Naturhistoriska Riksmuseet, Stockholm (NRS); and Dr. J. Coddington, Museum of Natural History, Smithsonian Institution, Washington (USNM). We are also indebted to Dr. M. U. Shadab of the American Museum for supplying illustrations and to Dr. Takeo Yaginuma of Ohtemon Gakuin University for providing contacts with other Japanese workers. Helpful comments on a draft of the manuscript were received from Mr. J. A. Murphy of Hampton, England, and Dr. K. Mikhailov of the Zoological Museum, Moscow State University.

The format of the descriptions follows that of Platnick and Shadab (1975); all measurements are in millimeters. Abbreviations of genitalic structures follow those of Platnick and Shadab (1982, figs. 3-5; 1983, figs. 2-5).

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).

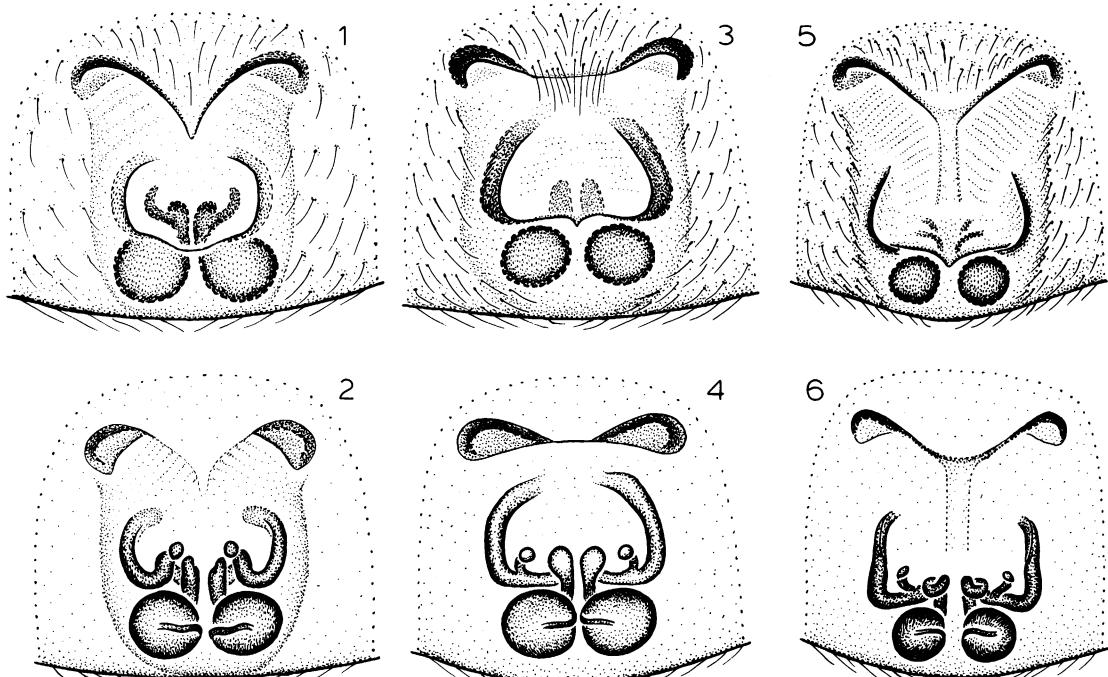
Zelotes Gistel, 1848, p. xi (nomen novum for *Melanophora* C. L. Koch).

Prosthesima L. Koch, 1872, p. 139 (superfluous nomen novum for *Melanophora* C. L. Koch).

DIAGNOSIS: Specimens 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, 1982, figs. 1, 2) and an intercalary sclerite on the male palp (Platnick and Shadab, 1983, fig. 2). The posterior median eyes are unlike those of the other zelotine genera known from China in being relatively small and well separated (up to their diameter apart).

DESCRIPTION: See Platnick and Shadab (1983, p. 104).

MISPLACED SPECIES: Two species belong elsewhere. The holotype of "*Zelotes ? joannisii*" Schenkel (1963), from Nanking in Jiangsu Province, lacks metatarsal preening combs and is not a zelotine. Similarly, the



Figs. 1–6. 1, 2. *Zelotes pseudoapricorum* Schenkel. 3, 4. *Z. hui*, new species. 5, 6. *Z. yinae*, new species. 1, 3, 5. Epigynum, ventral view. 2, 4, 6. Epigynum, dorsal view.

holotype of the Japanese species *Zelotes palpidipatellis* (Bösenberg and Strand), which was recorded from China by Zhu (1983), also lacks a preening comb; Japanese specimens of both sexes kindly loaned to us by Dr. Takahide Kamura have genitalia and abdominal patterning typical of members of the *Poecilochroa* group of genera.

Zelotes pseudoapricorum Schenkel
Figures 1, 2

Zelotes pseudoapricorum Schenkel, 1963, p. 54, fig. 27 (female syntype from Dorf Ndami or Kloster Kadiger, Gansu, China, in MNHN, examined).

DIAGNOSIS: This member of the *subterraneus* subgroup (Platnick and Shadab, 1983, p. 105) seems closest to the North American species *Z. sula* Lowrie and Gertsch, with which it shares a bifid conformation of the epigynal ducts (as viewed ventrally; compare fig. 1 with Platnick and Shadab, 1983, fig. 16). Females of *Z. pseudoapricorum* can be distinguished by their longer paramedian epigynal ducts (figs. 1, 2).

MALE: Unknown.

FEMALE: Described by Schenkel (1963).

MATERIAL EXAMINED: Only one syntype, taken either at Dorf Ndami on May 23, 1885, or at Kloster Kadiger on May 26, 1885 (the locality label now with the specimen specifies only the province).

DISTRIBUTION: Gansu Province, China.

Zelotes hui, new species
Figures 3, 4

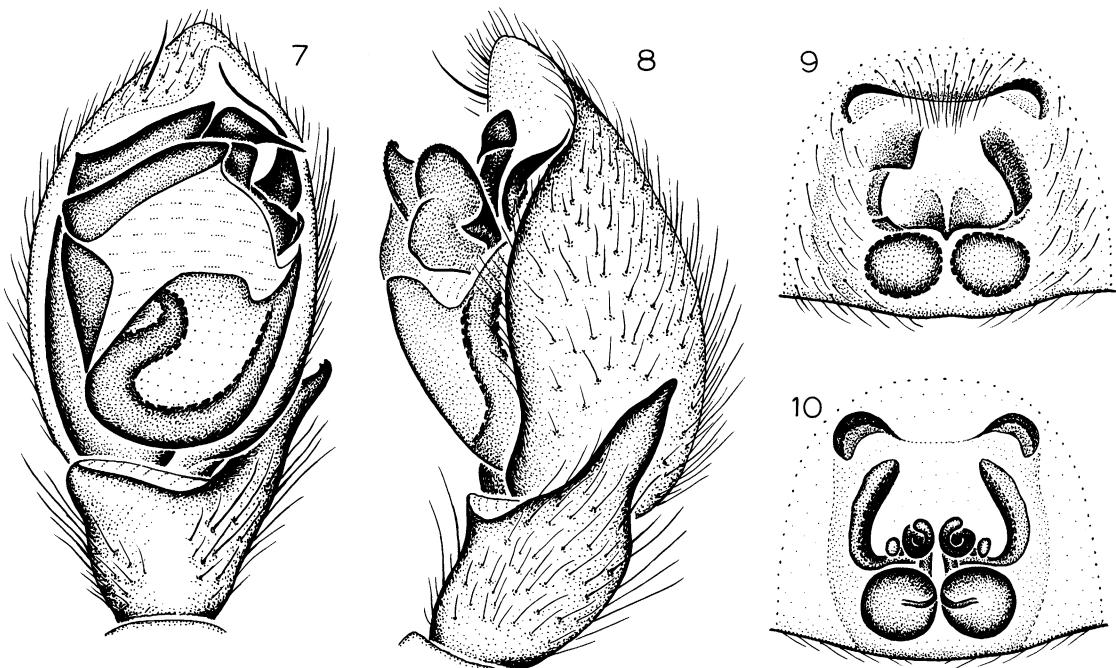
TYPE: Female holotype from Zhaosu, Xinjiang, China (August 25, 1982; J. L. Hu), deposited in IZB.

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

DIAGNOSIS: This member of the *subterraneus* subgroup (Platnick and Shadab, 1983, p. 105) can be recognized by the posteriorly narrowed median epigynal ducts (fig. 4).

MALE: Unknown.

FEMALE: Total length 4.93. Carapace 2.20 long, 1.71 wide. Femur II 1.35 long. Eye sizes and interdistances: AME 0.05, ALE 0.08,



Figs. 7–10. *Zelotes asiaticus* (Bösenberg and Strand). 7. Palp, ventral view. 8. Palp, retrolateral view. 9. Epigynum, ventral view. 10. Epigynum, dorsal view.

PME 0.08, PLE 0.07; AME-AME 0.08, AME-ALE 0.02, PME-PME 0.05, PME-PLE 0.08, ALE-PLE 0.06; MOQ length 0.21, front width 0.18, back width 0.21. LEM oblique (fig. 3), MED narrower posteriorly than anteriorly (fig. 4). Leg spination: femur IV p0-0-1, r0-0-1; tibia IV r2-1-1; metatarsus III r1-2-2.

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Xinjiang Province, China.

Zelotes yinae, new species

Figures 5, 6

TYPE: Female holotype from Beijing, Beijing, China (August–September 1975; H. Q. Wang), deposited in CYC.

ETYMOLOGY: The specific name is a patronym in honor of Prof. Yin Changmin of Hunan Normal University, Changsha, who made the type specimen available to us for study.

DIAGNOSIS: This member of the *hentzi* subgroup (Platnick and Shadab, 1983, p. 112) resembles the North American species *Z. pullus* Bryant in having the anterior epigynal margins widely separated, but can be distin-

guished by the anteriorly directed paramedian epigynal ducts (figs. 5, 6).

MALE: Unknown.

FEMALE: Total length 5.99. Carapace 2.57 long, 2.05 wide. Femur II 1.50 long. Eye sizes and interdistances: AME 0.06, ALE 0.10, PME 0.08, PLE 0.08; AME-AME 0.08, AME-ALE 0.02, PME-PME 0.08, PME-PLE 0.06, ALE-PLE 0.07; MOQ length 0.27, front width 0.20, back width 0.23. AEM widely separated; MED coiled (figs. 5, 6). Leg spination: femur IV p0-0-1; metatarsus III r1-2-2.

OTHER MATERIAL EXAMINED: None.

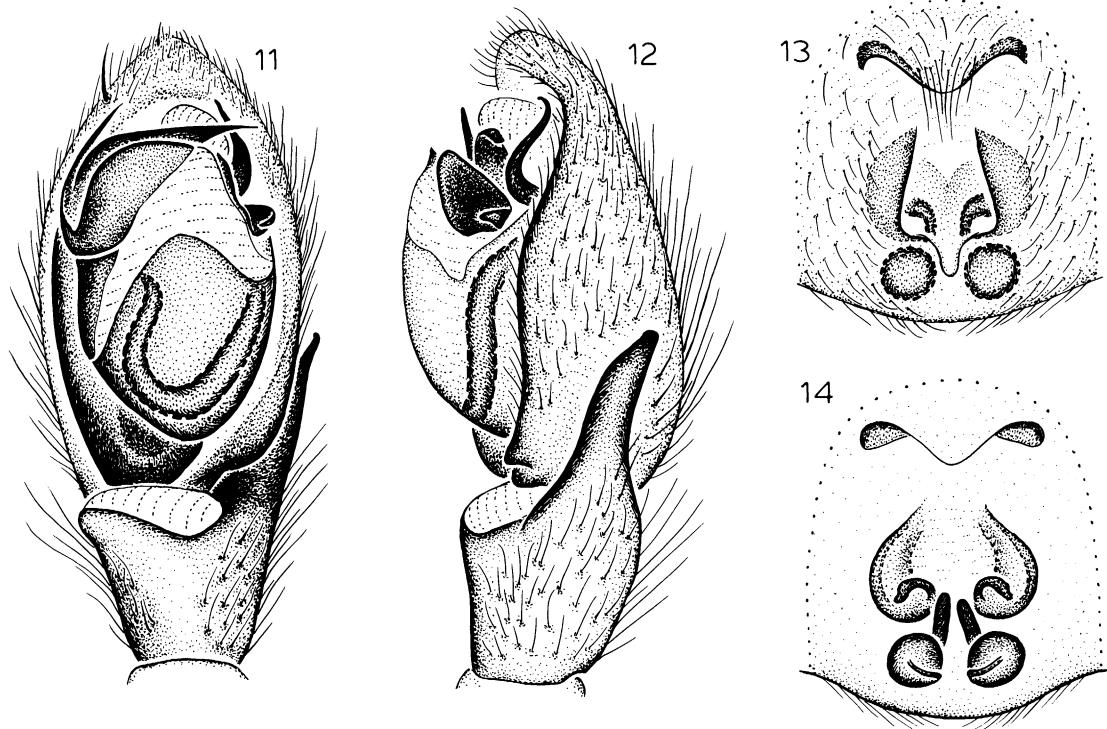
DISTRIBUTION: Beijing, China.

Zelotes asiaticus (Bösenberg and Strand)

Figures 7–10

Prosthesima asiatica Bösenberg and Strand, 1906, p. 121, figs. 78, 487 (female holotype from Saga, Kyūshū, Japan, in NMS, examined).

Zelotes asiaticus: Roewer, 1954, p. 445. Bonnet, 1959, p. 4913. Yaginuma, 1960, p. 121, pl. 56, fig. 329, text fig. 100(9). Paik, 1978, p. 422, pl. 8, fig. 124, pl. 35, fig. 124, text fig. 190. Hayashi, 1983, p. 10, figs. 1–10. Zhu, 1983, p. 87. Kamura, 1984, p. 4, figs. 7–13.



Figs. 11–14. *Zelotes barkol*, new species. 11. Palp, ventral view. 12. Palp, retrolateral view. 13. Epigynum, ventral view. 14. Epigynum, dorsal view.

DIAGNOSIS: This member of the *hentzi* subgroup (Platnick and Shadab, 1983, p. 112) can be recognized by the divided embolar base of males (fig. 7) and coiled median epigynal ducts of females (fig. 10).

MALE: Described by Hayashi (1983) and Kamura (1984).

FEMALE: Described by Hayashi (1983) and Kamura (1984); many specimens (including the holotype) have one or both of the elevated ridges on the lateral epigynal margins broken off posteriorly (fig. 9).

MATERIAL EXAMINED: CHINA: Henan: Xinxiang, June 1984 (B. Tsai, CTB), 1♂. Sichuan: Loochow (=Luzhou?) (N. Gist Gee, W. M. Wheeler, MCZ), 1♀; Tatsienlu (=Kangding), July 20, 1923, elev. 1200 ft (D. C. Graham, USNM), 1♀. Zhejiang: Shaoxing, Sept. 2, 1983 (Z. F. Chen, IZB), 1♀; Zhuji, Sept. 10, 1982 (Z. F. Chen, IZB), 1♀. HONG KONG: no specific locality, late Jan. 1920 (B. Digby, AMNH), 1♂. JAPAN: Honshū: Gumma: Yabutsuka, Oct. 3, 1981 (T. Hayashi, CTH), 1♂, 1♀. Kyōto: Kamigamo, Kita-

ku, Kyōto-shi, Apr. 16–24, 1985 (T. Kamura, IZB), 6♂, 7♀. Shizuoka: SE slope, Mt. Fuji, May 1, 1955, Berlese sample (D. C. Lowrie, AMNH), 1♀. Yamaguchi: Kisenji, June 25, 1962 (K. Murai, AMNH), 1♂. Kyūshū: Saga: Saga, Apr. 1884 (W. Donitz, NMS), 1♀ (type). SOUTH KOREA: Mt. Keumjeung-san, Apr. 13, 1975 (J. H. Kim, KYP), 1♀; Socheun, Bong-Weh-Gun, Kyungpook, Sept. 20, 1963 (Y. K. Jeung, KYP), 1♀.

DISTRIBUTION: Widespread in eastern Asia.

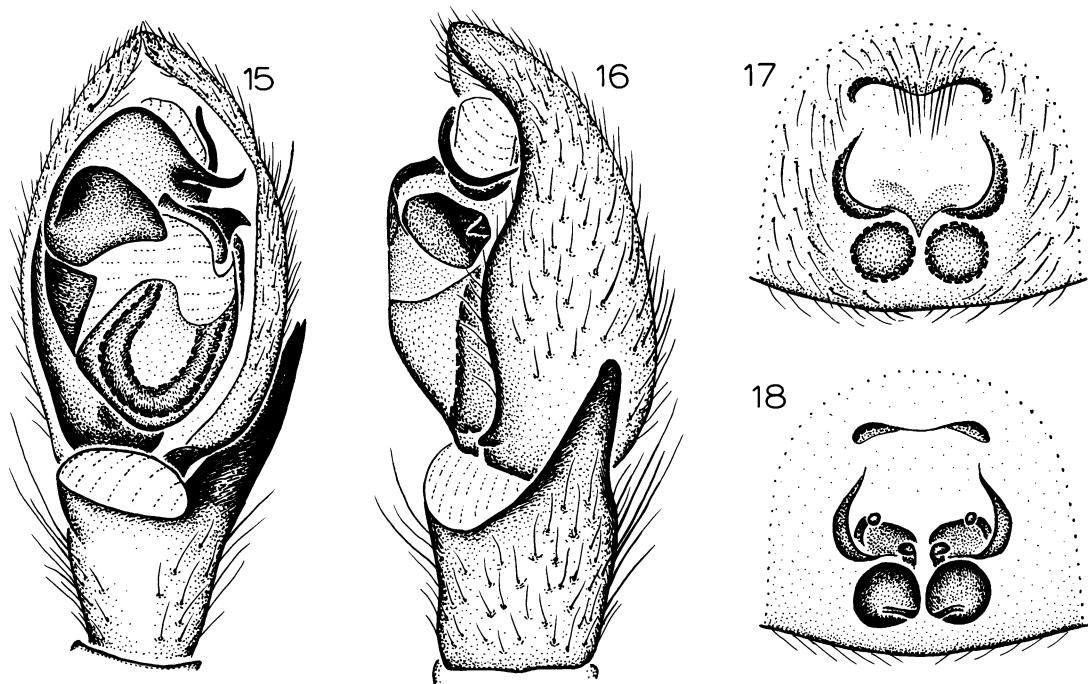
Zelotes barkol, new species

Figures 11–14

TYPES: Male holotype and female paratype from Barkol, Xinjiang, China (September 7, 1976; J. L. Hu), deposited in IZB.

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

DIAGNOSIS: This member of the *tuobus* subgroup (Platnick and Shadab, 1983, p. 123) resembles the European species *Z. aeneus* (Simon) but can be distinguished by the long-



Figs. 15–18. *Zelotes liaoi*, new species. 15. Palp, ventral view. 16. Palp, retrolateral view. 17. Epigynum, ventral view. 18. Epigynum, dorsal view.

er extension on the prolateral side of the embolar base of males (fig. 11) and the laterally directed paramedian epigynal ducts of females (fig. 14).

MALE: Total length 4.52. Carapace 1.94 long, 1.56 wide. Femur II 1.44 long. Eye sizes and interdistances: AME 0.04, ALE 0.07, PME 0.07, PLE 0.07; AME-AME 0.06, AME-ALE 0.02, PME-PME 0.05, PME-PLE 0.05, ALE-PLE 0.05; MOQ length 0.20, front width 0.14, back width 0.20. EB with sharp projection prolaterally, elongated retrolaterally (figs. 11, 12). Leg spination: femur IV p0-0-0, r0-0-1; tibia IV p 1-0-1.

FEMALE: Total length 4.51. Carapace 2.13 long, 1.62 wide. Femur II 1.44 long. Eye sizes and interdistances: AME 0.03, ALE 0.06, PME 0.07, PLE 0.06; AME-AME 0.08, AME-ALE 0.03, PME-PME 0.05, PME-PLE 0.06, ALE-PLE 0.07; MOQ length 0.21, front width 0.14, back width 0.19. LEM long, PED directed laterally (figs. 13, 14). Leg spination: femur IV p0-0-1, r0-0-1.

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Xinjiang Province, China.

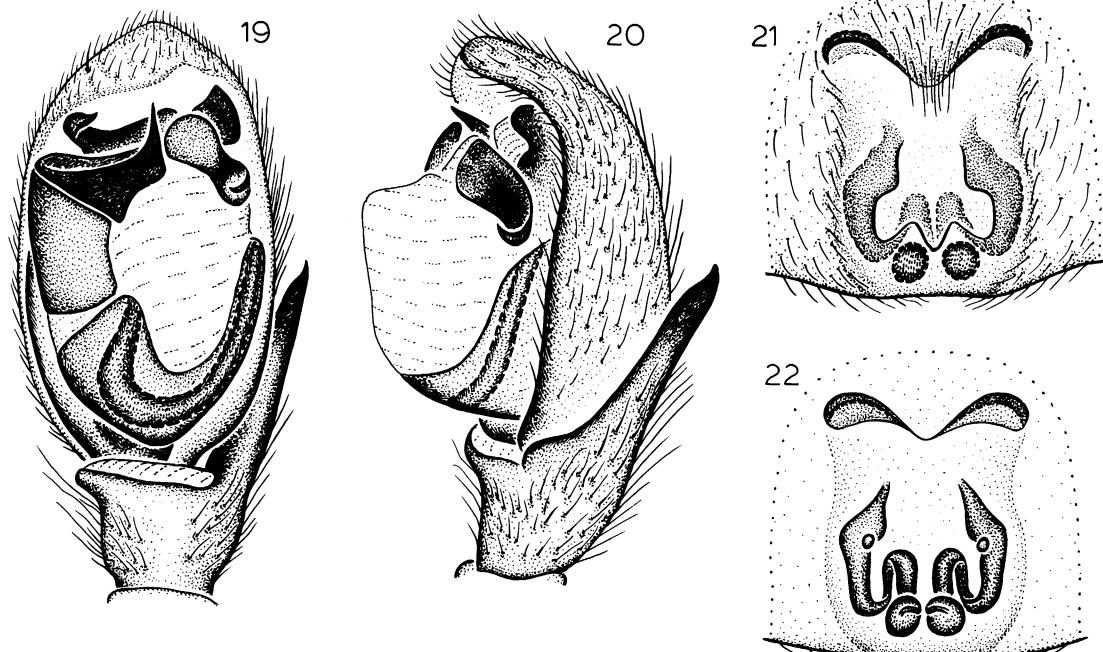
Zelotes liaoi, new species Figures 15–18

TYPE: Male holotype from Canton, Guangdong, China (May 6, 1982; C. H. Liao), deposited in IZB.

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

DIAGNOSIS: This member of the *tuobus* subgroup (Platnick and Shadab, 1983, p. 123) can be recognized by the rounded embolar base and short embolus of males (fig. 15) and the short, laterally deflected median epigynal ducts of females (fig. 18).

MALE: Total length 4.82. Carapace 2.16 long, 1.60 wide. Femur II 1.26 long. Eye sizes and interdistances: AME 0.05, ALE 0.06, PME 0.08, PLE 0.06; AME-AME 0.07, AME-ALE 0.02, PME-PME 0.05, PME-PLE 0.05, ALE-PLE 0.05; MOQ length 0.21, front width 0.17, back width 0.21. EB arched, rounded (figs. 15, 16). Leg spination: tibiae III, IV d1-0-0, p1-1-0; metatarsus III v2-1p-0.



Figs. 19–22. *Zelotes longipes* (L. Koch). 19. Palp, ventral view. 20. Palp, retrolateral view. 21. Epigynum, ventral view. 22. Epigynum, dorsal view.

FEMALE: Total length 5.01. Carapace 2.63 long, 2.16 wide. Femur II missing. Eye sizes and interdistances: AME 0.06, ALE 0.10, PME 0.08, PLE 0.10; AME-AME 0.09, AME-ALE 0.02, PME-PME 0.06, PME-PLE 0.07, ALE-PLE 0.06; MOQ length 0.24, front width 0.21, back width 0.22. MED small, laterally directed (figs. 17, 18). Legs missing.

OTHER MATERIAL EXAMINED: One female taken at an elevation of 5000–9000 ft near Litang, Sichuan, China, on August 21, 1930 (D. C. Graham, USNM), is tentatively matched with the male holotype.

DISTRIBUTION: Guangdong and Sichuan Provinces, China.

Zelotes longipes (L. Koch) Figures 19–22

Melanophora longipes L. Koch, 1866, p. 147, figs. 88, 89 (male holotype from Nürnberg, Bavaria, Germany, not examined).

Zelotes longipes: Roewer, 1954, p. 452. Bonnet, 1959, p. 4931. Grimm, 1985, p. 204, figs. 245, 266, 267.

NOTE: A full synonymy and bibliography

can be found in the works by Roewer, Bonnet, and Grimm cited above.

DIAGNOSIS: The triangular terminal apophysis (fig. 19) of males and anteriorly approximate lateral epigynal margins (fig. 21) of females are diagnostic.

MALE: Described by Grimm (1985).

FEMALE: Described by Grimm (1985).

MATERIAL EXAMINED: CHINA: Xinjiang: Tacheng, Sept. 10, 1983 (Y. P. Fu, IZB), 1♀.

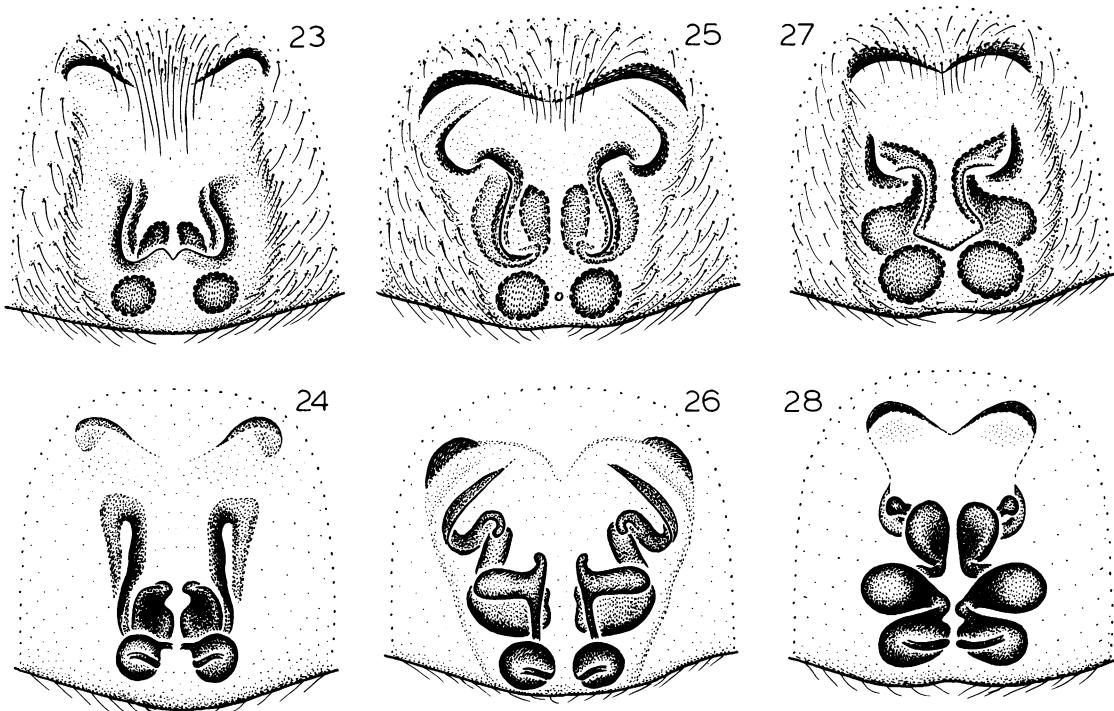
DISTRIBUTION: Previously known from Portugal to Siberia, but also extending into northwestern China.

Zelotes zhaoi, new species Figures 23, 24

TYPE: Female holotype from Chaoyang, Liaoning, China (Sept. 20, 1981; J. Q. Zhao), deposited in IZB.

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

DIAGNOSIS: This possible close relative of *Z. longipes* can be recognized by the massive



Figs. 23–28. 23, 24. *Zelotes zhaoi*, new species. 25, 26. *Z. sanmen*, new species. 27, 28. *Z. cantonensis*, new species. 23, 25, 27. Epigynum, ventral view. 24, 26, 28. Epigynum, dorsal view.

anterior expansions of the median epigynal ducts (fig. 24).

MALE: Unknown.

FEMALE: Total length 5.87. Carapace 2.89 long, 2.29 wide. Femur II 1.70 long. Eye sizes and interdistances: AME 0.05, ALE 0.11, PME 0.08, PLE 0.10; AME-AME 0.08, AME-ALE 0.03, PME-PME 0.07, PME-PLE 0.07, ALE-PLE 0.07; MOQ length 0.25, front width 0.18, back width 0.23. LEM closest anteriorly; MED with large anterior extensions (figs. 23, 24). Leg spination: femur IV p0-0-1; metatarsi I, II v2-1p-0.

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Liaoning Province, China.

Zelotes sanmen, new species

Figures 25, 26

TYPE: Female holotype from Sanmen, Zhejiang, China (October 7, 1976), deposited in IZB.

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

DIAGNOSIS: This bizarre species can be recognized easily by the elevated median epigynal ducts (fig. 26).

MALE: Unknown.

FEMALE: Total length 4.21. Carapace 1.89 long, 1.53 wide. Femur II 1.33 long. Eye sizes and interdistances: AME 0.05, ALE 0.08, PME 0.06, PLE 0.08; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.06, PME-PLE 0.06, ALE-PLE 0.05; MOQ length 0.21, front width 0.15, back width 0.18. MED narrow, long, superimposed over PED (figs. 25, 26). Leg spination: tibiae: I, II v0-1r-0; IV p1-0-1, r2-1-1; metatarsi I, II v2-2-0.

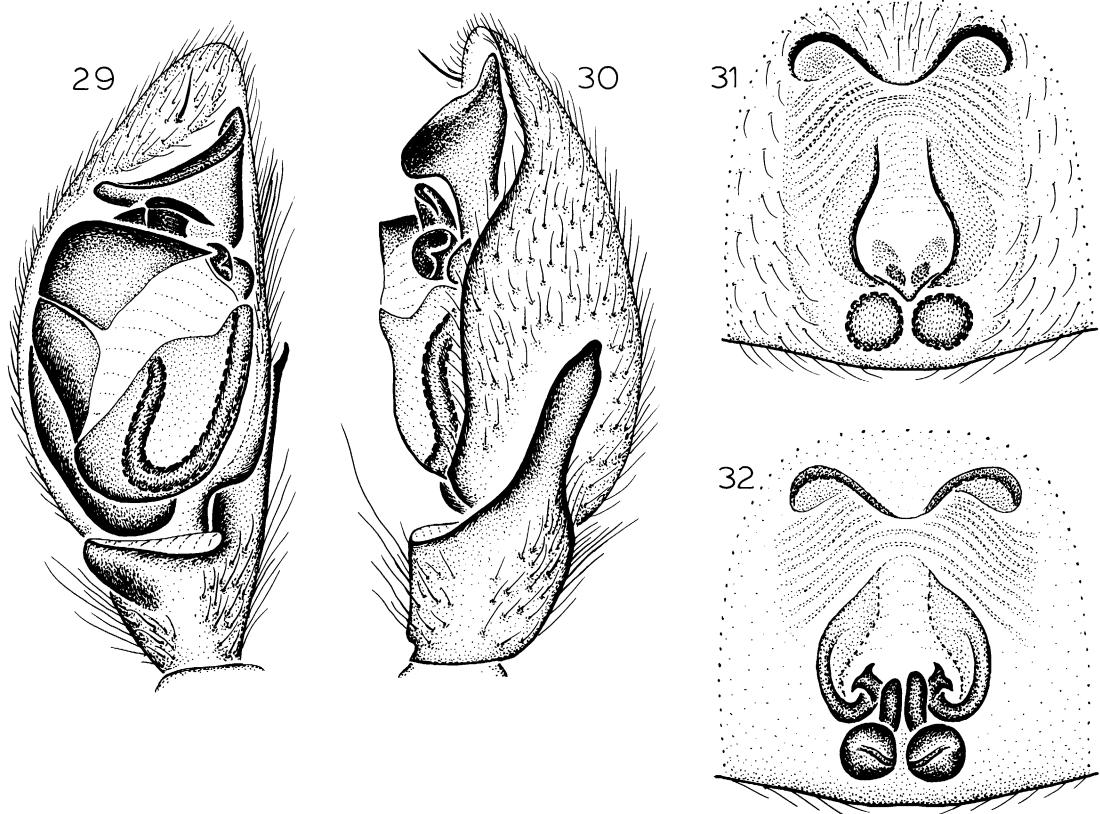
OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Zhejiang Province, China.

Zelotes cantonensis, new species

Figures 27, 28

TYPE: Female holotype from Canton, Guangdong, China (May 7, 1984; C. H. Liao), deposited in IZB.



Figs. 29–32. *Zelotes davidi* Schenkel. 29. Palp, ventral view. 30. Palp, retrolateral view. 31. Epigynum, ventral view. 32. Epigynum, dorsal view.

ETYMOLOGY: The specific name refers to the type locality.

DIAGNOSIS: This distinctive species can be recognized easily by the two anterior expansions of the median epigynal ducts (fig. 28).

MALE: Unknown.

FEMALE: Total length 4.14. Carapace 1.91 long, 1.44 wide. Femur II 1.28 long. Eye sizes and interdistances: AME 0.05, 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 0.04; MOQ length 0.20, front width 0.15, back width 0.15. LEM advanced anteriorly; MED with two anterior bulbous expansions (figs. 27, 28). Leg spination: femora: III r0-0-1; IV p0-0-0, r0-0-1; tibia IV p1-0-1; metatarsi: I v2-1p-0; II v2-2-0; III p0-2-2.

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Guangdong Province, China.

Zelotes davidi Schenkel

Figures 29–32

Zelotes davidi Schenkel, 1963, p. 51, fig. 26 (male and female syntypes from "Inkia fu" [=Inkia-phou], southern Shaanxi, China, in MNHN, examined).

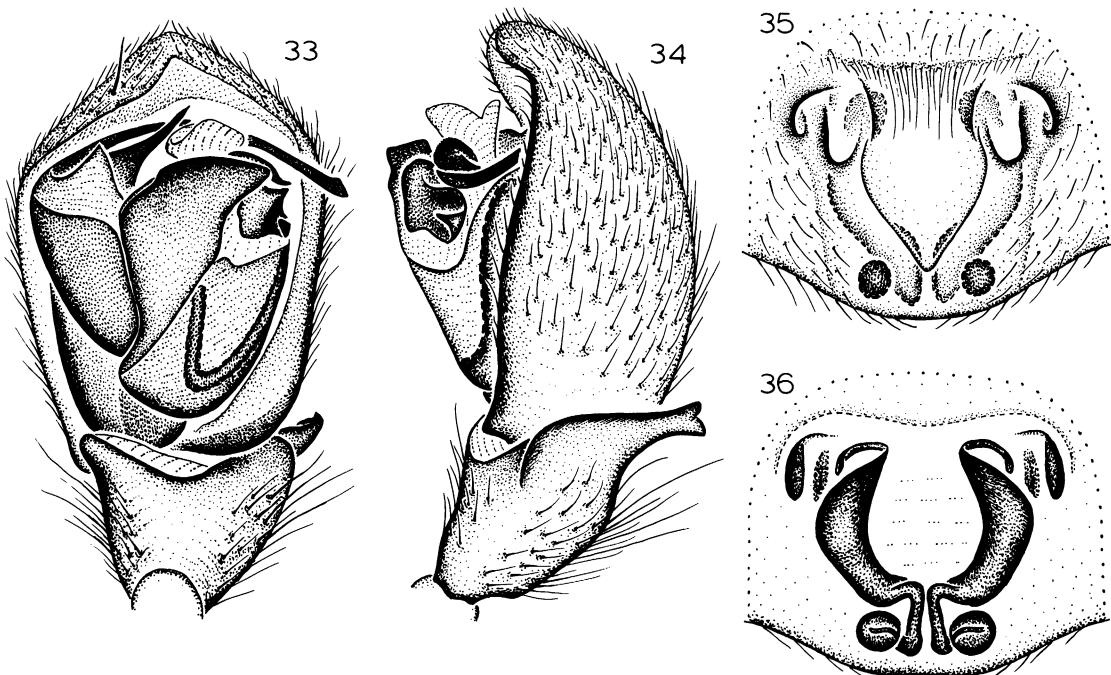
DIAGNOSIS: The greatly expanded embolus of males (fig. 29) and elongated, anteriorly striated epigynum of females (fig. 31) are diagnostic.

MALE: Described by Schenkel (1963).

FEMALE: Described by Schenkel (1963).

MATERIAL EXAMINED: CHINA: Anhui: Xuancheng, May 18, 1982 (J. W. Hou, IZB), 1♂. Shaanxi: Baoji, July 5, 1981 (J. L. Hu, IZB), 1♂; "Inkia fu," 1875 (MNHN), 1♂, 1♀ (types).

DISTRIBUTION: Anhui to Shaanxi Provinces, China.



Figs. 33–36. *Zelotes wuchangensis* Schenkel. 33. Palp, ventral view. 34. Palp, retrolateral view. 35. Epigynum, ventral view. 36. Epigynum, dorsal view.

Zelotes wuchangensis Schenkel
Figures 33–36

Zelotes wuchangensis Schenkel, 1963, p. 57, fig. 29 (female holotype [missing epigynum] from Wuchang, Hubei, China, in MNHN, examined).

DIAGNOSIS: The u-shaped anterolateral ledges (fig. 35) and massive lateral ducts (fig. 36) of the female epigynum are diagnostic. The male described below, with its uniquely elaborated intercalary sclerite (fig. 33), is tentatively associated with *Z. wuchangensis* on the basis of similarities in size, coloration, and degree of genitalic bizarre ness.

MALE: Total length 5.65. Carapace 2.59 long, 1.97 wide. Femur II 1.71 long. Eye sizes and interdistances: AME 0.07, ALE 0.09, PME 0.08, PLE 0.09; AME-AME 0.06, AME-ALE 0.02, PME-PME 0.05, PME-PLE 0.06, ALE-PLE 0.05; MOQ length 0.21, front width 0.20, back width 0.21. IS enormously elaborated, bifid (figs. 33, 34). Leg spination: femur IV p0-0-1, r0-0-1; tibiae I, II: v1r-1r-0; IV r2-1-1; metatarsi I, II: v2-2-0; III v2-0-0.

FEMALE: Described by Schenkel (1963).

MATERIAL EXAMINED: CHINA: Anhui:

Xuancheng, Mar. 28, 1982 (J. W. Hou, IZB), 2♀. Beijing: Beijing (AMNH), 1♀; Tsing Hua College, Beijing, Oct. 12, 1924 (P. W. Claassen, AMNH), 1♀. Guangdong: Canton, June 3, 1977 (D. Song, IZB), 1♂. Hubei: Wuchang, 1937 (MNHN), 1♀ (type, without epigynum). Jiangsu: Zhenjiang (B. Tsai, CTB), 1♀. Zhejiang: Sanmen, May 2, 1976 (S. X. Zheng, IZB), 1♀. SOUTH KOREA: Fort Beimers, 2 mi S North Korean border, Oct. 28, 1968, in room (Chabalowski, AMNH), 1f.

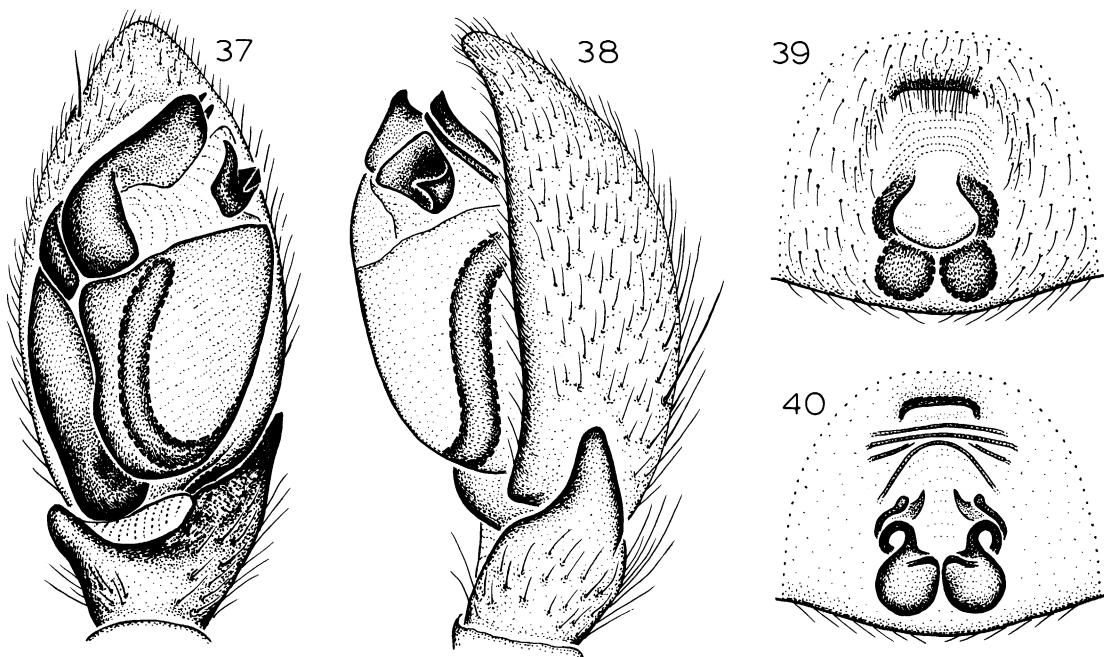
DISTRIBUTION: Eastern China and Korea; we have examined similar specimens from Japan but slight differences in epigynal structure indicate that they are probably not con-specific.

Zelotes zhengi, new species
Figures 51, 52

TYPE: Female holotype from Sanmen, Zhejiang, China (May 19, 1978; S. X. Zheng), deposited in IZB.

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

DIAGNOSIS: This member of the *laccus*



Figs. 37–40. *Zelotes potanini* Schenkel. 37. Palp, ventral view. 38. Palp, retrolateral view. 39. Epigynum, ventral view. 40. Epigynum, dorsal view.

subgroup (Platnick and Shadab, 1983, p. 173) resembles the European species *Z. exiguum* (Müller and Schenkel) and the North American species *Z. exiguides* Platnick and Shadab, but can be distinguished from both by the recurved median epigynal ducts (figs. 51, 52).

MALE: Unknown.

FEMALE: Total length 2.91. Carapace 1.17 long, 0.86 wide. Femur II 0.74 long. Eye sizes and interdistances: AME 0.04, ALE 0.06, PME 0.05, PLE 0.05; AME-AME 0.02, AME-ALE 0.02, PME-PME 0.03, PME-PLE 0.03, ALE-PLE 0.04; MOQ length 0.12, front width 0.10, back width 0.13. MED recurved (figs. 51, 52). Leg spination: femur IV p0-0-1, r0-0-1; tibiae: I v2-2-2; II 1r-1r-0; III v1p-2-2; metatarsi: I, II v2-0-2; III v2-0-0, r1-2-2; IV v2-1p-0.

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Zhejiang Province, China.

Zelotes potanini Schenkel Figures 37–40

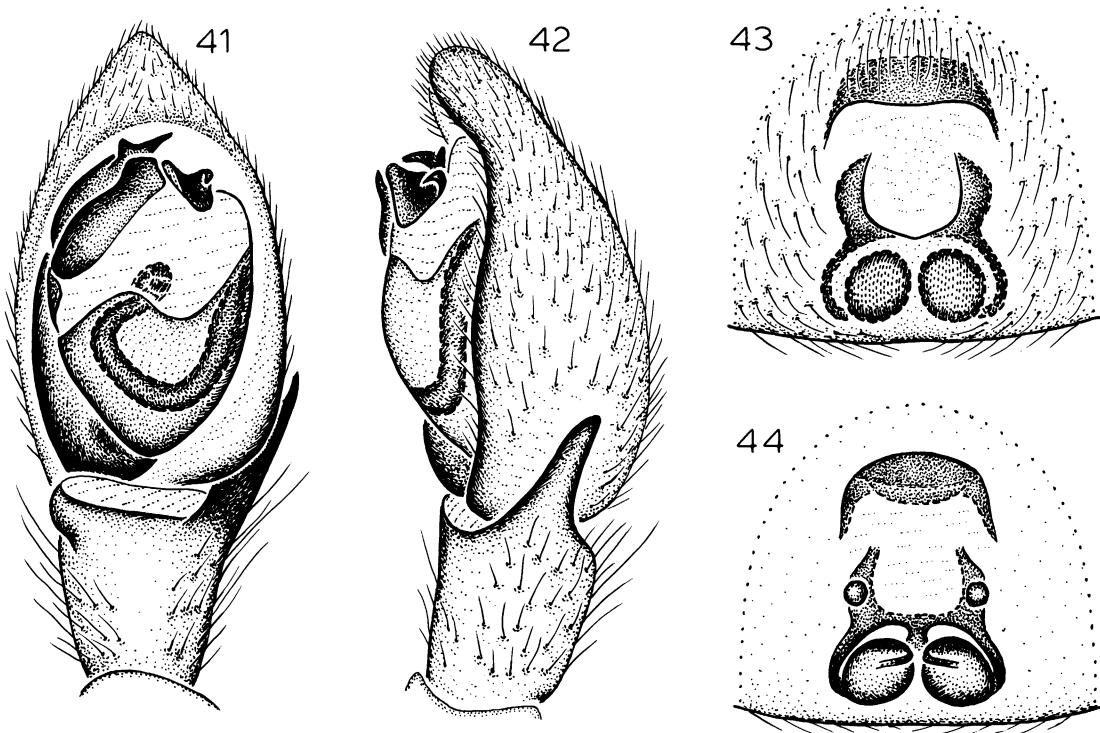
Zelotes potanini Schenkel, 1963, p. 55, fig. 28 (female holotype from "Yen mönn Pass," Shaanxi, China, in MNHN, examined).

DIAGNOSIS: This member of the *puritanus* subgroup (Platnick and Shadab, 1983, p. 180) seems closest to the North American and European species *Z. puritanus* Chamberlin (see Platnick and Shadab, 1983, figs. 247–252). Males (described here for the first time) can be distinguished by the ledgelike (rather than distally rounded) terminal apophysis (fig. 37), females by the elevated lateral epigynal margins (fig. 39) and coiled, laterally displaced median epigynal ducts (fig. 40).

MALE: Total length 4.69. Carapace 1.92 long, 1.55 wide. Femur II 1.22 long. Eye sizes and interdistances: AME 0.05, ALE 0.08, PME 0.06, PLE 0.07; AME-AME 0.07, AME-ALE 0.04, PME-PME 0.09, PME-PLE 0.06, ALE-PLE 0.05; MOQ length 0.17, front width 0.17, back width 0.21. TA ledgelike, distally straight; RTA short (figs. 37, 38). Leg spination: femur IV p0-0-0, r0-0-1; tibia IV p1-0-0; metatarsi: I, II v0-0-0; III v2-0-0.

FEMALE: Described by Schenkel (1963).

MATERIAL EXAMINED: CHINA: Beijing: Beijing, Aug.–Sept. 1975 (H. Q. Wang, CYC), 1♀. Henan: Xinxiang, Apr. 1966 (B. Tsai, CTB), 2♀. Shaanxi: "Yen mönn Pass," June 17, 1884 (MNHN), 1♀ (type). Shandong: Jin-



Figs. 41–44. *Zelotes yutian*, new species. 41. Palp, ventral view. 42. Palp, retrolateral view. 43. Epigynum, ventral view. 44. Epigynum, dorsal view.

an, July 13, 1980 (J. L. Hu, IZB), 1♀. JAPAN: Honshu: Shiga: Gokasho-cho, Kanzaki-gun, July 14, 1979 (T. Yamano, CTK), 1♂, 1♀.

DISTRIBUTION: Eastern China and Japan; the species has also been recorded from the Irkutsk and Buryat regions of the Soviet Union (Ismailova, 1978).

Zelotes yutian, new species

Figures 41–44

TYPES: Male holotype and female paratype from a rice field at Yutian, Xinjiang, China (June 3, 1982; J. L. Hu), deposited in IZB.

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

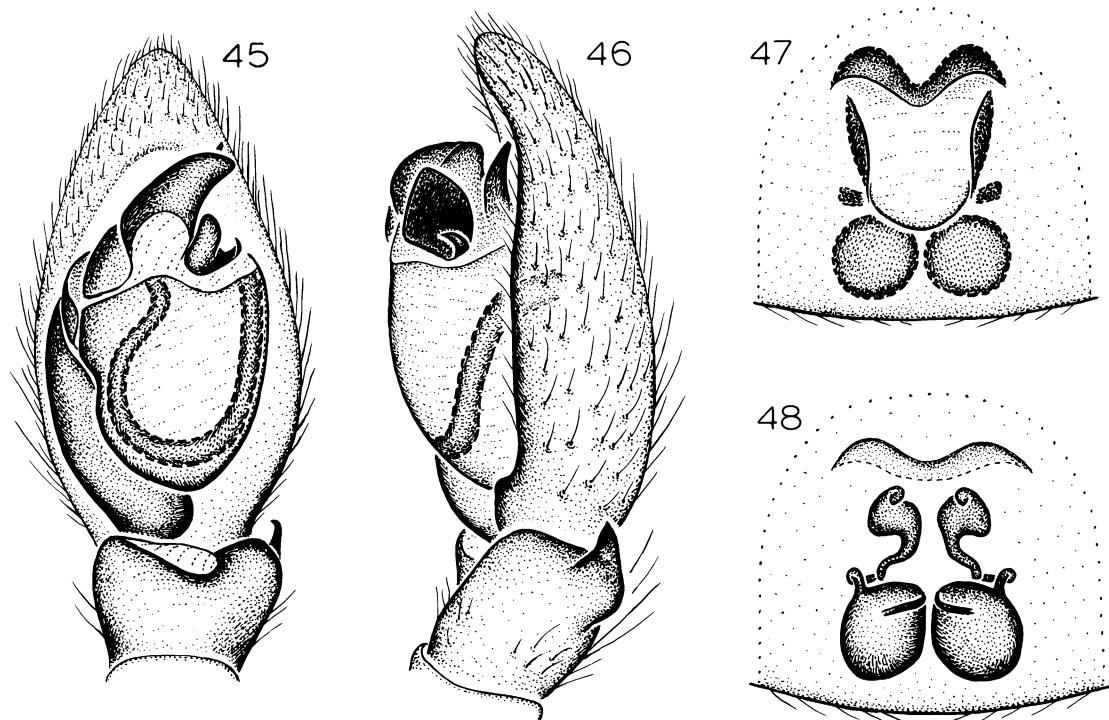
DIAGNOSIS: This small member of the *puritanus* subgroup (Platnick and Shadab, 1983, p. 180) can be recognized by the short embolar base (figs. 41, 42) of males and the protruding lateral epigynal ducts (figs. 43, 44) of females.

MALE: Total length 2.81. Carapace 1.23 long, 0.95 wide. Femur II 0.83 long. Eye sizes

and interdistances: AME 0.04, ALE 0.06, PME 0.05, PLE 0.05; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.05, PME-PLE 0.03, ALE-PLE 0.03; MOQ length 0.13, front width 0.13, back width 0.15. Intercalary sclerite shifted prolaterally; TA narrow, EB short (figs. 41, 42). Leg spination: femora III p0-0-1; IV p0-0-1, r0-0-1; tibiae: I, II v0-2-0; III v1p-2-2; metatarsi: I, II v2-2-0; IV r1-1-2.

FEMALE: Total length 3.98. Carapace 1.66 long, 1.21 wide. Femur II 1.13 long. Eye sizes and interdistances: AME 0.04, ALE 0.06, PME 0.06, PLE 0.06; AME-AME 0.06, AME-ALE 0.02, PME-PME 0.05, PME-PLE 0.05, ALE-PLE 0.06; MOQ length 0.17, front width 0.14, back width 0.17. MED narrow, LED protruding (figs. 43, 44). Leg spination: femora III, IV p0-0-1, r0-0-1; tibiae: III p1-0-1, v2-0-2, r0-0-1; IV p1-0-1, v2-0-2, r1-0-1; metatarsi: I v2-1p-0; II v2-2-0; III p1-1-2, v2-1p-0; IV v2-1p-0.

OTHER MATERIAL EXAMINED: CHINA: Xinjiang: Fukang, Aug. 1, 1982 (J. L. Hu,



Figs. 45–48. *Zelotes hummeli* Schenkel. 45. Palp, ventral view. 46. Palp, retrolateral view. 47. Epigynum, ventral view. 48. Epigynum, dorsal view.

IZB), 1♀; Qira, June 17, 1982 (J. L. Hu, IZB), 1♂.

DISTRIBUTION: Xinjiang Province, China.

Zelotes hummeli Schenkel

Figures 45–48

Zelotes hummeli Schenkel, 1936, p. 255, fig. 84 (male and female syntypes from Etsin-ri and Etsin-gol, Nei Mongol, China, in NRS, examined).

DIAGNOSIS: The short retrolateral tibial apophysis (fig. 46) of males and anteriorly expanded lateral epigynal ducts (fig. 48) of females are diagnostic for this small member of the *puritanus* subgroup.

MALE: Described by Schenkel (1936).

FEMALE: Described by Schenkel (1936).

MATERIAL EXAMINED: Only the male and female syntypes, collected by G. Söderbom at Etsin-ri on June 8, 1929, and at Etsin-gol on August 9, 1928, respectively.

DISTRIBUTION: Inner Mongolia.

Zelotes tsaii, new species

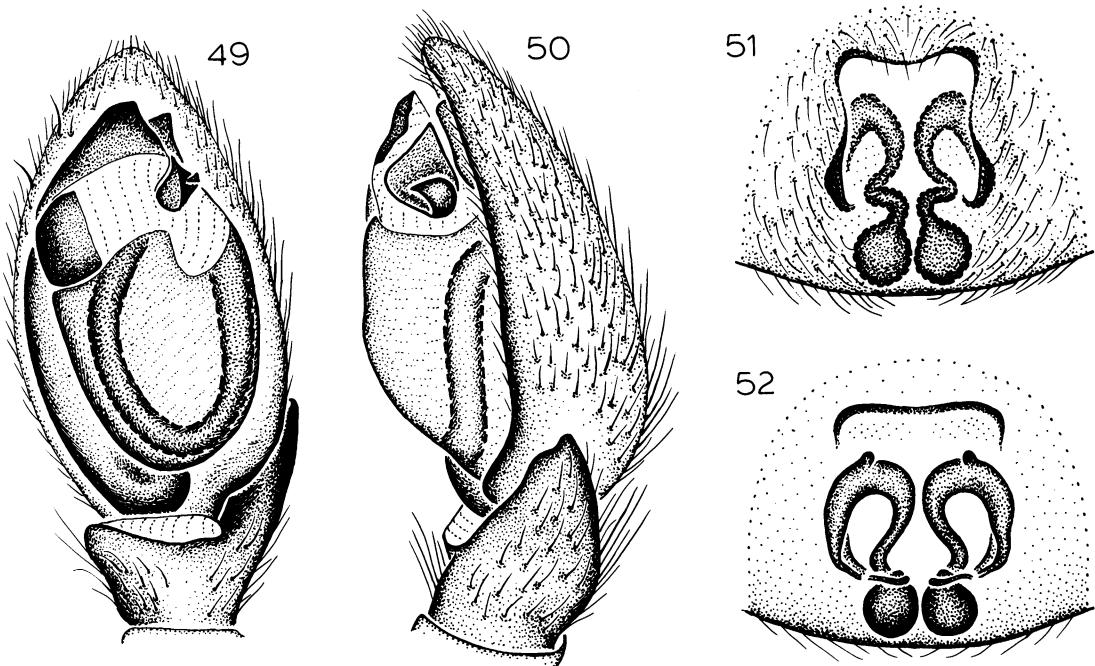
Figures 49, 50

TYPE: Male holotype from Xinxiang, Henan, China (B. Tsai), deposited in IZB.

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

DIAGNOSIS: This member of the *puritanus* subgroup can be recognized by the distally truncate, triangular terminal apophysis of males (fig. 49).

MALE: Total length 4.41. Carapace 1.73 long, 1.33 wide. Femur II 1.08 long. Eye sizes and interdistances: AME 0.04, ALE 0.06, PME 0.06, PLE 0.07; AME-AME 0.07, AME-ALE 0.03, PME-PME 0.07, PME-PLE 0.05, ALE-PLE 0.04; MOQ length 0.16, front width 0.15, back width 0.19. Intercalary sclerite squared; TA wide, triangular, distally truncated (figs. 49, 50). Leg spination: femur IV p0-0-0, r0-0-1; tibiae: III r0-1-1; IV p1-0-1; metatarsi: I, II v0-0-0; III v2-0-0, r0-1-2; IV p0-2-2, v2-2-1p.



Figs. 49–52. 49, 50. *Zelotes tsaii*, new species. 51, 52. *Z. zhengi*, new species. 49. Palp, ventral view. 50. Palp, retrolateral view. 51. Epigynum, ventral view. 52. Epigynum, dorsal view.

FEMALE: Unknown.

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Henan Province, China.

DRASSYLLUS CHAMBERLIN

Drassyllus Chamberlin, 1922, p. 166 (type species by original designation *Drassyllus fallens* Chamberlin).

Zelotes (*Epizelotes*) Lohmander, 1944, p. 14 [type species by original designation *Zelotes pusillus* (C. L. Koch)]. *Synonymy first suggested by Tullgren, 1946, p. 113.*

DIAGNOSIS: Specimens of *Drassyllus* can be distinguished from all other gnaphosids by the combined presence of a preening comb on metatarsi III and IV (Platnick and Shadab, 1982, figs. 1, 2), large and almost touching posterior median eyes (Kaston, 1978, fig. 528), and a bifid, medially situated terminal apophysis on the male palp (Platnick and Shadab, 1982, fig. 3).

DESCRIPTION: See Platnick and Shadab (1982, p. 7).

Drassyllus pusillus (C. L. Koch)

Figures 53–56

Melanophora pusilla C. L. Koch, 1833, pt. 120, pls. 20, 21 (female syntype from Germany, in Zoologisches Museum, Berlin, not examined).

Zelotes pusillus: Roewer, 1954, p. 456. Bonnet, 1959, p. 4944. Grimm, 1985, p. 274, figs. 316, 327, 328.

Zelotes (*Epizelotes*) *pusillus*: Lohmander, 1944, p. 14.

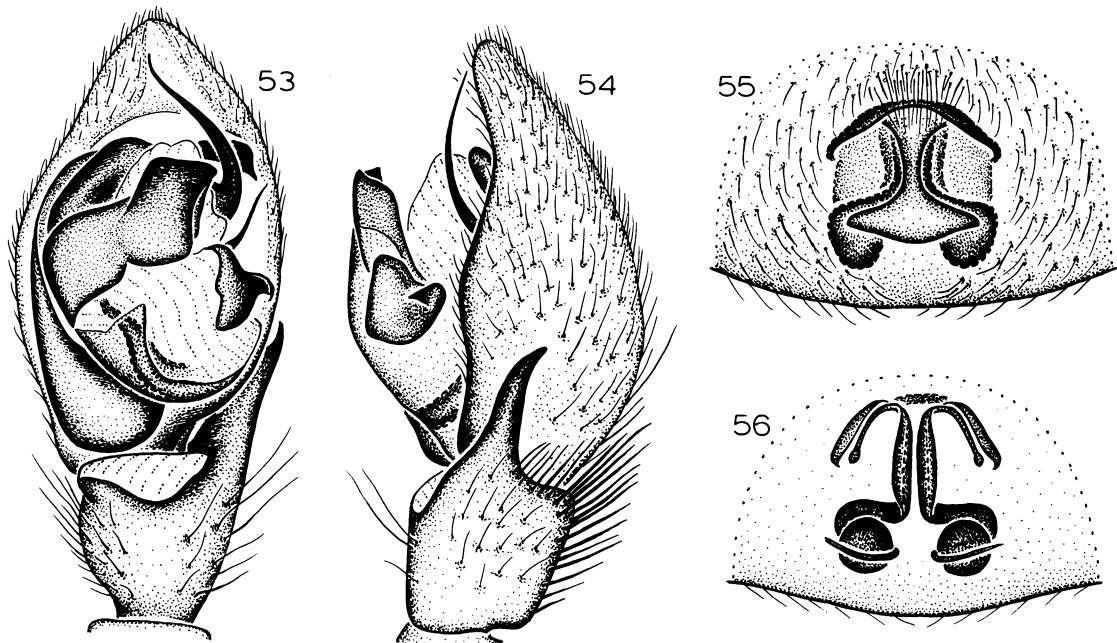
Zelotes (*Drassyllus*) *pusillus*: Kronestedt, 1983, p. 191.

NOTE: A full synonymy and bibliography can be found in the works by Roewer, Bonnet, and Grimm cited above.

DIAGNOSIS: Among Chinese species, *D. pusillus* seems closest to *D. yunnanensis*, new species, but can be distinguished by the more angular terminal apophysis of males (figs. 53, 54) and the shorter anterior epigynal margin of females (fig. 55).

MALE: Described by Grimm (1985).

FEMALE: Described by Grimm (1985).



Figs. 53–56. *Drassyllus pusillus* (C. L. Koch). 53. Palp, ventral view. 54. Palp, retrolateral view. 55. Epigynum, ventral view. 56. Epigynum, dorsal view.

MATERIAL EXAMINED: CHINA: Xinjiang: Tacheng, May 10, 1982 (Y. P. Fu, IZB), 1♂. BHUTAN: Chimakothi, May 22, 1972, elev. 1900–2300 m (W. Wittmer, NMB), 1♀; Decchi Paka, June 19–20, 1972, elev. 3300 m (W. Wittmer, NMB), 4♀; Sha Gogona, June 10–12, 1972, elev. 3100 m (W. Wittmer, NMB), 2♀.

DISTRIBUTION: Previously known from England to Russia, but apparently widespread in eastern Asia as well.

***Drassyllus yunnanensis*, new species**
Figures 57–60

TYPE: Female holotype from Kunming, Yunnan, China (June 2, 1977), deposited in IZB.

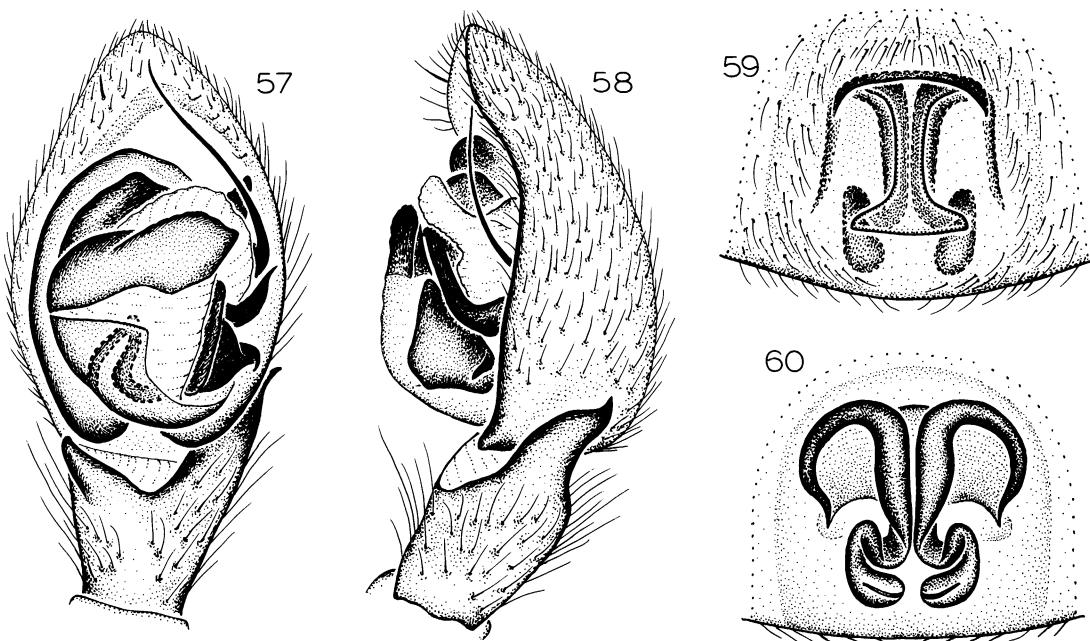
ETYMOLOGY: The specific name refers to the type locality.

DIAGNOSIS: This species seems closest to *D. pusillus* but can be distinguished by the more rounded terminal apophysis of males (figs. 57, 58) and the longer anterior epigynal margin of females (fig. 59).

MALE: Total length 4.68. Carapace 2.23 long, 1.74 wide. Femur II 1.42 long. Eye sizes and interdistances: AME 0.06, ALE 0.10, PME 0.10, PLE 0.10; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.03, PME-PLE 0.06, ALE-PLE 0.07; MOQ length 0.26, front width 0.17, back width 0.23. TA rounded, prolonged retrolaterally (fig. 57), RTA sinuous distally (fig. 58). Leg spination: tibia III v2-2-2, r1-1-1; metatarsi: I, II v0-2-2; III v2-2-0.

FEMALE: Total length 3.89. Carapace 1.69 long, 1.28 wide. Femur II 1.09 long. Eye sizes and interdistances: AME 0.05, ALE 0.07, PME 0.08, PLE 0.07; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.03, PME-PLE 0.05, ALE-PLE 0.05; MOQ length 0.20, front width 0.15, back width 0.19. AEM very long (fig. 59), AED very wide (fig. 60). Leg spination: femora II, IV p0-0-0; patella III r0-0-0; tibia II p1-0-1, v1p-2-2; metatarsi: I, II v2-2-0; IV v2-1p-0.

OTHER MATERIAL EXAMINED: One male and two females taken at an elevation of 4800 ft



Figs. 57–60. *Drassyllus yunnanensis*, new species. 57. Palp, ventral view. 58. Palp, retrolateral view. 59. Epigynum, ventral view. 60. Epigynum, dorsal view.

at Kambaiti in northeastern Burma on March 21, 1934, by R. Malaise (NRS).

DISTRIBUTION: Yunnan Province, China, and adjacent Burma.

Drassyllus vinealis (Kulczyński),
new combination
Figures 61–64

Prosthesima vinealis Kulczyński, in Chyzer and Kulczyński, 1897, p. 203, pl. 7, figs. 41, 51 (male and female syntypes from Tokaj, Hungary, may be in Budapest, not examined).

Zelotes vinealis: Roewer, 1954, p. 460. Bonnet, 1959, p. 4959. Miller, 1967, p. 266, pl. 3, figs. 2, 3, pl. 6, fig. 4. Tyschenko, 1971, p. 99, figs. 202, 220. Grimm, 1985, p. 263, figs. 318, 321, 322.

Zelotes pallidipatellis (misidentification): Paik, 1978, p. 424, fig. 191.

NOTE: Although the close relationship of this species to other *Drassyllus* has been known at least since the time of Miller (1967), the failure of European workers to recognize the genus has resulted in the combination being new here.

DIAGNOSIS: Males can be recognized easily by the very large embolus (fig. 61); females have distinctive, almost circular lateral epigynal elevations (fig. 63).

MALE: Described by Miller (1967).

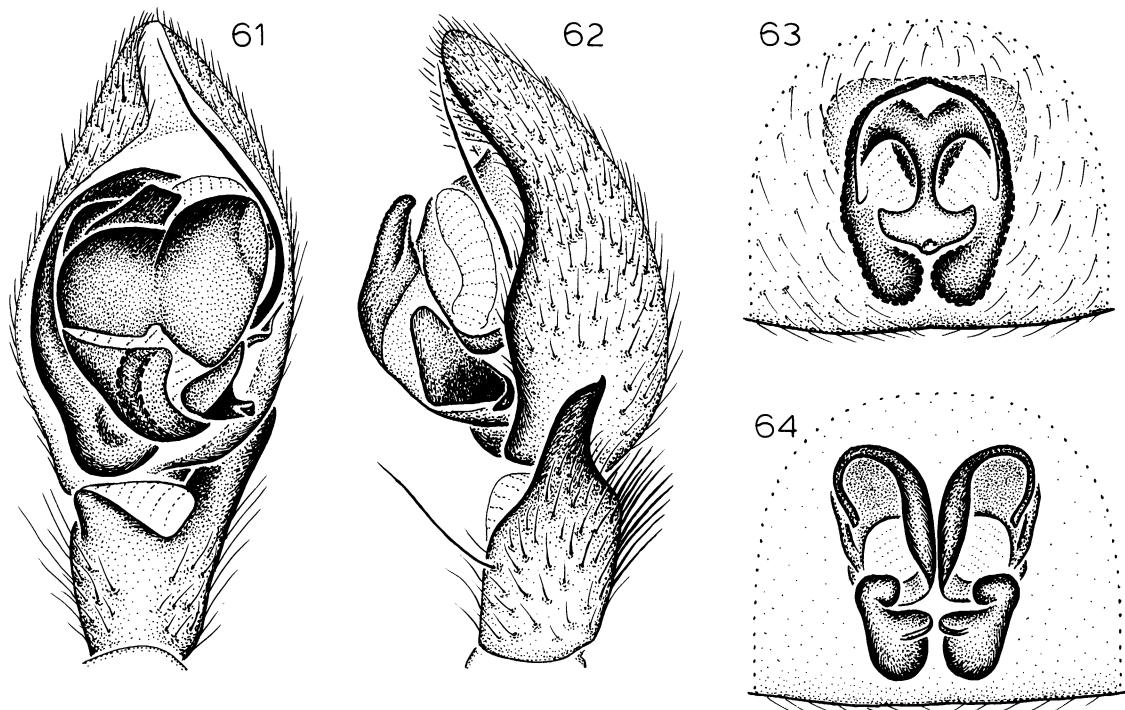
FEMALE: Described by Miller (1967).

MATERIAL EXAMINED: CHINA: Beijing: Beijing, Apr. 20, 1978 (IZB), 1♀. Henan: Xinxiang, May 14, 1982 (B. Tsai, CTB), 1♂, 4♀. Xizang [Tibet]: Markam, June 6, 1976, elev. 2600 m (IZB), 3♀; Zogang, Aug. 17, 1982, elev. 3100 m (Y. L. Lin, IZB), 1♀. SOUTH KOREA: Andong, Kyungpook, May 15, 1959 (S. Y. Kim, KYP), 1♀; Mt. Paogong-san, May 11, 1960 (K. Y. Paik, KYP), 1♀; Taegu, May 17, 1958 (Y. K. Kim, KYP), 1♀.

DISTRIBUTION: Previously known from eastern Europe and Russia, but apparently widespread in eastern Asia as well.

Drassyllus excavatus (Schenkel),
new combination
Figures 65, 66

Zelotes excavatus Schenkel, 1963, p. 58, fig. 30 [female holotype from "Tal des Tao ho oberhalb



Figs. 61–64. *Drassyllus vinealis* (Kulczyński). 61. Palp, ventral view. 62. Palp, retrolateral view. 63. Epigynum, ventral view. 64. Epigynum, dorsal view.

Min tschu (Mingtscheu)," probably Minxian, Gansu, China, in MNHN, examined].

NOTE: Both the eye arrangement and genitalic structure indicate that this species belongs to *Drassyllus* rather than *Zelotes*.

DIAGNOSIS: This species seems closest to *D. vinealis* but can be distinguished by the much longer anterior epigynal margin and the more anteriorly situated lateral epigynal elevations (fig. 65).

MALE: Unknown.

FEMALE: Described by Schenkel (1963).

MATERIAL EXAMINED: Only the holotype, collected on June 10, 1885.

DISTRIBUTION: Gansu Province, China.

Drassyllus sanmenensis, new species

Figures 67, 68

TYPE: Female holotype from Sanmen, Zhejiang, China (April 20, 1978; S. X. Zheng), deposited in IZB.

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

DIAGNOSIS: Females can be recognized by the wide m-shaped anterior epigynal margin (fig. 67).

MALE: Unknown.

FEMALE: Total length 6.32. Carapace 2.63 long, 2.09 wide. Femur II 1.80 long. Eye sizes and interdistances: AME 0.08, ALE 0.12, PME 0.12, PLE 0.10; AME-AME 0.07, AME-ALE 0.03, PME-PME 0.04, PME-PLE 0.06, ALE-PLE 0.07; MOQ length 0.33, front width 0.23, back width 0.28. AEM wide, m-shaped (fig. 67), AED with straight lateral extensions (fig. 68). Leg spination: tibiae: II v1r-1r-0; III v2-2-2.

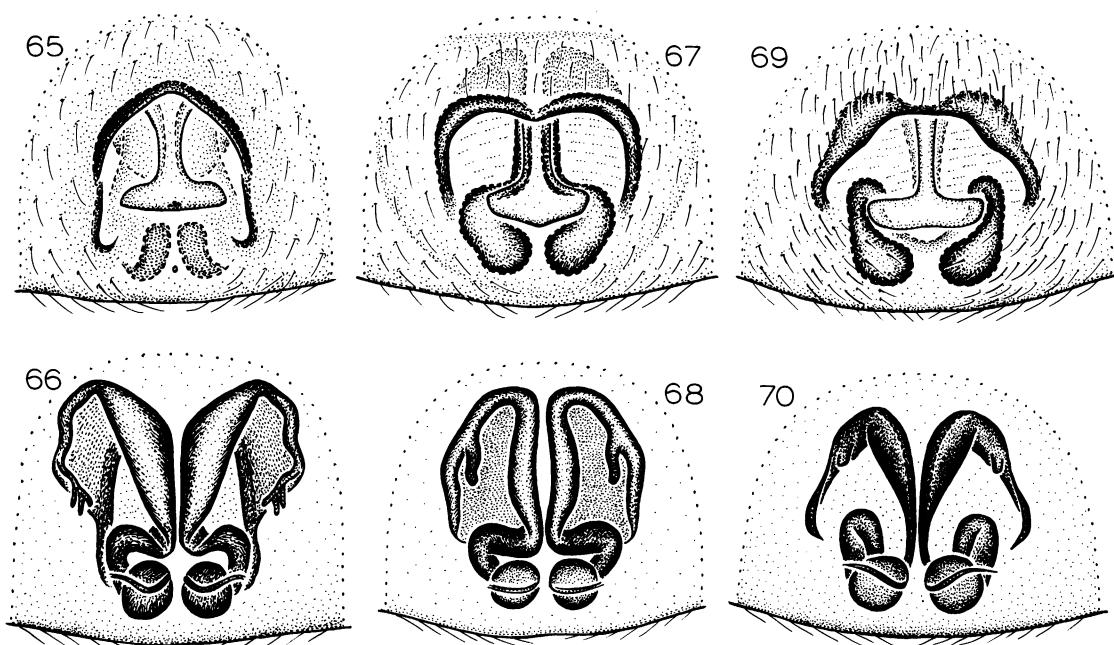
OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Zhejiang Province, China.

Drassyllus shaanxiensis, new species

Figures 69, 70

TYPE: Female holotype from Zhouzhi, Shaanxi, China (April 6, 1982), deposited in IZB.



Figs. 65–70. 65, 66. *Drassyllus excavatus* (Schenkel). 67, 68. *D. sanmenensis*, new species. 69, 70. *D. shaanxiensis*, new species. 65, 67, 69. Epigynum, ventral view. 66, 68, 70. Epigynum, dorsal view.

ETYMOLOGY: The specific name refers to the type locality.

DIAGNOSIS: The anteriorly expanded median epigynal ducts (fig. 70) are diagnostic.

MALE: Unknown.

FEMALE: Total length 5.11. Carapace 2.30 long, 1.67 wide. Femur II 1.53 long. Eye sizes and interdistances: AME 0.07, ALE 0.11, PME 0.13, PLE 0.10; AME–AME 0.09, AME–ALE 0.03, PME–PME 0.03, PME–PLE 0.06, ALE–PLE 0.08; MOQ length 0.32, front width 0.23, back width 0.29. AEM oblique (fig. 69), MED anteriorly expanded (fig. 70). Leg spination: tibia III v2-2-2.

OTHER MATERIAL EXAMINED: CHINA: Henan: Anyang, May 19, 1985 (B. Tsai, CTB), 1♀.

DISTRIBUTION: Shaanxi Province, China.

TRACHYZELOTES LOHMANDER

Zelotes (*Trachyzelotes*) Lohmander, 1944, p. 13
[type species by original designation *Zelotes pedestris* (C. L. Koch)].
Simonizelotes Marinaro, 1967, p. 702 (nomen nudum).

DIAGNOSIS: Specimens of *Trachyzelotes* can be distinguished from all other gnaphosids by the combined presence of a preening comb on metatarsi III and IV (Platnick and Shadab, 1982, figs. 1, 2) and a cluster of stiff setae on the anteromedian surface of the chelicerae (Platnick and Murphy, 1984, fig. 1).

DESCRIPTION: See Platnick and Murphy (1984, p. 3).

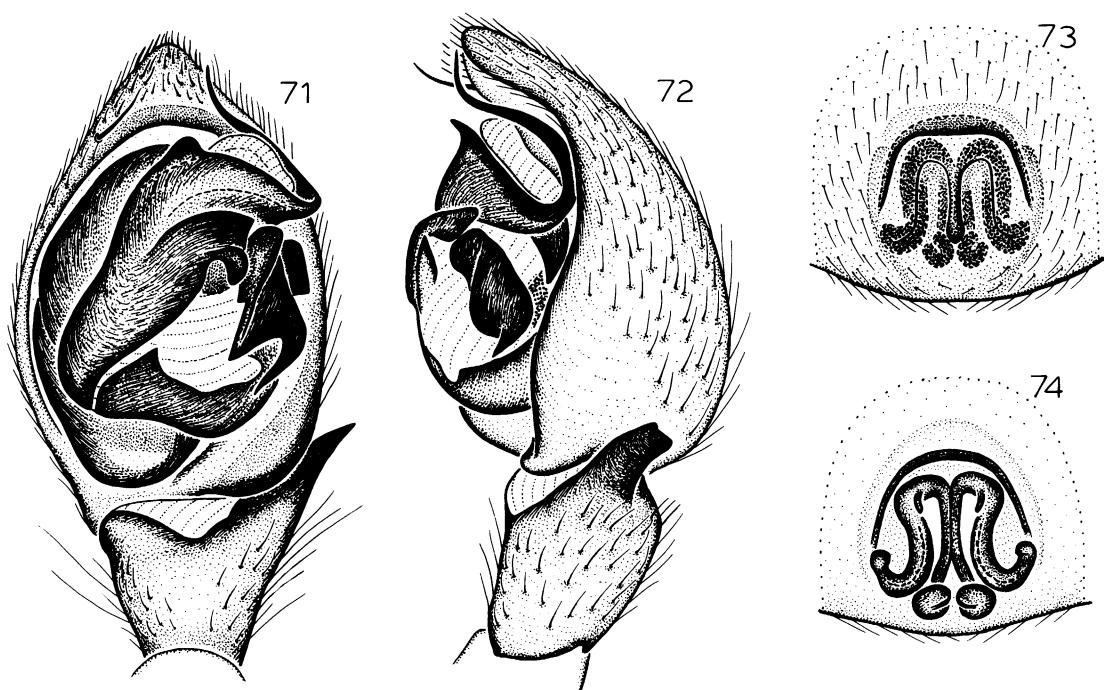
Trachyzelotes jaxartensis (Kroneberg)

Figures 71–74

Melanophora jaxartensis Kroneberg, 1875, p. 23, pl. 2, figs. 1a–c (female holotype from Samarkand, Uzbek SSR, Soviet Union, in Zoological Museum, Moscow State University, not available).

Prosthesima foveolata Simon, 1880, p. 117, fig. 17 (female holotype from Beijing, Beijing, China, should be in MNHN, lost). NEW SYNONYMY.

Zelotes foveolatus: Reimoser, 1919, p. 199.
Zelotes cavaleriei Schenkel, 1963, p. 50, fig. 25 (female holotype from Anshun, Guizhou, China, in MNHN, examined). First synonymized by Platnick and Murphy, 1984, p. 11.



Figs. 71–74. *Trachyzelotes jaxartensis* (Kroneberg). 71. Palp, ventral view. 72. Palp, retrolateral view. 73. Epigynum, ventral view. 74. Epigynum, dorsal view.

Trachyzelotes jaxartensis: Platnick and Murphy, 1984, p. 11, figs. 19–22.

NOTE: A full synonymy can be found in Platnick and Murphy (1984).

DIAGNOSIS: The distinct protuberance on the embolar base of males (fig. 71) and long, m-shaped epigynal ducts of females (fig. 74) are diagnostic.

MALE: Described by Platnick and Murphy (1984).

FEMALE: Described by Platnick and Murphy (1984).

MATERIAL EXAMINED: CHINA: Beijing: Tsing Hua College, Beijing, Nov.–Dec. 1924 (P. W. Claassen, AMNH), 1♂. Fujian: Gang-keu, July 25, 1936 (L. Gressitt, MCZ), 1♀. Guizhou: Anshun, 1912 (MNHN), 1♀ (type). Henan: Anyang, Apr. 30, 1982 (B. Tsai, CBT), 1♀; Xinxiang (B. Tsai, CBT), 1♂. Jiangsu: Jingjiang, June 11, 1978 (IZB), 1♂; Su-chou (AMNH), 1♀. Zhejiang: Sanmen, Aug. 3, 1977 (IZB), 1♀.

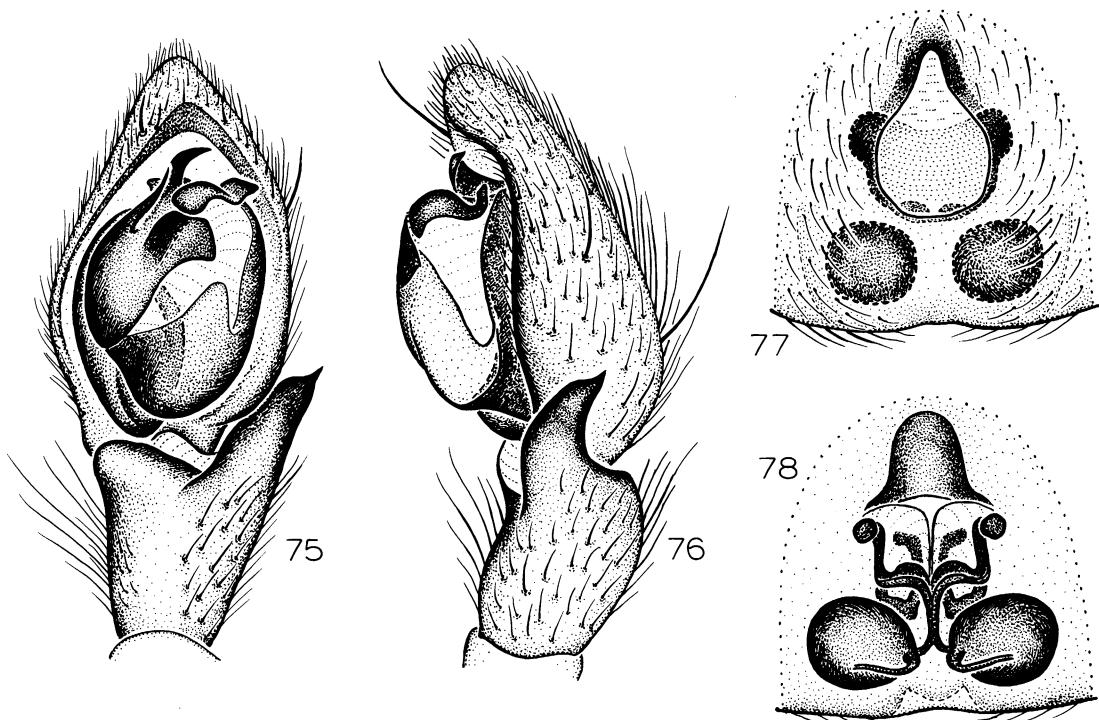
DISTRIBUTION: Natively Mediterranean, apparently introduced into China.

SYNONYMY: Although the holotype of *Z. foveolatus* is lost, Simon's indications that the chelicerae are "garnies en avant, au côté interne, de crins serrés, formant brosse" and that the species is "Voisin de *P. mutabilis* E. S., *barbata* L. K., et surtout *holosericea*" leave no doubt that the species belongs to *Trachyzelotes*. Simon's epigynal figure is a reasonably accurate rendition of *T. jaxartensis* (the only *Trachyzelotes* known from Beijing or elsewhere in China), on the assumption that it was printed upside down.

UROZELOTES MELLO-LEITÃO

Urozelotes Mello-Leitão, 1938, p. 111 [type species by original designation *Urozelotes cardiogynus* Mello-Leitão, = *U. rusticus* (L. Koch)].

DIAGNOSIS: Specimens of *Urozelotes* can be distinguished from those of all other zelotine genera by genitalic characters: males have a pointed terminal apophysis closely appressed to the embolus (fig. 75), and females have an



Figs. 75–78. *Urozelotes rusticus* (L. Koch). 75. Palp, ventral view. 76. Palp, retrolateral view. 77. Epigynum, ventral view. 78. Epigynum, dorsal view.

epigynum bearing an elongate, triangular median plate (fig. 77).

DESCRIPTION: See Platnick and Murphy (1984, p. 23).

Urozelotes rusticus (L. Koch)

Figures 75–78

Prosthesima rusticula L. Koch, 1872, p. 309 (female holotype from "Trent," Trento, Trentino-Alto Adige, Italy, in BMNH, examined).

Urozelotes rusticus: Platnick and Murphy, 1984, p. 24, figs. 55–58.

NOTE: A full synonymy can be found in Platnick and Murphy (1984).

DIAGNOSIS: The small terminal apophysis of males (fig. 75) and the wide epigynal plate of females (fig. 77) are diagnostic.

MALE: Described by Platnick and Murphy (1984).

FEMALE: Described by Platnick and Murphy (1984).

MATERIAL EXAMINED: CHINA: Fujian: Jianyang, Oct. 2, 1979 (S. X. Shen, IZB), 1♀. Hunan: Changsha, Sept. 1983 (H. M. Yan, CYC), 1♀.

DISTRIBUTION: Synanthropic and thereby virtually cosmopolitan.

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