

The genus *Serradigitus* in Sonora, Mexico,  
with descriptions of four new species  
(Scorpiones, Vaejovidae)

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## Abstract

Taxonomic characters of the recently resurrected scorpion genus *Serradigitus* Stahnke are discussed, leading to changes in the diagnosis and composition of the genus. Four species, *S. baueri* (Gertsch), *S. bechteli* (Williams), *S. littoralis* (Williams), and *S. pacificus* (Williams) are transferred into *Serradigitus* from the genus *Vaejovis*. The diversity of *Serradigitus* and distribution of its species in the Mexican state of Sonora are investigated. *Serradigitus hearnei* (Williams) and *S. subtilimanus* (Soleglad) are reported for the first time there, and four new species are described (two of which also occur in the United States): *S. allredi* from southern Arizona and central Sonora; *S. polisi* from Isla Tiburon and the Kino Bay area; *S. yaqui* from coastal Sonora, and *S. agilis* from southeastern Arizona, southwestern New Mexico, and eastern Sonora. A record for *S. harbisoni* (Williams) is referred to *S. polisi*. A key to the *Serradigitus* species of Sonora is provided.

## Introduction

The genus *Serradigitus* is a relatively diverse element of the vaejovid fauna in mountainous areas of Baja California, California, and Arizona. Additionally, one species is also known from the Cuatro Ciénegas area in Coahuila (Soleglad 1972) and another from the Big Bend area of Texas (Stockwell, unpubl. data). Although the Mexican state of Sonora is adjacent to Arizona and the mountain systems between the two areas are continuous, only a single record for *Serradigitus* exists for this state; this record, interestingly, is for Isla Tiburon, off the coast of Sonora. Examination of a considerable amount of vaejovid material from U. S. collections confirms that the genus *Serradigitus* is more diverse in Sonora than previously known, and it is the purpose here to report on this diversity. In the present paper, six species of this genus

are reported from Sonora for the first time, four of which are new. Most of the specimens obtained for this study were collected along the coast of Sonora. Because the ultraviolet detection technique has not been applied in the mountainous regions of central and eastern Sonora (they are actually not well-sampled with any method), we suspect that more species will be discovered there.

## Taxonomic Comments

The genus *Serradigitus* was erected by Stahnke (1974) for species that were formerly included in the *Vaejovis wupatkiensis* group. The discovery of a number of species in Baja California which appeared to be intermediate between *Vaejovis* and *Serradigitus* in several important features led Williams (1980) to return all species in *Serradigitus* to *Vaejovis*. Recently, however, Williams

and Berke (1986) resurrected the genus *Serradigitus*, but restricted its definition, thereby excluding some of the species formerly included in the *wupatkiensis* group.

The genus *Serradigitus*, as redefined by Williams and Berke (1986), is distinguished from *Vaejovis* primarily by the following combination of characters: (1) the fixed and movable fingers of the pedipalp chela terminate in enlarged, clawlike denticles; (2) the chela fixed finger bears a continuous, serrated primary denticle row either not subdivided or subdivided into two or three subrows by slightly enlarged denticles (the movable finger exhibits a similar condition); and (3) females possess one to three proximal pectinal teeth that are elongated or more swollen than the others. Our studies indicate that the diagnosis of *Serradigitus* requires emendation, and that such emendation necessitates the inclusion of the remaining *wupatkiensis* group species. Specifically, intraspecific variation in the number of denticle rows on the pedipalp chela fixed finger is such that the character as currently listed does not accurately characterize members of the genus. Further, five other characters not mentioned by Williams and Berke should be included in the diagnosis.

*Vaejovis baueri* Gertsch, *V. bechteli* Williams, *V. littoralis* Williams, and *V. pacificus* Williams were excluded from *Serradigitus* by Williams and Berke (1986) because they reportedly possess four or five (instead of three or fewer) subrows of denticles on the chela fixed fingers. However, *Vaejovis bechteli* Williams was reported to have three or four subrows in its original description (Williams 1980), and in the same publication, *V. pacificus* Williams was reported to possess from three to five subrows. Our observations confirm or add to the known variation in subrow counts in three of the excluded species. One specimen of *V. pacificus* in the senior author's collection possesses three subrows on both fixed fingers. In five specimens of *V. baueri*, three fixed fingers have two subrows, six have three subrows, and one has four subrows. In ten specimens of *V. littoralis*, 17 fixed fingers possess four subrows, and only three possess five subrows (two movable fingers among these specimens possess two subrows). Consequently, within what was formerly known as the *wupatkiensis* group, there is a continuum in subrow counts from one (or not subdivided) to five. Further, several new species described herein

possess either three or four subrows of denticles on the chela fingers; these species have obvious affinities with species currently included in *Serradigitus*. Restricting the character to include only those cases in which specimens possess three or fewer subrows seems untenable in light of the known variation. Accordingly, we recommend that the chela finger dentition character be emended to read "fixed finger primary denticle row either not subdivided or subdivided into two to five subrows by slightly enlarged denticles." The new characterization is not as arbitrary as it may seem -- subdivision of the primary row into six subrows is plesiomorphic, based on outgroup comparisons within the Vaejoidea and with other chactoid groups. Deviations from six subrows are, then, apomorphic; differences in the number of subrows in various species may provide further synapomorphies within *Serradigitus*.

We consider the presence or absence of the following characters important in diagnosing not only *Serradigitus*, but other vaejovoid genera and species groups as well. First, all species of *Serradigitus* have a well developed, comblike serrula on the ventrodorsal aspect of the cheliceral movable finger. Second, trichobothria *ib* and *it* on the pedipalp chela are found on the fixed finger from the vicinity of the sixth inner accessory granule of the dentate margin to about mid-finger -- they are never at the base of the finger. Third, every species of *Serradigitus* bears distinct whitish caps, the function of which is currently unknown, on the pedipalp chela fingertips (Stahnke 1974). Fourth, the genital opercula of the females are completely fused along their medial margins by a membranous connection (Soleglad 1973). Fifth, as noted by Soleglad (1972) and Stahnke (1974), females of *Serradigitus* lack peg sensilla on the (modified) proximal pectinal teeth. To our knowledge the absence of peg sensilla on the proximal pectinal teeth occurs only in *Serradigitus* and, with a few exceptions (see below), is uniform within the group.

It should be noted that *Vaejovis pacificus* and *V. baueri* do not have modified proximal pectinal teeth in females. *Vaejovis littoralis* has one proximal tooth on each pecten that is elliptical (but not enlarged) and lacks sensilla, and the condition of the female pectinal teeth in *V. bechteli* is not known to us. Exclusion of these species from *Serradigitus* on the basis of this character alone seems unwarranted in light of the combination of characters they share with members of that genus.

The same combination of characters excludes these species from all other vaejovoid groups. Consequently, we suggest that the four species discussed above be placed in the genus *Serradigitus*, and propose the following new combinations: *S. baueri* (= *V. baueri* Gertsch), *S. pacificus* (= *V. pacificus* Williams), *S. bechteli* (= *V. bechteli* Williams), and *S. littoralis* (= *V. littoralis* Williams).

*Vaejovis janssi* Williams, *V. minimus thompsoni* Gertsch and Soleglad, and *V. peninsularis* were discussed by Williams and Berke (1986) as species of *Vaejovis* that "have secondarily evolved the elongate terminal denticle on the movable and fixed fingers of the chela". We agree with those authors that all three taxa are properly members of the genus *Vaejovis*. *Vaejovis peninsularis* and *V. janssi* (with slender pedipalp chelae, six subrows of denticles on the chela fingers, and trichobothria *ib* and *it* at the extreme base of the fixed finger) are both members of the *V. nitidulus* group, as discussed elsewhere (Francke and Sissom 1985, Sissom 1991). Most of the remaining species in that group exhibit enlarged terminal denticles and suberrate denticle rows as well. *Vaejovis minimus thompsoni* and the other two subspecies of *V. minimus* have long been considered members of the *minimus* subgroup of the *mexicanus* group of *Vaejovis* (Gertsch and Soleglad 1972; Soleglad 1973; Williams 1980).

### *Serradigitus allredi*, new species (Figs. 1-13)

**Type data.** Adult male holotype of *Serradigitus allredi* taken from Picacho Peak, Pinal Co., Arizona, USA on 31 May 1976 by Bill Warner. Deposited in the American Museum of Natural History.

**Distribution.** Known from the mountains of central Sonora, Mexico and south-central Arizona, USA.

**Etymology.** The specific name is a patronym honoring Dr. Donald M. Allred of Brigham Young University in Provo, Utah, for his contributions to the systematics of North American scorpions.

**Diagnosis.** Adults 20-25 mm long. Base color yellow brown, with faint dusky markings on carapace and tergites. Pectinal tooth count 15-17 in

males, 14-16 in females. Females with two proximal pectinal teeth on each pecten elliptical, lacking sensilla; proximal tooth slightly more elongate than others. Metasomal segments I-II distinctly wider than long; III 0.89-1.03 times longer than wide; V 1.71-1.94 times longer than wide. Ventrolateral carinae on I-IV weak to moderate, crenulate. Ventral submedian carinae on I-II weak, granular; on III-IV weak, crenulate. Pedipalp: fixed finger with primary row divided into four subrows; six to 11 inner accessory granules on fixed finger, nine to 11 on movable finger. Trichobothria *ib* and *it* situated in basal one-third of fixed finger. Chela length/width ratio 3.79-4.18 in male, 4.88-5.00 in female; movable finger length/carapace length 0.97-1.09; movable finger length/chela width 2.52-2.71 in males, 3.22-3.33 in females.

**Description.** The following description is based on adults; parenthetical statements refer only to females. Measurements are given in Table 1.

**Coloration:** Base color yellow brown throughout; carapace with underlying, light dusky pattern radiating out along major carinae; ocular tubercles dark brown. Margins of carapace and tergites dusky brown. Legs and pedipalps with varying amounts of dusky marbling.

**Prosoma:** Carapace densely, minutely granular; anterior margin with weak median notch. Mesosoma: Tergites densely, minutely granular. Tergite VII tetracarinate, all carinae weak to moderate, granulose. Pectinal tooth count 15-17 (14-16). Females with proximal two pectinal teeth elliptical in shape, lacking sensilla; proximal pectinal tooth only slightly enlarged (Fig. 1). Sternite VII with lateral carinae weak, granular. Metasoma: Segments I-II wider than long, III 0.89-1.03 times longer than wide, V 1.71-1.94 times longer than wide. Segments I-IV: Dorsolateral carinae moderately strong, crenulate on segments I-IV. Lateral suprmedian carinae moderate on segments I-III, weak on IV, crenulate. Lateral inframedian carinae weak, crenulate; on I complete, on II present on posterior two-thirds, on III present on posterior one-third, on IV obsolete. Ventrolateral carinae weak to moderate, crenulate on I-IV. Ventral submedian carinae on I-II very weak to weak, granular; on III-IV weak, crenulate. Setal counts on segments I-IV are as follows: dorsolaterals, 0:0-1:1:2; lateral suprmedians, 0:1:1:2; ventrolaterals, 2:2-3:2-3:3; ventral submedians, 3:3:3:3. Segment V (Fig. 2): Dorsolateral

carinae moderate, granulose; lateromedian carinae very weak to weak, granular; ventrolateral and ventromedian carinae moderate, crenulate. All intercarinal spaces on metasomal segments I-V densely, minutely granular. Telson (Fig. 2): Ventral aspect of vesicle with weak granulation and punctations; about 10 pairs of major setae. Subaculear tubercle obsolete to very weak.

**Pedipalps:** Femur (Fig. 3): Dorsointernal, dorsoexternal, and ventrointernal carinae moderate, crenulate; ventroexternal carina weak, weakly crenulate. Internal face with 10-11 enlarged granules; other surfaces densely, minutely granular. Patella (Figs. 4-6): Dorsointernal and ventrointernal carinae moderate, crenulate; dorsoexternal and ventroexternal carinae weak, weakly crenulate. Internal face with nine enlarged tubercles forming an oblique longitudinal carina; dorsal and ventral faces densely, minutely granular; external face with numerous small granules along midline. Chela (Figs. 7-9): Manus slightly inflated medially. Dorsal marginal carina moderate (weak), weakly granulose; dorsal secondary and external secondary carinae weak (vestigial), smooth; ventroexternal carina weak to moderate (vestigial), smooth; digital carina weak to moderate (vestigial), smooth; ventromedian and ventrointernal carinae very weak, smooth; dorsointernal carina weak, weakly granulose. Fixed finger (Fig. 9) with primary row of denticles divided into four subrows; six to 11 inner accessory granules. Movable finger with four or five subrows and nine to 11 inner accessory granules. Cutting margins of chela fingers essentially straight. Trichobothrium *ib* positioned about one-third the length of the fixed finger from base, with *it* slightly distal to it (Fig. 9). Chela length/width 3.79-4.16 (4.88-5.00); movable finger length/carapace length 0.97-1.06; movable finger length/chela width 2.52-2.71 (3.22-3.33).

**Hemispermaphore** (Figs. 10-13): Relatively slender, distal lamina as long or longer than trunk; truncal flexure present; hook of distal lamina flattened or spatulate and rounded at tip, not bifurcate; distal barb of mating plug (Figs. 12-13) very broad, but abrupt and almost truncate; distal barb margin smooth.

**Variation.** Variation in pectinal tooth counts was as follows: in males, one comb with 15 teeth, four combs with 16 teeth, and one comb with 17 teeth; in females, one comb with 14 teeth, two with 15 teeth, and one with 16 teeth (the pectines of one

female were severely damaged and could not be counted). Variation in morphometric characters is given in the description. The paratopotype male had only six inner accessory granules on the pedipalp chela fixed fingers; all others had eight or more.

**Comparisons.** In possessing extra inner accessory granules, *Serradigitus allredi* is most similar to *S. polisi* and *S. subtilimanus*. From the former, *S. allredi* may be distinguished by having the inner face of the chela only slightly inflated, rather than distinctly inflated; by having weaker carinae on the pedipalp chelae; by having trichobothria *ib* and *it* in the basal third of the fixed finger, rather than displaced to near midfinger; and its smaller body size, with adults 20-25 mm in length, rather than 30-40 mm in length.

From *S. subtilimanus*, this species may be distinguished by its lower pectinal tooth counts (less than 18 in both sexes); its weaker pedipalp chela carinae; more basal position of chela fixed finger trichobothria *ib* and *it*; and its less inflated pedipalp chela palm.

**Comments.** Hemispermaphores of *Serradigitus* spp. are studied and illustrated for the first time. Although interspecific comparisons suggest there may be considerable potential for the utilization of hemispermaphore morphology and morphometrics in species recognition, we have refrained from attempting it in this paper. The primary reason for this is the limitation on sample size; for most species, only one or two adult male specimens were available. Because variation in hemispermaphoric structure and morphometrics in these taxa is completely unknown, it seems premature to propose species characters based on them. These structures certainly merit further study, and it is our purpose here to encourage it.

**Specimens examined.** MEXICO: Sonora: Cornelio (111.06W: 29.55N), 13 Sept 1966 (J. and W. Ivie), 1 paratype male, 1 paratype female (AMNH). USA: Arizona: Pinal Co.: Picacho Peak, 31 May 1976 (Bill Warner), 1 holotype male, 1 subadult paratopotype female (AMNH), 1 paratopotype male, 1 paratopotype subadult female (WDS); Pima Co.: Dripping Springs, Organ Pipe Nat'l Mon., 28 Mar 1976 (Bill Warner), 1 paratype female (WDS).

*Serradigitus polisi*, new species  
(Figs. 14-26)

*Vaejovis harbisoni*, Williams 1980: 98 (Fig. 98, Isla Tiburon record only).

**Type data.** Adult male holotype of *Serradigitus polisi* from Kino Bay, Sonora, Mexico on 9 April 1971 (F. and C. Kroehler). Deposited in the California Academy of Sciences (Stahnke collection), CAS Type No. 16105, San Francisco.

**Distribution.** Known from Kino Bay, San Pedro Bay, and Isla Tiburon, Sonora, Mexico.

**Etymology.** The specific name is a patronym honoring Dr. Gary A. Polis, of Vanderbilt University for his contributions to scorpion ecology.

**Diagnosis.** Adults 30-40 mm long. Base color yellow brown to brown, with faint dusky dorsal markings; metasomal segments IV and V darker than preceding segments; pedipalps usually darker than body. Pectinal tooth count 18 in holotype male, 15-21 in females. Females with proximal tooth on each pecten more elongate, angular, and lacking sensilla; second tooth slightly swollen, elliptical, and lacking sensilla. Metasomal segments I-II wider than long; III 0.94-1.00 times as long as wide; V 1.80-1.94 times longer than wide. Ventrolateral carinae moderate, crenulate. Ventral submedian carinae on I weak, smooth or with posterior crenulations; II-IV moderate, crenulate to serrate. Male pedipalp chela with palm swollen, rounded; chela length/width ratio 3.33 in male, 3.90-4.83 in females. Pedipalp chela fixed finger with three or four subrows of denticles; seven to nine inner accessory granules along dentate margin of chela fixed finger; eight to 11 on the movable finger. Chela fixed finger trichobothria *ib* and *it* situated near mid-finger. Movable finger length/chela width 2.18 in male, 2.55-3.30 in females.

**Description.** The following description is based on adults; parenthetical statements refer to females. Measurements are given in Table 1.

**Coloration:** Base color yellow brown to brown. Proximal metasomal segments lighter than segment V and telson. Carapace, tergites and legs with faint dusky markings. Pedipalps uniformly

orange brown; chela fingers with dusky coloration proximally.

**Prosoma:** Carapace with anterior margin emarginate; median notch distinct, rounded; surface densely, coarsely (finely) granular. Mesosoma: Post-tergites densely, coarsely (finely) granular. Sternite VII with pair of moderate, crenulate lateral carinae. Pectinal tooth count 18 (15-21). Females with proximal pectinal tooth elongate, somewhat angular, and lacking sensilla; second tooth usually only slightly swollen, ellipsoid, and lacking sensilla (Fig. 14). Metasoma: Segments I-II wider than long; III 0.94-1.00 times longer than wide; V 1.80-1.94 times longer than wide. Segments I-IV: ventral submedian carinae on I weak, smooth or with fine posterior crenulations; on II-IV moderate, crenulate to serrate. Other carinae strong, crenulate to serrate. Dorsal and dorsolateral intercarinal spaces with scattered, coarse granulation. Setal counts on segments I-IV are as follows: dorsolaterals, 0:1:1:2; lateral supra-medians, 0:1:1:2; ventrolaterals, 2-3:3:3:3; ventral submedians, 3:3:3-4:3-4. Segment V (Fig. 15): dorsolateral and lateral median carinae strong, granulose; ventrolateral and ventromedian carinae strong, serrate. Intercarinal spaces as on I-IV. Telson (Fig. 15): Vesicle with fine granulation and punctations ventrally; subtle, rounded subaculear tubercle; about 13 pairs of major setae.

**Pedipalps:** Trichobothrial pattern of pedipalps Type C, orthobothriotaxic (Vachon 1974). Femur (Fig. 16): All carinae strong, granulose. Inner face with 10-15 irregularly positioned subconical granules; ventral face with coarse proximal granulation. Patella (Figs. 17-19): All carinae strong, crenulate to serrate. Inner face with 13-14 enlarged granules forming an oblique longitudinal carina. External face coarsely (more finely) granular. Chela (Figs. 20-22): Palm distinctly (moderately) swollen inwardly. Dorsal marginal and dorsointernal carinae moderate, granular. Dorsal secondary carina moderate, smooth; digital carina strong, smooth. Ventroexternal carina moderate, granular. Other carinae weak to obsolete. Fixed finger (Fig. 22) with primary row of denticles divided into three or four subrows; basal subrow as long as first three combined; seven to nine inner accessory granules. Movable finger with four or five subrows; eight to 11 inner accessory granules. Cutting margins of chela fingers essentially straight. Trichobothria *ib* and *it* situated near mid-finger (Fig. 22). Chela length/width 3.33 (3.90-

4.83); movable finger length/carapace length 0.99-1.22; movable finger length/chela width 2.18 (2.55-3.30).

**Hemispermatorphore** (Figs. 23-26): Typical of genus (see description under *S. allredi*).

**Variation.** Only seven specimens were available for study. The male had a pectinal tooth count of 18-18; the six females had counts of 15-15, 16-17, 19-19, 19-19, 19-19 and 21-21. The female with the higher count (21-21) was taken in the San Carlos Bay area and represents the southernmost record for the species.

This species is characterized by the presence of extra inner accessory granules on the chela fingers, typically with seven to nine such granules on the fixed finger and eight to 11 on the movable finger. Interestingly, however, two specimens have only six inner accessory granules on their right movable fingers. These low counts are certainly aberrant because the distalmost inner accessory granules are lacking, rather than more basal ones as is the usual trend. In both specimens, the left movable finger possesses extra granules. This atypical variation is not incorporated into the diagnosis.

The female from Sauzal, Isla Tiburon was previously determined by Williams (1980) to be conspecific with *S. harbisoni*. This female was slightly larger and more darkly colored (much like some *S. harbisoni*) than the remaining females of *S. polisi*, but did not differ significantly from them in other characters, including morphometrics, number of granular rows and inner accessory granules, and pectinal tooth counts.

**Comparisons.** *Serradigitus polisi*, typically with more than seven inner accessory granules on the pedipalp chela fingers, is related to *S. harbisoni* (Williams), *S. subtilimanus* (Soleglad), and *S. allredi*. It is distinguished from *S. harbisoni* and *S. subtilimanus* by (1) the swollen, rounded pedipalp chela palm of the male, with a chela length/width ratio in the vicinity of 3.33, not 4.80-5.50; (2) the relatively shorter chela fingers, with chela movable finger length/chela width ratio of 2.35-3.30, not 3.10-3.80; (3) pedipalp chela fixed finger with three to four, rather than two, subrows of denticles; (4) metasomal segment II wider than long and segment III 0.94-1.00 times as long as wide (instead of both longer than wide); (5) pectinal tooth counts of about 18 in the male (15-21 in the female), not greater than 24 in the male (or 21-23

in the female); and (6) its smaller body size, with adults measuring about 30 mm in total length. *Serradigitus polisi* typically has seven to 11 inner accessory granules flanking the primary row of the pedipalp chela fingers, whereas the other two species usually have up to 17 such granules. Characters to distinguish *S. polisi* from *S. allredi* are given in the comparisons section under the latter's description.

**Specimens examined.** MEXICO: Sonora: Kino Bay, 9 April 1971 (F. and K. Kroehler), 1 male holotype (CAS-HLS); New Kino Bay, 3 Apr 1986 (D. Due, G.A. Polis), 1 female paratype (WDS); Isla Tiburon (south end), Gulf of California, 24 April 1966 (K. Lucas), 1 female paratype (CAS); Isla Tiburon, Sauzal (middle of S side), 20 March 1962 (Ira L. Wiggins), 1 female paratype (CAS-HLS); Isla Tiburon, 5 Apr 1986 (D. Due, G. A. Polis), 1 female paratype (WDS); San Carlos Bay, 12 July 1967 (J. Lewis), 1 female paratype (CAS-HLS); San Pedro Bay, 7 July 1921 (no collector), 1 female paratype (AMNH).

### *Serradigitus subtilimanus* (Soleglad)

*Vejois subtilimanus* Soleglad 1972:181; 1973:357; 1974:109.

*Vaejois subtilimanus*, Williams, 1976:2; 1980:90.  
*Serradigitus subtilimanus*, Williams & Berke, 1986: 351.

**Type data.** Male holotype and female allotype of *Vejois subtilimanus* from the Picacho Recreation Area, 23 mi N Winterhaven, Imperial Co., California on 24-25 April 1970 (C.S. and M.E. Soleglad); female allotype from same locality, 24 Dec 1971 (L.R. Erickson, M.E. Soleglad). Permanently housed in the American Museum of Natural History, New York; examined.

**Distribution.** Known from the Colorado River drainage system of southern California and southern Arizona in the U. S. A. extending into northern Sonora in Mexico.

**Diagnosis.** Adults to 45 mm in length. Base color brown to dark brown with dark reddish brown pedipalp chelae and distal metasomal segments; variable underlying dusky markings present. Carapace densely granular, especially at anterior

margin. Pectinal tooth count 24-27 in males, 20-23 in females. Metasoma with ventral submedian carinae smooth to crenulate on I, weakly crenulate on II, serrate on III-IV; segments II-III longer than wide; V 1.80-2.00 times longer than wide. Pedipalps: chela fixed finger with primary row divided into two subrows; trichobothria *ib* and *it* located near mid-finger; nine to 15 (usually about 12) inner accessory granules present on chela fingers. Chela length/width 4.80-5.50; movable finger distinctly longer than carapace; movable finger length/chela width greater than 3.10.

**Comments.** Soleglad (1972) described *S. subtilimanus* from the Picacho Recreation Area near Winterhaven, Imperial Co., California, but Williams (1976) considered it a synonym of *S. harbisoni* from northern Baja California. Williams & Berke (1986) later regarded it as valid. The major differences cited between *S. subtilimanus* and *S. harbisoni* were in the crenulation of the proximal metasomal segments and carapacial granulation (Soleglad 1972). There is, however, considerable variation in pedipalpal and metasomal morphology and morphometrics in populations of this "complex", and further study of the various populations of *S. harbisoni* and *S. subtilimanus* is warranted.

**Specimens examined.** MEXICO: Sonora: Pinacate, 10 April 1970 (H. L. Stahnke, T. Lutz), 1 male, 3 females, 2 juvs (CAS-HLS); 2 mi SW Cerro Colorado, Pinacate Mts., 12 Feb 1960 (T. Ades), 1 male, 2 juvs (AMNH).

### *Serradigitus hearnei* (Williams)

*Vaejovis hearnei* Williams 1980:103.  
*Serradigitus hearnei*, Williams & Berke 1986:351.

**Type data.** Holotype female and allotype male of *Vaejovis hearnei* from 32 km S Santa Rosalia, Baja California Sur, Mexico on 19-IV-1969 (S. C. Williams). Deposited in the California Academy of Sciences, Type No. 12117; not examined.

**Distribution.** Known from Punta Trinidad to Loreto along the coast of the Gulf of California in Baja California and on several islands in the Gulf.

**Diagnosis.** Adults 18-26 mm long. Base color yellow brown with faint dusky markings on dor-

sum. Pectinal tooth count 16-19 in males, 13-17 in females; proximal tooth on each pecten in females elliptical, lacking sensilla. Metasoma: segments I-II wider than long; III about as long as wide; V 1.70-1.83 times longer than wide; ventromedian carinae on I-II obsolete to weak, smooth; on III weak, smooth; on IV irregularly crenulate; segment V with intercarinal spaces moderately granulose. Pedipalps: femur length/width greater than 3.55; chela fixed finger with primary row of denticles divided into two to three subrows; primary row of denticles of fixed finger flanked by six inner accessory granules; fixed finger trichobothria *ib* and *it* both distal to sixth inner accessory granule; chela length/width ratio 4.40-4.60; movable finger length/chela width ratio 2.80-3.00; movable finger length/carapace length 0.90-1.00.

**Comments.** The records for Isla San Pedro Nolasco (Sonora) and Isla San Marcos (Baja California Sur) represent new records for this species. The specimens from Isla San Pedro Nolasco were taken on moderate (15-45°) to steep (>45°) slopes among large volcanic rocks (Denise Due, pers. comm.).

Specimens from the two islands do not differ significantly and fit Williams' (1980) original description of *S. hearnei* quite well, except for pectinal tooth counts. Williams reports pectinal tooth counts of 18-19 for males and 17 for females, based on the material he had available. The new material exhibits the following counts: for males, three combs with 16 teeth, one with 17 teeth; for females, one comb with 13 teeth, seven combs with 14 teeth, seven with 15 teeth, and one with 16 teeth. These lower counts possibly indicate significant geographic differences between populations, but further study is warranted before describing new species or subspecies from the new material.

**Specimens examined.** MEXICO: Baja California Sur: Isla San Marcos, 28 June 1984 (Denise Due, G. A. Polis), 6 females (WDS). Sonora: Isla San Pedro Nolasco, 11 Apr 1986 (Denise Due, G. A. Polis), 2 males, 3 females, 1 juvenile (WDS).

### *Serradigitus yaqui*, new species (Figs. 27-35)

**Type data.** Adult female holotype of *Serradigitus yaqui* from San Carlos Bay, Sonora, Mexico on 12

April 1971 (Stahnke, Lutz, Johns). Deposited in the California Academy of Sciences (H. L. Stahnke collection), CAS Type No. 16106, San Francisco.

**Distribution.** Known from the Guaymas/San Carlos Bay area of Sonora south to San Pedro.

**Etymology.** This species is named for the Yaqui Indians, who inhabited the nearby Yaqui River Valley; the name is used as a noun in apposition.

**Diagnosis.** Adults about 20 mm in length. Base color orange brown to yellow brown with faint dusky markings on carapace and tergites. Pectinal tooth count 16-17 in males, 13-15 in females; proximal tooth on each pecten in females elliptical, lacking sensilla. Metasomal segments I-III distinctly wider than long, with III length/width 0.74-0.94 times longer than wide; V 1.80 times longer than wide in males, 1.44-1.59 times in females; segment V with intercarinal spaces densely, coarsely granular. Pedipalps: femur length/width ratio 3.06-3.47; fixed finger with primary row divided into three or four subrows, six inner accessory granules flanking primary row; trichobothrium *ib* at level of sixth inner accessory granule, *it* slightly basal to fifth. Chela length/width 4.23-4.67; movable finger length/carapace length 0.92-1.08; movable finger length/chela width 2.74-3.09.

**Description.** The following description is based on adults; parenthetical statements refer only to females. Measurements are given in Table 1.

**Coloration:** Base color in alcohol orange to yellow brown, metasomal segment V darker than preceding segments. Telson light orange brown. Carapace with distinct dusky pattern; tergites with a pair of diffuse submedian spots. Legs yellow brown with distinct dusky markings.

**Prosoma:** Anterior margin of carapace emarginate, with moderate, rounded median notch; surface densely, finely granular. Mesosoma: Posttergites densely, finely granular. Sternite VII with a pair of moderate, granular lateral carinae. Pectinal tooth count 16-17 (13-15). Females with proximal tooth on each pecten elliptical in shape and lacking sensilla (Fig. 27). Metasoma: Segments I-III distinctly wider than long; V 1.80 times longer than wide in males, 1.44-1.59 times in females. Segments I-IV: Dorsolateral and lateral suprmedian carinae strong, crenulate to serrate. Lateral inframedian carinae on I-II complete,

strong, crenulate; on III present on posterior three-fourths, moderate to strong, crenulate; on IV absent. Ventrolateral carinae moderate, crenulate. Ventral submedian carinae on I obsolete; on II weak, granular; on III-IV weak, finely crenulate. Dorsal and lateral intercarinal spaces with scattered, coarse granulation. Setal counts on segments I-IV are as follows: dorsolaterals, 0:1:1:2; lateral suprmedians, 0:1:1:2; ventrolaterals, 2:2:3:3:3; ventral submedians, 3:3:3:3. Segment V (Fig. 28): Dorsolateral carinae strong, granulose; lateromedian, ventrolateral, and ventromedian carinae moderate, crenulate. All intercarinal spaces densely, coarsely granular. Telson (Fig. 28): Ventral aspect of vesicle with fine granulation and punctations; small pointed subaculear tubercle present; about 11 pairs of major setae.

**Pedipalps:** Trichobothrial pattern of pedipalps Type C, orthobothriotaxic (Vachon, 1974). Femur (Fig. 29): Dorsoexternal carina moderate, granular; other carinae strong, granulose. Inner face with about 10 enlarged, subconical granules; ventral face with weak, proximal granulation. Patella (Figs. 30-32): Dorsointernal carina weak, crenulate; ventrointernal carina moderate, crenulate; dorsoexternal carina weak, smooth to finely granular. Ventroexternal carina weak, granular. Inner face with 13-15 enlarged, subconical granules forming an oblique longitudinal carina. Chela (Figs. 33-35): Dorsal marginal carina weak, granular; dorsal secondary carina obsolete; digital carina weak, smooth; dorsointernal carina weak, with several enlarged, sharp granules; other carinae obsolete. Fixed finger (Fig. 35) with primary row divided into three or four subrows; six (rarely, five) inner accessory granules. Movable finger with four or five subrows; seven (rarely, six or eight) inner accessory granules. Trichobothrium *ib* situated in basal one-third of fixed finger at level of sixth inner accessory granule, and *it* slightly distal to it (Fig. 35). Chela length/width 4.23-4.67; movable finger length/carapace length 0.92-1.08; movable finger length/chela width 2.74-3.09.

**Hemispermaphore:** Not dissected; the only available adult male was too poorly preserved to permit dissection.

**Variation.** Pectinal tooth counts among the specimens examined varied as follows: in males, one comb with 16 teeth, one with 17 teeth; in females, two combs with 13 teeth; 13 combs with



14 teeth; and 13 combs with 15 teeth. In most female specimens examined, only the proximal pectinal tooth is elliptical and lacks sensilla; in a few, however, the second is also so modified.

**Comparisons.** This species is most similar to *S. hearnei* (Williams) and *S. gertschi* (Williams). From *S. hearnei*, it may be distinguished by having trichobothria *ib* and *it* in a slightly more basal position, with *ib* at the level of the sixth inner accessory granule and *it* situated halfway between the sixth and fifth inner accessory granules (not with both *ib* and *it* distal to the sixth inner accessory granule). The dorsointernal and dorsal marginal carinae of the pedipalp chela tend to be weaker and less granular in *S. yaqui*. *Serradigitus yaqui* tends to be slightly smaller in body size. Finally, *S. yaqui* exhibits the following values in morphometric ratios: femur length/width 3.06-3.47, not greater than 3.55; metasomal segment V length/width in females 1.44-1.59, not greater than 1.70.

From *S. gertschi*, this species may be distinguished by having three to four subrows on the pedipalp chela fixed finger, instead of two; by having the ventral submedian carinae on metasomal segments I-II obsolete to weak and granular, rather than well developed and crenulate to serrate; and by having proportionately shorter, wider metasomal segments in females (e.g., metasomal segment V length/width 1.44-1.59, not greater than 1.70).

**Specimens examined.** MEXICO: Sonora: Bahia San Carlos, 17-19 Feb 1963 (P. H. Arnaud, Jr.), 1 female paratopotype (AMNH); 7 Aug 1921 (no collector), 1 female paratopotype (AMNH); 12 April 1971 (Stahnke, Lutz, Johns), 1 holotype female, 2 paratopotype females (CAS-HLS); Guaymas (on beach)(110.54W:27.59N), 13 Sept 1966 (J. and W. Ivie), 1 female, 2 juv female paratypes (WDS); 14-15 April 1921 (no collector), 1 male, 1 female, 1 juv female paratypes (AMNH); 11 Sept 1966 (R. Hubbard), 1 female paratype (CAS-HLS); near Guaymas, 27 Feb ? (W. M. Wheeler), 1 female paratype (MCZ); 20 mi E San Pedro, 5 July 1936 (A. M. and L. J. Davis), 1 female paratype (AMNH); Guaymas, 26 Jan 1967 (P.J. Pinter), 1 female paratype (CAS-HLS).

### *Serradigitus agilis*, new species (Figs. 36-52)

**Type data.** Adult male holotype of *Serradigitus agilis* taken from road cuts, 5-6 mi W Peña Blanca Lake and Sycamore Canyon, Atacosa Mts., Santa Cruz Co., Arizona, U.S.A. on 21 Apr 1969 (M. A. Cazier, et al.). Deposited in the American Museum of Natural History, New York.

**Distribution.** Known from southern Arizona and southwestern New Mexico, U.S.A. and northeastern Sonora, Mexico.

**Etymology.** The specific epithet is taken from the Latin *agilis*, meaning agile or nimble. The term is descriptive of this and other members of *Serradigitus* which live on rocky hillsides and vertical cliff faces.

**Diagnosis.** Adults 16-22 mm long. Base color yellow brown with dusky markings on most cuticular surfaces; metasomal segments IV and V dark orange brown. Pectinal teeth numbering 14-17 in males, 14-15 in females. Female pectinal teeth all approximately same size or with most proximal only slightly larger; proximal two teeth elliptical in shape, lacking sensilla. Sternite VII with lateral carinae faint, granular. Metasoma: segments I-III wider than long, with III length/width 0.79-0.91; segment V 1.65-1.87 times longer than wide. Ventrolateral carinae on I faint, granular; on II-IV weak, finely crenulate. Ventral submedian carinae on I-II obsolete; on III-IV faint, granular. Male pedipalp chela slender, carinae reduced to faint ridges or obsolete; fixed finger with four or five subrows of denticles and six inner accessory granules; trichobothrium *ib* basal to and *it* at the level of sixth inner accessory granule. Margins of chela fingers straight. Ratio of chela length/chela width 4.64-4.98; movable finger length/chela width 2.97-3.11; movable finger length/carapace length 0.79-0.88.

**Description.** Based on adults; parenthetical statements refer to females. Measurements are given in Table 1.

**Coloration:** Base color yellow brown, with dusky underlying markings on carapace, tergites, metasomal venter, and pedipalp chelae; metasomal segments IV-V dark orange brown. Legs and pedipalp femora and patellae light yellow brown.

**Prosoma:** Carapace with anterior margin weakly emarginate, median notch shallow. Carapacial surface densely, finely granular. Mesosoma: Tergites densely, finely granular. Sternite VII with pair of faint, granular lateral carinae. Pectinal tooth count 14-17 (14-15). Females with all pectinal teeth approximately the same size, or with most proximal only slightly larger; the two proximal teeth elliptical in shape, lacking sensilla (Fig. 36). Metasoma: Segments I-III wider than long; V 1.65-1.87 times longer than wide. Segments I-IV: Ventral submedian carinae on I-II obsolete; on III-IV faint, granular. Ventrolateral carinae on I faint, granular; on II-IV weak, finely crenulate. Other carinae moderate, crenulate. Intercarinal spaces densely, finely granular with sparse coarse granulation. Setal counts on segments I-IV are as follows: dorsolaterals, 0:1:1:2; lateral supra-medians, 0:1:1-2:2-3; ventrolaterals, 2-3:2-3:3-4:3-4; ventral submedians, 3:3:3:3-4. Segment V (Fig. 37): Ventromedian and ventrolateral carinae weak, crenulate. Lateromedian carinae vestigial, granular. Dorsolateral carinae moderate, crenulate anteriorly; weak, granular posteriorly. Intercarinal spaces sparsely, coarsely granular. Telson (Fig. 37). Vesicle with a few coarse granules basally, interspersed with fine punctation; vesicle with about 12 pairs of setae; minute subaculear tubercle.

**Pedipalps:** Trichobothrial pattern of pedipalps Type C, orthobothriotaxic (Vachon 1974). Femur (Fig. 38): All carinae moderate, crenulate to serrate. Inner face with 10-11 coarse granules flanked by about the same number of smaller granules. Patella (Figs. 39-41): Dorsointernal and ventrointernal carinae moderate, crenulate; dorsoexternal and ventroexternal carinae weak, feebly granular. Inner face with about 10 granules forming an oblique longitudinal carina. Chela (Figs. 42-44): Palm slender; fingers not exceedingly long and tenuous, with both fingers distinctly shorter than carapace. Dorsal marginal and digital carinae present as feeble, smooth ridges; dorsointernal carina weak, granular; other carinae obsolete. Fixed finger with primary row of denticles divided into four or five subrows; six inner accessory granules. Movable finger with primary row of denticles divided into five or six subrows; seven inner accessory granules. Chela fingers terminating in relatively blunt terminal denticles (compared with other *Serradigitus*). Cutting margins of chela fingers straight (i.e., not

scalloped). Trichobothria *ib* basal to and *it* at the level of the sixth inner accessory granule (Fig. 44). Chela length/width 4.64-4.98; movable finger length/chela width 2.97-3.11; movable finger length/carapace length 0.79-0.88.

**Hemispermatothore** (Figs. 45-52): Typical of genus (see description under *S. allredi* and also comments on variation below).

**Variation.** Pectinal tooth counts varied as follows: in males one comb with 14 teeth, three with 15 teeth, and six with 16 teeth; in females, three combs with 14 teeth and five with 15 teeth. Variation in morphometrics is given in the diagnosis and description. Females differ significantly from males only in that they exhibit larger body size.

Hemispermatothores of males from Peña Blanca Lake, Arizona and Nacozari, Sonora exhibit interesting differences (cf. Figs. 45-52), particularly in the shape of the mating plug. The significance of these differences should be investigated once additional material becomes available from new localities, especially in Sonora. Because of the great similarity in external morphology of specimens from the two localities (agreeing in all known taxonomically important characters) and the lack of knowledge of hemispermatothoric variation, it would be premature to propose that the two populations represent different species or subspecies.

**Comparisons.** *Serradigitus agilis* is similar to *S. allredi* and *S. yaqui*. From both of these it may be distinguished by the possession of four to five subrows of denticles on the chela fixed finger (and five to six on the movable finger) and by the reduction of the ventrolateral and ventral submedian metasomal carinae on segments I and II. *Serradigitus agilis* also differs from *S. allredi* by possessing only six inner accessory granules on the fixed chela finger (not seven to eight such granules) and only seven on the movable finger (not nine). Other characters to distinguish *S. agilis* from *S. yaqui* are as follows: (1) the metasomal segments are proportionately shorter in females of *S. yaqui*, which has metasoma V length/width ratios of 1.44-1.59; and (2) metasomal segment V in *S. agilis* is only sparsely granular, but is densely, coarsely granular in *S. yaqui*.

In possessing four or five subrows of denticles on the chela fingers and relatively blunt terminal denticles on the chela fingers (compared to other

*Serradigitus*), this species resembles *S. littoralis* from Baja California and associated islands. However, *S. agilis* may distinguished from it by the lack of granulation on the dorsal aspect of the chela fixed finger and by the reduction of the ventrolateral and ventral submedian carinae of the metasoma (these are well developed and crenulate in *S. littoralis*).

**Comments.** This species lacks the elongate or noticeably swollen proximal pectinal teeth characteristic of females of most other *Serradigitus* and has four to five subrows of denticles on the dentate margin of the pedipalp chela fixed finger. We have chosen to include it in *Serradigitus* because of the relatively distal displacement of chela fixed finger trichobothria *ib* and *it*, the enlarged terminal denticles of the chela fingers (although not as exaggerated in some *Serradigitus*), the possession of a serrula, the possession of fused genital opercula in the female, and the possession of serrated primary row denticles. Further, although the two proximal pectinal teeth are not enlarged, they are both elliptical in shape and lack sensilla as in other *Serradigitus*.

**Specimens examined.** MEXICO: Sonora: 10 mi S Nacozari (Highway 10; entrance to old copper mine), 16 Aug 1959 (B. A. Branson), 1 paratype male (AMNH). U.S.A.: Arizona: Santa Cruz Co.: 5-6 mi W Peña Blanca Lake and Sycamore Canyon, Atacosa Mts. (road cuts), 21 Apr 1969 (Cazier, et al.), 1 holotype male, 1 paratype male, 1 paratype female (AMNH), 2 paratype males, 1 paratype female (WDS). New Mexico: Hidalgo Co.: NM highway 9, 7 mi W Animas (can traps off highway), 2 Apr-15 June 1988 (B. Tomberlin, T. Snell), 2 paratype females (WDS).

#### Key to species of *Serradigitus* from Sonora, Mexico

1. Pedipalp chela movable finger with more than seven inner accessory granules flanking primary row of granules . . . . . 2
- 1'. Pedipalp chela movable finger with seven inner accessory granules . . . . . 4
2. Pedipalp chela fingers with primary row of granules divided into two subrows by a single enlarged primary row granule; pectinal tooth counts of males 24-27, of females 20-23 . . . . .  
. . . . . *subtilimanus*

2. Pedipalp chela fingers with primary row divided into three or four subrows; pectinal tooth counts of males and females 21 or fewer . . . . . 3
3. Trichobothria *ib* and *it* of chela fixed finger situated near mid-finger . . . . . *polisi*
- 3'. Trichobothria *ib* and *it* of chela fixed finger situated in basal one-third of finger . . . . . *allredi*
4. Primary row of denticles of pedipalp chela fixed finger divided into five subrows; ventrolateral carinae of metasomal segments I-II obsolete to weak, smooth; chela fingers proportionately short, with ratio of movable finger length/carapace length 0.79-0.88 . . . . . *agilis*
- 4'. Primary row of denticles of pedipalp chela fixed finger divided into two to four subrows; ventrolateral carinae of metasomal segment I weak to moderate, crenulate; chela fingers proportionately long, with ratio of movable finger length/carapace length 0.90 or greater . . . . . 5
5. Trichobothrium *ib* of pedipalp chela fixed finger situated at the level of the 6th inner accessory granule; ratio of femur length/width 3.06-3.47; of metasomal segment V length/width in females 1.44-1.59 . . . . . *yaqui*
- 5'. Trichobothrium *ib* situated distal to 6th inner accessory granule; ratio of femur length/width > 3.55; of metasomal segment V length/width 1.70 or greater . . . . . *hearnei*

#### Acknowledgments

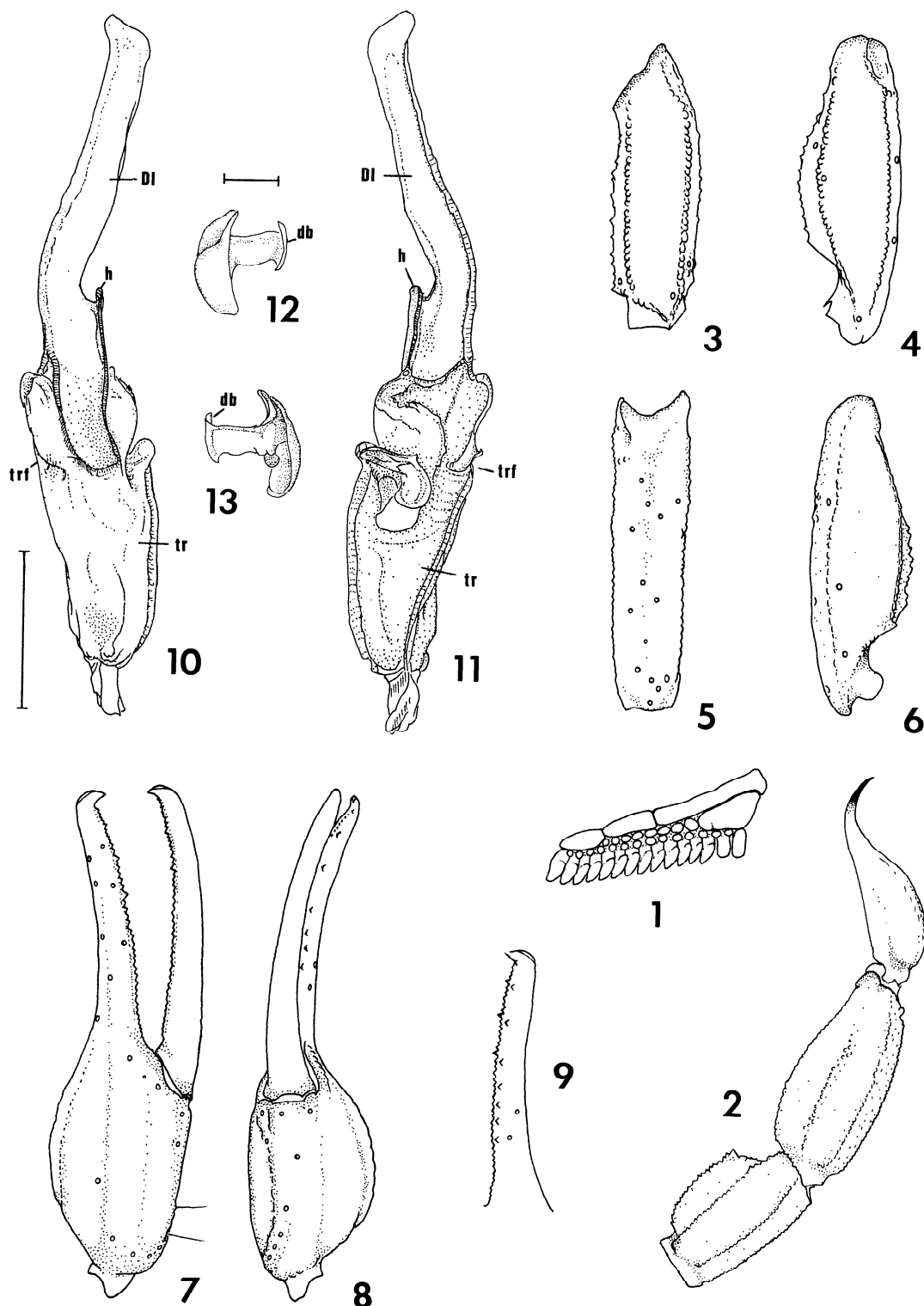
We are grateful to the following curators and institutions for the loan of material: Dr. Herbert W. Levi of the Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts (MCZ); Dr. Norman I. Platnick of the American Museum of Natural History, New York (AMNH); and Dr. Wojciech J. Pulawski of the California Academy of Sciences, San Francisco (CAS). Dr. Platnick kindly loaned us the type specimens of *Serradigitus subtilimanus*.

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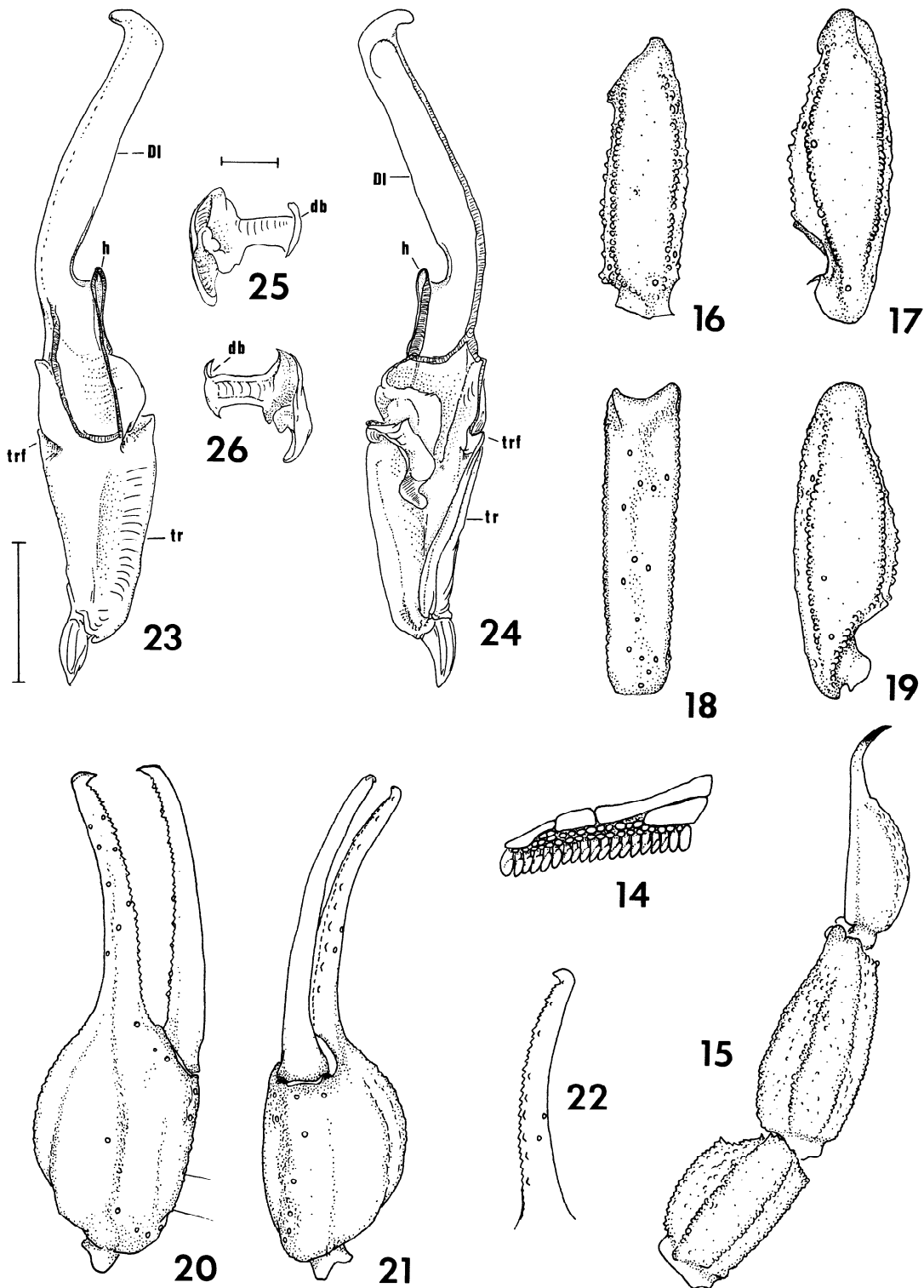
manuscript was partially supported by a faculty research and development grant from Elon College.

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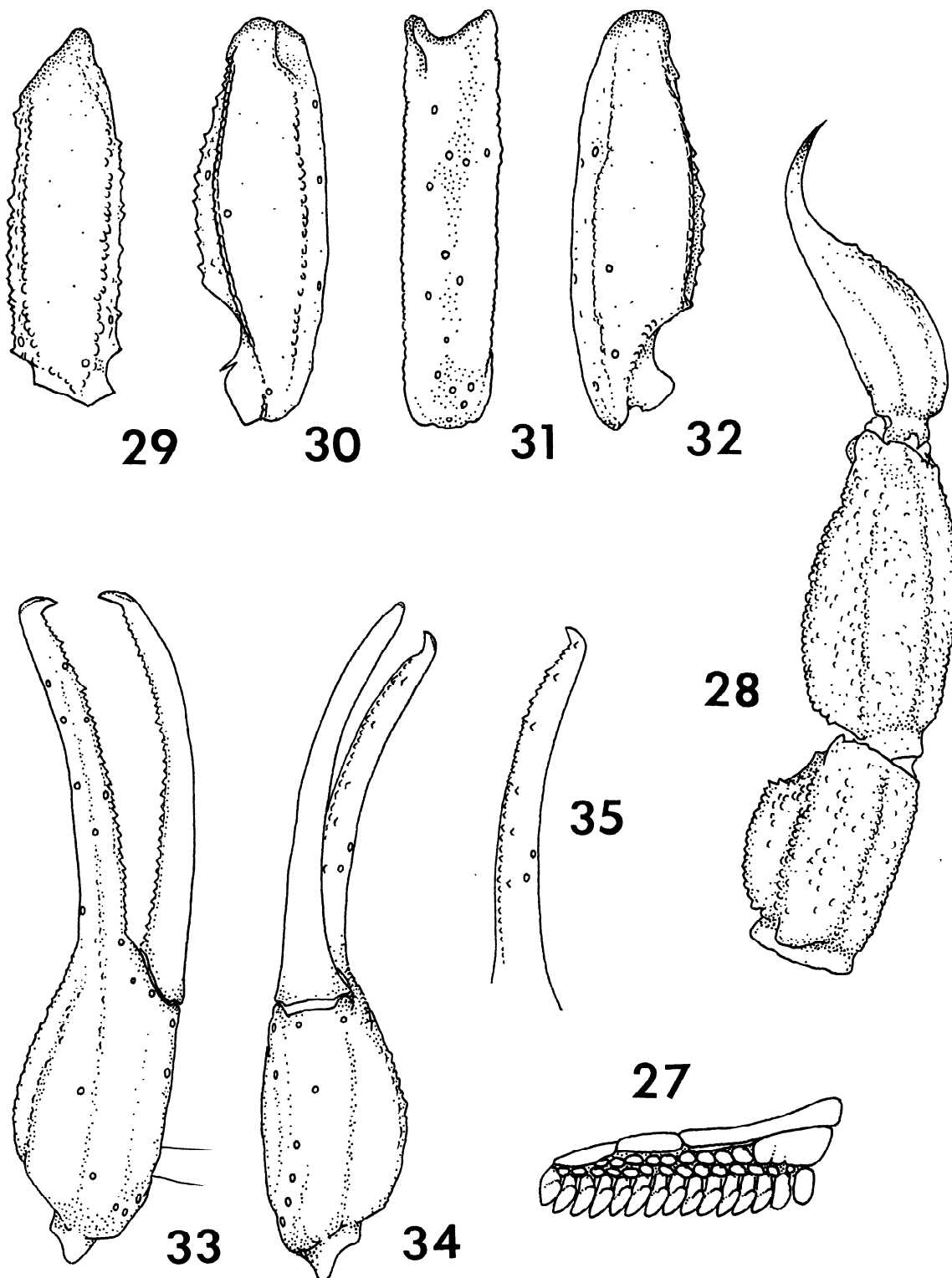
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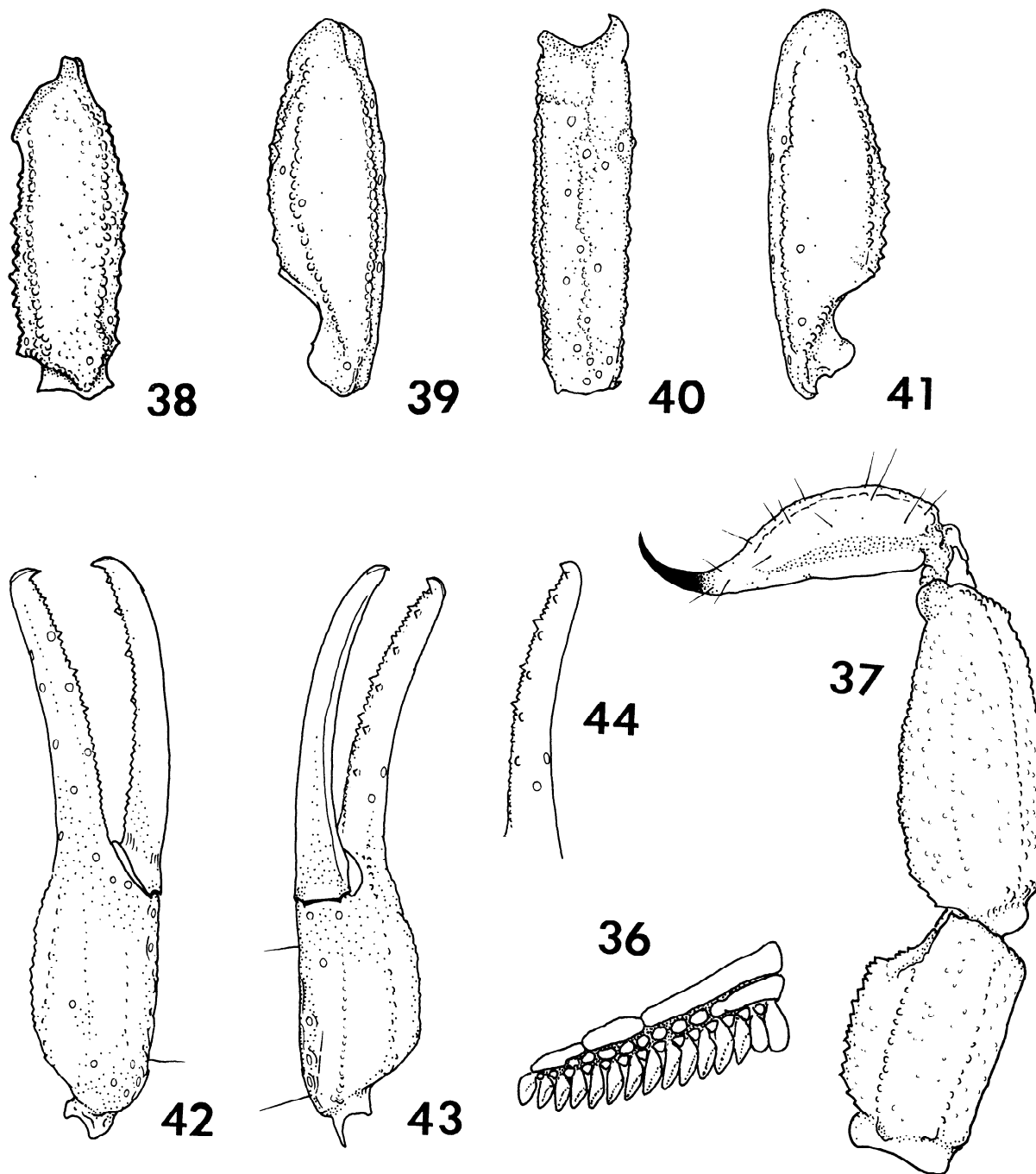
**Figures 1-13.** External morphology of *Serradigitus allredi*, new species. All drawings of paratype male from Cornelio, Sonora except as indicated. 1, ventral aspect of right pecten of female; 2, lateral aspect of metasomal segments IV-V and telson; 3, dorsal aspect of pedipalp femur; 4, dorsal aspect of pedipalp patella; 5, external aspect of pedipalp patella; 6, ventral aspect of pedipalp patella; 7, external aspect of pedipalp chela; 8, ventral aspect of pedipalp chela; 9, internal aspect of pedipalp chela fixed finger; 10, external view of right hemispermatophore; 11, internal view of right hemispermatophore; 12, external view of dissected mating plug; 13, internal view of mating plug. For hemispermatophores, b = distal barb of mating plug; Dl = distal lamina; h = hook of distal lamina; tr = trunk; trf = truncal flexure. Scale line for Figs. 10-11 = 1.0 mm; for 12-13 = 0.25 mm.



**Figures 14-26.** External morphology of *Serradigitus polisi*, new species. All drawings of holotype male except as indicated. 14, ventral aspect of right pecten of female; 15, lateral aspect of metasomal segments IV-V and telson; 16, dorsal aspect of pedipalp femur; 17, dorsal aspect of pedipalp patella; 18, external aspect of pedipalp patella; 19, ventral aspect of pedipalp chela; 20, external aspect of pedipalp chela; 21, ventral aspect of pedipalp chela; 22, internal aspect of pedipalp chela fixed finger; 23, external view of right hemispermatophore; 24, internal view of right hemispermatophore; 25, external view of dissected mating plug; 26, internal view of dissected mating plug. For hemispermatophores, db = distal barb of mating plug; Dl = distal lamina; h = hook of distal lamina; tr = trunk; trf = truncal flexure. Scale line for Figs. 23-24 = 1.0 mm; for Figs. 25-26 = 0.25 mm.

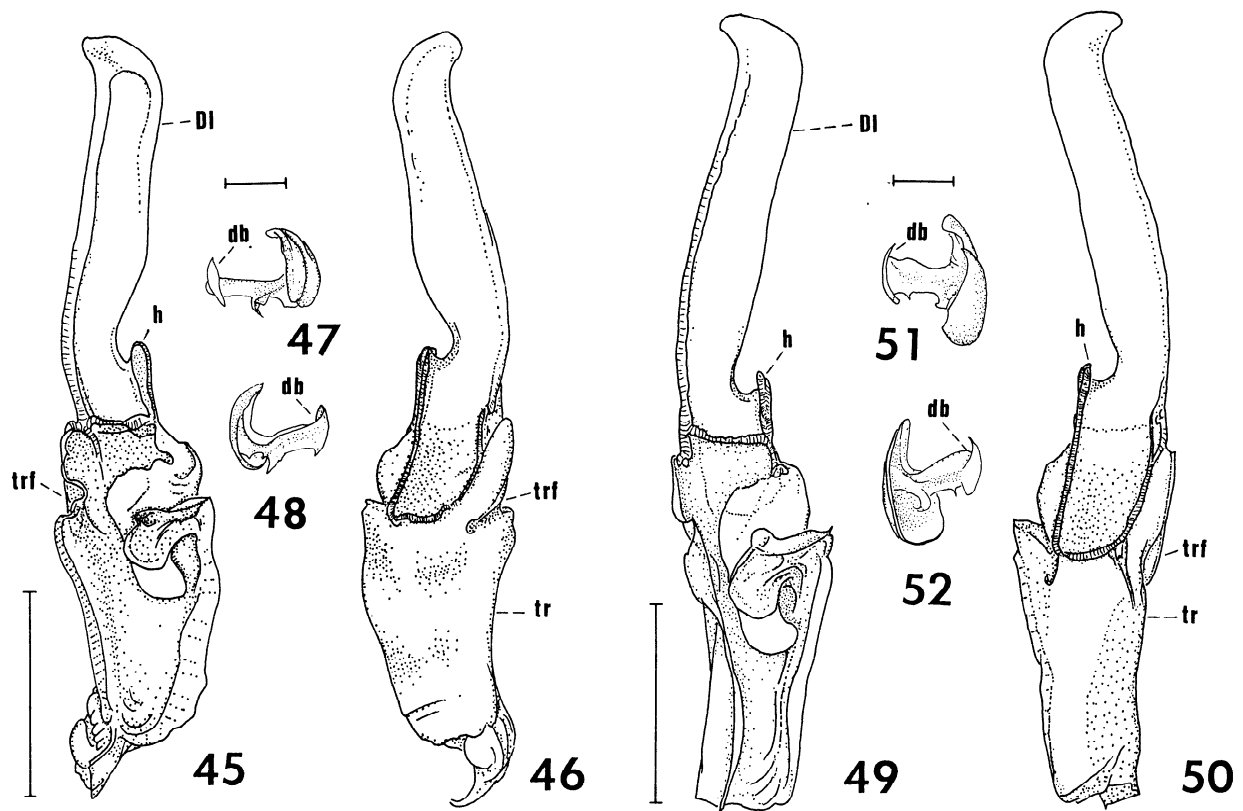


**Figures 27-35.** External morphology of holotype female *Serradigitus yaqui*, new species. 27, ventral aspect of right pecten; 28, lateral aspect of metasomal segments IV-V and telson; 29, dorsal aspect of pedipalp femur; 30, dorsal aspect of pedipalp patella; 31, external aspect of pedipalp patella; 32, ventral aspect of pedipalp patella; 33, external aspect of pedipalp chela; 34, ventral aspect of pedipalp chela; 35, internal aspect of pedipalp chela fixed finger.



**Figures 36-44.** External morphology of *Serradigitus agilis*, new species; all drawings of paratype male from Nacozari, Sonora except as indicated. 36, ventral aspect of right pecten of female paratype from Atacosa Mts., Arizona; 37, lateral aspect of metasomal segments IV-V and telson; 38, dorsal aspect of pedipalp femur; 39, dorsal aspect of pedipalp patella; 40, external aspect of pedipalp patella; 41, ventral aspect of pedipalp patella; 42, external aspect of pedipalp chela; 43, ventral aspect of pedipalp chela; 44, internal aspect of pedipalp chela fixed finger.





**Figures 45-52.** Hemispermatochore morphology of *Serradigitus agilis*, showing interpopulation variation. Figs. 45-48, male from Atacosa Mts., Peña Blanca Lake, Arizona: 45, internal aspect of left hemispermatochore; 46, external aspect of left hemispermatochore; 47, external aspect of dissected mating plug; 48, internal aspect of dissected mating plug. Figs. 49-52, male from 10 mi N Nacozari, Sonora: 49, internal aspect of left hemispermatochore; 50, external aspect of left hemispermatochore; 51, external aspect of dissected mating plug; 52, internal aspect of dissected mating plug. db = distal barb of mating plug; Dl = distal lamina; h = hook of distal lamina; tr = trunk; trf = truncal flexure. Scale lines for Figs. 45-46 and 49-50 = 1.0 mm; for Figs. 47-48 and 51-52 = 0.25 mm.

**Table 1.** Measurements in mm and pectinal tooth counts (l=left, r=right) of new species of *Serradigitus*: *S. allredi*, *S. polisi*, *S. yaqui*, and *S. agilis*.

	<i>S. allredi</i>		<i>S. polisi</i>		<i>S. yaqui</i>		<i>S. agilis</i>	
	Paratype	Paratype	Holotype	Paratype	Paratype	Holotype	Holotype	Paratype
	Male	Female	Male	Female	Male	Female	Male	Female
Total length	20.00	18.45	27.63	35.76	15.76	22.26	16.67	22.89
Carapace length	3.00	3.10	3.70	4.68	2.27	3.15	2.34	3.20
Mesosoma length	6.60	6.00	7.66	11.04	4.80	7.08	4.93	7.92
Metasoma length	10.40	9.35	12.47	15.42	6.66	9.08	7.20	9.01
I length	1.35	1.20	1.65	2.13	0.87	1.21	0.90	1.12
I width	1.80	1.75	2.25	2.75	1.20	1.90	1.40	1.80
II length	1.65	1.50	1.90	2.50	1.01	1.32	1.10	1.35
II width	1.75	1.70	2.24	2.58	1.18	1.92	1.37	1.80
III length	1.80	1.60	2.08	2.60	1.10	1.40	1.20	1.45
III width	1.70	1.70	2.25	2.48	1.18	1.90	1.35	1.75
IV length	2.30	2.15	2.90	3.54	1.55	2.15	1.70	2.14
IV width	1.75	1.65	2.20	2.31	1.18	1.88	1.30	1.67
V length	2.95	2.90	3.94	4.65	2.13	3.00	2.30	2.95
V width	1.90	1.60	2.15	2.28	1.18	1.88	1.28	1.60
Telson length	2.95	2.75	3.80	4.62	2.03	2.95	2.20	2.76
Vesicle length	1.90	1.70	2.47	2.70	1.23	1.78	1.40	1.80
Vesicle width	1.20	1.10	1.56	1.87	0.88	1.27	0.90	1.10
Vesicle depth	0.90	0.80	1.13	1.40	0.63	0.93	0.62	0.85
Aculeus length	1.10	1.05	1.33	1.92	0.80	1.17	0.80	0.96
Pedipalp length	10.25	9.80	13.21	17.47	7.25	10.11	7.11	9.67
Femur length	2.65	2.60	3.40	4.60	1.91	2.60	1.90	2.52
Femur width	0.80	0.80	0.95	1.20	0.55	0.80	0.55	0.80
Patella length	3.00	2.70	3.76	5.04	2.12	2.86	2.13	2.85
Patella width	0.95	0.95	1.25	1.45	0.66	1.00	0.64	0.94
Chela length	4.60	4.50	5.90	7.83	3.22	4.65	3.08	4.30
Chela width	1.20	1.00	1.63	1.86	0.69	1.10	0.60	0.90
Chela depth	1.10	0.90	1.90	2.07	0.75	1.13	0.66	1.00
Fix. fing. length	2.45	2.50	3.18	4.45	1.75	2.50	1.55	2.24
Mov. fing. length	2.95	3.00	3.83	5.28	2.13	3.05	1.90	2.72
Pectinal teeth (l/r)	17-16	16-15	18-18	19-19	16-17	13-13	16-16	14-15