

NEW SPECIES OF *PELLENES* FROM CALIFORNIA
(ARANEAE: SALTICIDAE)

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ABSTRACT

Five new species of jumping spiders from California are described, and named as follows: *Pellenes (Habronattus) ustulatus*, n. sp., *Pellenes (Habronattus) icenoglei*, n. sp., *Pellenes (Habronattus) kawini*, n. sp., *Pellenes (Habronattus) kubai*, n. sp., and *Pellenes (Habronattus) schlingeri*, n. sp.

INTRODUCTION

In conjunction with a study of the subgenus *Habronattus* F. P. Cambridge 1901 of the genus *Pellenes* Simon 1876 in California, five new species were discovered. I wish to thank the following for the loan of specimens: Saul Frommer, University of California, Riverside (UCR); Wendel Icenogle, personal collection (WIC); Norman Platnick, American Museum of Natural History (AMNH); Elbert L. Sleeper, California State University at Long Beach (CSULB); and Mel Thompson, personal collection (MTC). Other specimens were from the California Insect Survey, University of California, Berkeley (CIS) and the collection of the author (CEG).

The ratios given in the descriptions were calculated as follows: A — length ocular field/length carapace; B — length tibia III/tibia IV; C — height clypeus/height face; D — length ocular field/height carapace (to top of PLE); E — length patella III/tibia III; F — length tibia I/width ocular field III; G — length femur I/width ocular field III; H — length femur III/width ocular field III; I — length femur IV/femur III; J — length basitarsus and telotarsus I/tibia I; K — width ocular field III/length carapace.

Pellenes (Habronattus) ustulatus, new species
Figs. 1, 2.

Types.—Male holotype from Del Puerto Canyon, at N. Fork, Del Puerto Creek, Stanislaus Co., California, 12 April 1975, (C. E. Griswold), California Insect Survey, deposited on indefinite loan in the California Academy of Sciences. Two paratype males (same

locality): 13 April 1974 and 29 April 1975 (C. E. Griswold), in CIS. Specific name from the Latin for scorched, singed, or browned, referring to the color of the spider and the hot, dry situations in which it has been collected.

Male.—Carapace with integument dark brown, black around eyes; thin black marginal line; sides clothed with tan scales, ocular area densely covered with short scales of same color; band of black scales between PLE and ALE; patch of white scales behind each anterior eye; a few red-brown scales between each anterior eye. Clypeus with integument tan, dark line beneath each AME; tan-white scales from sides of carapace extending toward middle; long reddish-tan scales forming sparse fringe at oral margin. Chelicera brown at base, fading to pale yellow-brown at tips; few scales above. Labium and endite dusky brown, white at tips; sternum dusky brown, lightest in center; coxae and trochanters pale yellow-white. Abdomen with integument of dorsum dark anteriorly, breaking up into light and dark chevrons posteriorly; venter pale yellow-white; uniformly covered on dorsum and sides with tan scales; white scales on venter; spinnerets pale yellow. First leg with femur yellow-brown on dorsal and posterolateral surfaces, pale ventrally, and with dusky markings on anterolateral surface; sparse, fine black hairs on anterolateral surface; short, black posteroventral fringe on distal 0.25 of segment; patella, tibia, and basitarsus yellow-brown on dorsal and upper part of anterior surface, this area covered with white scales; lower part of anterior and ventral surface densely covered with black scales; telotarsus pale yellow-brown. Legs II-IV with integument yellow-brown, with dusky brown annuli basally and subapically on femora, basally and apically on patellae to basitarsi; claw tufts contrasting black. Palpus with segments yellow-brown; tarsus covered with white hairs; tibial apophysis as in fig. 2; bulb as in fig. 1.

Measurements.—Total length 3.92 mm; carapace length 2.13 mm; LOF 1.14 mm; WOF III 1.52 mm; carapace height 1.14 mm; face height 0.61 mm; clypeus height 0.19 mm; femur I length 1.1 mm; tibia I length 0.72 mm; basitarsus and telotarsus I length 1.03 mm; femur III length 1.52 mm; patella III length 0.76 mm; tibia III length 0.84 mm; femur IV length 1.10 mm; tibia IV length 0.68 mm.

Ratios.—A = 0.54, C = 0.31, D = 1.0, F = 0.475, G = 0.70, H = 1.0, I = 0.725, J = 1.42, K = 0.71.

Female.—Unknown.

Diagnosis.—*P. ustulatus* differs from other members of the genus in having the carapace and abdomen almost uniformly covered with tan scales, the first patella, tibia, and basitarsus black beneath, and in details of the palpal bulb.

Natural History.—Specimens have been collected on dry ground beneath *Adenostema fasciculatum* H. & A., and on gravelly soil; species apparently prefers hot, dry habitat.

Distribution.—Known only from type locality.

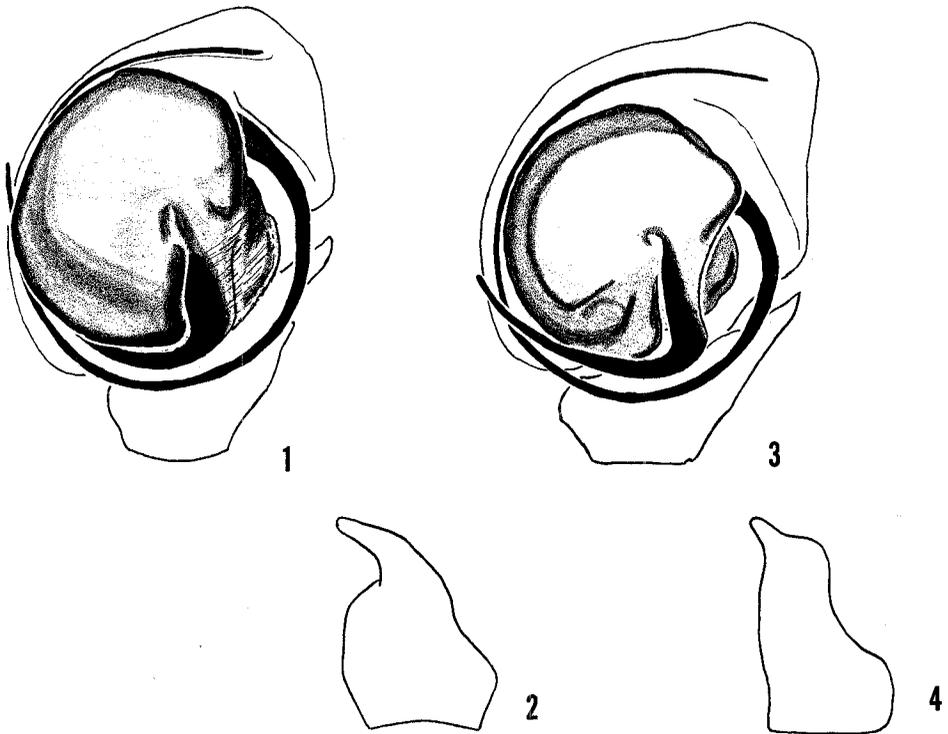
Pellenes (Habronattus) icenoglei, new species

Figs. 3, 4.

Type.—Male holotype from Indio, Riverside Co., California, 13 August 1962, (D. Gilmore), (CSULB), deposited in collection of California Academy of Sciences. The specific name is a patronym in honor of Wendel Icenogle.

Male.—Carapace with integument of ocular area dark brown; sides with broad brown band, one-half as wide as height of carapace, extending back toward posterior margin of carapace; triangular dark marking extending from ocular area down posterior declivity, widest behind; area around this marking forming yellow-brown band, extending to lower

margin and from base of triangle extending forward on lower margin of carapace to below level of PME; thin brown line around lower margin of carapace; ocular area overlain by white scales, these broadest posteriorly, becoming narrower and grayer above anterior eye row; white scales on areas of light integument and brown scales on areas of dark integument; color of integument plainly showing through on all areas; white scales around lower margin. Clypeus with integument yellow-brown centrally, becoming dusky laterally and extending on sides to below level of PME; covered with snow white scales; oral margin with fringe of long white hairs. Chelicera with integument yellow-brown, darkest above; covered with white hairs arising from upper part of chelicera and equal to chelicera in length. Labium, endite, sternum, coxae, and trochanters pale yellow-white, unmarked. Abdomen with integument pale yellow-white; dorsum with dusky marking in front, diverging into two broad longitudinal bands which reunite just before spinnerets, area between these bands white; venter unmarked; dorsum with areas of light integument covered with long white scales; dark integument covered with long brown scales. Legs with integument yellow-white, unmarked; leg I with orange scales, few distally on femur, dense on anteriodorsal and lateral surfaces of patella and tibia, and sparse on basitarsus; leg II with orange scales arranged as leg I, but much sparser; legs III and IV with scattered white scales. Palpus with all joints pale, covered with white hairs; tibial apophysis and bulb as in figs. 3, 4.



Figs. 1-2.—*Pellenes ustulatus*, new species: 1, ventral view of male palp; 2, retrolateral view of male palpal tibia.

Figs. 3-4.—*Pellenes icenoglei*, new species: 3, ventral view of male palp; 4, retrolateral view of male palpal tibia.

Measurements.—Total length 4.29 mm; carapace length 0.99 mm; face height 0.61 mm; clypeus height 0.23 mm; femur I length 1.10 mm; tibia I length 0.76 mm; basitarsus and telotarsus I length 1.14 mm; femur III length 1.44 mm; patella III length 0.80 mm; tibia III length 0.72 mm; femur IV length 1.25 mm; tibia IV length 0.80 mm.

Ratios.—A = 0.47, C = 0.37, D = 0.96, F = 0.54, G = 0.76, H = 1.0, I = 0.87, J = 1.5, K = 0.69.

Female.—Unknown.

Diagnosis.—*P. icenoglei* may be distinguished from other members of the genus in having the patella and tibia of the first leg covered on the anterior surface with orange scales, and in having the abdomen white dorsally, with two dark converging longitudinal bands.

Variation.—Other specimens may be darker than type, with lighter areas of integument yellow-brown, and darker areas brown to black. Some specimens have dusky markings on ventur of abdomen.

Natural History.—Joshua Tree N.M. specimens were collected in pitfall traps in Creosote Bush Scrub and mixed Juniper/Yucca habitats.

Additional Specimens Examined.—CALIFORNIA: *Riverside Co.*: Joshua Tree Natl. Mon., Pleasant Valley, 1 male, "ground trap," 24 April 1967, (S. L. Jenkins, CSULB); (same), 1 male, 25 April 1965, (E. L. Sleeper, S. L. Jenkins, CSULB).

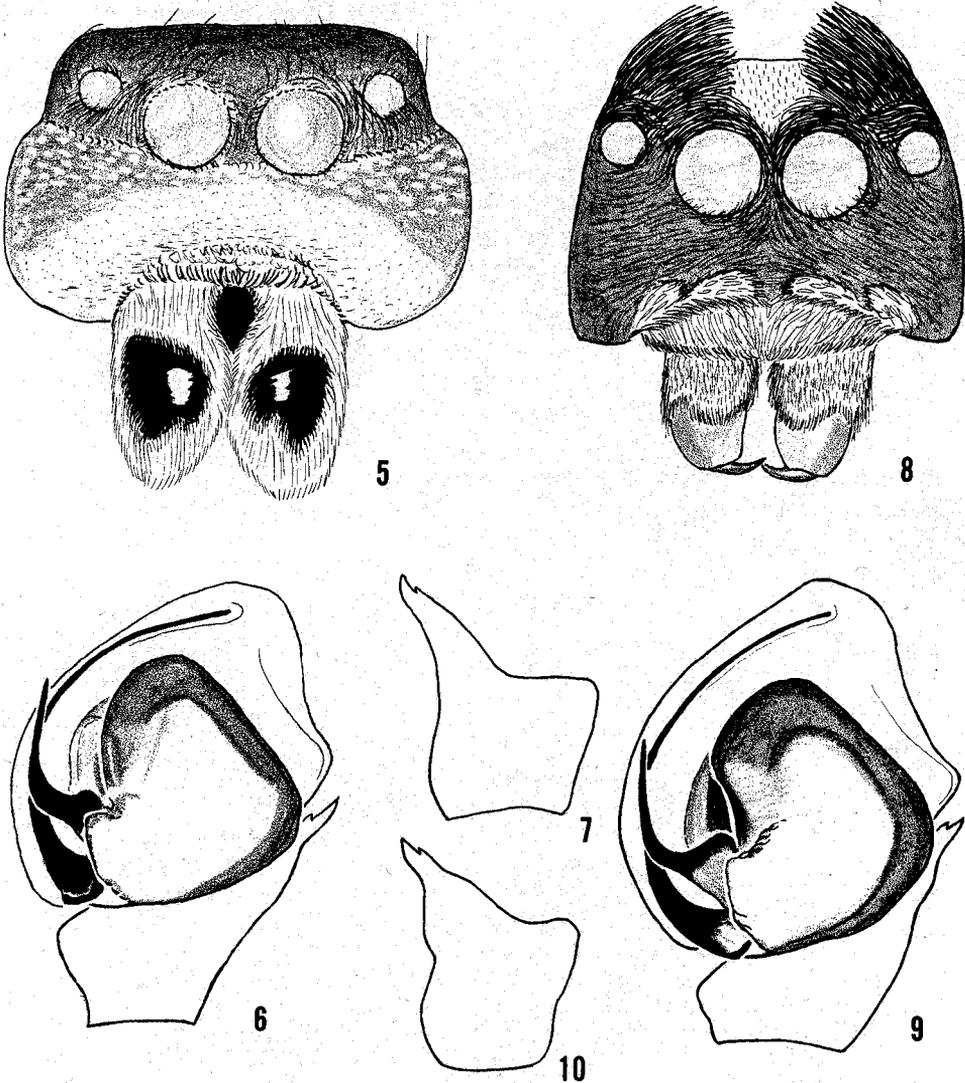
Pellenes (Habronattus) kawini, new species

Figs. 5, 6, 7.

Types.—Male holotype from Mt. Laguna, San Diego Co., California, 15 May 1975 (C. E. Griswold), California Insect Survey, deposited on indefinite loan in the California Academy of Sciences. The specific name is a patronym in honor of Richard A. Kawin.

Male.—Carapace with integument dark brown, shading to black on ocular area; ocular area densely covered with shiny dark-brown scales; cream to white scales forming faint band between PLE and ALE, sparse behind and becoming dense anteriorly; AME surrounded for upper 0.67 of their circumference by long silver blue scales; ocular area with many forward-directed, long, dark hairs, especially numerous above AME; sides with clypeal scales extending back in marginal band of diminishing width to behind level of PLE; sides and thoracic region sparsely covered with brown scales; narrow marginal band of white scales beginning at end of clypeal scales and running back to above coxa IV, and then running anterodorsally to top of declivity. Clypeus with white scales at lower margins of AME, remainder covered with closely appressed scales, extending laterally in narrowing band along lower margin of carapace to behind level of PLE; scales off-white, showing green iridescence; many long, thin, white cruciate hairs below AME. Chelicera shiny black in front and back; tips and fangs pale brown, with vestiture of white hairs, completely covering upper one-fourth, continuing around on sides to rejoin at tip. Sternum, labium, endites, coxae, and trochanters yellowish-white to slightly brownish-orange, unmarked. Abdomen with integument dark brown above, mottled; central light band diffuse and divided anteriorly, becoming solid behind middle, with chevron-like lateral extensions; integument laterally and ventrally pale, with patchy infuscations, especially in front of spinnerets and over lungs; vestiture of light (tan to white) scales ventrally and laterally; dark scales dorsally corresponding to dark integument; light central band overlain by white scales.

Legs with integument uniform yellow-orange to white, slightly dark above; femora I-IV, and patella and tibia I shading to dark brown above; leg I with femur and patella with dense posteroventral fringe of orange hairlike scales, reduced in density beneath tibia; same fringe on anterolateral face of same segments; telotarsus with integument dark, covered with black scales for whole length on all sides except dorsal; femur I with white scales above; other legs sparsely covered with white scales. Palpus with



Figs. 5-7.—*Pellenes kawini*, new species: 5, face; 6, ventral view of male palp; 7, retrolateral view of male palpal tibia.

Figs. 8-10.—*Pellenes kubai*, new species: 8, face; 9, ventral view of male palp; 10, retrolateral view of male palpal tibia.

integument of femur dark basally and dorsally, as are dorsal surfaces of patella and tibia; otherwise same yellow-white as rest of integument; tarsus covered with short, pale hairs, bulb as in fig. 6; tibial apophysis as in fig. 7.

Measurements.—Total length 4.235 mm; carapace length 2.1 mm; LOF 0.92 mm; WOF III 1.4 mm; clypeus height 0.33 mm; face height 0.66 mm; tibia I length 1.11 mm; basitarsus and telotarsus I length 1.7 mm; femur III length 1.7 mm; patella III length 0.925 mm; tibia III length 1.04 mm; femur IV length 1.51 mm; tibia IV length 0.925 mm.

Ratios.—A = 0.438, C = 0.5, D = 2.77, F = 0.789, H = 1.21, I = 1.12, J = 1.53, K = 0.666.

Female.—Unknown

Diagnosis.—*P. kawani* may be distinguished from other members of the *americanus* group except *Pellenes mustaciata* Chamberlin and Ivie by the shiny black anterior surface of the chelicerae, and may be distinguished from *P. mustaciata* in lacking a lateral extending "moustache" of clypeal scales, in having scales showing green iridescence on the clypeus (fig. 5), and in having telotarsus I black for its entire length.

Distribution.—Known only from type locality.

Pellenes (Habronattus) kubai, new species

Figs. 8, 9, 10.

Types.—Male holotype from 2 miles E. of Monitor Pass, Alpine Co., California, 8100', 10 July 1975 (C. E. Griswold), California Insect Survey, deposited on indefinite loan in the California Academy of Sciences. Paratopotype male, reared, in collection of author. The specific name is a patronym in honor of Stanley Kuba, who collected another specimen of this species at Leavitt Falls.

Male.—Carapace with integument dark brown, black on ocular area; covered with black scales, densest on ocular area; lower margin with thin band of scales beginning behind level of PLE and continuing to petiole; narrow band of white scales beginning behind level of PLE and continuing to petiole; narrow band of white scales beginning just behind AME and continuing back on ocular area to level of PME; on each side of ocular area a dense crest of long, black hairs originating between PME and ALE and extending forward to above AME (fig. 8). Clypeus covered with narrow, brown scales on upper part; lower part with two patches of iridescent blue scales on each side; oral margin with fringe of long orange scales. Chelicera with integument dark brown on anterior surface, light brown posteriorly, and palest near tips; covered above for 0.67 length by long, orange scales bordered with white scales (fig. 8). Labium and endite, dusky brown, tips pale; sternum, coxae and trochanters dusky brown. Abdomen with integument mottled with light and dark dorsally, thin light and dark lines laterally; venter pale yellow with three longitudinal dusky bands; dorsum covered with black scales; central longitudinal band of white scales on anterior part; and a second narrower band on posterior part, not quite reaching spinnerets; spinnerets dusky brown. Leg I with integument of femur dark brown on dorsal and anterior surfaces, light brown elsewhere; femur with sparse covering of thin black scales, forming a short posteroventral fringe distally; patella like femur but lacking fringe; integument of tibia, basitarsus and telotarsus dark on anterior and posterior surfaces, lighter dorsally and ventrally; tibia with appressed dark hairs dorsally, black scales anteriorly, and sparse

white scales ventrally; basitarsus with few dark hairs, and white scales ventrally; telotarsus with distal half densely covered with black scales except on dorsal surface; legs II-IV with integument like leg I; femur and patella II like leg I, except fringe smaller and scales on anterior surface brown to tan in color; telotarsus II pale; legs III and IV with sparse covering of black hairs and white scales, integument showing through plainly. Palpus with integument pale; femur with orange scales mesally, golden-brown scales ectally; patella same ectally, with fringe of yellow to white hairs mesally; tarsus heavily fringed with long white hairs ectally, shading to shorter golden hairs mesally; bulb typical of *americanus* group (fig. 9); tibial apophysis as in fig. 10.

Measurements.—Total length 4.44 mm; carapace length 2.28 mm; LOF 0.99 mm; WOF III 1.37 mm; carapace height 1.18 mm; face height 0.72 mm; clypeus height 0.38 mm; femur I length 1.52 mm; tibia I length 0.92 mm; basitarsus and telotarsus I length 1.86 mm; femur III length 1.86 mm; patella III length 0.91 mm; tibia III length 0.91 mm; femur IV length 1.44 mm; tibia IV length 0.91 mm.

Ratios (mean calculated from three males).—A = 0.40, C = 0.52, D = 0.76, F = 0.74, G = 1.06, H = 1.30, I = 1.25, J = 1.78, K = 0.59.

Female.—Unknown.

Diagnosis.—*P. kubai* may be distinguished from other members of the *americanus* group in having the chelicerae covered above with bands of closely appressed scales iridescent orange and white; in having the clypeus with patches of iridescent scales on lower half (fig. 8), and the palpi with fringes of long, white hairs.

Variation.—Paratopotype essentially identical to holotype. Male from Leavitt Falls, Mono Co., Calif., differs from the type as follows: central white band on ocular area absent, the crest over the anterior eyes solid and golden colored, the iridescent area of the clypeus forming a band rather than patches, the underparts pale yellow-white, and leg I with short fringe of white hairs beneath femur to tibia. A male from Lake of the Woods, Oregon, has a clypeus of the type form, but the crest solid and golden colored. There is a large range for all ratios calculated.

Note.—Males of *P. kubai* have the fringes on the palpus and first leg white in life. Living *Pellenes americanus* (Keys.) have these areas red, though these areas may fade to white after preservation.

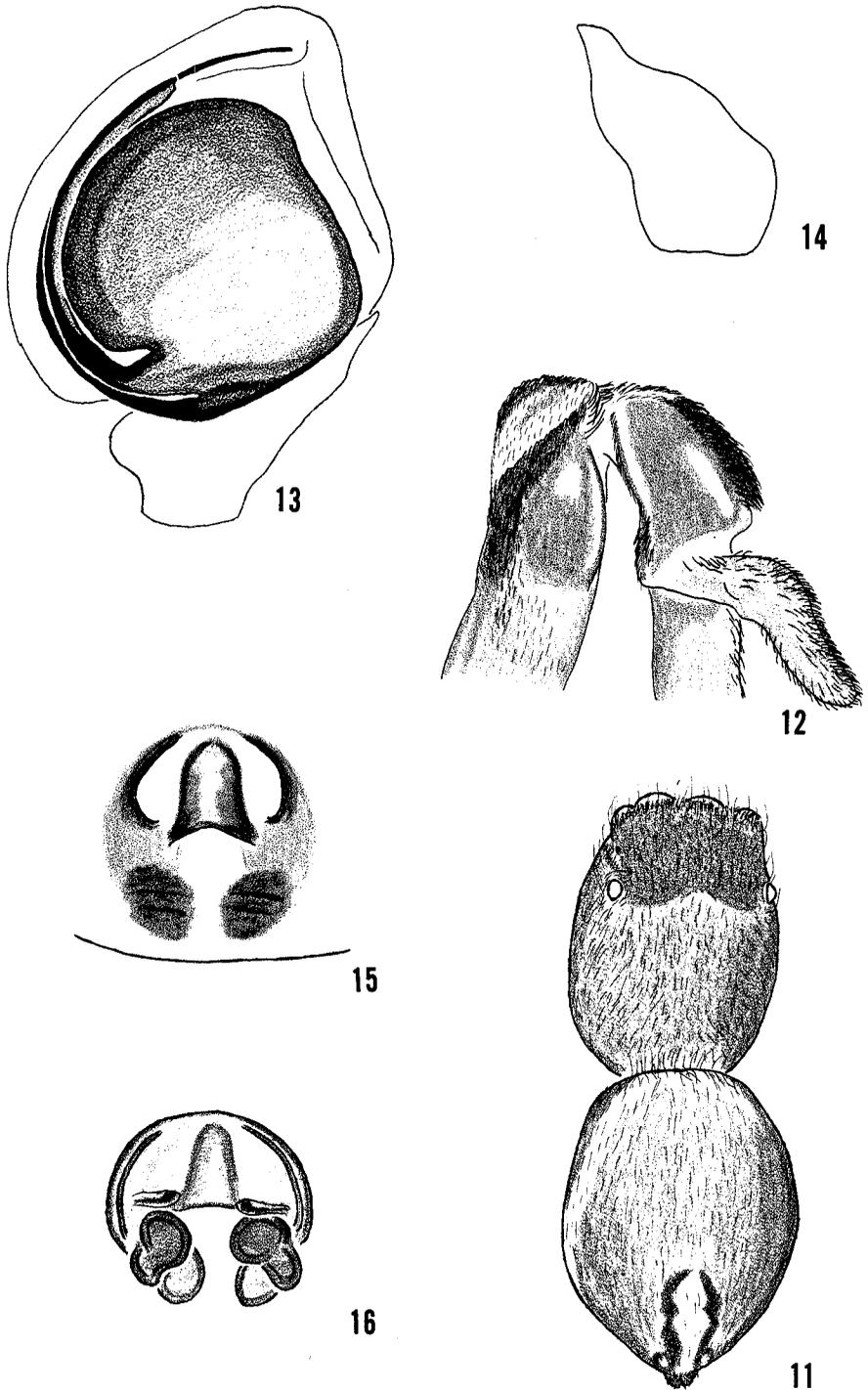
Natural History.—Specimens have been collected on the ground in Sagebrush Scrub at high altitudes. The closely related *P. americanus* has been collected in Yellow Pine Forest, Lodgepole Pine Forest, and Alpine Fell fields.

Additional Specimens Examined.—CALIFORNIA: *Alpine Co.*, 2 mi. E. Monitor Pass, 8100', one male, 10 July 1976, (C. E. Griswold, CEG); *Mono Co.*, Leavitt Falls, 3 mi. E. Sonora Pass, 8500', one male, 10 July 1975, (S. Kuba, CEG); OREGON: *Klamath Co.*, Lake of the Woods, 5000', one male, 1 to 4 July 1934 (Lawrence, AMNH).

Pellenes (Habronattus) schlingeri, new species

Figs. 11, 12, 13, 14, 15, 16.

Types.—Male holotype from Riverside, Riverside Co., California, "Ex cells of *Trypoxylon* sp.," 2 Sept. 1952, (E. I. Schlinger), deposited in the California Academy of Sciences. Paratopotypes, six females and two males: 1 male and 1 female in AMNH, the rest at UCR. The specific name is a patronym in honor of Evert I. Schlinger, who collected the types.



Figs. 11-16.—*Pellenes schlingeri*, new species: 11, dorsal view of female; 12, tip of femur and patella on third leg of male; 13, ventral view of male palp; 14, retrolateral view of male palpal tibia; 15, ventral view of female epigynum; 16, dorsal view of female epigynum.

Male.—Carapace with integument light brown, darker in ocular area and with a darker triangle on the posterior declivity, broadest at base and narrowing dorsally; ocular area thickly covered with short, closely appressed scales, iridescent gray; sides and thoracic region with dark brown scales, pattern of integument showing through; narrow band of white scales at lower margin; small fringe of tan to white scales above anterior eye row. Clypeus with silvery white iridescent scales from oral margin to bottom of AME, extending at this width past level of ALE onto side of carapace, diminishing width below PLE. Chelicera brown to yellow-brown, darkest at top; without covering of scales or hairs. Labium and endite dark brown, shading to white at tips. Sternum dark brown. Coxae and trochanters pale yellow, unmarked. Abdomen with integument obscured above by covering of scales; narrow light and dark longitudinal bands laterally reaching to base of spinnerets; venter pale, with infuscation near petiole, small infuscations near gastric furrow, and small, narrow infuscation in center midway between gastric furrow and posterior spiracle; covering of scales a narrow promarginal white band, and a second oblique white band extending just cephalad of middle on each side; narrow dorsal white spot just behind middle, and a small white spot on each side just before spinnerets; remainder of dorsum covered with narrow black scales; spinnerets dark gray dorsally, pale ventrally. Legs with integument yellow-brown, darker dorsally; telotarsi pale yellow; femur I with thick anterolateral fringes of long, thin, brown scales and posteroventral fringe of yellow-white scales, broadly flattened at tips; patella and tibia I with posteroventral fringe of short scales like those on femur; tibia I with two dark spatulate spines on anterior surface, at 1/3 and 2/3 distance from proximal end of segment; femur and patella III modified (fig. 12); distal surface of femur and middle surface of patella shiny dark-brown; femora II and IV with dorsal subapical infuscations. Palpus with all segments yellow-brown; tarsus with a few white scales but lacking fringes or tufts; tibial apophysis as in fig. 14; bulb typical of *coecatus* group (fig. 13).

Measurements.—Total length 4.36 mm; carapace length 2.32 mm; LOF 1.06 mm; WOF III 1.48 mm; carapace height 1.03 mm; face height 0.65 mm; clypeus height 0.23 mm; femur I length 1.33 mm; tibia I length 0.99 mm; basitarsus and telotarsus I length 1.29 mm; femur III length 1.79 mm; patella III length (less projection) 0.95 mm; tibia III length 0.95 mm; femur IV length 1.48 mm; tibia IV length 0.95 mm.

Ratios (calculated from 12 males, various localities).—A = 0.41 (0.38-0.43), C = 0.39 (0.35-0.47), D = 0.98 (0.88-1.08), F = 0.61 (0.58-0.69), G = 0.90 (0.86-0.92), H = 1.17 (1.07-1.25), I = 0.81 (0.67-0.90), J = 1.42 (1.19-1.50), K = 0.63 (0.60-0.65).

Variation.—Coloration of the tip of femur III and anterior surface of patella III varies from brown to black, always shiny.

Female (4 paratopotypes).—Carapace with integument of sides and thoracic region reddish-brown; ocular area dark brown; sides and thoracic region with uniform, sparse covering of long white scales; scales becoming shorter and denser on ocular area, with dark integument showing through to give area dark-brown or dark-gray to black, shiny appearance; long black hairs on ocular area, sparse at top of posterior declivity, more numerous near anterior eyes. Clypeus unmarked; covered with long, converging, cream to yellow scales, color varying with extent to which integument shows through; area below each AME darker; several pairs of long, white cruciate hairs above clypeal margin. Chelicera with integument light yellow-brown to dark brown, darkened at base; basal patches of white scales on anterior face present or absent. Labium and endite dark basally, shading to cream near tips. Sternum yellow to yellow-brown,

unmarked. Coxae and trochanters yellow to cream. Abdomen with integument solid gray to gray-brown dorsally, breaking up into narrow light and dark lines laterally; light spot or line beginning near middle and extending caudad to just before spinnerets; two small white dots just before spinnerets; venter pale yellow to cream, darker around spinnerets, and with dark line extending from epigastric furrow to posterior spiracle, covered dorsally with yellow to light brown scales; integument showing through to give a yellow-gray color; posterior line of white scales ending just before spinnerets, outlined in black; abdominal pattern as in fig. 11. Legs yellow-brown to dark brown; femora lightest on anterior surface near base, shading to darkest distally on dorsal surface; posterolateral surfaces of femora I and II with large, light blotches, coloration of other segments uniform; telotarsi lightest distally. Palpus pale yellow to yellow-brown. Epigynum as in fig. 15; spermathecae and associated internal structures as in fig. 16.

Measurements (9 females, Riverside and Winchester).—Total length 5.54 mm (6.93-4.31); carapace length 2.33 mm (2.55-2.07); LOF 0.98 mm (1.07-0.85); WOF III: 1.54mm (1.63-1.40); femur I length 1.15 mm (1.52-0.78); tibia I length 0.74 mm (0.81-0.62); femur III length 1.66 mm (1.81-1.40); patella III length 0.91 mm (1.04-0.74); tibia III length 0.86 mm (0.92-0.77); femur IV length 1.44 mm (1.59-1.25); tibia IV length 0.91 mm (0.96-0.77).

Ratios.—B = 1.06 (0.95-1.19), E = 1.07 (0.95-1.18), F = 0.47 (0.44-0.52), G = 0.77 (0.71-0.82), H = 1.07 (1.0-1.13).

Diagnosis.—*P. schlingeri* belongs to the *coecatus* group. Males may be distinguished from those of *Pellenes coecatus* (Hentz) in having the clypeus covered with silvery white scales, and from the males of *Pellenes brunneus* Peckham, *Pellenes mexicanus* (Peckham), and *Pellenes captiosus* Gertsch in having both the top of femur III and anterior surface of patella III smooth and shiny brown, with the patellar projection thick and almost equal in length to the rest of the patella (fig. 12). Females may be distinguished from those of *P. coecatus* and *P. captiosus* in having the light patch on the dorsum of the abdomen narrow and restricted to the posterior part (fig. 11), and from *P. mexicanus* in having this posterior light spot solid rather than broken into chevrons. No characters are known for separation from the females of *P. brunneus*.

Natural History.—This species is frequently taken in urban or suburban situations, being common in lawns throughout the year in southern California. Additional habitat records are from the Coastal Sage Scrub community. Courtship behavior has been observed and differs in certain details from the closely-related *P. brunneus*. In specimens of *P. brunneus* from California the male approached the female with the palpi spread 90° to the sides, with the palpal tarsi above and outside the femora of the first legs, while in *P. schlingeri* the palpi were spread only slightly, with the palpal tarsi inside the femora of the first legs and the bulb parallel to the sagittal plane of the body.

Distribution.—Northern Baja California and southern California along coast east to edge of deserts; north in Central Valley to San Joaquin Co., where it is sympatric with *P. brunneus*.