

AMERICAN MUSEUM NOVITATES

Published by
Number 1277 THE AMERICAN MUSEUM OF NATURAL HISTORY February 10, 1945
New York City

THE PSEUDOSCORPION GENUS *ALBIORIX* CHAMBERLIN¹

By C. CLAYTON HOFF²

In collections of pseudoscorpions from the American Museum of Natural History, the writer found representatives of four new species of the genus *Albiorix* Chamberlin. The present paper describes these new species and in addition gives a key for separating the known species of the genus.

All descriptions are based on specimens cleared in beechwood creosote and mounted in balsam, the body but not the appendages being treated with potassium hydroxide previous to clearing. The type specimens are deposited in the American Museum of Natural History.

SUBORDER DIPLOSPHYRONIDA CHAMBERLIN

IDEORONCIDAE CHAMBERLIN

Ideoroncinae Chamberlin

ALBIORIX CHAMBERLIN

The genus *Albiorix* was established by Chamberlin (1930), who designated as the type species *Ideoroncus mexicanus* Banks, 1898, a form which has been reported from San Miguel de Horcasitas, Sonora, Mexico (holotype), Las Animas Bay, Lower California, Mexico (neotype), San Marcos and San Esteban Islands in the Gulf of California, Mexico, and in the United States from El Centro, California, and a few localities in Utah. In addition the genus includes *Albiorix parvidentatus* Chamberlin, 1930, from Riverside County, California, and *A. edentatus* Chamberlin, 1930, from Mt. Hamilton, California. Locality records of the species of *Albiorix* described in the present paper extend the geographical range of the genus to the central and southern parts of Mexico.

KEY TO SPECIES OF THE GENUS *Albiorix*

1. Fixed chelal finger with about 30 teeth, vestigial ones included.....2
Fixed chelal finger with more than 45 teeth, vestigial ones included.....4
2. Length about 2.4 mm.; all chelal teeth

greatly reduced.....

.....*A. edentatus* Chamberlin

Length no more than 2 mm.; at least some chelal teeth well defined.....3

3. Movable finger of chela with one or two clearly defined marginal teeth; palpal femur no more than 3.6 times as long as wide, tibia no more than 2.5 times as long as wide.....

.....*A. veracruzensis*, new species

Movable finger of chela with six to eight clearly defined teeth; femur 4 to 4.2 times as long as wide, tibia 3.1 times as long as wide.....

.....*A. parvidentatus* Chamberlin

4. Movable finger of chela longer than 0.85 mm.; palpal femur 4.5 or more times as long as wide; tibia of fourth leg more than 4.5 times as long as wide.....5

Movable finger of chela shorter than 0.85 mm.; palpal femur about 4 times as long as wide; tibia of fourth leg less than 4.5 times as long as wide.....6

5. Body less than 2.75 mm. long; 14 to 20 moderately well-developed teeth on margin of movable finger of chela.....*A. mexicanus* (Banks)

Body longer than 3 mm.; all teeth of movable finger vestigial.....

.....*A. magnus*, new species

¹ This study was assisted by a Grant-in-Aid from the Society of Sigma Xi.

² Quincy College, Quincy, Illinois.

6. Teeth of fixed chelal finger conical, apex of each not directed toward the base of the finger; all except the distal-most tooth of movable finger vestigial; tibia of both first and fourth legs with length less than 4 times the depth; hand of chela in lateral view almost symmetrical, little swollen dorsally.....

.....*A. conodentatus*, new species

Teeth of fixed chelal finger retro-conical with the apex directed toward the base of the finger; several of the distal teeth of the movable finger fairly well developed but not acute; tibia of both first and fourth legs with length more than 4 times the depth; hand of chela in side view asymmetrical, swollen dorsally.....

.....*A. retrodentatus*, new species

Albiorix magnus, new species

Figures 1-5

MALE: Unknown.

FEMALE: Body and appendages relatively slender; delicate, not heavily sclerotic; light yellowish brown color; total length 3.3 mm. Dorsal face of carapace stippled, laterally and posteriorly with weak net-like sculpturing, not granular; posterior margin straight, lateral margins slightly convex, anterior margin with a median obtuse angle; tooth-like projection at the juncture of the anterior and each lateral margin; four prominent acuminate setae on or near the anterior margin between the eyes, four very weak setae along the posterior margin; face of carapace with a few extremely fine setae (care must be taken not to confuse areoles of broken setae with scattered discoidal microlyrifissures); one pair of eyes, each removed by about its diameter from the anterior margin of the carapace, diameter of cornea 0.055 mm.; carapace about 1.05 mm. long, greatest width 0.8 mm., posterior width slightly less, width just posterior to eyes 0.625 mm.

Abdomen little sclerotic, flimsy (treated specimen), length 2.3 mm., width 1.05 mm., length 2.2 times the width; tergites and sternites smooth and undivided except for weak, net-like markings on the anterior portion of each of the first three tergites;

tergal setae extremely fine and acuminate, varying in number from four to probably eight; most tergites with weakly developed pair of median and a similar pair of lateral slit-like lyrifissures; sternites with setae possibly varying from 10 to 14; all sternal setae delicate, easily broken, and difficult to count with certainty; sternal lyrifissures very similar to those of the tergites. Stigmatic plates little sclerotic, a single seta associated with each plate. Pleural membranes smoothly plicate.

Chelicera: Elongated, length 0.415 mm., width of base 0.195 mm.; base with six setae, all very slender, long, acuminate; exterior condylar lyrifissure about twice as long as the exterior one; flagellum of four setae, each finely serrate along the anterior edge. Fixed finger without lamina exterior; serrula interior consisting of about 20 (difficult to make accurate count) ligulate plates, the distal two plates with conspicuously serrate margins; apical tooth long and slender; about seven or eight acute teeth of varying size arranged along less than the terminal one-half of the inner margin of the finger forming a continuous row with two or three small denticles on the basal portion of the inner margin of the apical tooth. Movable finger 0.255 mm. long, serrula interior distally free and composed of about 24 (position of serrula precludes making an accurate count) simple, ligulate teeth; galea simple, slender, length about 0.095 mm.; apical tooth long and evenly curved; inner margin of finger swollen in the distal fourth and bearing six or seven well-developed, acute teeth.

Palpus: Moderately slender, light yellowish brown color, setae acuminate, relatively sparse, very fine, variable in length; surface of proximal podomeres granular, in distal podomeres granules confined to flexor surface of tibia and to ventral and inner surfaces of hand. Maxilla stout, 0.56 mm. long, 0.29 mm. wide; two long apical and one long subapical setae, smaller setae sparsely scattered on face of maxilla; subrostral supports about 0.15 mm. long. Trochanter with a single sublateral protuberance, inner margin convex, width 0.225 mm., length twice the width. Femur

without definite pedicle, little widened distally, inner surface evenly convex, outer surface evenly concave except near the ends, length 1.17 mm., width 0.26 mm., length 4.5 times the width. Tibia slender, pedunculate, pedicle longer than wide, outer margin flatly convex, inner margin convex distal to the pedicle, arthropodal membrane of joint attached to inner surface near the distal one-fourth of the tibia, length 0.92 mm., width 0.27 mm., length 3.4 times the width. Chela in dorsal view with flattened outer margin, inner margin greatly swollen; setae sparse, long, fine, and acute; four tactile setae on dorsal surface of hand much distal to the center of the hand; three long acuminate setae arranged in a row across the outer surface of the hand close to the base of the movable finger; chela length 1.97 mm., width 0.53 mm., length 3.75 times the width; depth of hand 0.515 mm., length of hand with pedicle 0.895 mm. In lateral view, dorsal margin of hand swollen and greatly convex, ventral margin weakly convex; fingers curved and fairly slender, both with venom duct, venedens, and lamina defensor; tactile setae of fingers very numerous. Fixed finger in lateral view curved dorsally, slender, outer margin concave, inner margin convex; nodus ramosus slightly less than one-third of finger length from tip; 54 retro-conical teeth, contiguous, dispersed along the entire inner margin; at level of nodus ramosus, the distances between apices of two consecutive teeth about 0.019 mm.; only the proximal two teeth approaching the vestigial condition. Movable finger 1.185 mm. long, gradually narrowing to the tip, inner margin concave, outer margin convex; nodus ramosus about one-third of finger length from tip; all marginal teeth vestigial, distal ones flatly cuneate, proximal ones becoming weaker and finally disappearing entirely in the basal one-third of the finger length; about 26 teeth discernible; distance between apices of consecutive teeth at level of nodus ramosus about 0.023 mm.

Legs: Slender, smooth, yellow color, setae acuminate; claws simple; subterminal setae toothed. First leg with trochanter 0.19 mm. deep, length 1.4 times

the depth; pars basilis of femur gradually increasing in depth toward the distal end, length 0.545 mm., depth 0.135 mm., flexor margin straight, extensor margin weakly concave especially in the distal one-half, a few very fine setae scattered over surface; pars tibialis a little less than one-half as long as pars basilis, length 0.255 mm., depth 0.12 mm., setae as in pars basilis; tibia little deepened distally, flexor margin weakly convex, extensor margin weakly concave, setae heavier and more numerous on the flexor than on the extensor surface, length 0.435 mm., depth 0.08 mm.; metatarsus subcylindrical, slightly narrowed distally, extensor margin very slightly concave, length 0.225 mm., depth 0.07 mm., setae as in tibia; tarsus elongated, distally somewhat narrowed, margins almost straight, setae numerous and fairly heavy, length 0.355 mm., depth 0.055 mm., length 6.5 times the depth; subterminal setae trifid. Fourth leg with trochanter 0.355 mm. long, 0.2 mm. deep, both margins evenly convex, few very fine setae; pars basilis 0.385 mm. long, 0.315 mm. deep; pars tibialis 0.535 mm. long, 0.315 mm. deep; entire femur with convex extensor margin but convexity more marked toward the proximal end of the margin, flexor margin straight in proximal two-thirds of femur, suture between pars basilis and pars tibialis perpendicular to the longitudinal axis of the podomere, setae sparse, very fine and short; femur length 0.865 mm., depth 0.315 mm., length 2.75 times the depth; tibia widest near the distal fourth, extensor margin basally convex but very slightly concave in the distal half, distal three-fourths of extensor margin evenly convex, setae stouter and slightly more numerous than on femur; length of tibia 0.605 mm., depth 0.125 mm., length 4.85 times the depth; metatarsus shaped much as in the first leg but more elongate, length 0.34 mm., depth 0.09 mm., a long tactile seta on the extensor surface about one-fourth of the length of the metatarsus from the base of the podomere; tarsus subcylindrical, a long tactile seta about 0.042 mm. from the base, other setae like those of metatarsus but more numerous; length of tarsus 0.46 mm., depth

0.065 mm., length 7.1 times the depth, subterminal setae bifid.

Genital complex: Anterior operculum (second sternite) with 10 short setae arranged in an irregular double row; third sternite unmodified and with six widely separated setae.

TYPE LOCALITY: A single specimen, the female holotype, in a collection taken 20 miles east of San Pedro, Mexico, by A. M. and L. I. Davis on July 5, 1936.

Albiorix magnus seems to be more closely related to *A. mexicanus* than to any other *Albiorix* species. Separation of the two species may be made readily by characteristics given in the key.

***Albiorix veracruzensis*, new species**

Figures 6-9

MALE: Body moderately stout, appendages somewhat slender except femur of third and fourth legs; setae simple, acuminate; yellowish brown color, palps darker brown than body and legs; length 1.65-1.75 mm. Carapace not granular, dorsal surface stippled and bearing a few scattered acuminate setae, sides of carapace with net-like markings; posterior margin virtually straight, with four or six marginal setae; lateral margins weakly convex; anterior margin with a median obtuse angle, four marginal setae; a slight prominence at juncture of lateral and anterior margins; one pair of well-developed eyes, diameter of cornea 0.05 mm., eye removed from the antero-lateral corner of the carapace by about two-thirds of the diameter of the eye; length of carapace 0.51-0.55 mm., greatest width 0.445-0.48 mm., length 1.1 to 1.15 times the width; posterior width slightly less than greatest width; width just posterior to eyes 0.365-0.375 mm.

Abdomen subovate; tergites and sternites (except the fourth) undivided, not granular; fairly sclerotic, abdomen retaining shape well when treated with potassium hydroxide; all setae acuminate, fine, easily broken; length of abdomen about 1.2 mm., width 0.64-0.75 mm., length 1.6 to 1.8 times the width. Anterior three tergites partially sculptured with net-like lines; total number of setae for ter-

gites 1 through 10 as follows: 2:2-4:6-8:10-12:10-12:12-14:12-14:14-16:14-16:12-14; setae forming a single marginal row; each tergite with a submedial and a lateral pair of slit-like lyrifissures; also the central tergites with a few discoidal microlyrifissures. Sternite 4 divided by a median suture and with six setae; setae of more posterior sternites gradually increase in number with the maximum about 20; lyrifissures as on the tergites. Pleural membranes marked by longitudinal plications. Each weakly developed stigmatic plate with one seta.

Chelicera: Moderately stout, length 0.24-0.26 mm., width of base 0.135 mm.; base with six acuminate setae; a discoidal microlyrifissure on base may easily be mistaken for a setal areole from which the seta is broken; the slit-like exterior condylar lyrifissure about three times as long as the exterior lyrifissure; flagellum with four setae, unilateral serrations minute. Fixed finger with slender apical tooth; about eight small denticles arranged along the basal half of the apical tooth and extending to the inner margin of the finger, followed proximally by three (or four) well-developed, much larger, acute teeth on the inner margin; serrula interior with 16 ligulate plates (difficult to count accurately), margin of plates appearing entire. Movable finger 0.15-0.17 mm. long, basally stout; inner margin concave with five or six (the proximal one usually much reduced) acute teeth confined to the terminal third of the finger, galea simple, slender, acute, length 0.061 mm.; serrula exterior with 19 ligulate plates (in holotype, possibly also in paratypes); distal one-fourth or less of serrula free.

Palpus: Brownish color; smooth except for granulations on the protuberance of the trochanter, on the medial side of the femur, and to a very slight degree on the medial side of the tibia; setae acuminate, long, not abundant. Maxilla 0.23-0.25 mm. long, 0.155-0.175 mm. wide; subrostral support 0.085-0.095 mm. long. Trochanter with sublateral protuberance; 0.21-0.225 mm. long, 0.135-0.15 mm. wide. Femur subcylindrical, widest near the distal one-third, outer margin nearly

straight in the central half but convex at both ends, inner margin straight to very slightly convex in proximal portion but convex distally, length 0.575–0.61 mm., width 0.165–0.175 mm., length 3.5 to 3.55 times the width. Tibia with short, stout pedicle; outer margin evenly convex, inner margin convex but in some individuals with a slight concavity basal to the midpoint; length 0.385–0.415 mm., width 0.16–0.17 mm., length 2.3 to 2.5 times the width. Chela in dorsal view with hand wide but fingers relatively narrow, outer margin moderately convex, inner margin swollen and more convex; in lateral view both ventral and dorsal margins appear convex; dorsal surface of hand with four tactile setae distal to the center, three tactile setae in a row on external surface near base of fixed finger; tactile setae of fingers numerous; length of chela 0.93–0.94 mm., width 0.26–0.28 mm., length 3.35 to 3.55 times the width; length of hand including pedicle 0.465–0.47 mm.; depth of hand slightly less than width, 0.25–0.26 mm.; movable finger 0.51–0.52 mm. long; both fingers with venom duct and venedens; lamina defensor vestigial in both fingers. In lateral view, fixed finger almost straight, both internal and external margins convex; 28 to 30 teeth, of which the first three are acute and conical, the fourth almost symmetrically acute but with base wider than in the first three, while the remainder are retro-conical and asymmetrical; a few of the proximal teeth much flattened but with the cusp not reduced; distance between cusps of consecutive teeth 0.017 mm. at level of nodus ramosus; nodus ramosus two-fifths or slightly more of finger length from tip. Movable finger with external margin convex, internal margin weakly concave; 21 to 23 teeth; the first well developed, conical, with a cusp; the second tooth cuneate, subvestigial, lacking the cusp; the remainder vestigial, greatly flattened, and without a cusp; length of base of vestigial tooth about 0.0225 mm. at level of nodus ramosus; nodus ramosus about two-fifths of finger length from the tip.

Legs: Yellow color; femur stout, other podomeres more slender; surface smooth;

setae sparse on femora but abundant on more distal podomeres, acuminate, long on flexor surface of femora and tibiae but short and fine on the extensor surface of these podomeres; claws simple. First leg with trochanter stout, 0.14–0.145 mm. long, 0.115 mm. deep; pars basilis with flexor margin nearly straight, extensor margin weakly convex, deepest distally, length 0.27–0.295 mm., depth 0.091–0.1 mm.; pars tibialis with convex outer margin, inner margin weakly convex, length 0.155–0.165 mm., depth 0.084–0.091 mm.; tibia subcylindrical, length 0.185–0.195 mm., depth 0.065 mm., length 2.85 to 3 times the depth; metatarsus with extensor margin very weakly concave, flexor margin nearly straight, length 0.14–0.147 mm., depth 0.53 mm.; tarsus tapering distally, length 0.21–0.215 mm., depth 0.04–0.042 mm., length 5 to 5.25 times the depth; subterminal setae bifid. Fourth leg with trochanter 0.195–0.21 mm. long, 0.118–0.13 mm. deep; pars basilis 0.25–0.265 mm. long, 0.2–0.22 mm. deep; pars tibialis 0.25–0.275 mm. long, 0.19–0.21 mm. deep; entire femur 0.48–0.495 mm. long, 0.2–0.22 mm. deep, 2.25 to 2.4 times as long as deep, flexor margin with central portion virtually straight, extensor surface much swollen; tibia with extensor margin proximally convex but distally straight or slightly concave, flexor margin convex, length 0.32–0.33 mm., depth 0.0875–0.09 mm., length 3.6 to 3.7 times the depth; metatarsus distally narrowed, 0.19–0.205 mm. long, depth 0.066–0.068 mm.; tarsus widest near basal two-fifths, length 0.275–0.28 mm., depth 0.0455–0.0485 mm., length 5.8 to 6 times the depth; subterminal setae trifid; tactile setae broken in all specimens.

Genital complex: Anterior operculum with nine to 12 acuminate setae; posterior operculum with seven to nine setae.

FEMALE: Unknown.

TRITONYMPH: An immature individual, probably a tritonymph; very similar in general appearance to the male; length 1.55 mm.; carapace 0.46 mm. long, 0.375 mm. wide; abdomen 1.05 mm. long, width approximately 0.65 mm.; tergites as in the adult except never more than 10 setae

in one tergite; second and third sternites with two setae each, fourth with four setae, more posterior sternites apparently with 10 setae; lyrifissures of abdomen, the pleural membranes, and the stigmatic plates as in the adult.

Chelicera: Slightly smaller and somewhat stouter than in the adult; movable finger length 0.14 mm.; base with six setae; exterior lyrifissures and flagellum much as in the adult; dentation of fingers as in adult except that larger teeth are more variable in size; serrula interior with 13 plates; movable finger as in the adult except that the plates of the serrula exterior are reduced to about 18; galea 0.0585 mm. in length.

Palpus: Length:width ratio and shape of podomeres much as in the adult except that the flexor margin of the femur is more evenly convex so that the inner and outer margins are subparallel; femur length 0.495 mm., width 0.145 mm.; tibia 0.3 mm. long, 0.14 mm. wide; chela 0.81 mm. long, 0.225 mm. wide; movable finger length 0.44 mm. Only two tactile setae on exterior of hand near base of fixed finger and three tactile setae in group on dorsal surface. Twenty-three teeth on margin of fixed finger, arrangement and appearance as in the male except cusps are weakly sclerotic; movable finger with distal two teeth as in the male, others vestigial, teeth of entire row not in a favorable position for counting but apparently fewer in number than in the adult.

Legs: Much as in the adult except podomeres are shorter and stouter. First leg with pars basilis, 0.23 mm. long, 0.08 mm. deep; pars tibialis 0.125 mm. long, 0.075 mm. deep; tibia 0.155 mm. long, 0.059 mm. deep; metatarsus 0.11 mm. long, 0.0495 mm. deep; tarsus 0.185 mm. long, 0.042 mm. deep. Fourth leg in general as in the male; podomeres shorter and except for femur stouter than in the adult; trochanter 0.175 mm. long, 0.11 mm. deep; femur 0.4 mm. long, 0.145 mm. deep, length 2.75 times the depth; tibia 0.255 mm. long, 0.076 mm. deep; metatarsus 0.16 mm. long, 0.057 mm. deep; tarsus 0.22 mm. long, 0.045 mm. deep.

TYPE LOCALITY: Male holotype, two

male paratypes, and one immature paratype from two collections made at La Buena Ventura, Veracruz, in July, 1909, by Dr. A. Petrunkevitch.

Albiorix veracruzensis is apparently related to *A. parvidentatus* by the small number of teeth on the chelal fingers and the body size. Separation is easily made on the basis of characteristics given in the key.

***Albiorix retrodentatus*, new species**

Figures 10-16

MALE: Color of body and appendages yellow to yellowish brown; body and legs slender, palpi moderately so; all setae acuminate; length 2.2-2.4 mm. Carapace not granular, dorsal surface stippled in appearance, posterior and lateral areas sculptured by weak lines forming a network pattern; posterior margin weakly convex, lateral margin convex especially in the anterior one-third; anterior margin with a median obtuse angle; juncture of anterior and lateral margins forming a blunt and weak projection; widest in the anterior half; length 0.7-0.72 mm., greatest width 0.54-0.56 mm., posterior width slightly less; width just behind eyes 0.415-0.43 mm.; diameter of eye 0.04-0.045 mm.; distance from eye to anterior margin of carapace much less than the diameter of the eye; six slit-like lyrifissures on dorsal face of carapace; setae very fine, easily broken; anterior margin with a pair of submedial setae and another pair somewhat removed from the anterior margin near the eyes; six or eight extremely fine setae near the posterior margin; other setae scattered sparsely over the face of the carapace.

Abdomen 1.5-1.7 mm. long, width about 0.7-0.75 mm.; tergites and sternites not divided; anterior portion of first four sternites marked with net-like lines; most tergites with a median and a lateral pair of slit-like lyrifissures; total number of setae for each tergite fewer than 10 in number, exact count difficult as the areoles of broken setae are easily confused with the discoidal microlyrifissures; sternite four with about six setae, maximum number in any sternite apparently 10 or 12, numerous discoidal

microlyrifissures within setal row. Pleural membranes longitudinally plicate; each stigmatic plate with one acuminate seta.

Chelicera: Fairly stout, length 0.275–0.29 mm., width of base 0.15 mm.; base with six setae, all acuminate; flagellum composed of four setae, weak unilateral serrations probably present on all flagellar setae; outer surface of base with very weak scale-like markings; exterior condylar lyrifissure about three times as long as the exterior; a single discoidal microlyrifissure usually present on external surface of base. Fixed finger with apical tooth long and slender; six to eight minute denticles on the inner margin of the basal two-thirds of the apical tooth, followed proximally on the inner margin of the finger by two or three acute teeth, followed in turn by one to three greatly reduced or vestigial teeth; serrula interior of 16 or 17 ligulate plates, the margins of the distal two serrate. Movable finger 0.185–0.19 mm. long; inner margin of finger with three to five teeth of which the proximal one is usually smaller than the remainder, no more than one of the teeth proximal to the level of the galeal seta; galea simple, terminally curved, about 0.058 mm. long; serrula exterior free distal to the level of the galeal seta, with 21 or 22 ligulate plates (difficult to count accurately).

Palpus: Maxilla stout, 0.35–0.37 mm. long, 0.185–0.22 mm. wide, length 1.7 to 1.9 times the width; surface non-granulate, weak net-like markings chiefly on lateral surface, a few scattered acuminate setae, two apical setae and one long sub-apical seta; subrostral support 0.027 mm. long. Trochanter with granular sublateral protuberance, a few acuminate setae on the extensor surface, length 0.305–0.32 mm., length 2.1 times the width. Femur with granular surface and in addition scale-like sculpturing; a few very fine and acuminate setae present; inner margin convex, outer margin concave; length 0.69–0.74 mm., width 0.175–0.19 mm., length 3.9 to 3.95 times the width. Tibia elongated, pedicle longer than wide; outer margin with a weak concavity slightly proximal to the midpoint, inner margin with portion immediately distal to pedicle flattened, inner

surface granular; a few short and fine setae especially on the extensor surface; length 0.59–0.625 mm., width 0.2–0.21 mm., length 2.95 times the width. Chela with fairly stout hand and slender fingers, hand with very few short setae, surface except on inner surface of hand smooth; usual group of four tactile setae on dorsum of hand distal to the center and a row of three tactile setae on external surface near base of movable finger; external margin weakly convex; internal margin bulging; in side view, hand with dorsal margin swollen and convex especially near base, ventral margin weakly convex; length of chela 1.295 mm. in holotype, 1.215 mm. in paratype, width, respectively, 0.375 mm. and 0.341 mm., depth of hand of each 0.32 mm., length of hand with pedicle 0.6 mm. and 0.59 mm., respectively; length of chela 3.5 times the width; length of movable finger of holotype 0.77 mm., of paratype 0.745 mm.; both fingers with numerous tactile setae, venom duct, venedens, and poorly developed lamina defensor; no accessory teeth. Fixed finger slender in lateral view, outer margin of finger little convex, inner margin more convex and with a row of well-developed marginal teeth, about 55 in holotype and 48 in paratype, all retro-conical and with conspicuous cusps except for loss of cusps and reduction in height of the proximal five or six teeth; at level of nodus ramosus, the distance between apices of consecutive teeth equals 0.012–0.0125 mm.; nodus ramosus between one-third and two-fifths of finger length from tip. Movable finger more slender than fixed finger; outer margin convex, inner margin concave; about 40 marginal teeth, all vestigial or subvestigial, anterior six or seven more elevated and rounded than the proximal teeth which are represented only by a slightly raised area marking the posterior portion of the tooth; length of tooth base at level of nodus ramosus about 0.014 mm.; nodus ramosus about one-third of finger length from tip.

Legs: Slender except femora of third and fourth legs; setae acuminate, sparse in proximal podomeres but abundant in distal podomeres; surface non-granulate;

claws simple; subterminal setae toothed. First leg with trochanter subtriangular, 0.18 mm. long, length 1.35 times the depth; pars basilis distally widened, length 0.34–0.345 mm., depth 0.099–0.1025 mm., length 3.4 to 3.45 times the depth, few setae; pars tibialis subrectangular, 0.18–0.185 mm. long, 0.0875–0.09 mm. deep; tibia with flexor margin weakly convex, extensor margin slightly concave, subcylindrical, length 0.285 mm., depth 0.063 mm.; metatarsus somewhat narrowed distally, length 0.16–0.165 mm., depth 0.05 mm.; tarsus slender, 0.24–0.25 mm. long, 0.038 mm. deep; distal three podomeres with abundant setae; subterminal setae trifid. Fourth leg with trochanter stout, length about 0.24 mm., length one and one-third times the depth; femur very stout, few setae, flexor margin almost straight in the center one-half but convex near the ends, extensor margin greatly swollen; pars basilis about 0.28 mm. long, length but little more than depth; pars tibialis 0.355–0.37 mm. long, 0.25–0.275 mm. deep, length 1.35 to 1.45 times the depth; entire femur 0.61–0.63 mm. long, depth 0.26–0.28 mm., length 2.25 to 2.35 times the depth; tibia with distal half much deepened, flexor margin weakly S-shaped, extensor margin distally straight but proximally convex, length 0.43–0.45 mm., depth 0.1025–0.107 mm., length 4.2 times the depth; metatarsus with flexor margin straight, extensor margin slightly concave, long sensory seta on extensor margin about 0.04 mm. from base, length 0.215 mm., depth 0.0725–0.0765 mm.; tarsus with flexor margin straight, extensor margin weakly convex, 0.32–0.33 mm. long, 0.0475–0.051 mm. deep, length 6.5 to 6.7 times the depth; setae very abundant on metatarsus and tarsus; subterminal setae bifid.

Genital complex: Anterior operculum with eight or nine acuminate setae; posterior operculum with 12 acuminate setae; two slit-like lyrifissures on each operculum; both opercula as well as anterior margin of fourth sternite very weakly sculptured by net-like markings.

FEMALE: Unknown.

TYPE LOCALITY: The male holotype and

one male paratype found in a collection made by L. I. Davis from Mexcala, Guerrero, Mexico, on July 2, 1941.

Albiorix retrodentatus is very similar to *A. conodontatus*, the two being separated by characteristics indicated in the key.

***Albiorix conodontatus*, new species**

Figures 17–20

MALE: Light yellowish brown; body slender; length 2.3 mm. Carapace non-granulate, dorsal face very faintly and finely stippled, rest of carapace marked by net-like lines; posterior margin straight with possibly four very fine setae; lateral margins weakly convex, each meeting the anterior margin in a weak protuberance; anterior margin forming medially an obtuse angle; anterior margin with a pair of submedial marginal setae and a pair removed somewhat from the anterior margin just medial to the eye; eye about 0.045 mm. in diameter, removed from the anterior margin of carapace by about one-half the diameter of the eye; a few fine setae scattered on face of carapace; length 0.67 mm., greatest width 0.51 mm., length one and one-third times the width, posterior width slightly less than the greatest width, width just behind eyes 0.39 mm. Abdomen somewhat elongate, length 1.6 mm., width less than one-half the length; tergites and sternites not divided; at least a part of each of the first four tergites marked with a net-like pattern formed of transverse anastomosing lines, tergite 1 with four fine setae, tergite 2 with six setae, maximum number of tergal setae apparently eight in posterior tergites; fourth sternite with four setae, gradually increasing to 10 or 12 in the central and posterior sternites; most tergites and sternites with a median and a lateral pair of slit-like lyrifissures and in addition a few discoidal microlyrifissures which are readily confused with areoles whose setae are broken. Pleural membranes longitudinally plicate; stigmatic plates each with one acuminate seta.

Chelicera: Length 0.26 mm., width of base 0.15 mm.; base with six acuminate setae; flagellum of four setae, unilateral serrations very minute; exterior condylar

lyrifissure about twice as long as the exterior lyrifissure. Fixed finger with moderately slender and acute apical tooth with three or four fine denticles on the interior margin, these being continuous with the five or six variably developed teeth of the inner margin of the finger; serrula interior made up of 17 or 18 ligulate plates of which at least the distal one has a serrate margin. Movable finger 0.175 mm. long, somewhat slender; three or four acute and well-developed teeth followed by one or two weak teeth on the inner margin; outer margin little convex; apical tooth slender; galea simple, gently curved, 0.057 mm. long; serrula exterior distally free, made up, as accurately as can be determined, of 21 ligulate plates.

Palpus: Very similar in dorsal view to the palpus of *A. retrodentatus* except that the tibia is slightly more stout and the femur is a trifle more slender; granular on the surface of trochanter, on the flexor surface of the femur and tibia, and to a slight degree on the inner part of the hand near the base of the fingers; setae acuminate but sparse. Maxilla with two apical and one subapical setae, very slightly granular on the ventral face, otherwise with net-like markings; few fine setae; length 0.34 mm., width 0.19 mm.; subrostral support about 0.1 mm. long. Trochanters broken in specimen, 0.145 mm. wide; sublateral protuberance poorly developed; surface granular; a few acuminate setae on the flexor surface. Femur decidedly curved, flexor margin evenly convex, extensor margin except near ends evenly concave; length 0.69 mm., width 0.17 mm., length 4.05 times the width; flexor surface granulate, extensor surface with weak scale-like markings; a few long scattered setae. Tibia with granulations and setae as in the femur; central portion of extensor margin flattened, almost straight, but convex toward both ends; flexor margin convex except for flattened area distal to pedicle; pedicle longer than wide; length of tibia 0.56 mm., width 0.2 mm., length 2.8 times the width. Chela in dorsal view with hand widened, inner surface swollen, very convex; slightly granular on inner surface near base of hand; fingers slender;

group of four tactile setae on dorsum of hand distal to center and three setae on outer surface of hand near base of fixed finger; tactile setae of fingers numerous; from the side, hand almost symmetrical with pedicle near center; dorsal and ventral margins of hand in side view subequally convex, the dorsal little more so than the ventral; chela 1.12 mm. long, 0.34 mm. wide, length 3.3 times the width; length of hand with pedicle 0.56 mm.; depth of hand much less than width, 0.29 mm.; movable finger considerably longer than hand with pedicle, 0.64 mm.; fingers moderately slender in side view, both with venum duct, venedens, lamina defensor, and marginal but no accessory teeth. Fixed finger with about 57 contiguous, conical to slightly subconical teeth, cusps well developed; four or five teeth at proximal end progressively reduced to the vestigial condition; teeth extend virtually to base of finger; at level of nodus ramosus, distance between apices of consecutive teeth equals 0.0085 mm.; nodus ramosus about three-eighths of the finger length from the tip. Movable finger with 42 marginal teeth, of which the distal five or six are subvestigial, the remainder vestigial; at level of nodus ramosus, base of vestigial tooth measures 0.0125 mm.; nodus ramosus three-eighths of the finger length from the tip.

Legs: Moderately slender except for trochanter and femur of the third and fourth legs; surface non-granular; claws simple; subterminal setae toothed; setae acuminate, sparse except on distal three podomeres. First leg with subtriangular trochanter, 0.17 mm. long, length 1.3 times the depth; pars basilis deepest distally, flexor surface slightly concave, extensor surface flattened except at base, length 0.31 mm., depth 0.0915 mm.; pars tibialis with both margins convex, the extensor more so than the flexor; length of pars tibialis 0.18 mm., depth 0.09 mm.; tibia of almost uniform depth throughout, extensor surface weakly concave, flexor margin convex, length 0.24 mm., depth 0.065 mm.; metatarsus subcylindrical, 0.15 mm. long, 0.0515 mm. deep; tarsus slightly narrowed distally, extensor margin very

weakly convex, flexor margin almost straight, length 0.23 mm., depth 0.04 mm., subterminal setae trifid; tibia and tarsus with numerous acuminate setae. Fourth leg with trochanter stout, length 0.21 mm., 1.35 times the depth, both extensor and flexor surfaces convex; pars basilis subtriangular, length 0.265 mm., depth 0.235 mm.; pars tibialis 0.31 mm. long, 0.235 mm. deep; entire femur with extensor margin very convex, the basal part much more so than the distal; entire femur with central portion of flexor margin almost straight, suture between pars basilis and pars tibialis perpendicular to the longitudinal axis of the podomere, length of femur 0.555 mm., depth 0.235 mm.; tibia distally deepened, extensor surface convex basally but straight distally, flexor margin with proximal portion slightly concave but distal portion convex, length 0.37 mm., depth 0.097 mm.; metatarsus narrowed

distally, flexor margin straight, extensor margin weakly concave, long tactile seta on extensor margin 0.035 mm. from base; length of metatarsus 0.205 mm., depth 0.0725 mm.; tarsus subcylindrical, 0.295 mm. long, 0.0455 mm. deep; setae numerous on last two podomeres; subterminal setae trifid.

Genital complex: Anterior operculum with nine acuminate setae; posterior with 12 acuminate setae, irregularly arranged in a transverse band; also four short setae on the posterior wall of the genital canal, two submedially on each side; each operculum with two slit-like lyrifissures.

FEMALE: Unknown.

TYPE LOCALITY: The single male holotype collected by Davis 5 miles west of Saltillo, Mexico, on July 5, 1936.

Albiorix conodentatus bears considerable superficial resemblance to *A. retrodentatus* but differs as indicated in the key.

BIBLIOGRAPHY

BANKS, NATHAN

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

BEIER, MAX

1932. Pseudoscorpionidea I. Subord. Chthoniinea et Neobisiinea. *Das Tierreich*, no. 57, pp. i-xx, 1-258, figs. 1-271.

CHAMBERLIN, JOSEPH CONRAD

1923. New and little known pseudoscorpions, principally from the islands and ad-

jacent shores of the Gulf of California. *Proc. California Acad. Sci.*, ser. 4, vol. 12, pp. 353-387, pls. 1-3.

1930. A synoptic classification of the false scorpions or chela-spinners, with a report on a cosmopolitan collection of the same.—Part II, the Diplosphyronida (Arachnida-Chelonethida). *Ann. Mag. Nat. Hist.*, ser. 10, vol. 5, pp. 1-48, figs. 1-3.
1931. The arachnid order Chelonethida. *Stanford Univ. Publ., Univ. Ser., Biol. Sci.*, vol. 7, no. 1, pp. 1-284, figs. 1-71.

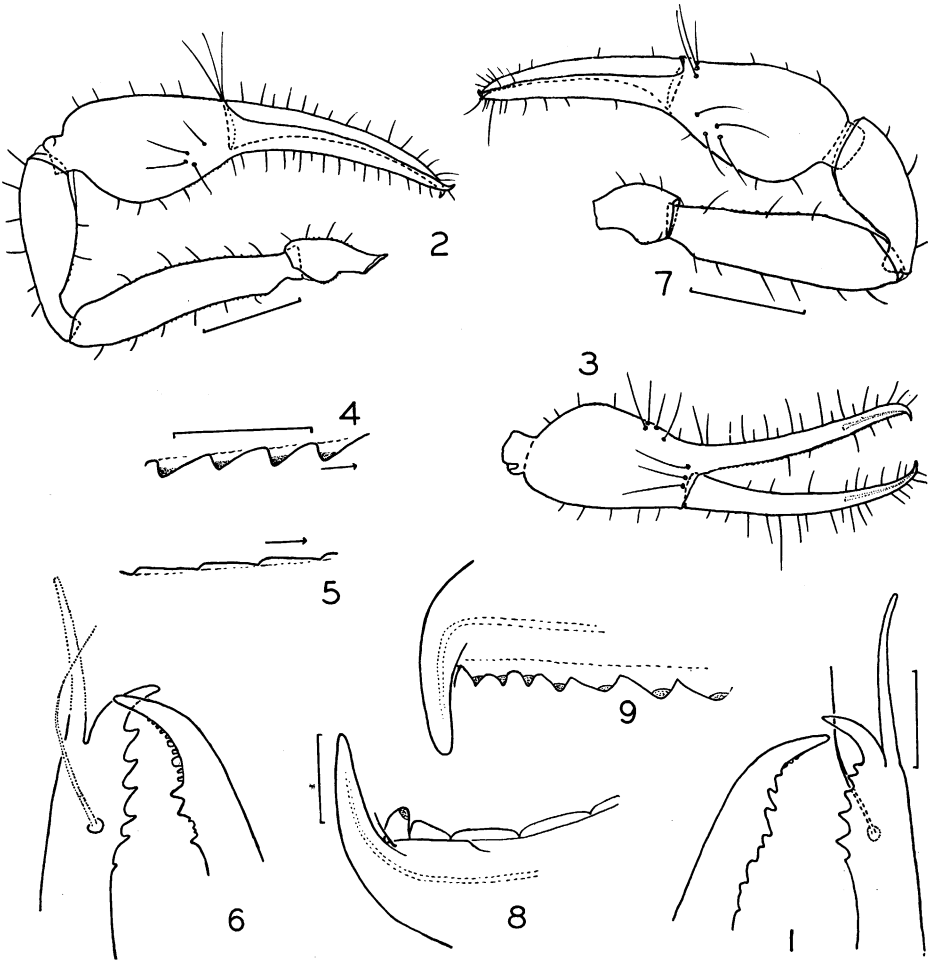
*Albiorix magnus*, new species

Fig. 1. Distal portion of cheliceral fingers, female holotype. Serrulae omitted. Scale equals 0.05 mm.

Fig. 2. Dorsal view of palp, female holotype. Scale equals 0.5 mm.

Fig. 3. Lateral view of chela, female holotype. Scale as in figure 2.

Fig. 4. Teeth of fixed finger of chela near level of nodus ramosus, female holotype. Arrow in this and subsequent drawings points distad. Scale equals 0.05 mm.

Fig. 5. Teeth of movable finger of chela near level of nodus ramosus, female holotype. Scale as in figure 4.

Albiorix veracruzensis, new species

Fig. 6. Distal portion of cheliceral fingers, male holotype. Serrulae omitted; structures indicated by dotted lines are supplied from a male paratype. Scale as in figure 4.

Fig. 7. Dorsal view of palp, male holotype. Scale equals 0.3 mm.

Fig. 8. Lateral view of tip of movable finger of chela, male holotype. Scale equals 0.02 mm.

Fig. 9. Lateral view of end of fixed chelal finger, male holotype. Scale as in figure 8.

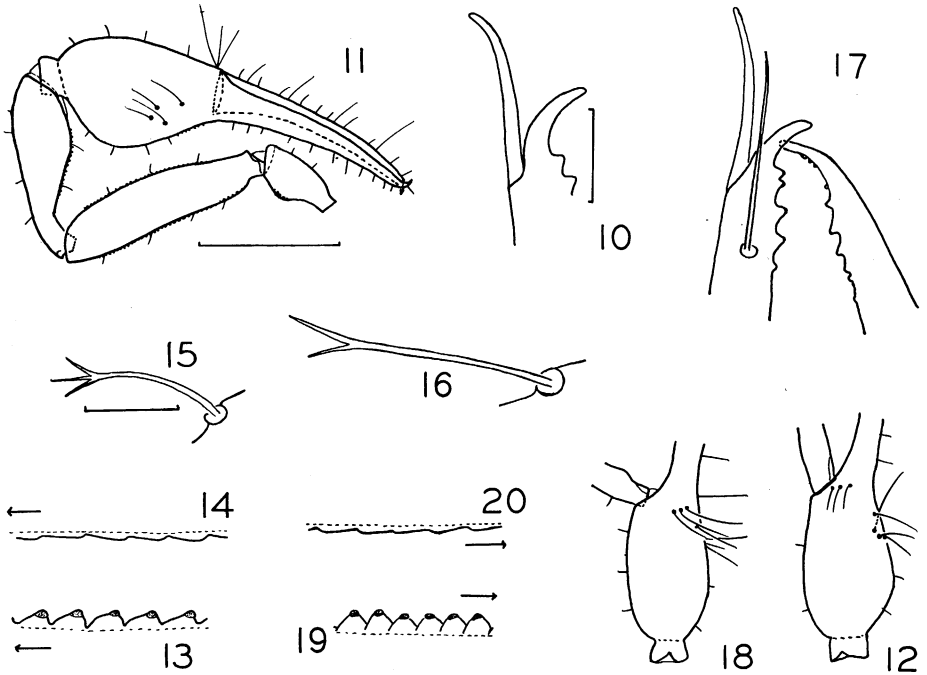
*Albiorix retrodentatus*, new species

Fig. 10. Galea and terminal portion of movable finger of chelicera, male paratype. Scale equals 0.03 mm.

Fig. 11. Dorsal view of palp, male holotype. Scale equals 0.5 mm.

Fig. 12. Lateral view of hand, male paratype. Scale as in figure 11.

Fig. 13. Teeth of fixed chelal finger at level of nodus ramosus, male holotype. Arrow in this and subsequent drawings points distad. Scale as in figure 10.

Fig. 14. Teeth of movable finger of chela, male holotype. Scale as in figure 10.

Fig. 15. Subterminal seta of the first leg, male holotype. Scale equals 0.02 mm.

Fig. 16. Subterminal seta of the fourth leg, male holotype. Scale as in figure 15.

Albiorix conodontatus, new species

Fig. 17. Terminal portion of fingers of chelicera, male holotype. Serrulae omitted. Scale as in figure 10.

Fig. 18. Lateral view of hand, male holotype. Scale as in figure 11.

Fig. 19. Teeth of the margin of the fixed chelal finger at level of nodus ramosus, male holotype. Scale as in figure 10.

Fig. 20. Teeth of the margin of the movable chelal finger at the level of the nodus ramosus, male holotype. Scale as in figure 10.