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BEETLES OF THE OEDEMERID GENUS *VASACES*
CHAMPION

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Champion (1889) described the genus *Vasaces* for three species from Central America. One species, *Vasaces aeneipennis*, was described from material from México, and the other two, *Vasaces sordidus* and *Vasaces costatus*, were described from Guatemala.

Since the completion of my revision of the Nearctic Oedemeridae (Amer. Midl. Nat., vol. 45, pp. 257-391, 1951), I have seen several specimens of *Vasaces* collected by J. N. Knull in Arizona and Texas. This genus has not previously been recorded from North America, north of México. In addition, a few specimens from Central America, in the collections of the U. S. National Museum and the Museum of Comparative Zoology, have been available to me for study.

The present paper, based on all available material, with the exception of the Champion type specimens, adds four new species to the genus. A key to the species is included, and the position of the genus in relation to other oedemerid genera is discussed.

I wish to thank Mr. J. N. Knull, Ohio State University, and Dr. P. J. Darlington, Museum of Comparative Zoology, for the loan of material used in this study.

¹Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture.

Genus *Vasaces* Champion, 1889

Vasaces Champion, *Biologia Centrali-Americana*, Coleoptera, vol. 4, pt. 2., p. 111, 1889 [no included species] and p. 128, pl. 6, figs. 7 and 7, a-c, 1890 [first included species].—Arnett, *Journ. Washington Acad. Sci.*, vol. 40, p. 225, 1950. (Genotype, *Vasaces aeneipennis* Champion, 1890; designated by Arnett, 1950.)

This genus belongs in the subfamily Oedemerinae as treated in my paper on the Nearctic species. The apical segment of the maxillary palpus is triangular or cultriform and the fore tibia has two apical spurs. It is tentatively placed in the tribe Asclerini, as I have previously defined it. However, studies of certain other genera have led me to revise somewhat my views on the oedemerid tribes, and when more groups have been restudied some rearrangement may be necessary. *Vasaces* Champion will key to couplet 7 of my key to the genera of Asclerini. The slightly emarginate eyes separate it from *Heliocis* Arnett, and the triangular or cultriform apical segment of the maxillary palpus will separate it from the genus *Sisenes* Champion. In *Sisenes* Champion the apical segment of the maxillary palpus is small, hardly triangular. In addition, many *Sisenes* species resemble lycids and have the antennal segments somewhat flattened, a condition which is not found in *Vasaces*. In the key to the male genitalia, this genus runs to couplet 3, where it may be separated from the genera *Eumecomera* Arnett and *Sisenes* on the basis of the structure of the ninth abdominal sternite. In *Vasaces* the apical portion of the ninth sternite of both *Eumecomera* and *Sisenes* consists of two separate rods united only by thin membrane. The ninth sternite of *Vasaces* resembles somewhat that of *Heliocis* except that the base is two distinct rods instead of the Y-shaped piece found in *Heliocis*.

It appears that the genus *Sisenes* is a close relative of *Vasaces*, both on characters of external morphology and those of the male genitalia. However, in the studied forms, the two genera can be adequately separated using the characters mentioned above. In gross appearance, the two genera are very distinct. The species of *Vasaces* are for the most part dark, somewhat metallic, elongate beetles, quite different from the brilliantly colored, lycidlike species of *Sisenes*.

Generic diagnosis.—Head moderate or elongate, usually constricted behind the eyes. Eyes somewhat emarginate, large. Antenna slender, 11-segmented, inserted between the eye and the base of the mandible, distinctly separated from the margin of the eye and the base of the mandible. Second segment of the antenna large, over one-half the length of the fourth and sometimes nearly the length of

the third. Both mandibles with the apex of each bifid. Apical segment of the maxillary palpus large, triangular or cultriform, widest at the base or near the center. Thorax slightly longer than broad, usually only slightly expanded apically and only slightly constricted at the base. Legs slender, claws simple; all tarsi with only the penultimate segment of each spongy beneath. Elytra distinctly costate, sometimes markedly so.

MALE GENITALIA: Median lobe short, base wider, without processes, tapering towards apex, without apical enlargements. Paramere a troughlike plate, wide basally, without basal processes, narrowed toward apex; apex V-shaped, emarginate; tegminate large, spatulate. Ninth abdominal sternite hood-shaped, with two basal tails; apex expanded, with basally projecting lateral flanges. Ninth tergite two parallel rods, apically expanded and united by membrane. Eighth abdominal sternite and tergite each bilobed, the sternite larger. Setae present on the apical lobes of the eighth abdominal segment.

Biology.—Unknown.

Distribution.—Known only from Central America and the extreme southwestern part of the United States.

Key to the species of Vasaces

1. Apical segment of the maxillary palpus cultriform (fig. 13,g), its outer edge sinuate.....2
 Apical segment of the maxillary palpus triangular (fig. 13,h).....4
2. Costae, suture, and margins of elytra fusco-piceous, intervals pale; antennae uniformly dark except for small pale areas at the joints; legs dark, slightly paler at joints.....**linearis**, new species
 Elytra with uniform coloration.....3
3. Elytra uniformly brassy.....**costatus** Champion
 Elytra dark.....**knulli**, new species
4. Pale testaceous; elytra with costae and suture each with an indistinct, interrupted row of fine, oblong streaks on either side.....**sordidus** Champion
 Dark species, otherwise marked.....5
5. Pronotum orange with black maculations, head short...**maculatus**, new species
 Pronotum dark, head elongate.....6
6. Pronotum with sides nearly parallel.....**elongatus**, new species
 Pronotum distinctly sinuate laterally.....**aenipennis**, Champion

Vasaces linearis, new species

FIGURE 13, c, e-g, j-l, m, n

Diagnostic characters.—The light brassy color, with the dark brown, prominent elytral costae, readily differentiates this species from the others. It is most closely related to *V. costatus* since the shape of the apical segment of the maxillary palpus is similar.

Description.—(Based on male holotype.) Antenna long, nearly as long as the body, second segment subequal to the third. Apical segment of the maxillary palpus large, distinctly cultriform, outer margin arcuate. Vertex of head transversely elevated between the eyes, and with a slight median groove from the base of the antenna to the summit of the vertex. Pronotum somewhat longer than broad, widest near anterior margin, slightly narrower at base, surface irregular, laterally with slight elevations, median line somewhat impressed, and with a slight V-shaped elevation on anterior half. Elytron long and narrow, with four prominent costae and the suture and margin prominently elevated, and a short, basal, spurious costa uniting with the inner margin.

Entire insect clothed with fine, short, sparse, whitish hairs. Color: in general pale brassy; head with a darker area on front; mouthparts, except for maxillary palpi, paler. Antennae and maxillary palpi dark. Thorax dark except for irregular paler areas near base and apex. Elytra uniformly pale brassy except for dark brown costae, suture, and margins. Ventral surface and legs dark. Surface irregularly rugose-punctate. Length: 8 mm.

MALE GENITALIA: Described in the generic diagnosis. The seventh sternite has a slight angular emargination which is probably a secondary sexual character.

Type.—Holotype, male, Ohio State Univ. coll., Arizona, Huachuca Mountains, Cochise County, June 9, 1935, J. N. Knull.

Distribution.—Known only from this single male type specimen from Arizona.

Vasaces costatus Champion, 1890

Vasaces costatus Champion, Biologia Centrali-Americana, Coleoptera, vol. 4, pt. 2, p. 129, pl. 6, fig. 8, 1890.

This species is also known only from one male, the type, from Guatemala, at Cerro Zunil (4,000 feet), collected by Champion, and is in the British Museum (Natural History). It is much smaller than the genotype, but a little larger (9.5 mm.) than the preceding species. The elytra are uniformly brassy in color, lacking the dark brown costal, sutural, and marginal markings. The seventh sternite of the male is deeply emarginate.

Vasaces knulli, new species

FIGURE 13, b

Diagnostic characters.—The small size, dark color, and lack of brassy tints serve to separate this species from the other two having the apical segment of the maxillary palpus cultriform. It is most closely allied to *V. costatus*.

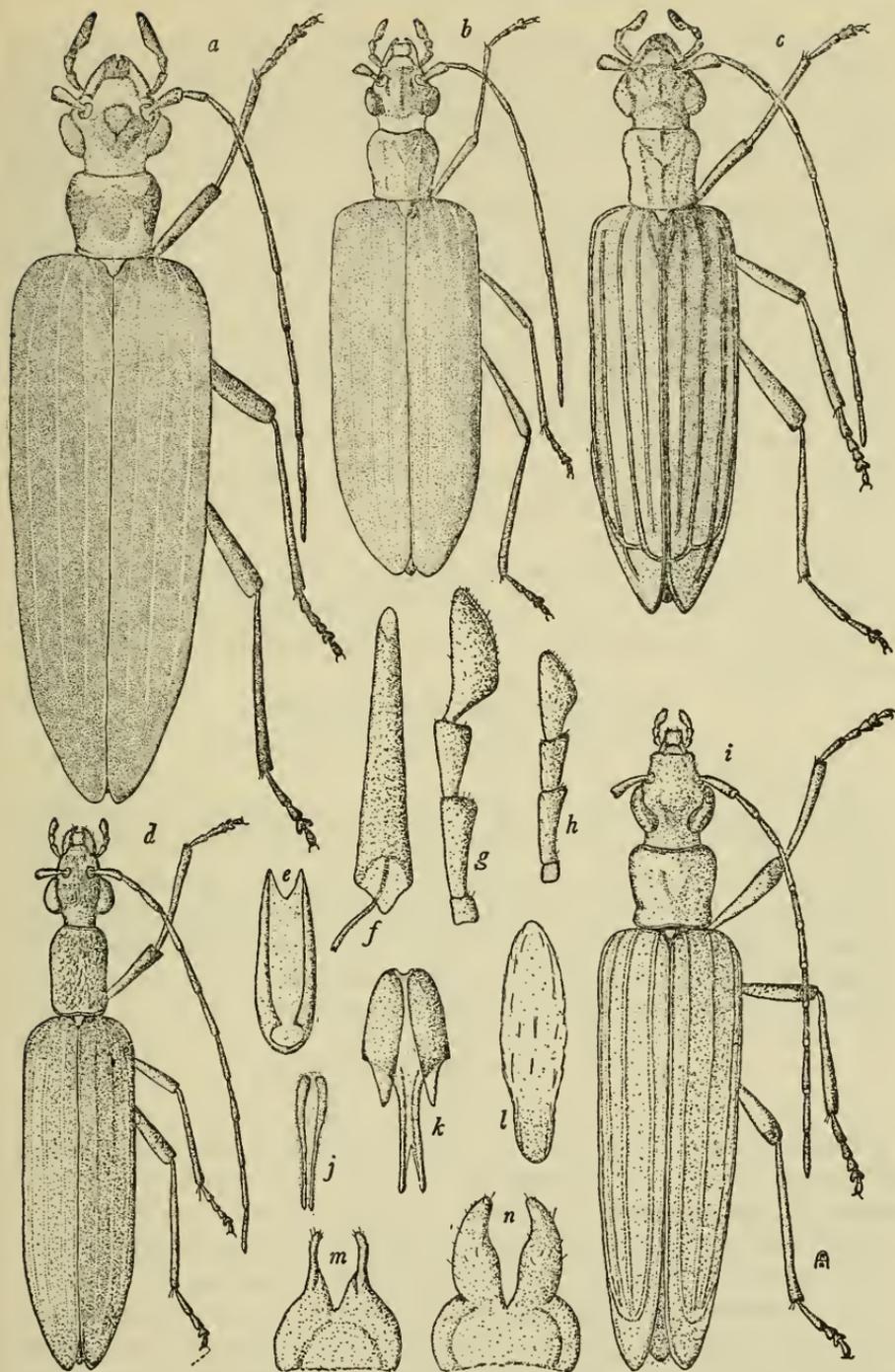


FIGURE 13.—Adults and male genitalia of the genus *Vasaces*: a, *Vasaces maculatus*, new species, ♀; b, *V. knulli*, new species, ♀; c, *V. linearis*, new species, ♂; d, *V. elongatus*, new species, ♀, e, f, ♂ genitalia, *V. linearis*, new species; e, paramere; f, median lobe; g, h, maxillary palpi; g, *V. linearis*, new species, ♂; h, *V. elongatus*, new species, ♀; i, *V. aeneipennis* Champion, ♀; j–n, *V. linearis*, new species, ♂; j, ninth tergite; k, ninth sternite; l, tegminite; m, eighth tergite; n, eighth sternite.

Description.—(Based on female holotype.) Antennae short, not extending over two-thirds the length of the elytra, second and third segments equal in length, each about three-fourths the length of the fourth segment. Apical segment of the maxillary palpus large, cultriform, outer edge slightly arcuate. Head shorter than that of the other species; front with a slight depression near the bases of the antennae on the inner side; a moderately deeply impressed median line on the front. Pronotum with surface very irregular and with a moderately prominent V-shaped ridge on the anterior half and an interrupted lateral ridge on each side; longer than broad, widest anteriorly just beyond the middle, constricted behind. Elytra narrow, long; costae present but obscure. Surface covered with fine, short, sparse, whitish hairs. Color: dark, mouthparts, underside of head, neck, coxae, bases of femora, tarsi at joints, and small area at joints of the segments of the antennae paler. Surface finely rugose-punctate. Length: 7 mm.

Type.—Holotype, female, Ohio State Univ. coll., Arizona, Huachuca Mountains, Cochise County, June 9, 1935, J. N. Knull.

Distribution.—This species is known only from the type, which is from Arizona.

***Vasaces sordidus*, Champion, 1890**

Vasaces sordidus Champion, *Biologia Centrali-Americana*, Coleoptera, vol. 4, pt. 2, p. 129, 1890.

This species is known from one female only, the type, from Capetillo, Guatemala, collected also by Champion, which is in the British Museum (Natural History). It is smaller than the preceding species (8.5 mm.); the apical segment of the maxillary palpus is smaller, and triangular instead of cultriform. The color is pale testaceous. The costae and suture are conspicuous, and each has an indistinct, interrupted row of fine oblong streaks on either side.

***Vasaces maculatus*, new species**

FIGURE 13, *a*

Diagnostic characters.—The dark orange pronotum with a median and two lateral spots is unique among the species of this genus. It is the largest known species in the genus and is most closely related to *V. sordidus* but has the orange markings which are lacking in that species.

Description.—(Based on female holotype.) Antennae short, reaching to about two-thirds the length of the elytra, second segment short, about two-thirds as long as the third. Apical segment of the maxillary palpus large, elongate triangular, widest near basal third, outer margin straight. Front of head irregular, with a circular depression extending from the inner side of the base of the antenna basad about half the distance to the pronotum. Pronotum quadrate, widest

anteriorly, only slightly constricted posteriorly, surface irregular but without prominent ridges or depressions except for a slight depression on either side near the anterior lateral angle. Elytra long, narrower apically, about twice as broad as thorax; costae present, flat, not prominent.

Entire insect clothed with very fine, short, sparse, golden hairs. Surface finely rugose-punctate. Head with punctures larger, more distinct, with a stouter recumbent hair arising near each. Color: Head orange, with a large dark spot on front; antennae and palpi dark; thorax orange except for a large central dark spot which connects with two large lateral spots; legs with coxae and bases of femora pale, remainder dark; abdomen and elytra uniformly dark. Length: 10 mm.; of paratype, 11 mm.

Types.—Holotype, female, USNM [61112, Arizona, Chiricahua Mountains, June 8. Hubbard and Schwarz. Paratype, female, same data as type except date, June 11.

The paratype agrees with the type except that the black markings of the thorax are less extensive.

Distribution.—Known only from the two type specimens from Arizona.

Vasaces elongatus, new species

FIGURE 13, *d, h*

Diagnostic characters.—The uniform dark color, elongate head and thorax, and parallel sides of the pronotum are characteristic of this species. It is very different in general habitus from the other members of this genus, but is probably most closely related to *V. aeneipennis*.

Description.—Head elongate, over twice as long as wide at bases of antennae, hardly constricted behind the eyes. Antennae reaching beyond apical third of elytra, apical segment of the maxillary palpus triangular, widest at middle, outer edge straight. Front of head smooth, without elevations or depressions. Pronotum longer than broad (7:4), surface irregular but without distinct ridges or depressions, sides only slightly sinuate. Elytra broad, twice the width of the thorax, tapering behind. Legs long and slender, costae distinct, flat.

Entire insect clothed with short, fine, white hairs, those of the head and thorax sparser, but longer and coarser than those of the rest of the body. Surface of head smooth and shiny with large distinct punctures which are sparser on the vertex; thorax coarsely rugose; remainder of body finely rugose. Color: dark fuscous; neck, under surface of head, mouthparts, and coxae paler. Length: 8 mm.

Type.—Holotype, female, Ohio State Univ. coll., Texas, Chisos Mountains, Brewster County, June 9, 1939, D. J. and J. N. Knull.

Distribution.—Known only from the female type.

Vasaces aeneipennis ChampionFIGURE 13, *i*

Vasaces aenipennis Champion, Biologia Centrali-Americana, Coleoptera, vol. 4, pt. 2, p. 128, 1890.

This is apparently the least rare of the species in this genus and is one of the largest of the known species. The triangular apical segment of the maxillary palpus, the elongate head, and the uniform brassy color distinguish it from the other species.

Champion described this species from two specimens (a male and a female) from Tototzinapan, México, in the Sallé collection (location unknown). The U. S. National Museum collection contains two females from Guatemala, and the Museum of Comparative Zoology has one female from Honduras. A detailed description of one female from Guatemala follows:

Description.—(Based on female, from Guatemala). Head elongate, about twice as long as wide at bases of antennae. Antennae long, reaching nearly to apical third of the elytra, second segment about two-thirds the length of the third. Apical segment of the maxillary palpus triangular, widest at middle, outer edge straight. Dorsal surface of head irregular, but without distinct ridges or depressions. Pronotum nearly quadrate, widest anteriorly, sides distinctly sinuate, surface irregular. Elytra long and narrow, tapering at apex; costae distinct, flat, both edges of costae outlined by a very fine, irregular, impressed line, somewhat darker in color, giving in gross appearance the impression that the costae are double.

Surface clothed with extremely fine, very short, sparse, golden hairs which are somewhat larger on the thorax and dorsal surface of the head. Surface rugose, that of the thorax and head indistinctly rugose-punctate. Color: uniformly brassy, dorsal surface of the head and ventral surface of the thorax and abdomen darker. Length: 15 mm.

Variation: The surface of the head and thorax varies from rugose-punctate to shiny smooth with sparse punctures. The length varies from 10 to 16 mm. The color is darker in some specimens than in others.

Distribution.—Known only from the types from México and the above-mentioned specimens from Guatemala and Honduras (Rosario San Juancito).

Material examined.—Female, USNM coll., Guatemala, Santa María, W. Schaus.