

A NEW *SEIRA* FROM THE UNITED STATES, WITH A REDESCRIPTION OF
SEIRA BIPUNCTATA (PACKARD) AND NEW RECORDS
FOR *SEIRA DISTINCTA* MARI MUTT
(COLLEMBOLA: ENTOMOBRYIDAE)

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Abstract.—*Seira cryptica* n. sp. is described from specimens collected in Florida and Arizona. This species was previously confused with *S. bipunctata* (Packard), which is redescribed from type material and specimens from Nebraska. *Seira distincta* Mari Mutt is recorded for the first time from the United States and Mexico.

During a recent review of the Puerto Rican species of *Seira* (Mari Mutt, 1987) I considered one local species as possibly *S. bipunctata* (Packard), described in 1873 from Texas and redescribed by Christiansen and Bellinger (1980) from specimens collected in various localities of the United States. These authors reported a degree of variation in coloration and chaetotaxy that suggested their samples contained more than one species. Christiansen and Bellinger had considered this possibility but preferred to list all their records under one species.

Thanks to Kenneth Christiansen, who has placed at my disposal his collection of *S. bipunctata*, and to the Museum of Comparative Zoology of Harvard University, which lent the necessary type material, I have been able to reinterpret the North American material of *S. bipunctata*. Some of the specimens in the Christiansen collection belong to Packard's species while others belong to a new species that is described below. I received also from Dr. Christiansen some specimens from Massachusetts and Mexico that represent new records for *Seira distincta* Mari Mutt (1986), known previously only from Puerto Rico.

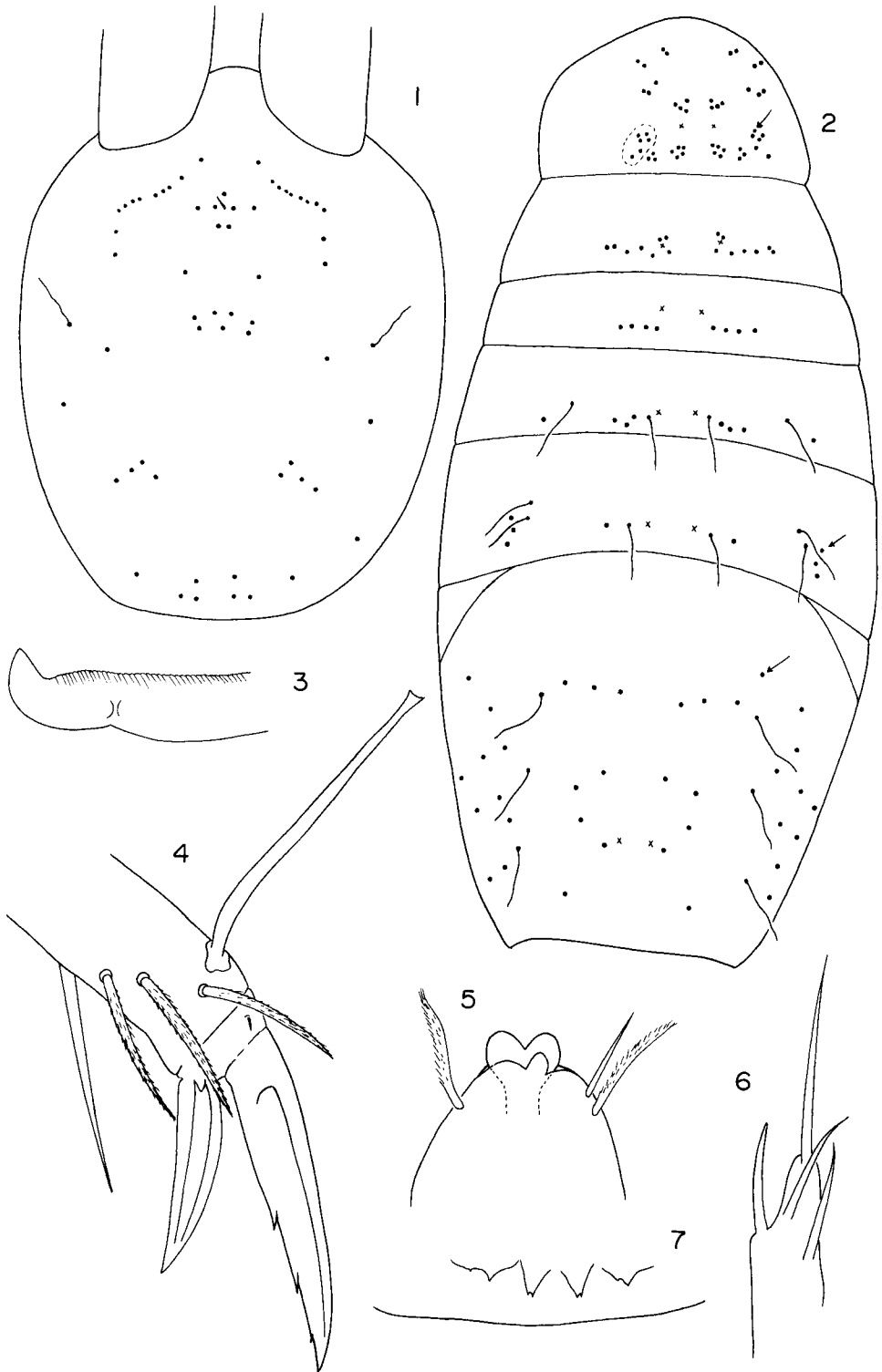
The type series of *Seira bipunctata* and the holotype of *Seira cryptica* n. sp. are de-

posited in the Museum of Comparative Zoology, Cambridge, Massachusetts. The remaining material is deposited in the collection of Dr. Christiansen, Department of Biology, Grinnell College, Iowa. In the species descriptions and discussions, Ant. 2, Th. 2, Abd. 2, etc. means second antennal segment, second thoracic segment, etc.

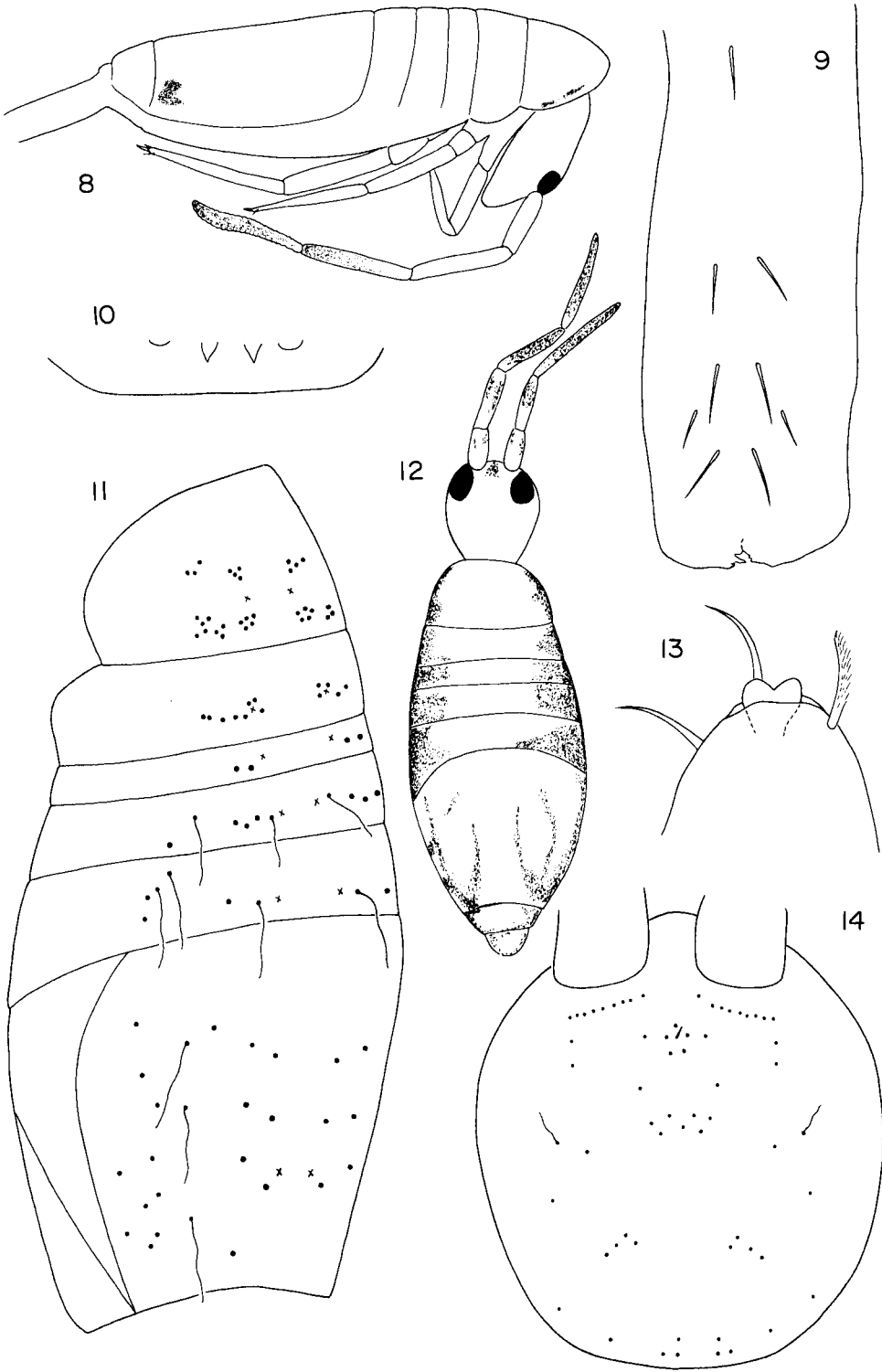
***Seira cryptica* Mari Mutt, NEW SPECIES**

Seira bipunctata (Packard): Christiansen and Bellinger 1980: 925-926, Fig. 756 B, E, F (Florida), misidentification.

Description.—Length from front of head to end of Abd. 6 up to 1.8 mm. Body with a lateral band of pigment along its length, pigment extending dorsally but with diminishing intensity, leaving dorsum of body unpigmented (Fig. 12, see also Christiansen and Bellinger, 1980: 926, Fig. B). Some lighter specimens almost white, darker specimens with pigment extending almost to midline of body. Antennae and legs lightly pigmented throughout length. Manubrium with some pigment basally. Anterior margin of mesonotum rounded, not projecting over head. Apex of Ant. 4 without protuberance or pin seta but with bilobed papilla (Fig. 13). Head rounded, distribu-



Figs. 1–7. *Seira bipunctata*. 1, Distribution of head macrochaetae. 2, Distribution of body macrochaetae, bothriotricha (wavy lines) and pseudopores (×) (setae signalled by arrows are absent in some specimens—see text. On Th. 2, a broken line surrounds the external posterior group of macrochaetae). 3, Mucro. 4, Metathoracic claws. 5, Apex of Ant. 6, External labial papilla. 7, Labral papillae.



tion of macrochaetae as in Fig. 14. Eyes G and H reduced, not visible in cleared specimens. Outer labral papillae rounded, inner papillae conical and not bifurcated (Fig. 13). Body macrochaetotaxy as in Fig. 11; 2 + 2 setae on Abd. 1. Other characters described under *S. bipunctata* identical in this species.

Comments.—The specimen from locality 2425 has three outer macrochaetae on both sides of Abd. 3; all other specimens possess two setae. I have examined two specimens from a cave in Puebla, Mexico (coll. no. 4067) which possess the typical coloration of this species but their guts are filled with so much food that the abdominal chaetotaxy cannot be studied.

Diagnosis.—*Seira cryptica* is very similar to *S. distincta* Mari Mutt (1986), described from Puerto Rico and now reported in this paper from the United States (Massachusetts) and Mexico. These species differ in coloration, the pigment in *S. distincta* is restricted to the sides of Th. 3 to Abd. 2 (Mari Mutt, 1986: Fig. 21). In addition, *S. distincta* lacks the macrochaeta inserted above the pseudopore of Abd. 4 and consistently possesses three outer macrochaetae on Abd. 3 (two in *S. cryptica*).

Seira cryptica can be distinguished from *S. bipunctata* by the presence of 2 + 2 macrochaetae on Abd. 1 (4 + 4 in *S. bipunctata*) and also by the coloration, although well pigmented specimens of *S. cryptica* may closely resemble specimens of *S. bipunctata*. Specimens of *S. bipunctata* possess a somewhat conical mesonotum which projects over an elongated head. In *S. cryptica* the mesonotum does not project over the head and the head is rounded. *Seira bipunctata* has an apical protuberance on Ant. 4 (absent in *S. cryptica*) and always has

three outer macrochaetae on Abd. 3 (usually two in *S. cryptica*). Finally, the posterior outer group of setae on Th. 2 is usually composed of six setae in *S. bipunctata* and of five in *S. cryptica*.

Material examined.—Florida, Monroe County, on several small mangrove islands, 4.VII.1969 to 16.VII.1970, collection numbers: 2425, 2432, 2433, 2506, 2827, 2831, 2834; D. Simberloff, holotype and 17 paratypes on slides. Arizona, nr. Phoenix, McDowell Mt. Park, on dry stream bed, 19.III.1986, coll. no. 6620, K. Christiansen, 1 specimen on slide.

Seira bipunctata (Packard)

Lepidocyrtus bipunctatus Packard 1873: 37 (Texas).

Seira bipunctata—Christiansen & Bellinger 1980: 925–926, Fig. 756 A, C (Nebraska and New Mexico).

Description.—Length from front of head to end of Abd. 6 up to 2.4 mm. Coloration variable (see comments). Anterior margin of mesonotum conical, projecting over head. Distribution of scales: head and body, dorsum of Ant. 1 and Ant. 2, dorsal proximal half of Ant. 3, all leg segments, and furcula. Ant. 4 slightly annulated; its apex (Fig. 5) with distinct protuberance and bilobed papilla but without pin seta. Head elongate, macrochaetae distributed as in Fig. 1. Eyes G and H not greatly reduced. Interocular chaetotaxy consists of a small ciliated seta external to eye D, a similar seta between eyes E and F, and 5 longer setae in area between eyes C to H (arrangement identical in *S. caheni* Jacquemart—Mari Mutt, 1986: Fig. 10). Prelabral setae ciliated, labral setae smooth. Labral papillae well developed, sometimes bifurcated apically

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Figs. 8, 9. *Seira bipunctata*. 8, Distribution of violet pigment, lectotype. 9, Ventral manubrial chaetotaxy, basal area of manubrium at top of page. Figs. 10–14. *Seira cryptica*. 10, Labral papillae. 11, Distribution of body macrochaetae, bothriotricha (wavy lines) and pseudopores (x). 12, Distribution of violet pigment. 13, Apex of Ant. 4. 14, Distribution of head macrochaetae.

(Fig. 7). Labial chaetotaxy: a1–a5, M1M2r (reduced)EL1L2. One long ciliated seta on each side of ventral groove near posterior margin of head. One to 3 pairs of scales inserted between this seta and setae of postlabial quadrangle. Setae of maxillary palpus smooth, subequal in length and shape. Differentiated seta of outer labial papilla clearly surpassing apex of papilla (Fig. 6). Body macrochaetotaxy as in Fig. 2; 4 + 4 setae on Abd. 1. Detailed chaetotaxy of Abd. 2 and Abd. 3 and distribution of setae associated with anterior bothriotricha of Abd. 4 as in *S. caheni* (Mari Mutt, 1986: Figs. 16–18). Trochanteral organ with up to 30 slender smooth setae. Structure of claws as in Fig. 4. Ventral manubrial chaetotaxy as in Fig. 9. Mucro as in Fig. 3. Male genital plate circinate, with 11 smooth setae in a circle around genital pore and at east 1+1 setae near pore.

Comments.—The types of this species possess a small patch of pigment along the anterior margin of the mesothorax and a larger patch on the lateral-posterior margin of Abd. 4 (Fig. 8). On the other hand, the specimens from Nebraska are almost completely pigmented as illustrated by Christiansen and Bellinger (1980: 926, Fig. 756C). The first two antennal segments of the latter specimens are violet but Ant. 3 and Ant. 4 are pale. Legs are violet to the apical ¼ of femur, remainder of leg is pale yellow. The specimens from New Mexico have all the antennal segments, head, and thorax pigmented but the abdomen lacks color. No anatomical differences were detected among these populations.

Setae signalled by arrows on Th. 2 and Abd. 4 in Fig. 2 are absent on one side of the body of one specimen from Nebraska. The signalled seta on Abd. 3 is absent on both sides of the body of one specimen from the same locality.

Diagnosis.—This species is similar to *S. caheni* Jacquemart (1976), described from the Galapagos Islands and reported from Cuba (Gruia, 1983) and Puerto Rico (Mari Mutt, 1986). Both species possess identical

head and body macrochaetotaxy except that *S. bipunctata* has six setae on the outer posterior group of Th. 2 (Fig. 2) while most specimens of Jacquemart's species have five setae (some specimens have six setae). *Seira caheni* lacks an apical protuberance on Ant. 4 and has a pair of setae between the apical pair on the manubrium of *S. bipunctata* (cf. Fig. 9 and Mari Mutt, 1986: Fig. 11). These species also differ in typical coloration.

Material examined.—Texas, McLennan County, Waco, Lectotype (here designated), 4 paralectotypes on slides and 35 paralectotypes in alcohol; Nebraska, Thomas County, Halsey, 13.II.1957, coll. no. 461x, Henzlik, col., 4 specimens on slides; New Mexico, Eddy County, Carlsbad Caverns National Park, bat cave site no. 4, 25.IV.1975, coll. no. 3668, 3 on a slide with specimens of an *Entomobrya*.

Seira distincta Mari Mutt

Seira distincta Mari Mutt, in press.

Described originally from Puerto Rico, this species is reported for the first time from the United States and Mexico. *Seira distincta* is very similar to *S. cryptica*; the differences between both are listed in the latter's diagnosis.

Material examined.—USA, Massachusetts, Cambridge, Biological Laboratories, 26.II.1948, K. Christiansen, coll. no. 5985, 4 specimens on slides; Mexico, Veracruz, Cueva del Rio, 3 km E of Atoyac, 6.II.1957, coll. no. 4093, J. Reddell, 1 specimen on slide.

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