

Review of specimens corresponding to three species of *Thyene* (Araneae: Salticidae: Plexippini) in the Peckham Collection

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Abstract. Specimens of *Thyene crudelis*, *T. ogdeni* and *T. pulchra* in the Peckham Collection at the MCZ have been examined and documented, supporting the synonymy of *T. crudelis* (male only) with *T. coccineovittata* but not the synonymy of the female *T. ogdeni* described by the Peckhams with *T. coccineovittata* as proposed by Berland & Millot (1941). Wesołowska & Haddad (2009) is recognized as the best recent redescription of the male *T. coccineovittata*, both sexes of *T. ogdeni*, and the female *T. pulchra*.

Keywords. Africa, *Hyllus coccineovittatus*, synonymy, *Thyene coccineovittata*, *Thyene crudelis*, *Thyene ogdeni*, *Thyene pulchra*

In 1903 the Peckhams (Peckham & Peckham 1903) described six new species in the genus *Thyene* Simon 1885 from Africa (Table 1). With the exception of the *T. crudelis* ♂, which has been redescribed under the name *T. coccineovittata*, all of these species have retained their original species group name.

Table 1. Recent status of the six *Thyene* species named by Peckham & Peckham (1903).

species	localities	recent status
<i>Thyene australis</i> ♂	1♀, Algoa Bay	Wesołowska & Cumming (2008) redescribed the ♂ and ♀
<i>Thyene crudelis</i> ♂	2♂, Durban	synonym of <i>Thyene coccineovittata</i> (Simon 1886) according to Berland & Millot (1941); redescribed as ♂ <i>Thyene coccineovittata</i> by Wesołowska & Haddad (2009) and Oger & Van Keer 2017
<i>Thyene Leighii</i> ♂	several ♂, Durban	Wesołowska & Cumming (2011) and Wesołowska (2011) redescribed the ♂ as <i>Thyene leighi</i> ; the ♀ is unknown
<i>Thyene natalii</i> ♂♀	1♀, several ♂, Durban	redescribed by Wesołowska & Cumming (2008); reported by Wesołowska & Haddad (2009)
<i>Thyene Ogdenii</i> ♂♀	Algoa Bay; Durban; Mashonaland	♀ a synonym of <i>Thyene coccineovittata</i> (Simon 1886) according to Berland & Millot (1941); Lessert (1925) and Wesołowska & Haddad (2009) redescribed both the ♂ and ♀ of the Peckhams as <i>Thyene ogdeni</i>
<i>Thyene pulchra</i> ♀	5♀, Durban	♀ redescribed as <i>Thyene pulchra</i> by Wesołowska & Haddad (2009); <i>Thyene</i> ♀ cf. <i>pulchra</i> reported by Mariante & Hill (2018); the ♂ is unknown

To support our identification of a *Thyene* species recently discovered in Brazil (tentatively identified as *Thyene* cf. *pulchra*; Mariante & Hill 2018) we have examined specimens of *T. crudelis*, *T. ogdeni* and *T. pulchra* from the Peckham Collection, currently residing at the Museum of Comparative Zoology (MCZ) of Harvard University, in Cambridge, Massachusetts (Table 2). This paper is a preliminary report to document our initial findings with respect to the identity and characteristics of these specimens. An additional vial associated with *T. coccineovittata* (MCZ:IZ:151894, collected in Tanzania by Arthur Loveridge, determined by Wanless in 1977) was also examined, but was found to contain only an immature *Thyene* that could not be identified, and an unidentified salticid of a different genus.

Table 2. Specimens residing in the MCZ that were examined in the course of this study.

species of record	MCZ Number	specimens	notes on label
<i>Thyene crudelis</i>	MCZ:IZ:20956	<i>Thyene crudelis</i> : 3♂ with most appendages separated	syntype, Natal, Durban, GW & EG Peckham coll.
<i>Thyene ogdeni</i>	MCZ:IZ:22386	<i>Tularosa ogdeni</i> : 19♀, = <i>Thyenula aurantiaca</i> Simon 1902	syntype, Natal, Durban, Quekett, GW & EG Peckham coll., <i>Tularosa ogdeni</i>
	MCZ:IZ:151900	<i>Thyene ogdeni</i> : 10♀	Natal, Durban, ex Milwaukee Museum, Peckham Collection
	MCZ:IZ:151903	<i>Thyene ogdeni</i> : 8♀	Natal, Durban, GW & EG Peckham coll.
	MCZ:IZ:151907	<i>Thyene ogdeni</i> : 2♂, 1♀	Mashonaland, Workman, GW & EG Peckham coll.
<i>Thyene pulchra</i>	MCZ:IZ:22787	<i>Thyene pulchra</i> : 6♀	Durban, type, GW & EG Peckham coll.
	MCZ:IZ:151905	<i>Thyene pulchra</i> : 2♀, 2 penultimate ♂	Durban, ex Milwaukee Museum, Peckham Collection

♂ *Thyene crudelis* Peckham & Peckham 1903

This species, for which only the male was described, is of interest to us because Berland & Millot (1941) synonymized it with *Thyene coccineovitta* (*Hyllus coccineovittatus* Simon 1886), but also associated the male with the drawing of a female *Thyene* (Figure 1, 71B) that resembles our *Thyene* cf. *pulchra* from Rio de Janeiro (Mariante & Hill 2018).

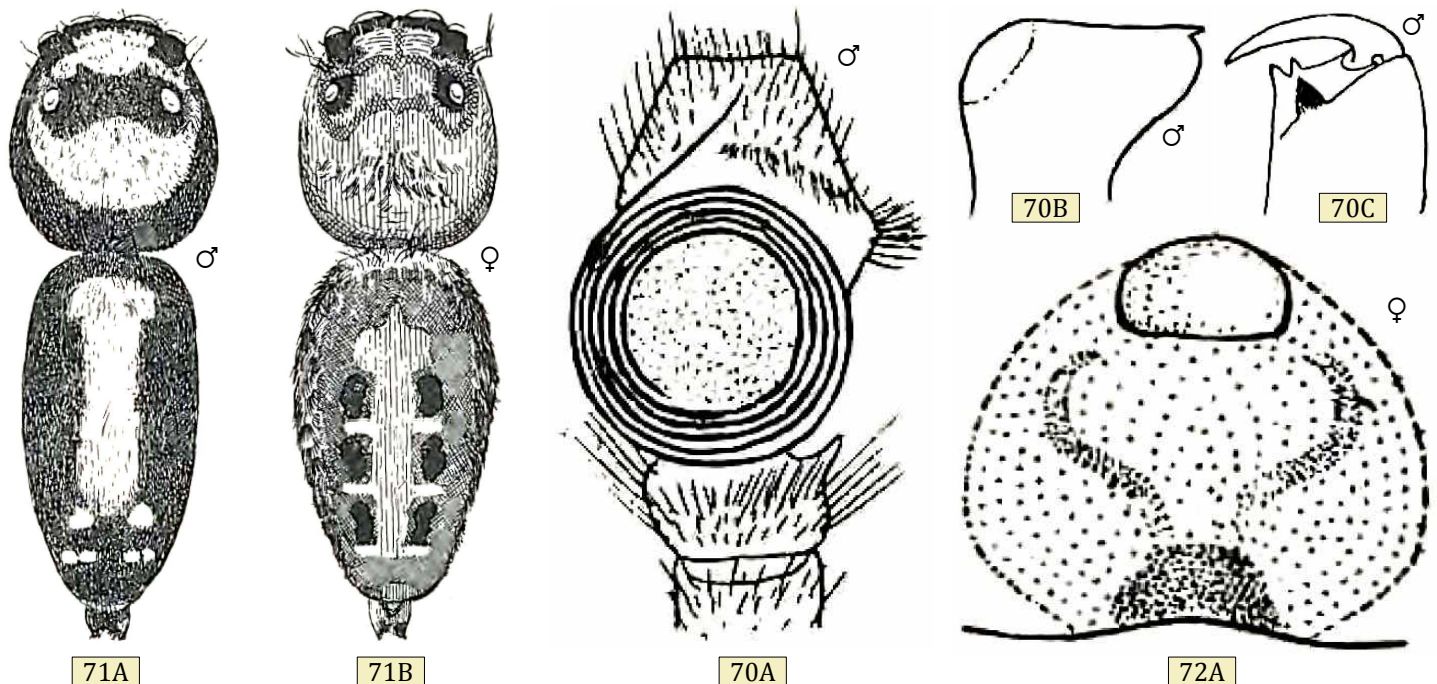


Figure 1. Drawings of male and female *Thyene coccineovittata* (Simon 1886) by Berland & Millot (1941), with figure numbers from the original publication shown in rectangles. The male (71A, 70A-C) resembles *T. crudelis*, although the RTA (70A) is significantly larger here than shown by the Peckhams, and the endites (70B) shown by the Peckhams did not have a lateral projection. Berland & Millot recognized the female *T. ogdeni* as the female of this species (or a subspecies), although the drawings that they published (71B, 72A) do not agree with either the descriptions or the specimens held by the Peckhams for that species. The female shown in (71B) resembles the female *T. pulchra*, but the epigynum shown in (72A) might represent any of several different species of *Thyene*.

Although the Peckhams (1903) only listed two males from Durban, South Africa, there are three males in the Peckham collection (MCZ:IZ:20956; Table 2) associated with this locality (Figures 2-4). The Peckhams described yellowish-white, iridescent scales in a band across the front of the eye region, in bands around the eye region, and comprising a middorsal band on the opisthosoma where it was *edged with red*. Behind this were several pairs of white spots. There was a single *stout* tooth on the posterior margin of each fang groove and the endites were extended to a point anterolaterally (Figure 3). The Peckhams drew a pedipalp with many coils of the apophysis and a very small retrolateral tibial apophysis (RTA); the RTA is even smaller in their specimens and if present is partly concealed behind the coiled apophysis (Figure 4).

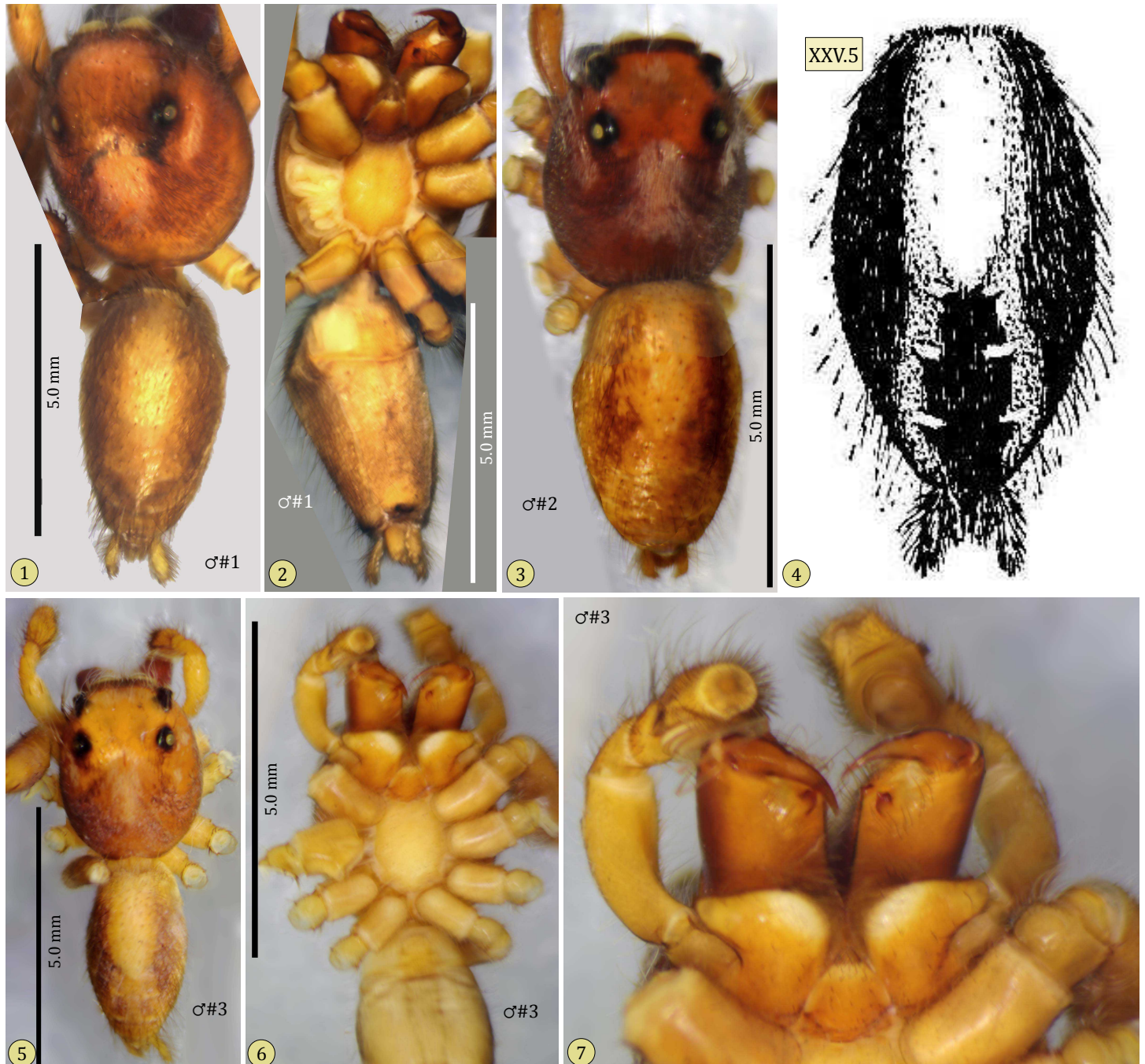


Figure 2. Three male specimens labeled *Thyene crudelis* from the Peckham Collection (1-2, 3, 5-7; MCZ:IZ:20956), with the Peckhams' published drawing (1903, pl. XXV, fig. 5) of the dorsal opisthosoma (4).

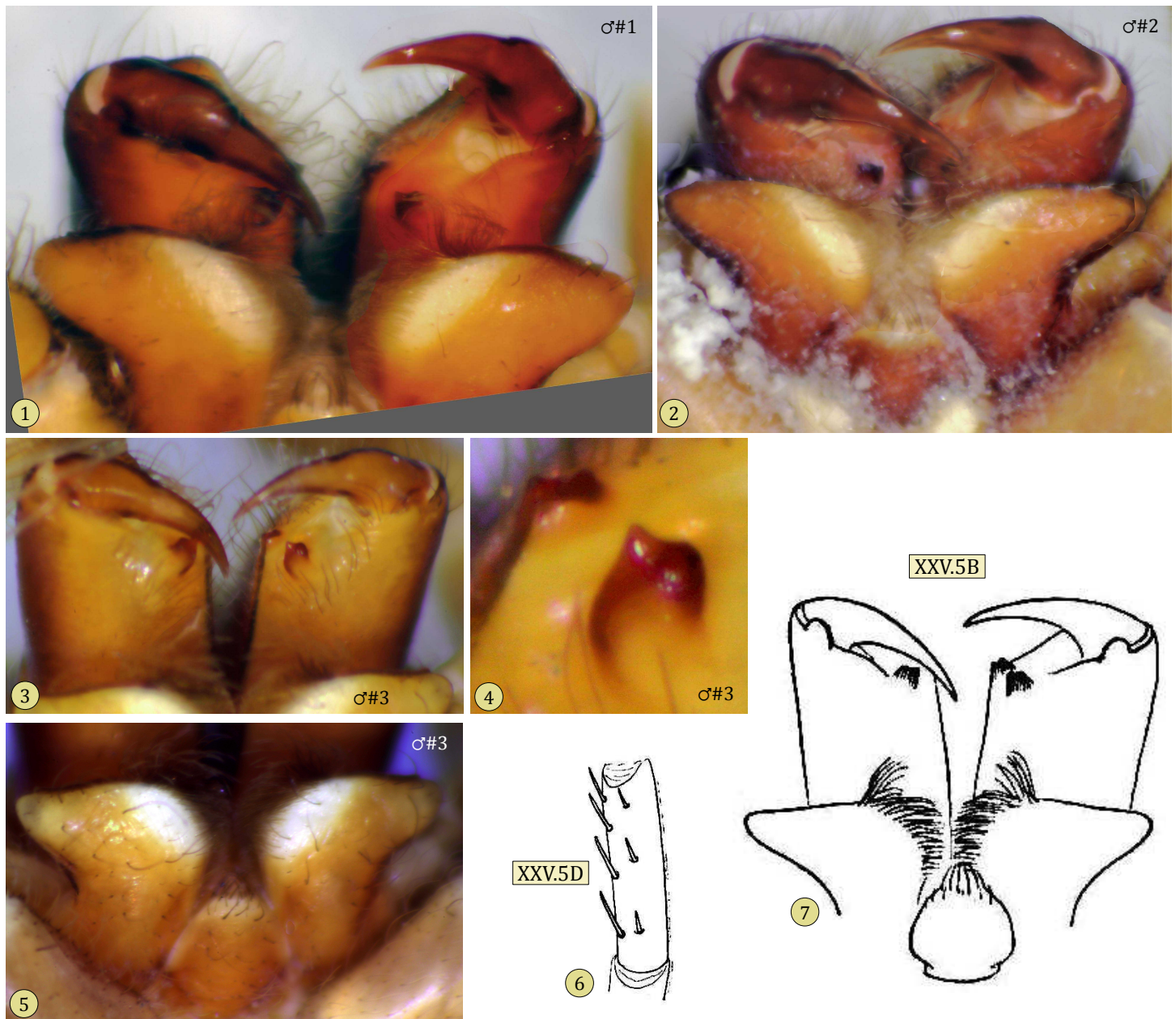


Figure 3. Ventral view of endites and chelicerae of three male specimens labeled *Thyene crudelis* from the Peckham Collection (1, 2, 3-5; MCZ:IZ:20956), with the Peckhams' published drawings of the underside of tibia I (6) and the labium, endites and chelicerae (7). 4, In male #3 the large tooth on the posterior margin of the fang groove was rounded in outline, but as in other specimens the tooth on the anterior margin was bicuspid (two-pointed) as drawn by the Peckhams.

Based on this review, it is reasonable to associate *Thyene crudelis* with subsequent illustrations of the male *T. coccineovittata* (Berland & Millot 1941; Wesołowska & Haddad 2009; Oger & Van Keer 2017). But did Berland & Millot correctly synonymize *T. crudelis* with the latter species in 1941? If not, then the much earlier name of *T. crudelis* Peckham & Peckham (1903) has priority. Simon (1886) described the male *Hyllus coccineovittatus*, from Dakar, Senegal, but did not designate any type specimens. Berland & Millot wrote that they subsequently examined some of Simon's specimens, in poor condition, but we have not yet been able to locate these and suspect that they no longer exist. However a number of features in Simon's Neolatin (text only) description of *H. coccineovittatus* lead us to concur with Berland & Millot in their synonymy of *T. crudelis*. These include the presence and distribution of yellowish scales, the stout posterior tooth of the fang groove, and the long spiral embolus, distinct lateral cymbial tuft, and very small (*minutissima dentiformi*) RTA of the pedipalp.



Figure 4. Pedipalps associated with three male specimens labeled *Thyene crudelis* from the Peckham Collection (1-3 & 5-6, 8-10, 11, 12; MCZ:IZ:20956), with the Peckhams' published drawings of a left pedipalp (4) and tibia with small apophysis (7). Two of these pedipalps (1-3 & 5-6, 8-10) were loose in the specimen vial and almost all appendages of the three specimens were detached. However both pedipalps (11-12) were still attached to male #3 (see Figure 2:5-7). In each specimen the RTA, if visible, was very small and hidden behind the coils of the embolus (3, arrow, corresponding to 4).

The identify of the female *Thyene coccineovittata* is far less certain. The description of salticid species has often been troubled by the erroneous association (or lack thereof) of dimorphic males and females, and there is no consensus on how this should be decided in the absence of solid evidence from the field (Edwards 2014). As noted above, the female described by Berland & Millot (1941) looks like the *Thyene* cf. *pulchra* that we previously reported from Brazil (Mariante & Hill 2018) in dorsal view, but their drawing of the epigynum does not agree with that species. Their dorsal view of the female is, however, compatible with Simon's brief description of the female *H. coccineovittatus*. Berland & Millot also synonymized the female (but not the male) *T. ogdeni* with *T. coccineovittata*. In the next section we will discuss why we think that the latter synonymy is not valid.

♂♀ *Thyene Ogdenii* Peckham & Peckham 1903

The Peckhams (1903) did not report the number of males of this species that they examined, but it is quite possible that their description of the male combines characters from two different species. Only two male *Thyene Ogdenii* (now *T. ogdeni*) were found in the Peckham Collection, both from Mashonaland, Zimbabwe (MCZ:IZ:151907). The first (Figure 5) has rows of dark spots on the dorsal opisthosoma and was apparently the basis for the Peckhams' figures of this species. The pedipalp has a 2-3 coil embolus and a relatively long RTA with a single serration on the distal margin. A single, relatively small tooth is present along the posterior fang groove.

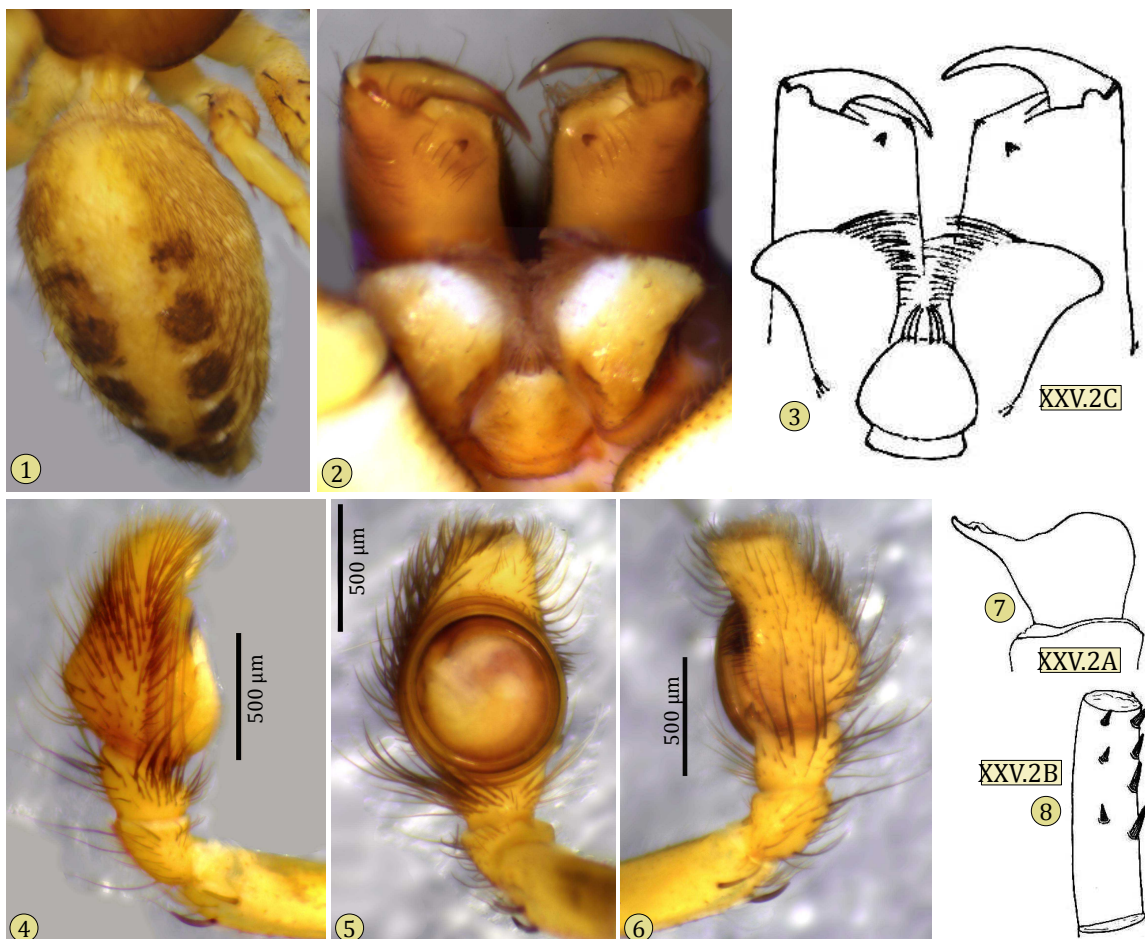


Figure 5. First male *Thyene ogdeni* from the Peckham Collection (1-2; 4-6; MCZ:IZ:151907), with drawings (Peckham & Peckham 1903) that appear to represent this specimen (3, 7-8). 4-6, Mirror images of right pedipalp. 7, Tibia of pedipalp showing long, serrated RTA. 8, Underside of Tibia I.

A second male specimen in the same container (Figure 6) may represent a different species, corresponding to the text description that agrees with *Thyene crudelis* (= *T. coccineovittata*), but not the published figures. This male has a pedipalp with a shorter RTA and 4-5 coils of the embolus, and the pattern on the dorsal opisthosoma is altogether different from that of the first male. The first male agrees with the recent description of *T. ogdeni* by Wesołowska & Haddad (2009). The second male, and the published text of the Peckhams' description, could be excluded from the description of that species.

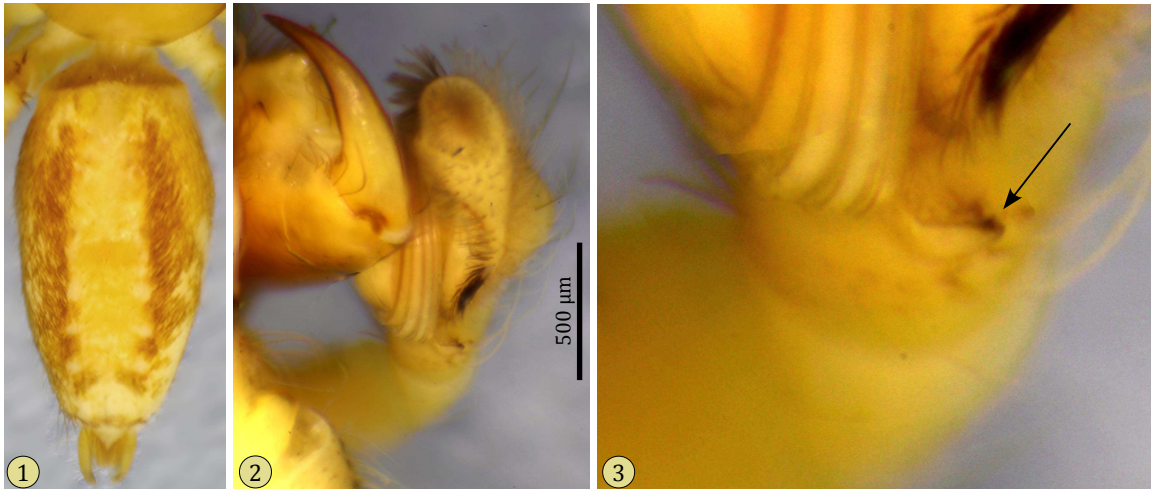


Figure 6. Second male "*Thyene ogdeni*" from the Peckham Collection (MCZ:IZ:151907). The appearance of the dorsal opisthosoma, the relatively small RTA, and the many-coiled embolus suggest that this may be a *T. crudelis* (= *T. coccineovittata*). **1**, Dorsal opisthosoma showing light central band and pigmented lateral margins. **2**, Mirror-image of right pedipalp and chelicera. This was the only pedipalp remaining with this specimen. **3**, Detail showing small RTA (arrow).

There are 19 specimens of the female *Thyene ogdeni* in the Peckham collection (Table 2; Figures 7-8), and these are all similar, with a pigmented band, interrupted by several pairs of light spots toward the rear, on either side of a light middorsal opisthosomal band. The epigynum is lightly sclerotized except for a variably sclerotized, anterior ovoid fossa (Figure 8). When compared with *T. pulchra* (see below), the epigynum of *T. ogdeni* has much heavier sclerotization of the fossa and plate margins. The Peckhams (1903) provided only a brief and insufficient description of these females, but based on specimens in the Peckham Collection, Wesołowska & Haddad (2009) should be taken as the reference description for *both* males and females of this species. Lessert (1925) also described both sexes of *T. ogdeni* in a manner that agreed with specimens in the Peckham collection. He supplied a useful description of the epigynum of this species (here translated from the original French): *Epigynum a testaceous plate, rounded, slightly indented at the back in the middle of the posterior border, furnished with a more or less uniformly rounded and roughened brown interior plate, finely rimmed, separated from the posterior border by an interval equal to or a little larger than its diameter, corresponding exactly to Figure 2D of Peckham*. Apparently the sclerotized rim encircling the larger epigynal plate, now evident in preserved specimens from the Peckham Collection (Figure 8), was not visible some 116 years ago when these were examined by the Peckhams.

Thus the synonymy of the female *T. ogdeni* (as described by the Peckhams) with *T. coccineovittata*, proposed by Berland & Millot (1941), cannot be supported.

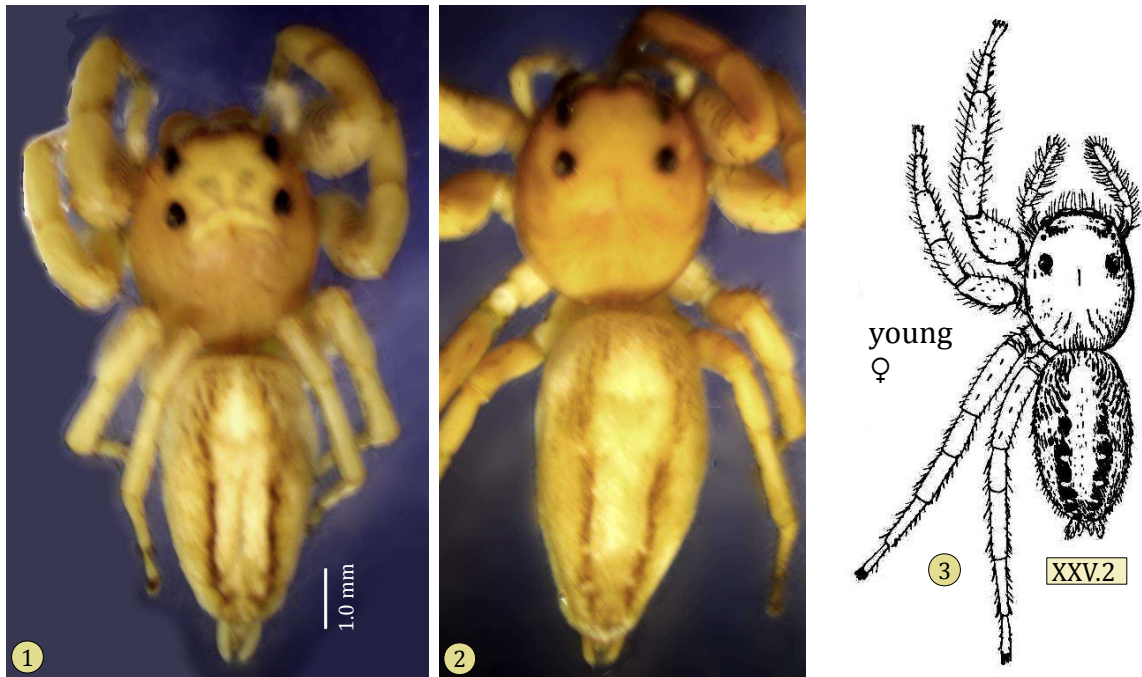


Figure 7. Female *Thyene ogdeni* from the Peckham Collection showing the darker stripes with paired white spots toward the rear on either side of the light middorsal band of the dorsal opisthosoma. **1**, Female from vial labeled MCZ:IZ:151900 (Durban). **2**, Female from vial labeled MCZ:IZ:151907 (Mashonaland). **3**, Drawing of a young female by Peckham & Peckham (1902).

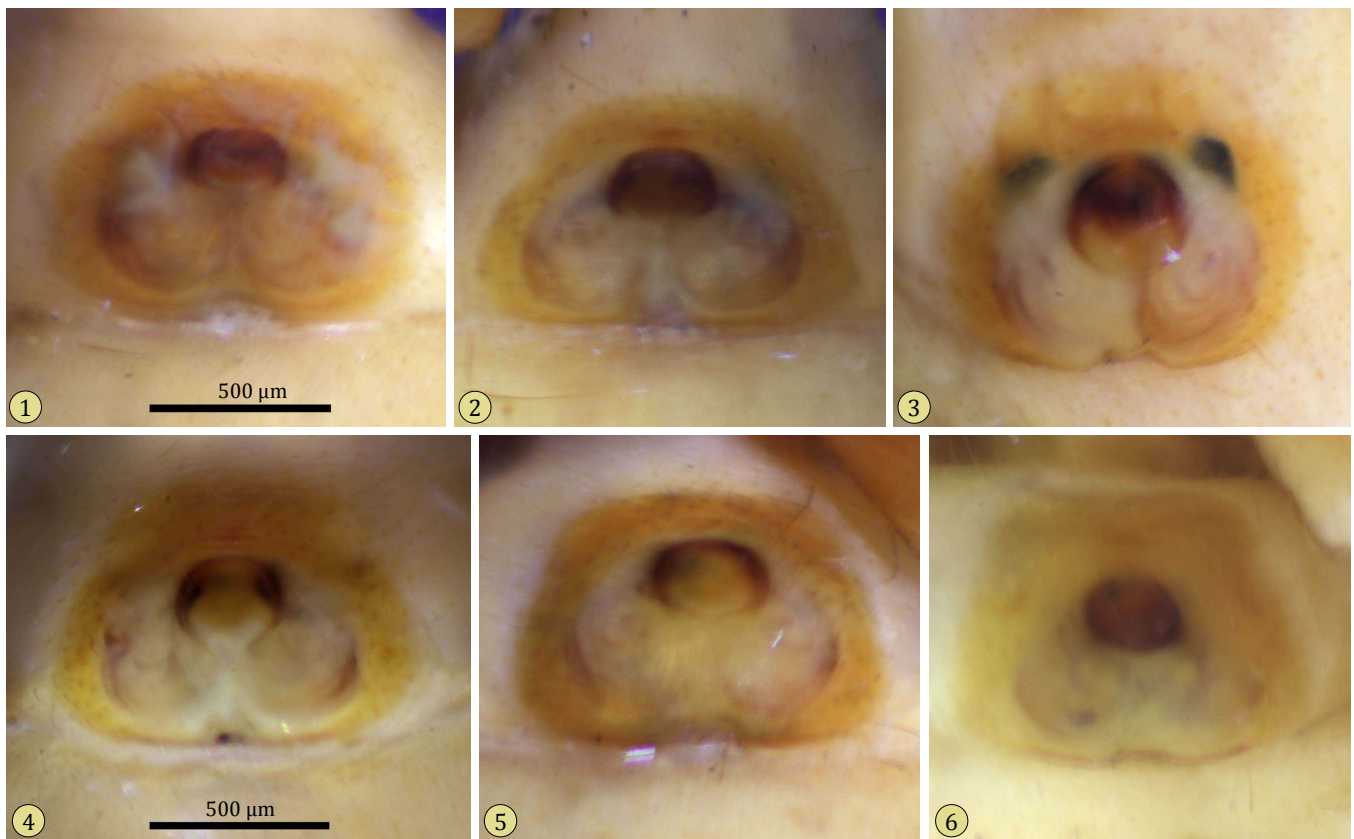


Figure 8 (continued on next page). Ventral view of the epigynum of *Thyene ogdeni* in the Peckham collection (anterior at top of page). **1-8**, Females from Durban (MCZ:IZ:151903). **9**, Female from Mashonaland (MCZ:IZ:151907). **10-17**, Females from Durban (MCZ:IZ:151900). **18**, Line drawing of the epigynum from Peckham & Peckham (1903, pl. 25, fig. 2D).

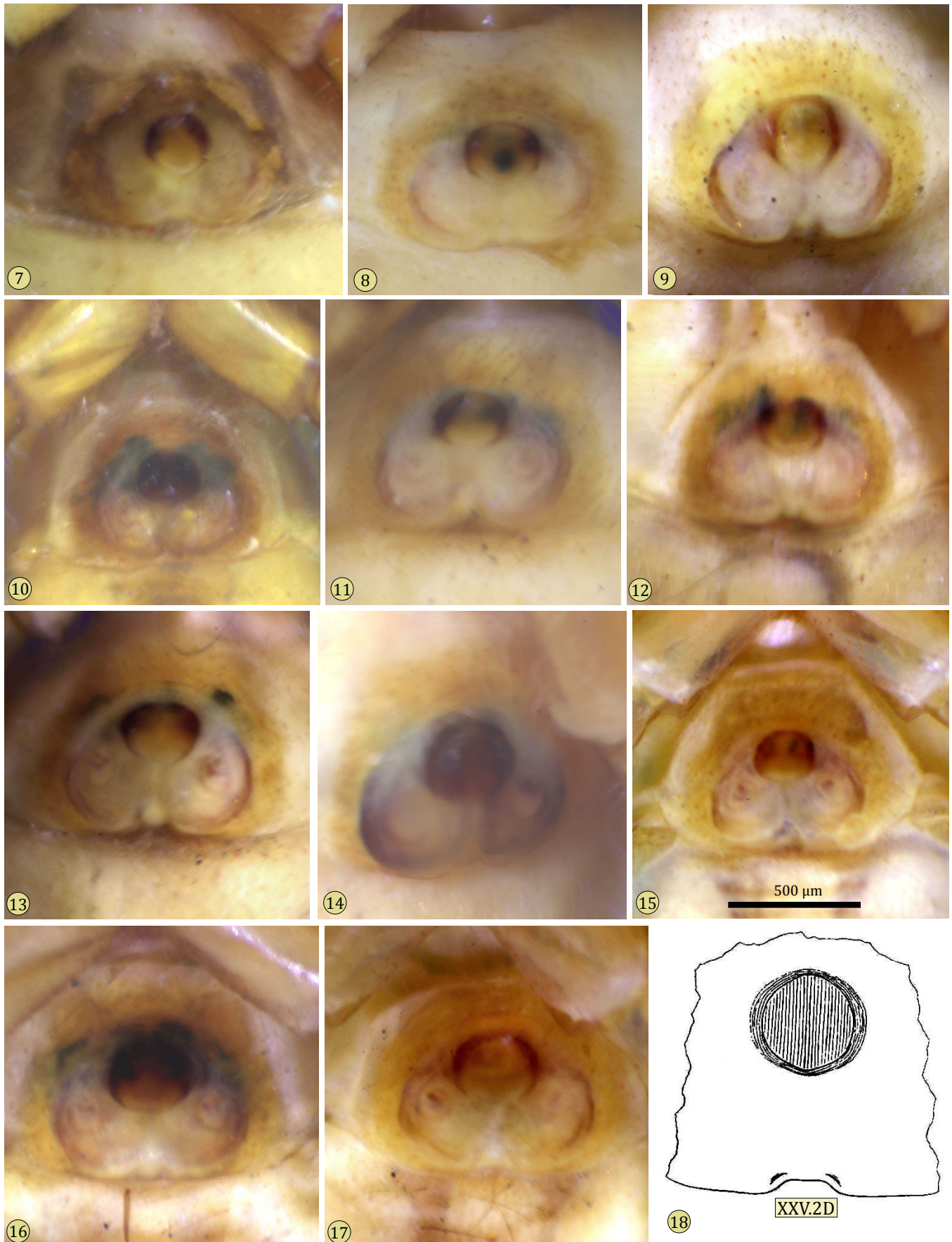


Figure 8 (continued from previous page). Ventral view of the epigynum of *Thyene ogdeni* in the Peckham collection. Sclerotization of the rim of the plate may not have been visible in these specimens when the Peckhams viewed them.

♀ *Thyene pulchra* Peckham & Peckham 1903

There are two vials (MCZ:IZ:22787: 6 females, labeled as the type, and MCZ:IZ:151905: 2 females and 2 penultimate males, all from Durban) representing *Thyene pulchra* in the Peckham Collection (Figures 9-10). In their description the Peckhams (1903) listed only 5 females from Durban. Although the dorsal view of the female *Thyene coccineovittata* drawn by Berland & Millot (1941; Figure 1:71B) agrees with the Peckhams description of the female *T. pulchra*, to date this species has maintained a separate identity. Our female *Thyene* cf. *pulchra* from Brazil (Mariante & Hill 2018; to be updated in the near future) also agrees in general appearance with the original description of this species by the Peckhams as well as the more recent description by Wesołowska & Haddad (2009).

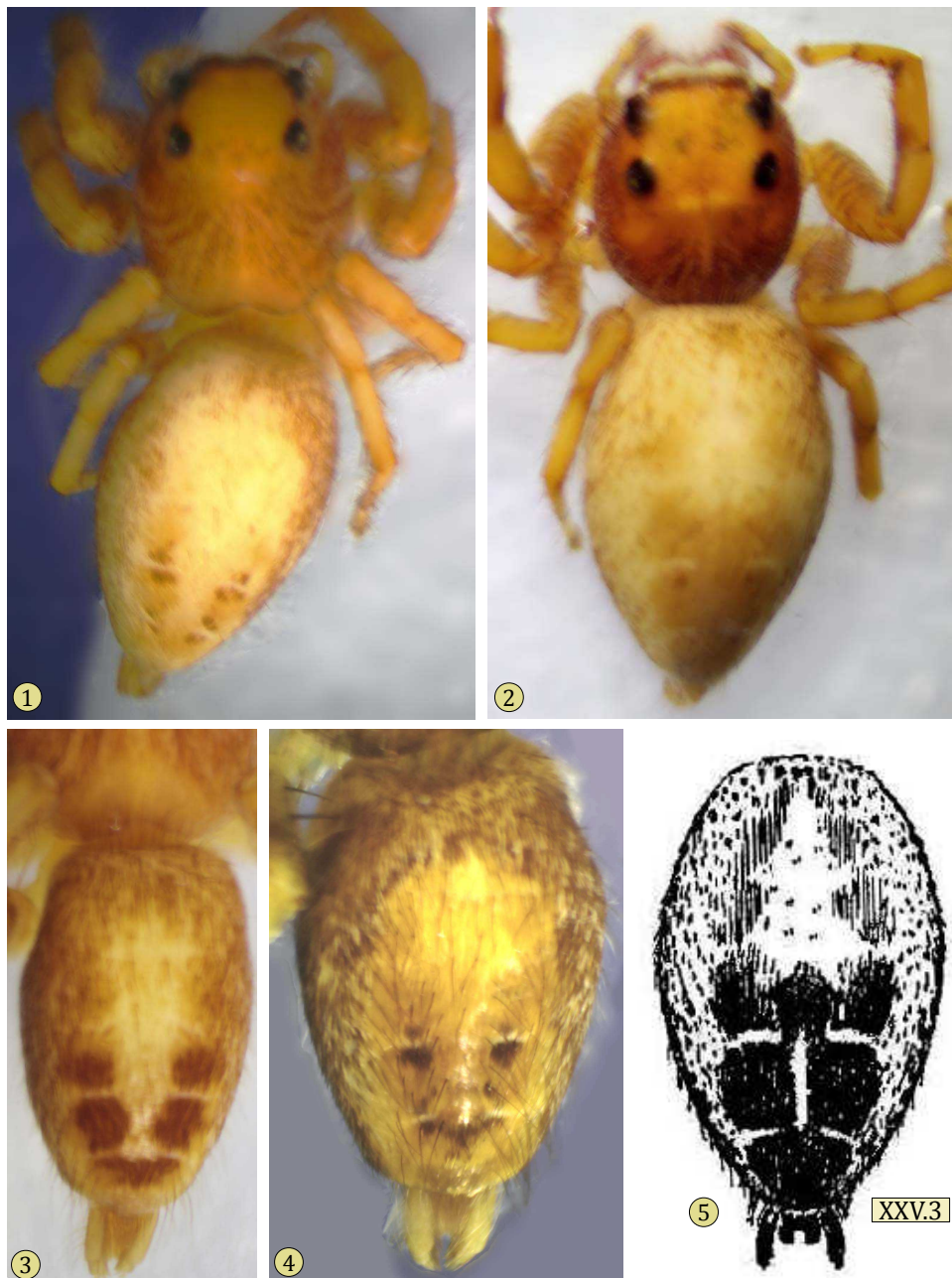


Figure 9. Dorsal opisthosoma of the female *Thyene pulchra*. 1-3, Syntypes from Durban (MCZ:IZ: 22787). 4, Another female from Durban (MCZ:IZ:151905). 5, Drawing by Peckham & Peckham (1903, pl. XXV, fig. 3).

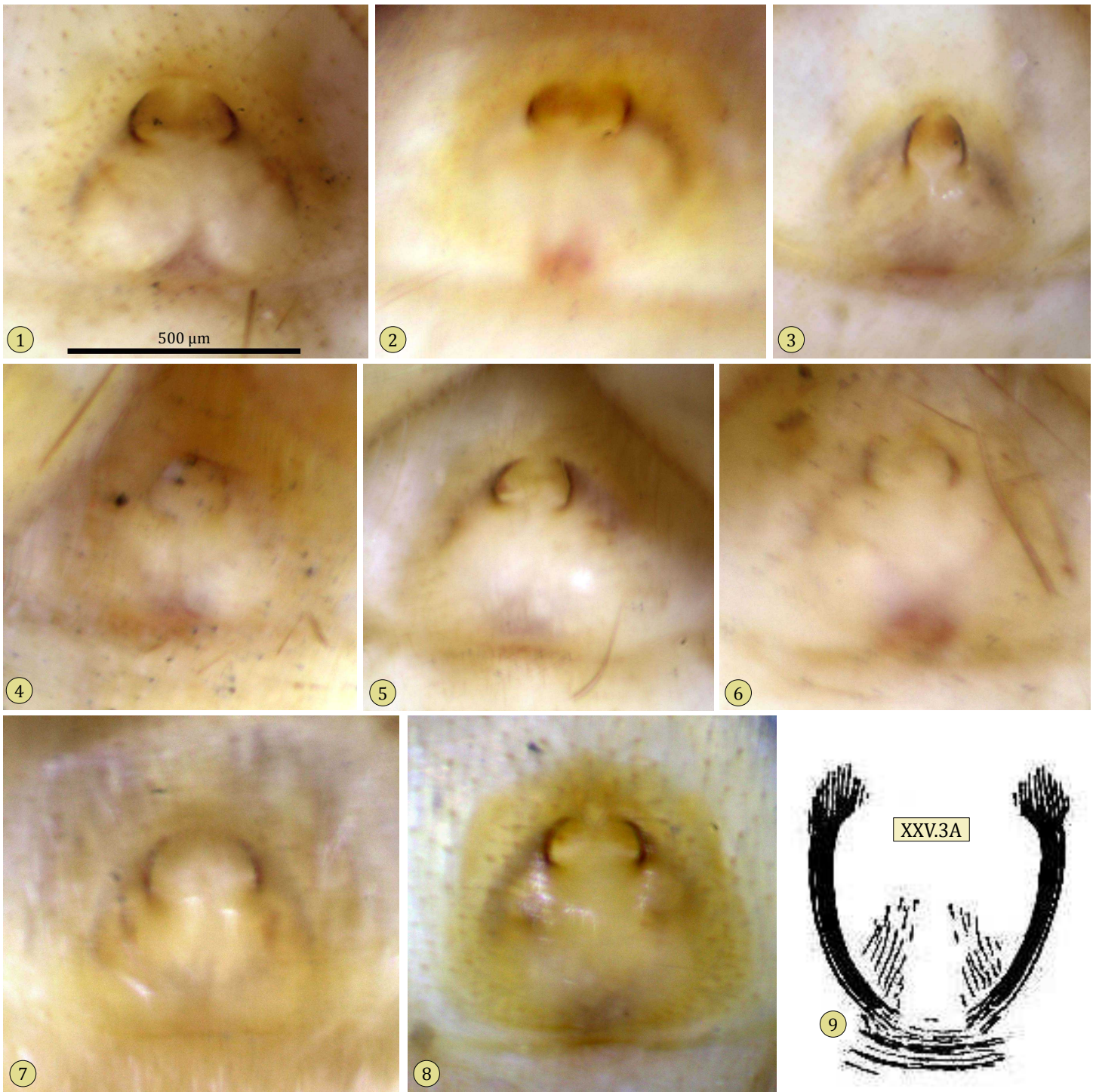


Figure 10. Ventral view of epigyna of female *Thyene pulchra* (anterior toward the top of the page). **1-6**, All six syntypes from the Peckham Collection (MCZ:IZ:22787). **7-8**, Two additional females from the Peckham Collection (MCZ:IZ:151905). **9**, Drawing of the epigynum published by the Peckhams (1903, pl. XXV, fig. 3A). This compares with (3), with the anterior direction toward the bottom of the page.

The dark, paired spots of the posterodorsal opisthosoma of this species are faded but still visible in the older specimens (Figure 9). The epigynum (Figure 10) is very lightly sclerotized, and in recent specimens (Wesołowska & Haddad 2009) only the "parentheses" situated toward the anterior end of the epigynal plate are readily visible from the exterior. Sclerotization of these structures is much lighter than that seen in the female *T. ogdeni* (Figure 8). The Peckhams' drawing of the epigynum of *T. pulchra* (Figure 10:9) is confusing, but can best be interpreted as a sketch of the sclerotized "parentheses" of the syntype shown in Figure 10:3, with the anterior end drawn at the bottom of the figure. Presently the best reference description for the female *T. pulchra* (male not known) can be found in Wesołowska & Haddad (2009).

Acknowledgments

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