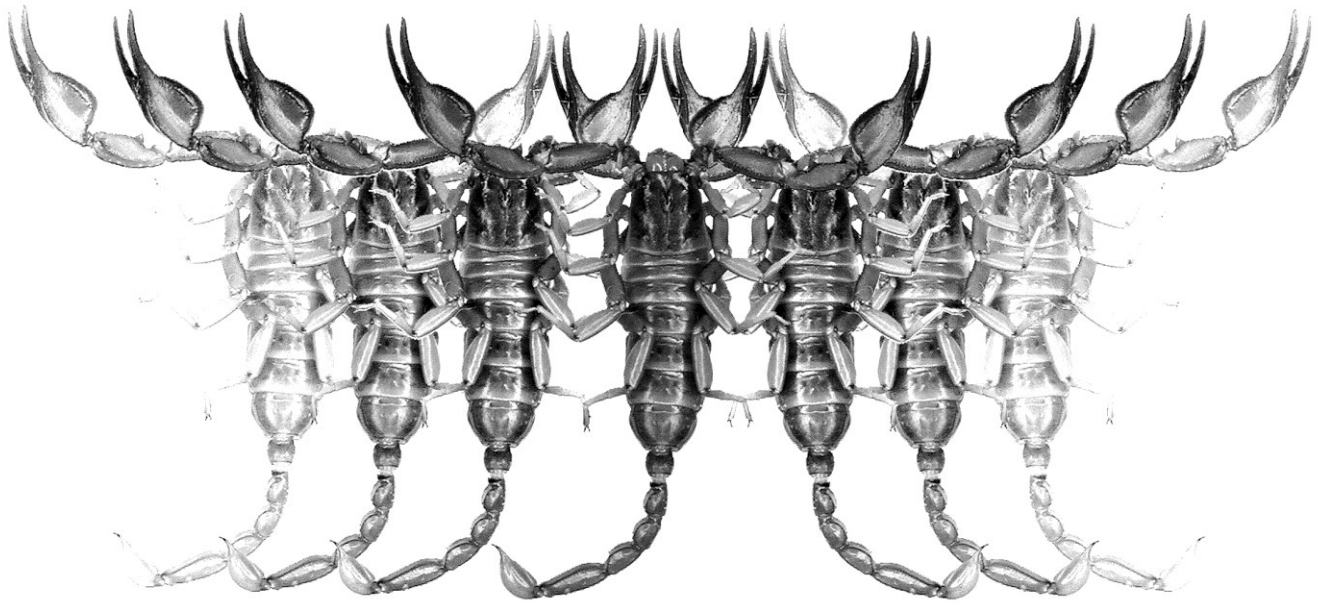


Euscorpius

Occasional Publications in Scorpiology



Pseudouroctonus peccatum Tate et al., 2013,
Rediscovered

Richard F. Ayrey

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Pseudouroctonus peccatum Tate et al., 2013, Rediscovered

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Summary

Shortly after the discovery of *Pseudouroctonus peccatum* Tate, Riddle, Soleglad et Graham, 2013 (Scorpiones: Vaejovidae) there was a large wildfire in the Spring Mountains of Nevada. At the time the species description was published, it was noted that the only known population of this species may have been extirpated by the fire and subsequent flooding of the type locality habitat (Tate et al. 2013). Today it is certain that the species has survived after the collection of 12 new specimens. Additional data on males are also presented.

Introduction

“Unfortunately, forest fires ravaged the type locality shortly after we collected the type series and surveys in other areas of the mountains were unsuccessful.” (Tate et al., 2013). This statement in the original publication where *Pseudouroctonus peccatum* (Scorpiones: Vaejovidae) was described spurred the author to visit the type locality to determine if there were any specimens to be found. None of the other recently described “sky island” scorpion species, including two new *Pseudouroctonus* from Arizona, *P. santarita* Ayrey et Soleglad, 2015 and *P. kremani* Ayrey et Soleglad, 2015, are thought to be in immediate danger of extirpation. The results of four field trips to the Spring Mountains are presented below.

Materials and Methods

Measurements are as described in Stahnke (1971).

Abbreviations

RFA, personal collection of Richard F. Ayrey, Flagstaff, Arizona, USA.

Material examined

Pseudouroctonus peccatum (12 specimens)

Kyle Canyon, Spring Mountains, Clark County, Nevada, USA, 24 September 2014, leg. R. F. Ayrey, 2 ♀, 3 ♂ (RA1047, RA1049, RA1145, RA1146, RA1048, RFA); 14 June 2015, leg. R. F. Ayrey, 2 ♂ (RA1198, RA1199,

RFA); 12 September 2015, leg. R. F. Ayrey, 4 ♀, 1 ♂ (RA2177, RA2178, RA2179, RA2180, RA2181, RFA).

Distribution. Known only from the type locality: Kyle Canyon, Spring Mountains, Clark County, Nevada, USA; elevation of 2,103 m asl.

Discussion

The authors of the *Pseudouroctonus peccatum* species description stated, “Since the population at the type locality may have been extirpated during recent fires...” (Tate et al., 2013). Since the type locality had been severely damaged with fire and flood debris, the author decided to make several field trips to the Spring Mountains to look for surviving specimens. On the first trip we observed that the habitat in the type locality, 36.2666°N, 115.5988°W, had indeed been severely damaged (see Figure 4). The ground under the tree depicted in the original publication (see Tate et al., 2013, figure 18) was covered with fire and flood debris to a depth of approximately one meter. It appears that the microhabitat where the original specimens were collected is no longer there. The surrounding oak trees were burned to ground level and the Pinyon Pine trees were damaged. Any and all grasses and forbs at the site are gone (see Figure 4).

Together with my wife Melinda DeBoer-Ayrey, we have searched in other similar habitats in the Spring Mountains. No *Pseudouroctonus peccatum* were observed. Numerous *Paruroctonus boreus* (Girard, 1854) were found near the type locality and in many other parts of Kyle Canyon. During a second unsuccessful field trip, Melinda suggested we go back to the type



Figures 1–2: *Pseudouroctonus peccatum* 1. Topotype male from Kyle Canyon, Spring Mountains, Nevada in life, six days after final molt. 2. Juvenile male in life.



Figure 3: *Pseudouroctonus peccatum* male the day after molting.

locality and search again. Five *Pseudouroctonus peccatum* were observed that afternoon and evening, two females and three males. On the third field trip, two males were found, and on a fourth and final field trip, four females and one male were found. All of the specimens from the first successful trip were juveniles. Both specimens found on the next trip were also juveniles. On the last trip, one male specimen that appeared to have recently molted showed some change to adult coloration. Based on our limited searching, it appears that the adults of *P. peccatum* may have been killed or washed away in the flood that followed the fire. The presence of juveniles is probably only due to early stage instars surviving in the ground litter at the site.

Since there was only one male in the type series, I have included below additional information about the males of *Pseudouroctonus peccatum* Tate et al., 2013.

Pectines. Pectinal tooth counts for females including the four type specimens and additional six topotype specimens (12–13) [1], (13–13) [3], (14–13) [1], (14–14) [4], (15–14) [1], mean = 13.55 [20], standard deviation = 0.6863. Pectinal tooth counts for males include the paratype male and additional six topotype specimens (14–15) [1], (15–14) [4], (15–15) [2], mean = 14.643 [14], standard deviation = 0.4972.

Total Length of Males. Total lengths of the two largest males collected were measured, the remaining being earlier stage juveniles. Specimen RA1198 was 31.43 mm and RA1048 is 34.32 mm. These values are close to the paratype male length provided in the species description, MRG1252 was 36.12 mm. They also imply that the largest of the males recently collected is still not an adult two years after the fire and flood.

Illustrations. The male pictured in Figures 1–3 was collected 14 June 2015. Figure 2, taken shortly after it was collected, shows it as a typical juvenile. Figure 3 shows it the day after it shed and Figure 1 a week later, when it is beginning to change to adult coloration.

Conclusions

Based on female specimen RA2180 with pectinal tooth counts of 15–14, it is no longer applicable to separate males and females by “the larger pectinal tooth counts in the male” (Tate et al., 2013). They can still be separated by “the completely separated genital operculum in the male and the presence of genital papillae” (Tate et al., 2013). Males can also be separated from females by the sensorial area of the pectinal teeth of



Figures 4–5: *Pseudouroctonus peccatum* habitat. **4.** Accumulated debris at the base of the tree from the fire and subsequent flood at the type locality. **5.** New growth of oak trees.

males being longer than their basal portion without sensory pegs. On the females the sensorial area is the same size or shorter.

At this time it seems that the original population is recovering and definitely not extirpated. The habitat is beginning to recover as evidenced by the oak trees that were burned in the fire starting to come back. They are now about one meter tall (see Figure 5). After another year or two, adult males and adult, gravid females will hopefully be observed once again in Kyle Canyon.

Acknowledgments

I would like to thank my wife Melinda DeBoer-Ayrey for joining me on four field trips to the Spring Mountains and two anonymous reviewers.

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