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OBSERVATION OF INTRADERMAL TROMBICULID MITE LARVAE IN TWO SPECIES OF SALAMANDERS IN VIRGINIA – Chigger parasitism of amphibians in Virginia has only twice been reported in the literature (Loomis, 1956; Mitchell, 2004). The list of species recorded by these authors as infected by chigger larvae is short and includes *Rana palustris* (Pickerel Frog), *Rana clamitans* (Green Frog), and *Eurycea cirrigera* (Southern Two-lined Salamander). Herein, we report another species of amphibian infected with chiggers and extend the known range of chigger parasitism for *E. cirrigera* in Virginia.

On 6 May 2006, we found one adult *Desmognathus fuscus* (Northern Dusky Salamander) under a rock while surveying a stream in White Oak Mountain Wildlife Management Area, Pittsylvania County, Virginia (36° 46' 39" N, 79° 20' 02" W). Upon inspection, JG observed numerous red pustules covering the surface of the animal's feet. We also found one each *Eurycea guttolineata* (Three-lined Salamander) and *E. cirrigera* but they were not infected with larval chiggers. We revisited the stream on 29 May 2006 for a more extensive survey and found 10 total salamanders (3 *E. cirrigera*, 2 *E. guttolineata*, and 5 *D. fuscus*). Two of the *D. fuscus* had red pustules and were returned to the lab for further study.

One of the infected salamanders measured 110 mm total length and 56 mm snout-vent length (SVL, measured to the posterior angle of vent). A total of four red pustules were observed on this animal. The pustules had an average diameter of 1.8 mm with the central red portion of the pustule measuring 1.0 mm. JG cut several pustules open and inspected the larvae under a microscope. JG took digital pictures of the larvae and preserved several in alcohol for future species identification and study. The pustules were located as follows: one on the dorsal side of the right front foot just proximal to the third digit, one on the dorsal surface of the left hind thigh, one on the dorsal distal portion of the left hind leg, and one on the dorsal surface of the right hind foot just inferior to the second digit.

The second infected salamander measured 111 mm total length and 59 mm SVL. We counted a total of three chiggers on this animal. Locations included the ventral surface of the abdomen just lateral to the anterior angle of the vent, one was lodged in skin between the fused second and third digits, and in the webbing between the third and fourth digits. We hypothesized that the chigger infection caused the second and third digits to fuse together. The salamander found infected on 6 May also had malformed

digits around the infected area. Including the observations of 6 and 29 May, 13 salamanders were observed with three containing mite infections. Three of six *D. fuscus* salamanders were infected. This is the first published report of chigger parasitism for this species in Virginia.

On 19 March 1997 one of JG's students brought in an *E. cirrigera* containing six red pustules. At that time, observations were recorded in a field notebook and photographs taken, but JG did not know the cause of infection. Based on recent inspection of one of the photos, we have concluded that this salamander had the same red pustules as the salamanders found in 2006. This is only the second record of larval chigger infection for this species in Virginia. This salamander was found in Rocky Ford Creek at County Route 603 in Powhatan County, Virginia (37° 29' 30" N, 77° 52' 28" W).

The next wave of research in Virginia herpetology should be the inspection of individual amphibians and reptiles for diseases and malformations. As amateurs and professionals begin to observe more closely the animals they capture, our knowledge of parasites and disease will grow exponentially. More expertise and training in the areas of herpetology and pathology are needed to continue increasing our understanding of this group.

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