

Shorter Contributions

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Two Significant Cases of Insects Biting Humans

Ralph P. Eckerlin

Mathematics, Science & Engineering Division
Northern Virginia Community College
Annandale, Virginia 22003
reckerlin@nvcc.edu

ABSTRACT

Bites of humans by the squirrel flea, *Orchopeas howardi*, have rarely been recorded. An occurrence is documented from Maryland that resulted in a case of dermatitis in a boy. The Azalea Plant Bug, *Rhinocapsus vanduzeei*, is a fairly well known biter of humans. A painful bite is recorded from Virginia and the distribution of the bug in Virginia is described.

Keywords: Azalea Plant Bug, flea, Heteroptera, *Orchopeas howardi*, Maryland, Siphonaptera, Virginia.

On 26 January 1990, a 10-year old boy presented with symptoms of a severe flea bite allergy at the Georgetown University Hospital in Washington, D.C. Two fleas taken from the boy's body were brought to the clinic by his mother. In the absence of anyone at the hospital able to identify the fleas they were brought to me. I identified them as two females of *Orchopeas howardi* (Baker, 1895), a common species of ceratophyllid flea on arboreal squirrels in eastern North America (Traub et al., 1983) including Maryland (Eckerlin, 2011). The specimens were mounted on slides and are kept as number M-Hs¹-90 in my collection.

In a follow-up telephone conversation with the boy's mother I learned that Eastern Gray Squirrels, *Sciurus carolinensis* Gmelin, 1788, were living in the crawl space above the apartment in Silver Spring, Montgomery County, Maryland where the boy lived. Apparently, fleas from the squirrels were dropping through the ceiling into the apartment below. The young boy had experienced many bites and had developed a flea bite allergy.

What is interesting about this case is the rarity of reports of *O. howardi* biting humans. The only published report of which I am aware is that of Benton (1980), who noted an outbreak of this flea species at a mink farm in Virginia in which "Persons handling the mink were seriously affected." Lewis (2000) states that "on more

than one occasion this species has been found on humans, though usually singly". Corpus & Corpus (1991) stated that flea outbreaks with *Ctenocephalides felis* (Bouché, 1835), the cat flea, are rarely reported in the literature although entomologists were aware of many anecdotal accounts. I am aware of anecdotal accounts of humans bitten by squirrel fleas (possibly *O. howardi*) related to me by people in Connecticut, New Jersey, and Virginia, but no flea specimens were provided.

What is significant about this case is that *Orchopeas howardi* has been found infected with the rickettsial organism, *Rickettsia prowazekii*, which is the causative agent of sylvatic epidemic typhus. Southern Flying Squirrels, *Glaucomys volans* (Linnaeus, 1758), are reservoir hosts for this rickettsial organism and *O. howardi* has been found to be infected with *R. prowazekii* (Durdin & Hinkle, 2009). Human cases with sylvatic epidemic typhus have been reported in Georgia, Tennessee, Pennsylvania, and Massachusetts (McDade et al., 1980) and North Carolina, Virginia, and West Virginia (Duma et al., 1981). The Virginia cases were from residents in the counties of Halifax and Lee, and the City of Richmond. Additional human cases of sylvatic epidemic typhus have been reported from the states of Arkansas, California, Indiana, Maryland, and New York (McDade, 1987). Detailed information on the nature of sylvatic epidemic typhus disease is given by Reynolds et al. (2003) based on two additional cases from Georgia and West Virginia. What the role is of *O. howardi* in the maintenance and transmission of sylvatic epidemic typhus is as yet unknown. Thus, it is significant to note that *O. howardi* does indeed bite and feed on humans.

Another example of insects biting humans and inflicting painful bites occurred in Virginia. Shortly after planting two varieties of azalea bushes in front of their home in Annandale, Fairfax County, VA, the couple living there began to experience numerous painful bites from insects they called "redheads". Specimens were submitted to me and were identified by Thomas Henry of the United States Department of Agriculture (ARS, SEL) as *Rhinocapsus vanduzeei* Uhler, 1890, the Azalea Plant Bug (Order Hemiptera: Family Miridae).

The year following the planting of the azalea bushes, bites from the mirid bug were experienced beginning in May and continuing through July. The bite was described by one of the homeowners as a sharp, immediate pain resulting in a reddened wheal at the bite site. For several days later, the bite would itch and beginning on day 3 through day 6 would weep clear fluid. The bite site was dry by day 7 and still red until day 10. The bite of *R. vanduzeei* is described by

Wheeler & Herring (1979) as “painful”, “a chigger-like welt”.

The Azalea Plant Bug is common on a number of plant species, primarily members of the Ericaceae, and there are some records of its occurrence in Virginia. The Virginia Museum of Natural History has in its collection specimens of *R. vanduzeei* from the following counties: Caroline, Chesterfield, Floyd, Greensville, Henry, Isle of Wight, Wythe, and the City of Richmond. All specimens were collected between May and July. Two specimens from Martinsville in Henry County were noted by the collector as “biting”. At the National Museum of Natural History, Smithsonian Institution, there are Virginia records from the counties of Arlington and Albemarle. There is an additional record from the City of Alexandria (Bug Guide, 2018). Specimens in my possession from Annandale have been deposited into the VMNH collection and are the first record from Fairfax County.

There are two species of very similar appearing azalea plant bugs in eastern North America which occur from southern Canada to the Gulf States (Henry & Wheeler, 1988). Knight (1923) discerned the two species in a key as follows: *Rhinocapsus rubricans* (Provancher, 1887) has the second segment of the antenna all black while *R. vanduzeei* has the second antennal segment bicolored yellow and black.

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