Wheeling-Ohio County Health Department

FIRST RECORD OF *TRIATOMA SANGUISUGA* (HEMIPTERA: REDUVIIDAE),

VECTOR OF CHAGAS DISEASE, IN WEST VIRGINIA

Chagas disease, or American trypanosomiasis, is one of the most important arthropod-borne diseases in tropical America. Chagas disease is a zoonotic disease mostly occurring in Mexico and Central and South America but a few indigenous cases have been reported in Texas, Tennessee, Louisiana, and California. At present, the disease affects about 8 million people in Latin America, of whom 30 to 40% either have or will develop serious complications such as cardiomyopathy or digestive megasyndromes (Rossi, Rossi & Marin-Neto, 2010). Chagas disease has both acute and chronic forms, but it is best known for the myocardial damage it causes with cardiac dilation, arrhythmias, and major conduction abnormalities, as well as digestive tract involvement such as megaesophagus and megacolon.

Trypanosoma cruzi, the causative agent of Chagas disease, is transmitted by *kissing bugs* (Hemiptera: Reduviidae: Triatominae). The kissing bugs are so named because most of them are nocturnal species which feed on humans, often biting the faces of their sleeping victims. Infection is not by the salivary secretions associated with the insect bite but by fecal contamination of the bite site. Several species of kissing bugs will attack humans and some are capable of transmitting *Trypanosoma cruzi*; however, only a few species are efficient vectors. Due to its capacity to feed on both humans and Chagas disease competent mammalian reservoirs, association with locally acquired human Chagas disease cases (Dorn et al. 2007), and broad distribution in the southern United States, the bloodsucking conenose, *Triatoma sanguisuga*, (Fig. 1) is considered a kissing bug of public health concern. *Triatoma sanguisuga* has been found in Pennsylvania, Ohio, and Maryland, south to Florida, and west into Arizona (Lent & Wygodzinsky 1979); however, *Triatoma sanguisuga* has never been reported in West Virginia (Fig. 2).

Fig. 1. *Triatoma sanguisuga*

Fig. 2. Estimated U. S. Distribution of *Triatoma sanguisuga* (http://www.cdc.gov/parasites/chagas/gen_info/vectors/t_sanguisuga.html)

A recent perusal through the West Virginia Department of Agriculture Insect Collection uncovered 10 *T. sanguisuga* from West Virginia. *Triatoma sanguisuga* has been collected from at least five West Virginia counties; however, the geographic range may be more extensive (Fig. 3). Based upon the interpretation of 'USA WV Hardy 1 mile S,' the bloodsucking conenose could also have been active in the civil division Hardy County, Hardy Cemetery in Mineral County, the stream 'Hardy Run' in Monroe County, Hardy Union School in Mingo County or the town Hardy in Mercer County. The first West Virginia specimen was collected on April 20, 1969. *Triatoma sanguisuga* was active from late spring (April 20) through early autumn (September 7). Biological notes such as 'in house' and 'killed on bedroom wall' affirm the species' peridomestic habits. And additional observations from the collecting labels, such as 'had bitten human female,' show the species has human feeding tendencies.

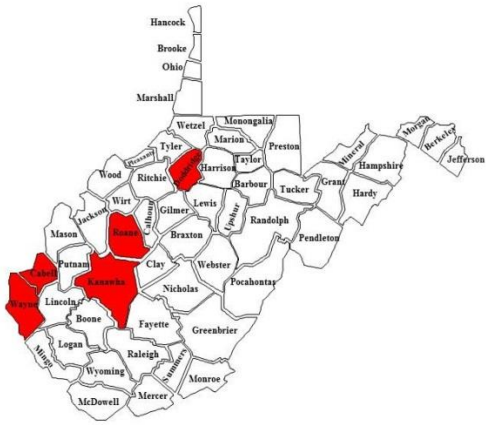

Fig. 3. Distribution of *Triatoma sanguisuga* in West Virginia

Although people with Chagas disease can be found anywhere in the world, vector-borne transmission of the disease is confined to the Americas, particularly rural areas in parts of Mexico, Central America, and South America. Rare cases attributed to vector transmission have been reported in the southern United

States. Typically high incidence of Chagas disease is associated with poor housing construction and close proximity to domestic animals quarters or wildlife habitats. Substandard housing built of mud and roofed with thatch provides cracks and crevices where kissing bugs can hide during the day and feed at night. The low incidence of human Chagas disease in the United States is attributed to the relatively low percentage of infected triatomine bugs and vertebrate hosts, the sylvatic behavior of the bugs, and the time delay between triatomine feeding and defecation (Wood 1951, Lent & Wygodzinsky 1979, Neva 1996). Antitrypanosomal agents, such as benznidazole and nifurtimox, are effective against Chagas disease if applied during the early stages of the disease.

References

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