

Domestic *Triatoma sanguisuga*-Human Exposure in the Coastal Carolina Region

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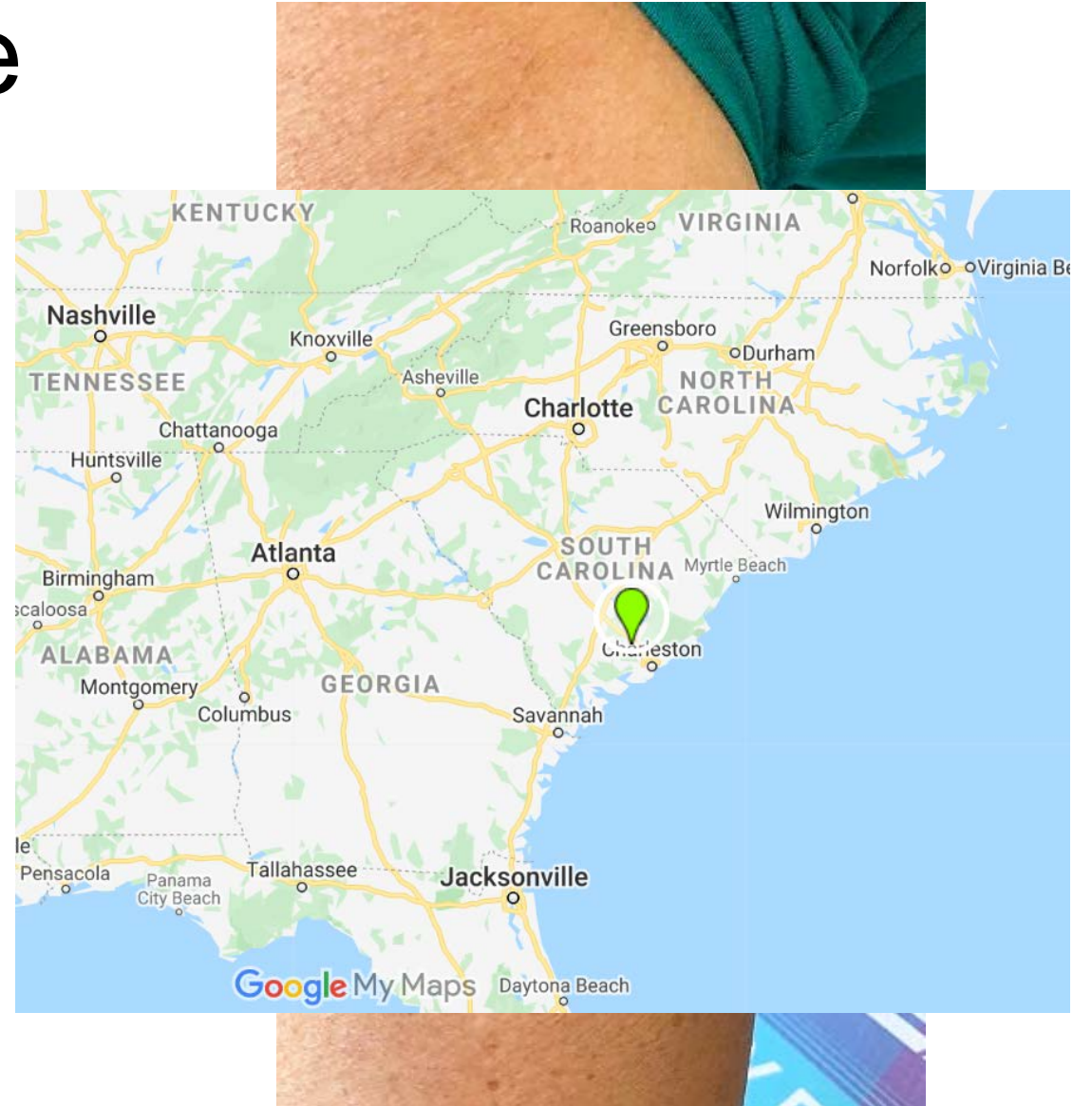


Outline

- Case Report: Exposure
 - Triatomine bite—Summerville, SC
 - USC team brought in for investigation
- Investigation
 - Home assessment
 - Family member testing
 - Triatomine collection and processing
- History of triatomines / *Trypanosoma cruzi* in SC
 - Implications for future

Case Report: Exposure

- June 2019, Summerville, SC
 - 51 year-old Hispanic woman visiting family
 - Originally from Colombia
 - Felt something crawling on arm: 4 bites and triatomine discovered
 - Recognized insect: similar to vectors of Chagas disease from Colombia



Case Report: Exposure

- Collaborative investigation launched
 - USC
 - SC state public health entomologist
 - CDC Division of Parasitic Diseases and Malaria



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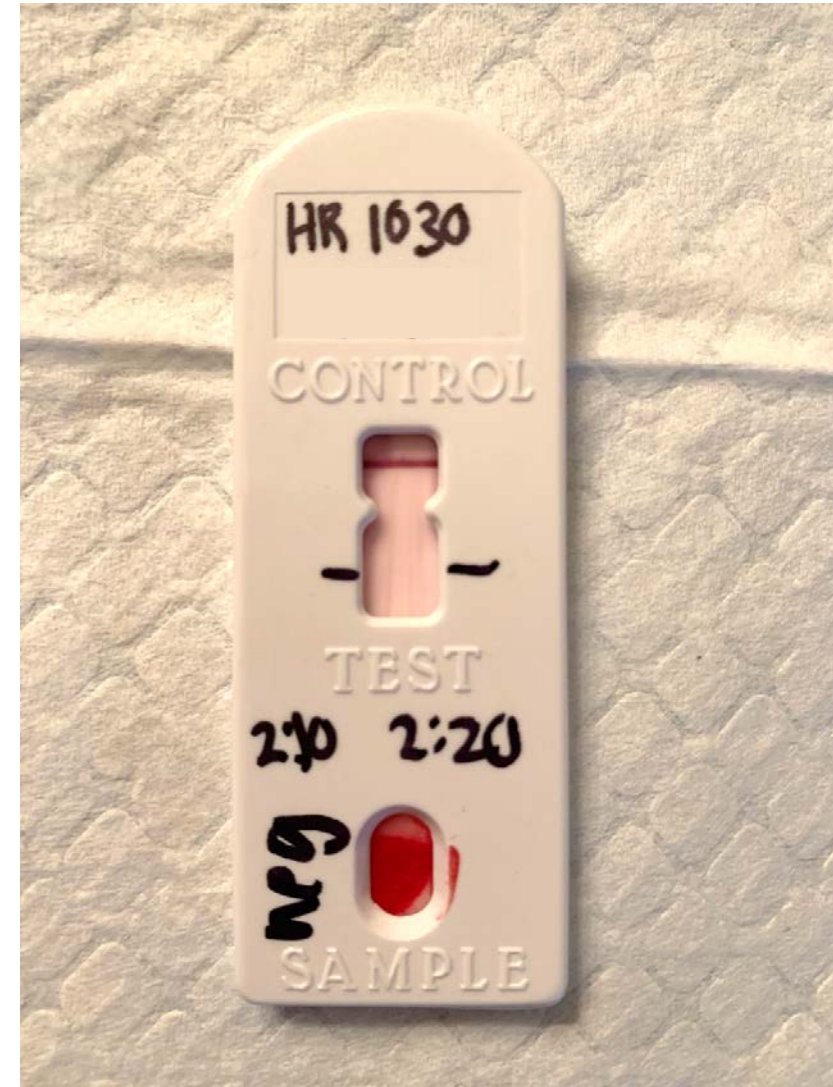
Investigation

- Home assessment
 - Domestic opportunities for triatomine intrusion: low risk
 - Potential triatomine habitats near home
 - Rural environment
 - Lattice perimeter
 - Two large, undisturbed wood piles adjacent to property line
- Additional triatomine surveillance
 - Wood piles
 - UV light trapping (attempted)



Investigation

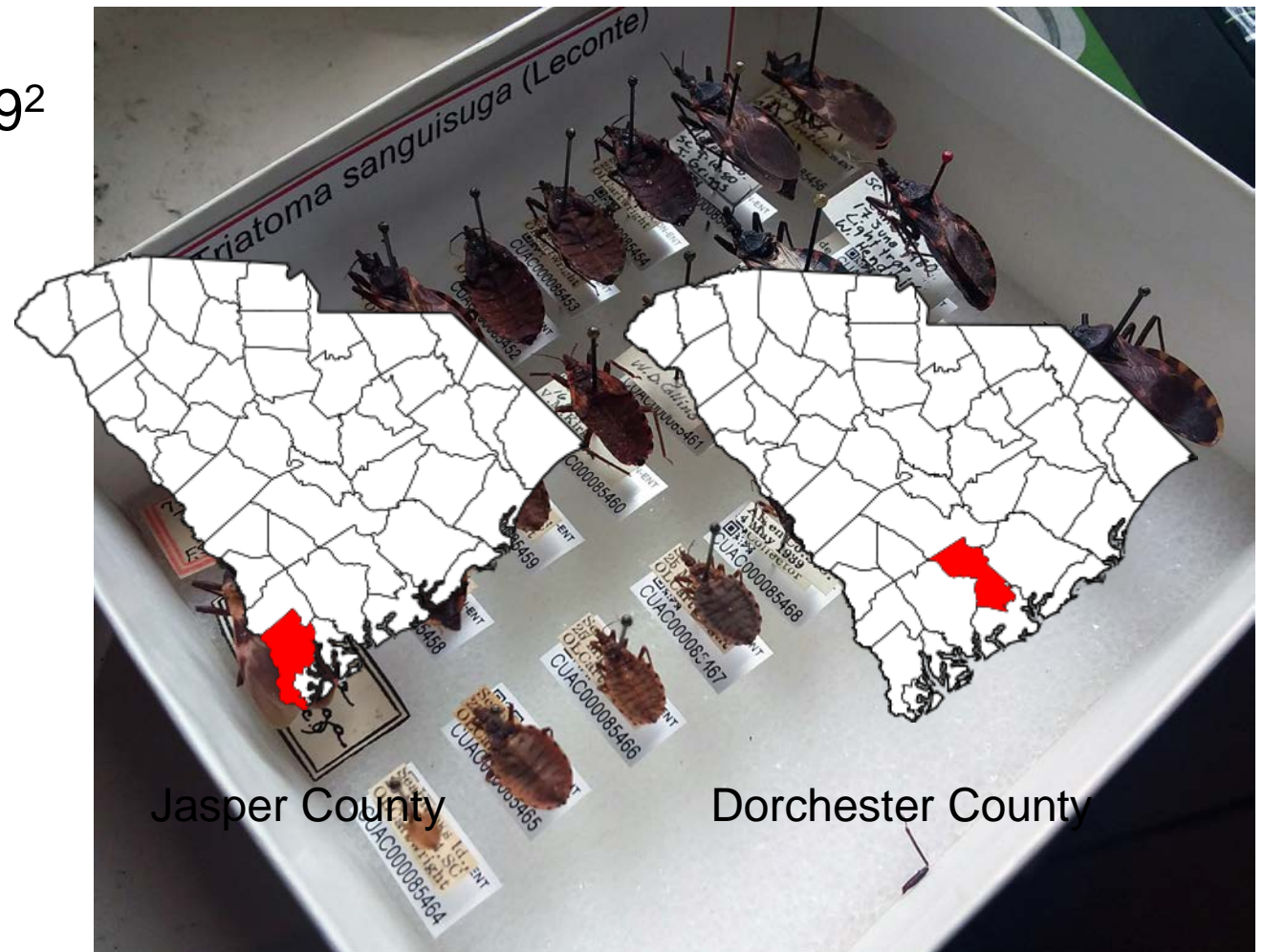
- Family member testing and surveys
 - Chagas STAT-PAK®: all house occupants (n=5) tested negative
 - First triatomine encounter at home
- Triatomine collection and processing
 - Morphologically identified¹:
T. sanguisuga (adult F)
 - PCR (CDC)
 - Negative for *Trypanosoma cruzi* DNA



¹Lent and Wygodzinsky (1979)

History of Triatomines in SC

- *T. sanguisuga* and *T. lecticularia*: published from 'the Carolinas' in 1859²
 - Collected in: GA, NC, and TN³
- Multiple accounts of triatomines collected from homes in SC
 - Human-bite related
 - *T. cruzi* testing never conducted
- Most recent: 3 triatomines submitted from Jasper Co. SC
 - August 2019
 - *T. sanguisuga*
 - Not associated with human bites



²Ryckman and Ryckman (1967), ³Bern et al. (2011)

History of *T. cruzi* in SC

- Sylvatic transmission of *T. cruzi* among reservoir hosts prevalent throughout SC
 - Raccoons⁴
 - Wild canids⁵
- Sylvatic transmission found in neighboring states:
 - GA: raccoons, opossums, striped skunks, grey foxes, coyotes, bobcats
 - NC: raccoons, opossums
 - TN: raccoons, dogs

- Tennessee 1999:
 - **5th autochthonous case of Chagas disease reported in the US⁶**
 - *T. sanguisuga* implicated as vector



⁴Yabsley and Noblet (2002), ⁵Rosypal et al. (2007), ⁶Herwaldt et al. 1999

Implications for the Future

- First published case report of direct *T. sanguisuga* human bite exposure in South Carolina
- Although not *T. cruzi*-positive, this case report is significant
 - Coastal region of SC
 - Increase in reported triatomine exposures
- General lack of knowledge among physicians and residents regarding Chagas disease and triatomines
- Triatomines and Chagas disease should be on the radar for public health and vector control professionals

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