KISSING BUGS OF LOUISIANA

Biology, Identification and Prevention

Header photo by Graham Snodgrass

Kissing bugs are members of the order Hemiptera (subfamily Triatominae, family Reduviidae). Their common name is due to their behavior of biting humans near the mouth. They are also referred to as conenose bugs due to their characteristic cone-shaped head. The kissing bug biting behavior is primarily driven by their attraction to carbon dioxide (CO_2) present in exhaled breath. Kissing bugs are of medical concern due to their ability to vector to humans the parasite *Trypanosoma cruzi*, a protozoan, and the causative agent of Chagas disease. Knowledge of the biology of native kissing bugs, Chagas disease and strategies for management are important in understanding risks to humans and pets in Louisiana.

An adult Eastern conenose bug (*Triatoma sanguisuga* LeConte) extending its proboscis. Photo by Sturgis McKeever, Georgia Southern University, Bugwood.org

***Triatoma yelapensis* eggs. Photo by Cheryl Harleston López Espino, iNaturalist.org, Creative Commons 4.0**

A nymphal Eastern cone-nose bug *(Triatoma sanguisuga* LeConte). Photo by Glenn Caspers, iNaturalist.org, Creative Commons 4.0

Biology and Identification

Like other Hemipterans, kissing bugs undergo incomplete metamorphosis, progressing through egg, nymphal and adult stages. The overall speed of their development cycle is closely tied to exterior temperature, host availability and habitat conditions. Eggs are generally deposited in cracks and crevices in and around human-made structures, although this pattern may not apply to species primarily associated with wild hosts. Eggs differ among species in shape and appearance and may be elongate or oval, shiny or dull white, and laid either singly or in groups. Following oviposition, nymphs will emerge from eggs in as quickly as nine days and as late as 28 days, depending on species and environmental conditions. Nymphs are similar to adults but are smaller and lack wings. Nymphs become progressively larger as they develop

through five distinct stages (instars). A blood meal is required during each stage. Nymphal blood-feeding duration increases with each developmental stage. Feeding times average approximately 10 minutes in the first instar and increase to about 24 minutes by the fifth instar. Depending on the species of kissing bug, the nymphal stage may last from a few months to two years before developing as an adult.

Adult kissing bugs range from 10 to 40 mm in body length depending on the species, with most measuring around 20 mm (Table 1). Adults possess an elongate, protruding head with large eyes and a narrow neck, as well as a long straight needlelike rostrum that is tucked under their flat bodies when not in use. Their abdomens extend beyond the length and width of their wings, revealing colored bands of orange or red and black, which is diagnostic for kissing bugs. Nymphs and adults of both sexes require blood for development and reproduction and are not host-specific. Unlike nymphs however, adults readily leave oviposition sites and disperse into surrounding areas. Adult kissing bugs will occupy nests/dwellings of their vertebrate hosts, i.e. animal burrows, chicken coops, as well as cracks and crevices in other human-made structures.

Table 1. Kissing bug species (Hemiptera: Reduviidae: Triatominae) of southeastern United States.

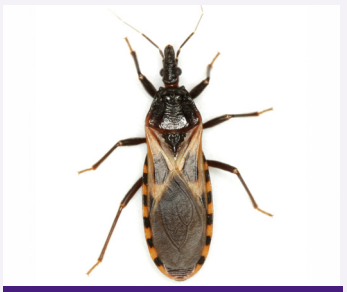
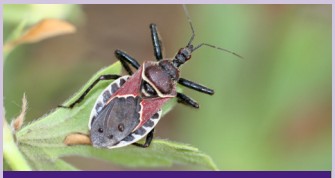
Species	Regional Distribution	Length of Adults	Image
Triatoma lecticularia	Florida, Georgia, North Carolina, South Carolina, Tennessee, Texas	16-23 mm	 Photo by Russel Pfau, iNaturalist.org, Creative Commons 4.0
Triatoma neotomae	Tennessee, Texas	16.5-19.5 mm	 Photo by Mike Quinn, iNaturalist.org, Creative Commons 4.0
Triatoma rubrofasciata	Florida	19.5-25 mm	 Photo by Jacob Chen, iNaturalist.org, Creative Commons 4.0

Table 1. Kissing bug species (Hemiptera: Reduviidae: Triatominae) of southeastern United States.

Species	Regional Distribution	Length of Adults	Image
Triatoma sanguisuga	Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas	15.5-23 mm	 Photo by Jacob Chen, iNaturalist.org, Creative Commons 4.0

The kissing bug subfamily, Triatominae, includes more than 100 species, of which 60% are known carriers of *T. cruzi*. Nearly a dozen species of Triatominae can be found within the United States, predominately in the southwest. Once primarily associated with wild mammal hosts, kissing bugs are now increasingly found in domestic and peridomestic environments. *Triatoma sanguisuga* and *Triatoma protracta* are the most common North American species found in buildings. Several insects are often misidentified as kissing bugs (Table 2). Assassin bugs, which are members of the same family, Reduviidae, are beneficial predatory insects and should be conserved due to their value as biocontrol agents. Assassin bugs are commonly encountered outdoors during the day, whereas kissing bugs can be found both outdoors and indoors and are mainly nocturnal.

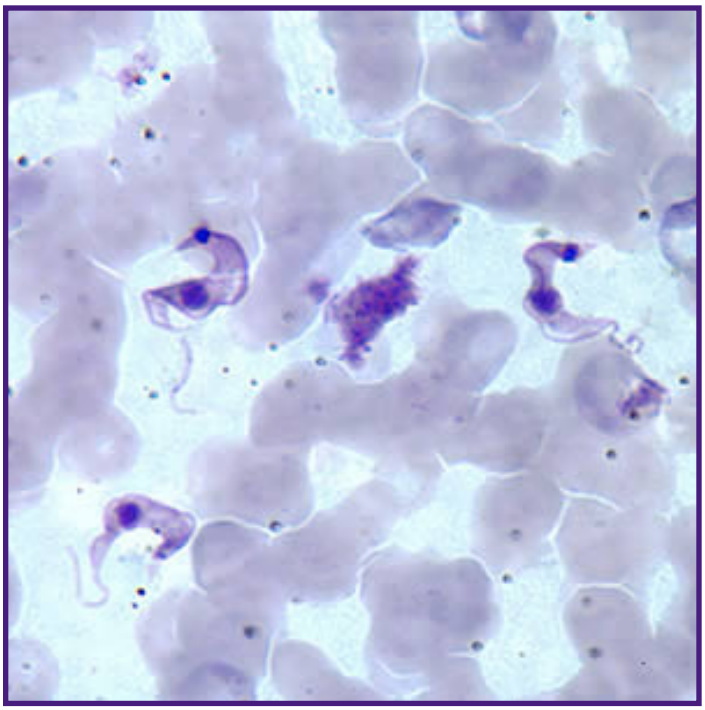
Table 2. Insects often mistaken for kissing bugs.

Mistaken Insect	Differing Characteristics	Image
Other members of Reduviidae	Lacking red/orange bands on the abdomen; possesses shorter and rounder head; solitary when mature	 *Apiomerus spissipes*. Photo by Whitney Cranshaw, Colorado State University, Bugwood.org
Stink bugs (Pentatomidae)	Triangle-shaped in the middle of the shield-like thorax; discharges foul odor when threatened or crushed; broad body	 *Mcphersonarcys aequalis.* Photo by Joseph Berger, Bugwood.org
Leaf-footed bugs (Coreidae)	Rounder head; larger size; enlarged hind tibia	 *Mcphersonarcys aequalis.* Photo by Joseph Berger, Bugwood.org

Chagas

Chagas is an infectious disease caused by the parasitic protozoan *Trypanosoma cruzi* first discovered in 1909 by the physician Carlos Chagas in Brazil. While feeding on a host, the primary kissing bug vectors of Chagas often defecate at or near the feeding site. Kissing bug feces often contain the *T. cruzi* pathogen. If the infected fecal material is rubbed into the bite wound, mouth, eye, or ingested, then the pathogen may be transmitted to the host. Introduction of *T. cruzi* into the host can lead to the development and progression of Chagas disease. Kissing bugs are the primary vectors of the disease, though not all species transmit the disease in the same way. The parasite is acquired while feeding on the blood of an infected animal or human. Chagas disease can also be acquired through pregnancy, as well as blood and organ donations; however, blood and organ donations are now screened in most countries. A person infected with Chagas undergoes two phases of infection: acute and chronic. The acute phase may last for several weeks to months, often with no symptoms. If present, symptoms are mild or flu-like: edematous swelling of the eyelids; inflammation of the tear gland and swelling of the lymph glands of the neck. The chronic phase of Chagas appears long after the initial infection, up to 10 or 20 years later. The chronic phase can be asymptomatic as well, but severe symptoms may appear, such as irregular heartbeat, sudden cardiac arrest and heart failure. Chagas in the acute phase may be cured, using medicines such as benznidazole and nifurtimox to kill the parasite. However, once the disease is in the chronic phase, Chagas is medically incurable, and treatment is restricted to managing severe symptoms.

Cases of Chagas disease are limited to the Americas, posing a serious public health concern from southern Mexico to South America. Globally, about 7 million cases of Chagas disease occur every year, resulting in 12,000 deaths. Between 2007, when national blood donation surveillance began in the United States, and



***Trypanosoma cruzi* in a Giemsa-stained blood smear. Photo by the Centers for Disease Control and Prevention**

2018, blood screening identified 2,406 cases of Chagas disease. Most of these cases, however, were acquired from outside the United States. There have been only 29 confirmed cases (47 suspected) of locally acquired Chagas in the U.S. from 2000 to 2018. Accurately reporting confirmed cases of Chagas disease in the U.S. is challenging due to its frequently asymptomatic nature and lack of active monitoring. A September 2025 report issued by the Centers for Disease Control and Prevention suggests that Chagas disease is now endemic in the United States. Of the 300,000 cases that the report estimates to exist in the United States actively, fewer than 2% would be aware of their condition. At present, however, there has been limited additional literature or surveillance data published to corroborate these conclusions.

Kissing bugs in North America behave differently than their counterparts elsewhere, resulting in a lower risk of Chagas disease transmission. Because Chagas disease is spread through their feces, the interval between feeding and defecation strongly influences the likelihood of transmission. Within North American kissing bug species, a much greater time lapse occurs

between feeding and defecation compared to species found in South America. This delay in defecation ultimately reduces the possibility of *T. cruzi* entering the body and developing into Chagas disease. Additionally, infrastructure in North America is generally more developed and better protected from outside environmental exposure, with clear separation between human living spaces and animal or livestock quarters, a common harborage for kissing bugs.

From a veterinary perspective, there is concern with kissing bugs regarding dogs. Due to differences in behavior, such as a dog's likelihood to consume insects it finds, or sleeping outside, dogs have a higher likelihood than humans to be infected with *T. cruzi*. In a 2020 study, 1,610 workings dogs within the Department of Homeland Security were tested for the presence of *T. cruzi*, with 120 being positive. Currently, there is no approved vaccine or antiparasitic medicine for dogs in the United States.

Prevention and Management

Reducing risk of being bitten by a kissing bug is the primary way to prevent Chagas disease. Management and protection focus on strategies that make environments less conducive to kissing bug presence. Effective area management plans for kissing bugs should include several components:

1. Inspection of areas to identify kissing bug presence
2. Removal of animal nesting sites near structures
3. Removal of conditions around structures that are conducive to harboring kissing bugs (wood and rock piles, dense vegetation, etc.)
4. Exclusion of kissing bugs from structures (sealing cracks and crevices, installing screens, ensure windows and doors are fitted tightly, etc.)
5. Applications of insecticides to control remaining individuals, if their presence is confirmed

Regularly inspect areas for signs of kissing bugs, including live insects, eggs or fecal spots. Particular attention should be given to cracks, crevices, crawl spaces and areas where pets or wildlife may rest. Because infestations of kissing bugs are relatively uncommon both indoors and outdoors, further control actions may not be needed when no active presence is detected. Preventative measures are still recommended to help limit future kissing bug activity. Limiting burrows, nesting sites and access points (e.g., gaps in fences) can significantly reduce wildlife presence on a property, which in turn may decrease the likelihood of kissing bugs. Common animal hosts for kissing bugs in North America include armadillos, opossums, rodents, squirrels, raccoons, as well as domestic pets such as cats and dogs. If pets spend time outdoors, regularly inspect them and their bedding for signs of kissing bug presence. The removal of potential kissing bug habitat on a property can also be effective, such as by eliminating wood buildups, debris buildup and dense vegetation.

As kissing bugs are primarily nocturnal, they pose the greatest threat to humans during sleeping hours. Kissing bugs are attracted to exterior lighting at night, then may enter structures. If possible, reduce the use of lights near structures at night, especially lighting near doors and windows. Sealing cracks around windows, walls and roofs, as well as installing tight-fitting screens on doors and windows, can minimize the likelihood of kissing bugs entering structures and is the most effective method of prevention. Certain entry points, like pet doors, may need custom modifications or specially designed products to create a tight seal and prevent insect entry. After all previous

management strategies have been utilized, insecticides (particularly pyrethroids) may be necessary to control remaining individuals. For international travel, ensure your accommodation is well-constructed and has no or minimal openings to the outdoors. If you suspect you've been bitten by a kissing bug and you can locate the suspected insect, try to safely contain the insect using gloves. Seek medical assistance from your primary care physician if any symptoms develop after returning and inform the doctor about travel history.

Sources

Beatty, N.L., G.L. Hamer, B. Moreno-Peniche, B. Mayes, and S.A. Hamer. 2025. Chagas disease, an endemic disease in the United States. Emerg. Infect. Dis. 31: 1691–1697.

Carlton, C., F. Huval and T. Reagan. 2019. *Triatoma sanguisuga*, Eastern Blood-Sucking Conenose Bug (Hemiptera: Reduviidae). LSU AgCenter Pub. No. 3694. 2 pp.

Cooper, R.A. 2012. Bed bugs and kissing bugs. In S.A. Hedges and D. Moreland (eds.), Mallis Handbook of Pest Control: the behavior, life history, and control of household pests, 10th ed., pp. 621–627. GIE Media, Cleveland, OH.

Durães-Oliveira, J., J. Palma-Marques, C. Moreno, A. Rodrigues, M. Monteiro, G. Alexandre-Pires, I.P. da Fonseca, and G. Santos-Gomes. 2024. Chagas disease: a silent threat for dogs and humans. Int. J. Mol. Sci. 25: 3840.

Killets, K.C., J. Wormington, I. Zecca, L.F. Chaves, G.L. Hamer, and S.A. Hamer. 2025. Comparative feeding and defecation behaviors of *Trypanosoma cruzi*-infected and uninfected triatomines (Hemiptera: Reduviidae) from the Americas. Insects 16: 188.

Klotz, S.A., P.L. Dorn, M. Mosbacher, and J.O. Schmidt. 2014. Kissing bugs in the United States: risk for vector-borne disease in humans. Environ. Health Insights 8: 49–59.

Louisiana Office of Public Health – Infectious Disease Epidemiology Section. 2023. Chagas annual report 2023. Louisiana Department of Health, Baton Rouge, LA. https://ldh.la.gov/assets/oph/Center-PHCH/Center-CH/infectious-epi/Annuals/2023/Chagas_LaIDAnnual_2023.pdf

Lynn, M.K., B.H. Bossak, P.A. Sandifer, A. Watson, and M.S. Nolan. 2020. Contemporary autochthonous human Chagas disease in the USA. Acta Trop. 205: 105361.

Meyers, A.C., J.C. Purnell, M.M. Ellis, L.D. Auckland, M. Meinders, S.A. Hamer. 2020. Nationwide exposure of U.S. working dogs to the Chagas disease parasite, *Trypanosoma cruzi*. Am J Trop Med Hyg. 102(5):1078–1085. https://doi.org/10.4269/ajtmh.19-0582

Stevens, L., P.L. Dorn, J.O. Schmidt, J.H. Klotz, D. Lucero, and S.A. Klotz. 2011. Kissing bugs: the vectors of Chagas, pp. 169–192. In L. M. Weiss, H. B. Tanowitz, and L. V. Kirchhoff (eds.), Advances in Parasitology. Academic Press, San Diego, CA.

AUTHORS

Chance D. Hudnall, Graduate Student
Aaron R. Ashbrook, Assistant Professor of Urban and Peri-urban Entomology
Chris E. Carlton, Professor Emeritus

Funded by the Department of Health and Human Services, Center for Disease Control and Prevention,
1 NU50CK000638-01-00.

Visit our website: www.LSUAgCenter.com

P4037 (online) 4/26