THE BLOODSUCKING CONENOSE, OR "BIG BEDBUG," *TRIATOMA SANGUISUGA* (LECONTE), IN AN OKLAHOMA CITY HOUSEHOLD

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A report of an attack by "a curious bug" came to the attention of the writer on June 13, 1947, while on duty at the State Department of Health. The bug was received at the State Laboratory from a residence in northwest Oklahoma City where it had bitten one of the occupants. The specimen was

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crushed, but was easily recognizable as an engorged female conenose bug, *Triatoma sanguisuga* (Leconte), sometimes called the "big bedbug" in southwestern United States. This species and other bloodsucking conenoses (Hemiptera: Reduviidae) are of demonstrated public-health importance, and the case seemed worthy of investigation.

The writer was cordially received by a family of three who were at their wits' end to account for a series of visitations by large bloodsucking bugs. The daughter, apparently of late teen age, had been a victim on several occasions, including this most recent attack. The bites numbered a half-dozen or more, distributed irregularly upon her shoulder and arm. In accordance with the usual effective parasitism of *Triatoma* bugs, she had been bitten several times before awakening, and this was also the case on previous attacks. However, the bites were later a source of some irritation to her, burning and itching, although the total effects were probably aggravated by her mental reaction. Each bite was plainly marked by local swelling and redness, and she had sought the advice of a physician who prescribed a soothing lotion. The more obvious places of concealment about the premises had been searched repeatedly by the family, and an inspection was made by the writer, but no additional specimens of the bugs could be found.

Summer field duties interrupted further consideration of the problem until the fall, when it was disclosed that another attack by a large bloodsucking bug had occurred in midsummer, but the specimen had been destroyed. Subsequent to this report, the writer and Mr. Alex D. Burke of Communicable Disease Center Activities, State Department of Health, explored the premises in November 1947 without discovering any specimens of the bugs. However, the history of the attacks was again discussed in some detail, confirming a growing opinion that the situation was one to have delighted the gifted private investigator from Baker Street.

Attacks had occurred in 1946 at least on two remembered occasions in late spring, followed by another attack after an interval of several weeks. This pattern of recurrence was almost exactly duplicated in 1947,[2] with the first two definite attacks occurring in late May and early June, and the last one in midsummer (probably late July or early August, but the exact date could not be established). On each occasion a large engorged bug (said to be exactly like the one identified in the laboratory) was discovered immediately after the attack, resting on the person or the bed; however, all specimens except the one sent to the laboratory were destroyed or lost. The attacks were nocturnal, except one morning visit when the victim was napping on a divan. The bites were always several in number, on portions of the limbs and body exposed in sleep, and were recalled as frequently appearing in a more or less well-spaced line. The daughter was peculiarly the sole victim until her departure early in the summer of 1947, after which her mother suffered the midsummer attack. The local effects on the daughter were more severe than on the mother.

When Usinger's (1944) manual on the Triatominae was consulted for determination of the one specimen obtained, it was puzzling to discover that the species in hand seemed a variety far out of its normal range. This was *Triatoma sanguisuga texana* Usinger, described from the arid Rio Grande region of southwest Texas. A tempting solution for this distributional inconsistency was then proposed by detailed consideration of the situation at the residence where the attacks occurred.

The victimized family occupied one-half of a small duplex, having three ground-floor rooms and a glassed-in sleeping porch. Attacks by the bloodsuck-

[2]Also in 1948 after this article was written, an attack on the daughter—ten bites on a shoulder and one on an arm—was followed by discovery of two fifth-instar nymphs, one engorged (April 14, 16). The rear sleeping porch, where the attack occurred, was then sprayed with a residual DDT solution; and the other rooms were treated with a DDT-pyrethrum aerosol. No further attacks occurred but a male was taken on the front porch on May 16.

ing bugs occurred on the porch, and in the front room and a middle room, as the family shifted sleeping locations. The other half of the duplex was occupied by a family of traveling entertainers who used the attic for storage. The entertainers had made regular trips into the areas where the *texana* variety of *Triatoma sanguisuga* is an established native. It was easily conceivable that the specimen examined might represent an introduced variety which smuggled its way northward in the luggage stored in the attic after each trip. A ceiling opening to accommodate sliding doors might have provided access from the attic to the rooms where the attacks occurred. However, the travelers denied any experience with *Triatoma* bugs. Whether the suggested explanation is true or not, the complexity of the possible problems involving distribution and attack by *Triatoma* bugs is emphasized. Incidentally, a nocturnal attack on a young boy by a large bloodsucking bug was described to the writer on June 19 in Muskogee, the description quite recognizably fitting a *Triatoma* and suggesting the need for further studies on the occurrence of these bugs in Oklahoma households.

Triatoma sanguisuga and other bloodsucking conenoses have long been known to carry the causative organisms of Chagas' disease, *Trypanosoma cruzi* Chagas. The transmission of this disease by conenose bugs is well-established in South and Central America, from Argentina to Mexico. *Trypanosoma cruzi* has also been reported from *Triatoma* bugs in the southwest United States, notably in Texas by Davis, McGregor, and deShazo (1943), but Chagas' disease does not appear definitely established in this country. An excellent summary of the situation has been given by Usinger (1944),[2] with clear, photographic illustrations of all our native *Triatoma* bugs and an interesting account of their biology and public-health significance. Oklahoma is well within the range of *Triatoma sanguisuga* (Leconte) and *T. lecticularius* (Stal), as shown on the generalized distribution map by Usinger.

Triatoma sanguisuga has also been shown by Kitselman and Grundmann (1940) to be naturally infected with the virus of equine encephalomyelitis in the region of Manhattan, Kansas. Further studies by Grundmann (1947) in the same region have given an account of the biology of the bug. The natural host was found to be the wood rat, *Neotoma floridana baileyi* Merriam, but it was observed that the bloodsucking conenose would feed upon almost any animal, including man and livestock. The suggested wide range of possible hosts is amply supported by the observations of several authors, as summarized by Usinger, Grundmann, and others.

Important public-health considerations are aroused by such hematophagous insects as *Triatoma sanguisuga* which are normally parasites of wild animals, but not deterred by host preference or specificity from occasional assaults upon domestic animals and man. This is particularly true when the insects are known carriers of human and domestic-animal diseases to which the wild-animal hosts of the insects are also susceptible. Such complex host-parasite relationships, involving insect and wild-animal reservoirs of disease, are responsible for some of the most-difficult problems in preventive medicine and public health. These interrelationships are in part established for Chagas' disease and equine encephalomyelitis, with *Triatoma sanguisuga* featured as one important vector capable of bringing these diseases from hidden reservoirs into the medical and veterinary scene.

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[2] For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price 25 cents.

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