

NOTES ON THE TICK, *ORNITHODOROS TALAJE*
(GUER.), INFESTING A HOUSE IN
THE CANAL ZONE

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On February 27, 1929, while at Gatun, Canal Zone, I learned through conversation with Dr. R. P. Curry, Assistant Chief Health Officer of the Canal Zone, and Sanitary Inspector C. A. Roach, of the Gatun District, that a short time previously the occupants of one of the houses at Gatun had complained of their quarters being infested with ticks that were biting them and causing considerable annoyance. They had collected several specimens of these ticks and brought them to the office of the District Physician at Gatun. From there they were sent to the Board of Health Laboratory, at Ancon, Canal Zone, where they were identified as *Ornithodoros talaje*.

Although I had been giving considerable attention to *O. talaje* in Panama for a number of years, this was the first time that I had learned of any definite reports of this species attacking man. Neither had I heard of their being found in houses in the terminal cities of Panama and Colon or in the American villages in the Canal Zone, although many of the rats captured in these places are usually heavily infested with the larval forms of this species. Nymphal and adult forms had been collected only in native huts in some of the interior villages where they were generally found in company with numerous *Ornithodoros venezuelensis* Brumpt. In view of these facts I was greatly interested to learn of this species being present in a dwelling at Gatun and attacking man and wishing to observe the conditions that prevailed, Dr. Curry, Mr. Roach and I visited the infested quarters. The house was one of the regular Canal Zone type of four-family wooden quarters, and it was in one of the two

downstairs apartments that the ticks were located. The occupant of this apartment was an American family, consisting of Mr. X, his wife and a ten year old son.

Mr. X was a civilian employee of the U. S. Army and had been occupying these quarters for a period of about three months. The previous occupant, so far as known, had made no complaint of being annoyed by arthropods in the house.

The X family began to be attacked soon after moving into the apartment. Since these attacks seemed to occur only at night and while in bed, it was at first suspected that the apartment was infested with bedbugs. A search was made which failed to reveal any bedbugs, but did result in several of the ticks being found.

The furniture in the house was all supplied through United States government channels, but there were two single beds in one room that had been used by the former occupant. Believing that these beds might be the source of infestation, Mr. X placed them in a storeroom and purchased new ones.

At the time of our visit, Mrs. X gave me a bottle containing ten of the ticks. These had been found during the thirty-three days that had elapsed since the previous lot had been collected and sent in for identification. Four of these were apparently second stage nymphs and six appeared to be in the third stage. All were flat and seemingly unfed and none had molted while in the bottle. Several of these specimens had been found on the white spreads covering the beds and the family believed that they were dropping from the ceiling.

The bedroom was lined with narrow matched pine boards and had been well painted. There were many crevices between the boards, however, that would provide hiding places for *Ornithodoros*, but a close search aided with flashlights and probing along in the crevices with tooth-picks gave only negative results.

The two single beds, which were of iron, that had been placed in the storeroom were examined, and two cast nymphal skins of *O. talaje* were found in a joint in one of the frames.

Upon inquiry regarding the presence of rats in the house,

Mrs. X informed me that when they first moved into the apartment, the place was badly infested with them. Efforts were at once made to get rid of these rodents. A carpenter closed all rat holes that could be found in the apartment. That these efforts proved to be successful was evidenced by the fact that no rats had been seen for some time.

On April 6th, Inspector Roach visited the house, and at this time was given a bottle containing twelve of the ticks. These were also second and third stage nymphs, and had been collected during the thirty-eight days since our former visit.

On May 29th, I again visited the house, and at this time Mr. X was suffering from the effects of the bites of three of these ticks. Two of his fingers were badly swollen and were in bandages. The third bite was on his back and had produced a severe local reaction with swelling, considerable irritation and several large wheals appeared in the surrounding area. Two of the ticks had been found a few days before my visit and both of these were third stage nymphs. Mr. X stated that he had taken one of these ticks after it had dropped on one of the beds from the ceiling. Mrs. X claimed that she had swept several from the cracks in the floor of the bedroom.

On September 20th one more tick was received. This was an adult male that had been taken while feeding upon Mr. X.

No more specimens were received from this house, and upon making inquiries a few weeks later I was informed that the family were no longer being bitten and that no more ticks were being found in the apartment.

The twenty-five ticks that I received from this house probably fell short of the total number that was found during that time. It is quite reasonable to believe that many more were destroyed when found and not collected alive.

I am of the opinion that rats were responsible for bringing the *O. talaje* to this apartment. It is quite probable that after the rodent hosts had been either destroyed or prevented from returning to their hiding and nesting places in the apartment, the engorged larvæ that had dropped from

them had, after molting and becoming nymphs, been forced to seek their blood meals from the human inhabitants. Since the larvæ of this species remain attached to the host for several days while engorging and none in this stage had been observed by the X family, it is reasonable to believe that if larvæ had hatched from eggs deposited in the house they were not existing upon human blood.

It seems rather remarkable that during the time these ticks were present in the X apartment, the other parts of the house seemed to be free of them. The families occupying the other three apartments stated that they had not been bitten by the ticks and none had been found in their rooms.

Observing the effects produced on Mr. X by the bites of these ticks I fed seven of them on my left forearm in order to study the reaction upon myself. There was a considerable delay in getting them to start feeding, but after they began taking blood they all became well engorged and secreted coxal fluid. The longest time required by any of the seven to engorge was sixteen minutes. Five of them were induced to feed by placing them one at a time in a tube applied to the same spot on my arm. Thus all five fed on the same site and each of the last four apparently used the same tiny puncture made in my skin by the first one. The reaction from these bites consisted of a slight swelling with a well-marked hæmorrhagic area surrounding the site of each bite and accompanied by a severe itching which occurred at intervals during the three or four days following the bites. Naturally the effects produced by the multiple bites at the same site were much more pronounced than at the sites of the two single bites. Since the reaction I experienced was so much less severe than in the case of Mr. X, I am led to believe that there is a considerable difference in the susceptibility of individuals to the effects of bites from these ticks.

My thanks and appreciation are due Dr. D. P. Curry for information regarding this house infestation, and to Sanitary Inspector Roach for his kindness in visiting the house on several occasions to secure information and ticks for me.