PARTHENOGENESIS IN TICKS.

(PRELIMINARY NOTE.)

By GEORGE H. F. NUTTALL, F.R.S.

(From the Quick Laboratory, University of Cambridge.)

ARAGÃO (1912) has recently described a new species of tick which he raised through three complete generations upon cold-blooded animals, the natural hosts in Brazil. He gave the species the name *Amblyomma agamum* because reproduction occurred parthenogenetically, males not having as yet been observed. The tick, in common with most other *Ixodidae*, feeds upon three successive hosts in the larval, nymphal and adult stages; it may, however, undergo metamorphosis from larva to nymph upon the host. This observation of Aragão's is the first of the kind, for parthenogenesis has not hitherto been observed in ticks. In the course of his raising experiments he obtained thousands of females which laid fertile eggs in the absence of males.

On reading Aragão's paper, it occurred to me that it would be of interest to determine if parthenogenesis occurs in ticks where males are commonly encountered with females, the sexes being usually found in equal numbers upon the host. The experiment is being tried at present with several species, a positive result having been obtained, however, with *Rhipicephalus bursa*, a common sheep tick in parts of Southern Europe and Northern Africa.

When males and females of this species are placed together upon sheep the replete fertilized females abandon the host after 4-12 days and lay 5000-7000 eggs. When we placed females alone upon a sheep they remained upon it for 25-38 days and abandoned the host without having fully gorged themselves with blood. Some of them began to oviposit after a normal interval of time and many of the eggs shrivelled up. The number of eggs laid per female is smaller (about 2000) than in females which have fed to repletion in the presence of males.

Nevertheless, from some of the eggs larvae duly emerged. Parthenogenesis, therefore, occurs in *R. bursa*, a small proportion of the eggs laid by a female giving rise to larvae.

In a paper by Oudemans (1908), to which my colleague, Mr Warburton, has drawn my attention, the author discusses the subject of parthenogenesis in Acari. According to Oudemans, Richard Beck (1866) is the only writer who appears to prove that parthenogenesis occurs in this group. If Beck's statements are true then he observed parthenogenesis in *Cheletes erudites* (sic). Berlese (1881) states his belief in the occurrence of parthenogenesis in Acari, but offers no proof as he did not carry out breeding experiments. Trouessart (1894) states that parthenogenesis occurs in *Syringobia*, but Oudemans says that Trouessart did not recognize the males.

REFERENCES.

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