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NOTES ON THE MARRIAGE FLIGHTS OF SOME
SONORAN ANTS.

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Myrmecological literature contains many accounts of the marriage-flight of ants, but in nearly all cases the descriptions are fragmentary, owing to the complexity of the phenomena, the great area over which they occur and the obstacles, such as forests, hills or buildings which in most localities interfere more or less with observation. Moreover, the actual mating of the males and females often takes place high in the air or even at night, so that one is apprised of the occurrence of a flight only by finding the recently fecundated and deälated queens running about on the ground. The following observations made during the past summer near Cloudcroft, N. M., and later while I was accompanying the Cornell Biological Expedition across the deserts of southern Arizona, are in some respects as incomplete as others which have been published, but since they illustrate interesting peculiarities in the behavior of a few of the more conspicuous ants of the Sonoran region, it seems advisable to record them.

1. *Liometopum apiculatum* Mayr.

This ant, which has huge females and males, out of all proportion to the small workers, is peculiar to the live-oak zone, or "encinal" of the dry mountains of Texas, New Mexico, Arizona and Colorado and therefore does not live at altitudes above 6,000-7,000 feet. At the latter altitude near Wooten, in the Sacramento Mountains of New Mexico, I found it to be very scarce. Undoubtedly it is abundant at lower elevations in the same range. During the marriage flight, however, the males and females are carried by air-currents to considerably greater altitudes. July 3, while walking down Haine's Canyon, a few miles from Cloudcroft, I saw numerous males of *apiculatum*, which had fallen on the road at altitudes between 8,000 and 8,500 feet. As some of them were still alive the marriage flight of the species must have occurred on this or the preceding day. They were being rapidly dragged away as food by foraging *Formica fusca* workers. July 5, near Russia, at an altitude of 9,400 feet, I detected four deälated *apiculatum* queens, each in a small cavity under a stone. All of them were dead and