

Short Communication

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YOUNG LAC INSECTS IN A MINIATURE ANT'S NEST

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INTRODUCTION

Many insects live underground and so do most species of ants. A typical case would be of the common black ant, *Camponotus compressus*. On the contrary there are insects which build their nests in elevated areas or on tree tops. Such an insect would be the honey-bee. Then there is an ant which builds its nest on trees, and it is *Oecophyla smaragdina*. Prof. Doflein was Professor of Zoology, Freiburg University, Germany, before the First World War. As Zoologist he toured over Southern Asia visiting Ceylon as well. Here he observed the ant *Oecophyla smaragdina* building its nest. Living on a tree with broad leaves some ants tried to hold them close to one another while others glued them together with the secretion of their larvae otherwise destined to become silk-like thread for their cocoons when dried. Thus arose a nest formed of leaves with the size almost two thirds of an ordinary foot-ball. Doflein was the first to illustrate such a nest and also to show the ants bringing separated leaves near one other for being woven into a nest.

A subject of my study had been lac. While at Bangalore I found the local species, *Kerria myorensis*, grows best on *Shorea talura*. This has broad leaves of the same size as that of the banyan. Besides the lac insect there was the ant *O. smaragdina*. It had constructed nests, some around the stems on which lac insects were found. Then there were nests of which the leaves on the undersurface were infected with some scale-insects. Lac insect is also a scale-insect so that the inhabitants of the ants' nests were all scale-insects. They secrete honey-dew which serves as the food of the ant. Thus in effect the ants' nest was like "a dairy." There was also evidence to show that ants helped to transplant scale-insects on leaves and increase their number in the nest. The scale-insects then were treated like cows by the ants. As far as I remember Doflein does not mention the ants' nest he observed was populated with scale-insects.

However, like the Asian species *O. smaragdina*, there is one in Africa named *O. longinoda*. E.O. Wilson, the great American authority on ants, and Hoelldobler [1] have studied the African ant, which was rehabilitated in a

greenhouse in America. Their illustrations confirm the main observations of Doflein. They do mention that the ants "gather the sweet honey dew, the excrement of scale insects". But there is no hint to the effect that the nest was found populated by scale-insects and it functioned like their dairy. This is because their observations refer to a rehabilitated ant colony and not the natural in Africa.

Now whereas the large nests of the two ants *Oecophyla smaragdina* and *O. Longinoda* have been illustrated a similar nest of a small ant remains unrecorded. Lac was cultivated, in a small plantation near the village Dorsanipalia, on way to Banergatta, in Bangalore. The tree was called Jalari in Kanarese, which would be *Shorea talura*. The insect was a new species which has been named *Kerria mysorensis*.

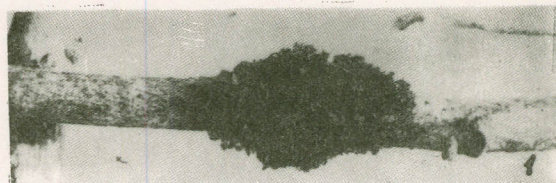


Fig. 1

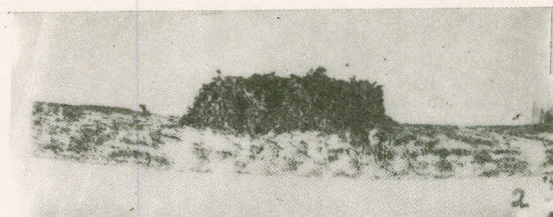


Fig. 2

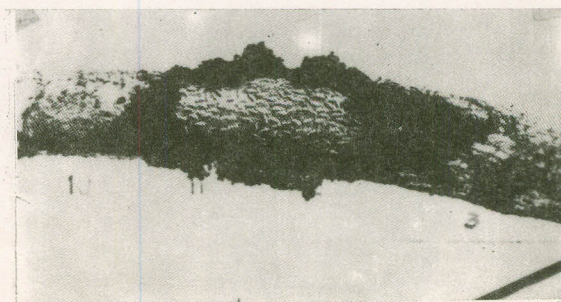


Fig. 3

It gives three crops of lac per thirteen lunar months. In the above area I found the nest of a small ant. The nest was built of spores and residues of fungi growing on the leaves of *Shorea talura* infected with lac. The insects excrete honey-dew copiously and much of it falls on the leaves below where saprophytic fungi grow profusely upon it. The predominant fungus was *Aspergillus niger*. This accounted for the black appearance of the miniature ant's nest, in Fig. 1. It is shown almost natural size. The point to observe is that the ant had so constructed the nest that there was one hole which was used as entrance and another as exit. These two holes are seen in Fig. 2. When the nest was seen from above it appeared as shown in Fig. 1. I was able to find another nest of the same ant in its earliest stage of construction. This is shown as Fig. 3. Finding there to be a small colony of lac insects the ants came to construct a nest using the saprophytic fungi as the building material. The motive of constructing the nest

was the same as of the larger nest by the weaver ants *O. smaragdina* or *O. longinoda*.

The fact remaining to be added is the species that built the nests illustrated here. Unfortunately this information was contained in a file which I had taken to Pabna, Bangladesh. My residence was looted and I regret being unable to supply the missing information. But be the ant what is may its nest is shown fully formed with two holes, as entrance and as exist, which suffice to speak of the ants' intelligence.

Key words: Young, Lac insects, Miniature ant.

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2. In *H. Topoff: Animal Society and Evolution* (Scientific American Publication).

nest of a small ant remains unrecorded. Lac was cultivated in a small plantation near the village Doranipala, on way to Panagatta, in Bangladesh. The tree was called Jalai in Kanarese, which would be Shorea talura. The insect was a new species which has been named *Kavira woywarsa*.



Fig. 1



Fig. 2



Fig. 3

A subject of my study had been lac. While at Bangladesh I found the local species, *Kavira woywarsa*, grows best on Shorea talura. This has broad leaves of the same size as that of the bayonet. Besides the lac insect there was the ant *O. smaragdina*. It had constructed nests some around the stems on which lac insects were found. Then there were nests of which the leaves on the underside were infested with some scale-insects. Lac insect is also a scale-insect so that the inhabitants of the ants' nests were all scale-insects. They secrete honey-dew which serves as the food of the ant. Thus in effect the ants' nest was like "a dairy". There was also evidence to show that ants helped to transplant scale-insects on leaves and increase their number in the nest. The scale-insects then were treated like cows by the ants. As far as I remember Doffein does not mention the ants' nest he observed was populated with scale-insects. However, like the Asian species *O. smaragdina*, there is one in Africa named *O. longinoda*. E.O. Wilson, the great American authority on ants, and Hoelldobler [1] have studied the African ant, which was rehabilitated in a