

tents on the Spurge. They were of the "carton" type constructed of finely trituated wood and in these shelters the ants kept the plant-lice; they were thus protected from their enemies and also from the rain and strong sunlight. Forel, who has added so much to our knowledge of the lives of these insects, has described a number of different kinds of "cow-sheds" which several European species of *Lasius* constructed. A certain species, *L. brunneus*, constructs shelters made of detritus, that is, minute inorganic or mineral particles such as sand, etc., over large bark aphides. Certain species of *Myrmica* make earthen cells to enclose the aphides and these chambers communicate with the rest by means of covered galleries. Our greatest American authority on ants, Prof. W. M. Wheeler, informed me, when I was studying these interesting habits, that *Lasius niger* and its American varieties are in the habit of constructing shelters over plant-lice and mealy bugs, and he refers to this habit in his interesting paper on the habits of the tent-building ant, *Crematogaster lineolata*, Say. (in *Bull. Amer. Mus. Nat. Hist.*, Vol. 22, 1906). The common American variety, *L. niger* var. *americana*, occasionally builds detritus tents around the stems of plants.

The Japanese colonies of *Lasius niger* which Dr. Stopes discovered seemed to have reached the highest stage of agricultural development; even the ants seemed to be imbued with the Japanese spirit of progress! She discovered tents on the evergreen oak, *Ilex integra*, of a cylindrical shape, encircling the terminal portions of shoots arising from the stumps of a stem that had been cut down. These tents were of the detritus type and made of minute grains of black sand mixed with white fragments of broken shell—the trees were growing near the sea at Hayama. The whole twig, with the exceptions of the tips of the leaves, was enclosed in the detritus tent through which ran galleries swarming with ants. But these particular ants were not content to construct "cow-sheds" merely, but for their own comfort had built of the same detritus covered galleries which wound round the trunk of the tree and communicated with the nests which were underground, so that they could reach the "cow-sheds" in all weather. Other shelters which may have been the initial stages of the larger tents, were made by the ants by biting the undersides of the midribs of the leaves. This caused the leaves to become inrolled with their uppersides outwards and the spaces thus formed by the inrolling was filled with detritus to form chambers.

Ants appear to construct the two types of tents—the carton type made of fibrous material of a vegetable nature, and the detritus type made of inorganic material: both kinds of