

from this interesting nest. Professor Shapley kindly gave the writer specimens of the different forms and in conversation described the region in which the nest was found. The writer wishes to thank Professor Shapley for these abnormal specimens and for numerous facts concerning these ants in the locality of Pasadena, California. To Dr. Wheeler the writer wishes to express his thanks for his opinions concerning the specimens.

According to Creighton (1928) abnormalities in ants appear to fall into three fairly well defined categories:

1. Sex mosaics and intersexes.²
2. Aberrant forms produced through altered food supply.
3. Freaks and atavistic forms.

The first group includes the various lateral mosaics as well as the rarer antero-posterior type. The second group includes a large number of peculiar forms which arise from pronounced nutritional irregularities. Lack of food may produce dwarf individuals, while loss of food due to the presence of parasites gives rise to pseudogynes. In the event of an overabundance of food, unusually large males and females, egg-laying workers and, more rarely, repletes may result. In the third group may be included those individuals which show duplication, loss or malformation of parts and atavistic forms.

The method by which aberrant forms, particularly pseudogynes, may be produced through altered food supply has been studied by Wasman for more than thirty years. He has suggested the following hypotheses.

1. Ants of colonies, having their larval broods devoured by the *Lomechusa* larvæ try to transmute into workers some larvæ which have already developed somewhat along the path terminating in the queen phase. These efforts result in the production of forms that belong to neither caste.

²Intersexes should probably fall in the second category, as recent works indicate that they are produced through a change in the rate of metabolism.