process of respiration." In June of the same year Wetherell (1852) presented to the Academy the results of a chemical analysis of the honey of the Langstroth repletes. He found that the average weight of the honey in one of these individuals was 0.3942 gr., the average weight of the ant 0.048 gr., so that "the honey which an average one of these ants contains is 8.2 times greater than the weight of its body. .... The syrup extracted from the ant had an agreeable sweet taste, the odor very much resembling that of the syrup of squills. It reacted slightly acid to blue litmus paper. When evaporated by the heat of steam, it dried to a gummy mass, which did not exhibit traces of crystallization after standing for a couple of weeks. It was very hygroscopic, becoming quickly soft from the absorption of water from the atmosphere." As a result of further analysis Wetherill found that "the honey contained in the Mexican ant is a nearly pure solution of the sugar, so-called, of fruits, which is in a state of hydration, isomeric with grape sugar, $C_{12}H_{14}O_{14}$ and differing from grape sugar in not crystallizing." The source of the acidity he could not determine, but raised the question as to whether it was formic acid or acetic from the oxidation of the alcohol in which the specimens had been preserved.

These remarks and the meager descriptions of the original specimens of *M. mexicanus* and perhaps also of *melliger*, comprise all the observations that seem to have been published on the typical Mexican forms of the genus. The following observations relate exclusively to the forms occurring in the United States.

2. **Myrmecocystus melliger orbiceps** subsp. nov.

This beautiful form differs from all our other *Myrmecocysti* in the glittering white sheen of its body. In this respect it is not unlike the Saharan *M. bombycinus*, which, when running rapidly over the desert soil, is said to resemble a rolling drop of quicksilver. *M. orbiceps*, too, prefers very hot, dry localities. I have found it along the limestone escarpment which stretches from Austin to Del Rio and forms the Edwards Plateau of Texas, and in the deserts of Trans Pecos Texas, New Mexico and Arizona. It may be most conveniently studied on the Jollyville Plateau, a few miles west of Austin, and at San Pedro Springs on the outskirts of San Antonio. Like the Sarahan *Myrmecocysti* it runs over the ground with great agility in the full glare of the sun.

The nest, which is always in stony soil, has the form of an obscure crater, with an irregular or arcuate and sometimes very large entrance (2–3.5 cm. in diameter) leading down obliquely into the soil. The main gallery thus formed breaks up at a depth of 20–30 cm. into short passages and flat,