

no sugar. The difference between the proportional amount of the different solids present in the different forms of larval food is a constant one and no doubt this variation has in view the particular requirements of the larvæ in question. Certain small but constant differences were also observed in the chemical composition of the food of the larval drones during the first four days, and at subsequent periods. Not only is there a difference in the quality, but there is also one in the quantity of the food supplied.

The juice from 100 queen-bee cells yielded 3.6028 grams of dry substance; that from 100 drones' cells, 0.2612 gram; that from 100 workers' cells, 0.0474 gram. The substance investigated was the juice of pap, the whitish, sticky substance which the working bees store in the cells of the larvæ of the queens, drones and workers.

Leuckart regarded it as the product of the true stomach of the working bees, which they vomit into the cells, in the same way that honey is vomited from the honey-stomach. Fischer and others regarded it as the product of the salivary glands of the bees. Schonfeld, in numerous papers, has recently shown that Leuckart's original view is the correct one. He showed that the saliva can be easily obtained from the salivary glands of the head and thorax, and that it is very different from the food juice deposited in the cells of the bees; and that, moreover, the juice is similar, both chemically and microscopically, to the contents of the bee's true stomach; he showed also from the consideration of certain anatomical and physiological peculiarities of the bee, such as the position of the mouth, the inability of the bee to spit, etc., and in view of this substance being saliva, is quite untenable.

Certain observers have replied that a bee cannot vomit the contents of its true stomach, because of a valve which intervenes between it and the honey stomach; but Schonfeld has shown that the structure, mistaken by these observers for a valve, does not act as one, but is in reality an internal mouth, over which the animal has voluntary control; and by no means of which it is able to eat and drink the contents of the honey-stomach when necessity or inclination arises. By light pressure on the stomach, and stretching out the animal's neck, the contents of the stomach can be easily passed out. Planta's investigations entirely confirm Schonfeld's view, that this substance comes from the bee's stomach.

From the San Francisco Chronicle.

The Crop and Honey Market.

REPORTS from all over the State are to the effect that the honey crop is so short that it is no exaggeration to say that it is a total failure. There is hardly an apiary in any of the hitherto most prominent bee-keeping counties of the States which has this year produced surplus honey enough to pay interest on the capital invested therein. The same reports come from the east, and never since the care of bees attained the proportions of a regular industry has the honey yield of the

United States been so limited as in the season now closing. In conjunction with the limited output, however, has come a marked rise in prices, but these comparatively high figures are after all of little value to the bee-keeper, for of what use would it be to him were honey to be quoted at even a dollar a pound if his bees produced no surplus for sale? The experience of the present season is, after all, only a repetition, on a more extended scale, of what has been the uniform history of the industry ever since the first colonies of bees were brought around by the isthmus and sold here for \$300 apiece. First there has come a succession of good seasons; the stock of bees has largely increased; the price of honey has gradually lowered and finally many have gone out of the business in disgust. Then a bad season has come, or a succession of them; there have been no wild flowers, or the natural bloom has not contained the usual amount of nectar; the honey crop has been short; prices have risen, and a few, who were located in exceptionally favored regions, have made large profits. This has stimulated others to go into the business, and the result has been another period of heavy production, low prices and small profits. For those who are able to secure anything like a fair crop, the present season will be a bonanza. And those who have been sufficiently far-sighted to provide their bees with an abundance of forage, without placing any dependence upon the natural bloom, will this season reap a good reward for their enterprise. Those who have taken this precaution are few enough by the side of the many who "trust to luck," but this lends emphasis to the general proposition that the bee-keeper who treats his colonies precisely as he would any other kind of animals upon which he placed dependence for an income, and sees that provision is made for a bad season, will come out ahead in the long run, while the one who trusts to nature will run behind.

QUERIES AND REPLIES.

UNDER THIS HEAD will appear Questions which have been asked, and replied to, by prominent and practical bee-keepers—also by the Editor. Only questions of importance should be asked in this Department, and such questions are requested from everyone. As these questions have to be put into type, sent out for answers, and the replies all awaited for, it will take some time in each case to have the answers appear.

Placing Foundation in Sections.

QUERY No. 214.—I have a neighbor who places a strip on the bottom of his sections, about two rows of cells, then lays foundation over top to fill the sides closely and come down within about