

queen and drone to complete the digestion. Thus the queen, during the active season, while she is often laying 2,000 or 3,000 eggs daily, receives her food all prepared for absorption, and so we understand how it is that the queen may lay nearly twice her weight in eggs daily. I have weighed laying queens several times, and find them to weigh about .23 of a gramm or about 35 grains. I have found that 3,000 eggs weigh about .4 of a gramm, or about 6 grains. This wonderful performance is only possible, in that the queen's food is wholly digested for her by the nurse bees.

The nature of the food given by the nurse bees to the brood, and to the queen and drones has been much discussed, Dufour that it was chyle, or food thoroughly digested and ready for absorption. Schiemenz argues that it is the secretion from the upper head glands. Schonfield believes that Dufour was correct, digested pollen with additions of honey. Schiemenz thinks that the valve that reaches from the stomach mouth into the true stomach, would make it impossible for the bee to regurgitate any food which had really entered the true stomach, and so argues despite the location of the mouths of these ducts and the necessity of saliva for the liquification of the pollen, that the jelly or larval food is really the product of the upper head glands. From several experiments which I have tried, I believe Schonfield and Dufour are correct and Schiemenz in error. One experiment which, in itself seems critical, I will explain: I removed from a small colony of bees all honey, gave them a frame of brood, and shut them in their hive. I then mixed some finely pulverised charcoal with some dilute sugar syrup, and fed it to these bees. As the charcoal is insoluble and indigestible, of course, it can not and does not pass through the walls of the stomach into the blood, and so can not even pass to the glands. Even if it were in the blood, it could not enter into secretion, as it is non osmotic, and so could not appear in the saliva. Yet this charcoal appears in the food given to the larva. This food then cannot be a secretion but must be the chyle or digested food of the nurse bees. That the strongly muscular structure of the alimentary tract, may draw the stomach mouth up to the esophagus, and thus draw the valve up so that its valvular nature is destroyed, is the view of Schonfield, and is I believe, correct. This is then a sort of adjustable valve, and may prevent regurgitation or not as the function of the bees require. Thus we have in the stomach mouth as well as in the tongue of the honey bee, examples of differentiation which are not surpassed anywhere in the organic world.

A. J. Cook.

#### 60 POUND TINS AND STRONG HANDLES.

We find that our tinsmith, without our knowledge has been making the handles of these tins too light, much too slender for the weight which each one has to carry. One or two complaints reached us during the Fair at Toronto, and we have at once removed the defect. The handle as it has been put on, will lift all right if it is not wrenched or jerked, but it will not stand rough handling. We shall not likely have any more complaints from this date.

#### CONVENTION NOTICES

The next annual meeting of the Ontario Beekeepers Association will be held in the city of Belleville on the second Wednesday and Thursday, 8th and 9th, of January 1890. All members are respectfully requested to be present. There will be a good programme prepared.

Railroad certificates for reduced rates will be sent to any persons desiring to attend the meetings if they will apply for them. W. COUSE, secretary, Streetsville.

#### MICHIGAN STATE BEE-KEEPERS' ASSOCIATION

The 24th annual meeting of this Association will be held at Lansing in the Capital building, on Dec. 26 and 27.

Reduced rates have been secured at the Hudson House. Half fare on nearly all railroads. A few roads charge one and one-third fare for the round trip.

Several very interesting papers have been promised from our leading apiarists.

The question box will be one of the important features. Come prepared to ask and answer questions. A cordial invitation is extended to all. H. D. CUTTING, Sec.

Clinton, Mich., Dec. 1, 1889

#### 12 CENTS PER POUND FOR EXTRACTED.

For No. 1 extracted honey, put up and shipped us in 60 pound tins—we will pay 12c. per lb, delivered at Beeton, payment to be made in any kind of supplies wanted at prices marked in our catalogue. This is the most we have offered for honey in a wholesale way for years.

**TO THE DEAF.**—A person cured of Deafness and noises in the head of 23 years standing by a simple remedy, will send a description of it FREE to any Person who applies to NICHOLSON, 30 St. John St. Montreal.

Prof. Loissette's Memory System is creating greater interest than ever in all parts of the country, and persons wishing to improve their memory should send for his prospectus free as advertised in another column.

Send five cents for samples of our lithographed and other honey labels. It pays to have your packages bear your name and address. Honey tastily labelled finds ready sale.

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