

ELIMINATING SCUM FROM HONEY, AND MANIPULATING FOR A SMOOTH-GRAINED ARTICLE.

At the recent Conference considerable discussion took place with reference to marketing honey free from scum, also in reference to manipulating honey to artificially produce a fine smooth grain. A question was asked, "What is scum?" and not satisfactory answer was received. The question was no doubt raised through the action of the Government honey graders in declining to grade honey for export with what they considered an excessive amount of scum on the top of the honey. The action of the Department was upheld by a large majority of beekeepers. No system or method by which a scumless fine-grained honey could be produced was sufficiently explained at the Conference; therefore it is hoped that this article will be of valuable assistance to the beekeepers of the Dominion.

Kind of Honey.

Recently I graded at Hawera a line of 200 tins of honey produced by Mr. J. Nicholas. It was the finest lot I have ever seen. Each tin was absolutely scumless, and the grain was perfect. Other lines from the same district were, without exception, coarser in the grain, and one lot in particular had from one to four inches of scum. Others had from a fraction to $\frac{1}{4}$ -inch.

Mr. Nicholas has at the present time some 500 colonies of leather-coloured Italian bees in 12-framed hives. All the frames are staple spaced for easy manipulation. His apiaries are located in an extensive dairying district, and the flora from which the bees gather is rewa rewa and boxthorn in spring, white clover in abundance during the summer, and thistle and boxthorn in the late summer or autumn. The rewa rewa is used exclusively for brood-rearing. The honey he markets is clover, thistle, and possibly boxthorn mixed. If allowed to granulate under natural conditions, the honey has a rather sandy grain.

Equipment.

The plant necessary for the proper manipulation of honey is not expensive. As the illustrations indicate, it consists of a "Severn" capping melter, as was shown at the recent Conference, a small stove over which this is placed, a trough 7 ft. or 8 ft. long, 1 ft. wide, and about 9 in. deep, with a honey gate at one end, a tank to hold three or four tons of honey, which we call the settling tank, and two granulating tanks, each capable of holding half a ton.

The dimensions of the latter are as follow:—Length, 5 ft. 6 in.; depth, 1 ft. 9 in.; width, 1 ft. 9 in. The settling tank and the granulating tanks should each have a honey gate of 3 in. or $3\frac{1}{2}$ in., the latter for preference.

Manipulation.

Mr. Nicholas uncaps over the capping melter at the rate of 100 combs per hour. He uses a steam-heated uncapping knife, and his extractor is driven by a $2\frac{1}{2}$ horse-power benzine engine. The honey from the extractor runs directly through a strainer into the shallow mixing tank, and also the honey from the capping melter. The gate at the end of this tank is closed, and when it is nearly full the contents are stirred until the warm honey from the capping melter has been well mixed with the cold from the extractor. The gate is now opened,

and, as the house is built on a hillside, the honey gravitates into a cheese-cloth strainer, which is tied under the above honey gate and over the entire top of the three-ton settling tank. This cheese cloth strainer is tied very loosely, so much so that the centre portion will touch the bottom of the tank, which, when full, floats the strainer on the top of the honey. At times a large quantity of honey has been put through per hour, and it has never blocked up or given any trouble from first to last of a five-ton crop. When the tank is full for the last time, take up as much slack of the strainer as possible, then, when the majority of the honey has drained through dump the balance into the capping melter. It is very important to keep the tank covered with sheeting or canvas.

The honey is run from the big tank into the half-ton granulating tanks, and into each of these is mixed 10 lbs. or more of granulated honey. The more granulated honey mixed, the quicker will the granulation of the whole start. This 10 lb. is called starter. Probably the hardest work begins now, for it is no light duty to stir each of these tanks two half-hours a day. This, however, has to be done until the granulation is well forward, and a fine grain assured. When in this condition it is so thick that it will just run through the gate, and when tinned off will granulate within a few days. It is advisable to have a large gate in each of these tanks. Keep them covered as much as possible. Tin off three-quarters of each tank, and the next filling will be speeded up considerably.

Remarks.

It will be acknowledged that warming the honey to a thin consistency materially assists the strainers to properly perform their function in extracting from the honey particles of wax and other foreign bodies. Bubbles, froth, and scum are caught by the cheese-cloth strainer, and prevented from straining into the honey in the big tank. "With arrangements of this description," said Mr. Nicholas, "there is no necessity to skim any of the tanks. The heating and efficient straining eliminate the scum from the honey, and the stirring and starter gives a fine grain and quick granulation."

The Americans have for some time past advocated stirring the honey for a fine grain, and I have no doubt that our coarser grained honeys could be improved to a wonderful extent by this simple method. When the grain is coarse there is a certain amount of levulose and water which adheres to the granules, and this condition usually imparts a "mushy" appearance.

Honey should not, however, be stirred to excess, otherwise a soapy, flaky article will be the result. When in this condition it will draw out and impart a shiny and satin appearance, but it will not granulate hard and firm. It is also likely to change to a dull colour. Some, however, prefer it this way, as it spreads more easily on the bread.

The Capping Melter.

A number of beekeepers have condemned capping melters without giving them a fair trial, and to these I can recommend the "Severn," or Barnes," which are identical. Should their use not be considered advantageous, some other form of heating apparatus must be employed. The small stirring tank could be water-jacketed and connected with a boiler, or, failing this, lamps could be placed under the tank.

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