

BEEKEEPING.

RENDERING BEESWAX.

[By W. B. BRAY, Bee Instructor.]

A LARGE quantity of beeswax is wasted annually for the want of proper knowledge as to the best methods of saving the wax from old combs. Many farmers throw this material away or use it for firing, and where an attempt is made to render it down there is in most cases a large proportion lost in the refuse. Beeswax is a valuable side product of beekeeping, one for which there is always a steady demand. At present wax has to be imported from Australia and India for manufacturing purposes. Besides the crude wax many tons are imported annually in the form of foundation comb for the use of beekeepers. At present it is not possible to manufacture this in New Zealand, as the required quantity of wax is not produced. A large quantity of beeswax is also used annually in the manufacture of varnishes and boot and floor polishes.

It is certain that if proper methods were used in saving the wax the annual output and the modes of utilization would rapidly increase, and the money at present being sent away would remain in the country.

SAVING ODD PIECES OF COMB.

A box should be kept for the storing of pieces of comb that accumulate during the season. It should be examined for the wax-moth occasionally, and if any are found the wax must be melted up at once, or it will all be devoured in a short time. In a large apiary where there is likely to be much accumulation of small pieces it pays to have a solar wax-extractor, as by its use the wax is melted automatically, as it were.

VESSELS TO USE.

Only tin or copper vessels should be used in all melting operations. Iron attacks the wax and discolours it. If iron vessels have to be used, heat first and rub with mutton-fat.

WATER.

Rain-water only should be used in all melting operations. River and artesian waters are liable to be hard, and the lime in them decomposes the wax, and forms a sponginess on the bottom of the cakes. If rain-water is not available, vinegar should be added, more or less according to the hardness of the water used.

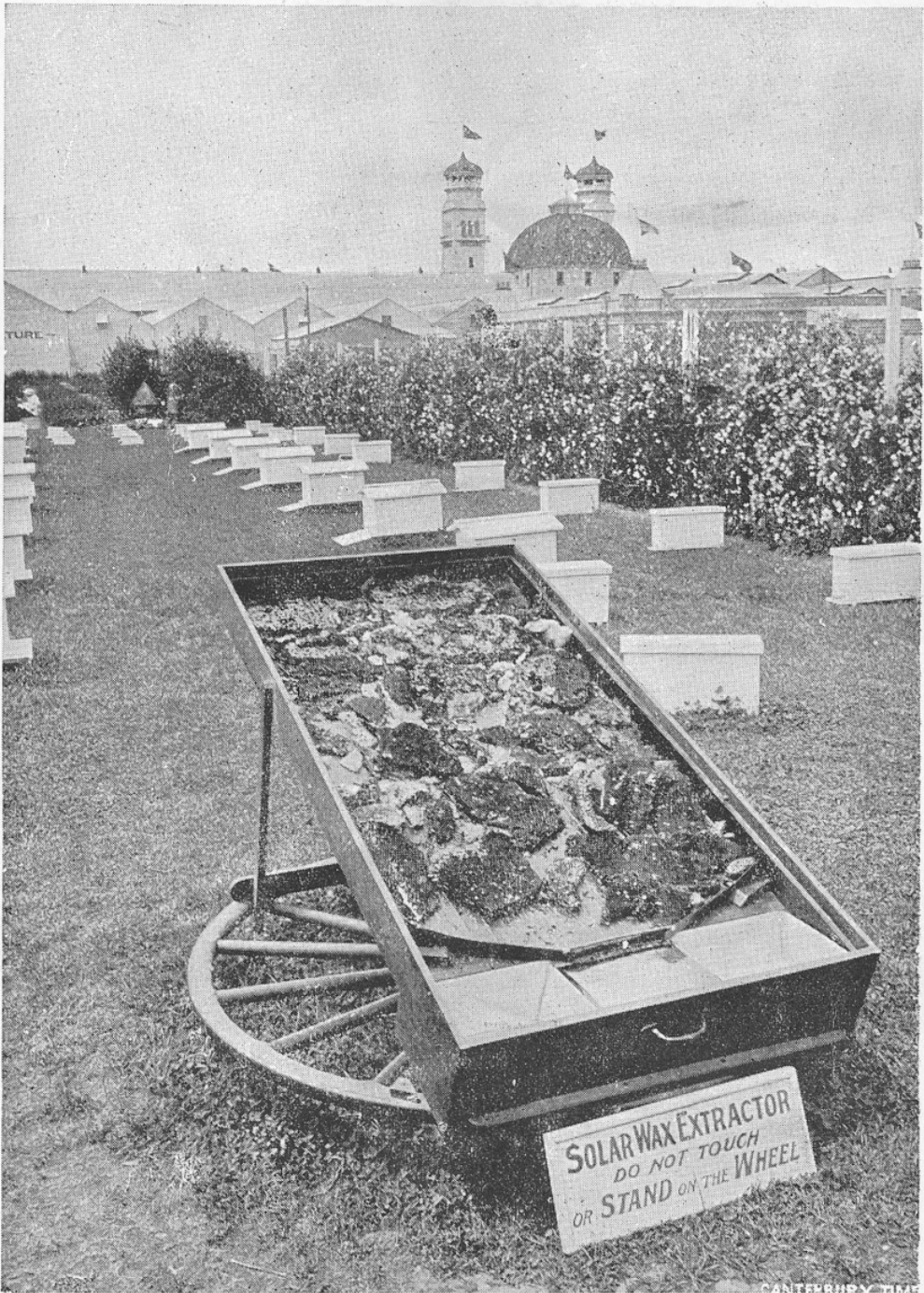


PLATE NO. 87.—SOLAR WAX-EXTRACTOR.

Large size.

HEAT.

Wax should always be heated in water, as a direct heat from the fire causes it to turn brown. Even in water it must not be allowed to attain too great a heat. At the temperature of boiling water it is liable to rise like milk. This makes the finished article very brittle, and at such a high temperature it is easily stained with dirt, and even if perfectly clean it will turn brown. The best temperature is from 143° to 170° Fahr. The finished product, if the best price is to be realized, should be of a light to a rich yellow, and soft enough to allow the thumb-nail to be easily buried in the surface. Also, there must not be the slightest trace of any foreign substance.

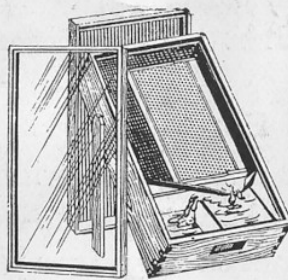


PLATE NO. 88.—SOLAR WAX-EXTRACTOR.

Small size.

SORTING THE COMB.

Comb that has never had brood in it, and the cappings, present no difficulty in rendering down, as there is practically no foreign matter present. All such comb should be sorted out from the remainder, and melted down separately. The darker combs are discoloured by the layers of cocoons left behind by each successive generation of brood. It is these cocoons which make it so difficult to extract all the wax, as they absorb it to a certain extent, and a great pressure is required to remove it. The day before it is to be melted all brood-comb should be put to soak in water. The cocoons then become saturated and do not hold the wax so readily. Straw, preferably rye-straw, cut into short lengths should be mingled with the comb in the melting and pressing-out process, to assist in the carrying-off of the wax.

SOLAR EXTRACTOR.

The solar wax-extractor is useful in melting odd bits of comb in a large apiary, and is very useful even for cappings. Most of the wax can be got from brood-combs too, but they have to remain a long time in the extractor, consequently it is not suitable where large quantities have to be dealt with. It depends on the sun to supply the heat, and so its work is rather intermittent. Details of its construction are given in Bulletin 18, but smaller ones can be made if desired.

SWISS EXTRACTOR.

This is a cheap handy extractor, but it will not remove all the wax from brood-combs. The water is boiled in a lower compartment, and the steam passes upwards through an opening covered by a cone to prevent the wax running through. In the top is a perforated zinc basket, which contains the comb to be melted. As fast as the wax melts it runs down to the bottom of the compartment, and out by a tube in the side. To get the best results with this extractor the comb must not be crowded into the basket, but packed as loosely as possible, so that the steam finds its way right through the mass. A new lot must not be put in until the last of the wax is through the spout, and the refuse must be removed after five or six lots have been through. In rendering down old combs by this extractor there is a good percentage of wax left behind, but what does come through is of good colour.

HOT-WATER PRESS.

Where there is much comb to be dealt with it is desirable to have some sort of a press to remove all the wax obtainable. The cost of a good press is very small, and the extra wax obtained soon pays for it. There are various wax-presses on the market, but the one that gives the best results is the "Hatch" press. It is easily manipulated, is strong and lasting, produces the best-coloured wax, and is the cheapest to buy or the easiest to make, as will be seen by the illustration. It is practically a small platform, with two uprights supporting a cross-beam which carries the screw. On the platform is a movable tin can with a spout in the bottom. In the can is a slatted

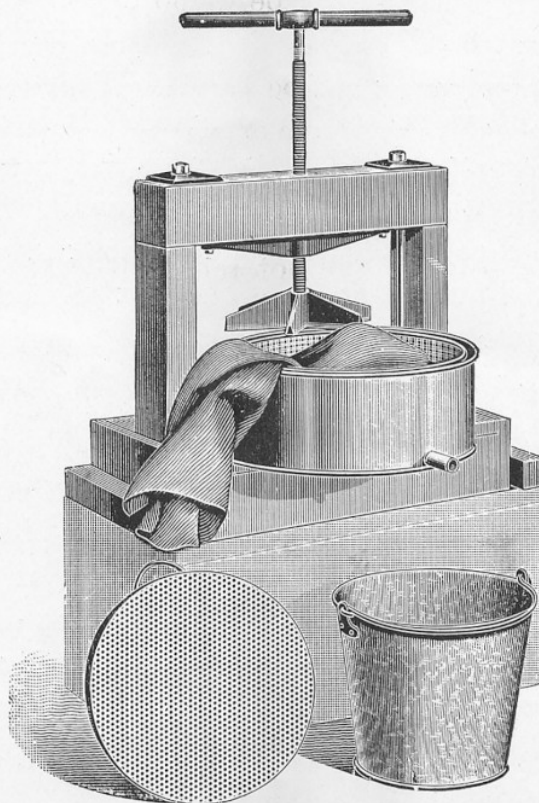


PLATE NO. 89.—HATCH HOT-WATER WAX-PRESS.

rack to go round the side, another for the bottom, and one to go on top of the wax to be pressed. The screw carries an iron plate which comes down on the top rack, and distributes the pressure evenly. Strong cheese-cloth or burlap is used to hold the melted comb while being pressed.

As explained above, the comb is put to soak for a day or two, and is then heated up until the wax melts, and the combs are reduced to a mash. It is very handy if the copper has a tap in the bottom so that hot water can be drawn off. To begin operations, put the racks and cloth in the can, insert a wooden plug in the spout, and fill the can with hot water. Then return the water to the boiler, spread out the cloth, and pour in a dipperful of melted comb and water. For the best results there should be a good proportion of water. Fold the cloth over, put the top rack on, slide the can back under the screw, and apply the pressure. Place a can under the spout, and withdraw the plug. Continue applying the pressure till no more wax runs out. Racks should be placed with the slabs pointing towards the spout, and then by tipping the press up all the wax and water is drained off. Then release the pressure, and put what remains in the cloth into a tin. This is given a second treatment similar to the first, when there will be very little wax left in the refuse.

If the receptacle used to catch the wax and water has a tap at the bottom, the water can be drawn off and returned to the boiler. As the wax accumulates, equal quantities of it and the hot water can be poured into other cans and allowed to cool. The wax should be well wrapped up, as the more slowly it cools the better is the chance for all the fine dirt to settle in the water. When quite cold the dirt will be found on the bottom of the cakes of wax, and can be scraped off.

The operation of pressing should be carried on quickly and in a warm atmosphere, or the cooling of the wax, everywhere, is somewhat of a nuisance.

CLARIFYING.

Merely straining melted wax will not remove all dirt, so all wax should be treated as above—that is, allowed to cool on top of clean water. The absolute cleanness of wax for all purposes is more important than anything else, and clean wax will always find a ready sale at a good price.

Dirty wax should be broken up into a thoroughly clean vessel, clean rain-water added, and heated slowly till the wax melts. The temperature need not be taken any higher than is necessary to melt it, and then it can be allowed to cool as described above.

SIZE OF CAKES.

At present wax is sold in all shapes and sizes, but for those who wish to use a uniform size I would suggest the following:—

$$12 \times 12 \times 2 \text{ in.} = 10 \text{ lb.}$$

$$8 \times 18 \times 2 \text{ in.} = 10 \text{ lb.}$$

Any required weight can be obtained if it is remembered that 288 cub. in. of wax weighs 10 lb. It would necessitate melting the wax again in a vessel standing in hot water. Tin trays of the required size for moulding can be obtained for a small sum. The edges should be bevelled, and the depth should be an inch more than is required, to prevent spilling over. Wax prepared in thin blocks like this is more suitable to the requirements of the general retail trade, as it can readily be broken into any required size, and it should therefore command a higher price.

NOTES.

There are many other appliances used in extracting wax from combs, but those mentioned above are the most suitable to the average beekeeper. A good sample of wax is produced, and where the press is used very little is wasted in the refuse.

For a complete treatise on the wax, the beekeeper should procure, "Wax Craft," by T. W. Cowan, F.L.S. It can be obtained from all supply-dealers or from the publishers, *British Bee Journal Office*, 8 Henrietta Street, Covent Garden, London, W.C.—paper cover, 2s., postage, 2½d.

All refuse from wax-extractors should be burned or buried in case disease-germs are present.

The melting-point of beeswax is from 143° to 147° Fahr. The specific gravity is 0.960. Beeswax is soluble in ether, spirits of turpentine, or benzine.

IMPORTATION OF PORK, TINNED MEATS, ETC., TO GERMANY.

A STATEMENT having been published to the effect that the restrictions upon the importation of American pork into Germany had been removed, inquiry was made by the Veterinary Officer for New Zealand in London, who reports that there has been no alteration in the law as to the importation of pork, which is only admitted in whole or half carcasses, with pleura and peritoneum, lungs, heart, and kidneys attached. [See also Report of High Commissioner, p. 476.]

The importation of tinned meats is absolutely forbidden. With reference to exports of tinned meats from Queensland to Germany (*Journal*, October, p. 333), it is possible that these goods may have been sent to Germany not for use in that country, but merely for ships' stores, navy victualling, or some similar purpose,

BULLS FOR SALE.

PARTICULARS of a number of bulls for sale at the Ruakura Experimental Farm are given in an advertisement at the end of this issue.