Putting Old Sol to work

Construction of a solar wax extractor is described by DA Briscoe, Apiary Instructor, Department of Agriculture, Tauranga.

The use of solar wax extractors is once again becoming popular, particularly with beekeepers in the warmer parts of the North Island.

There is nothing new in this method of obtaining beeswax from cappings and/or old combs. Solar heat is used in many different ways and this form of heating is cheap and efficient.

Beeswax has a melting point of approximately 140-145°F. The temperatures in a well made solar extractor will reach over 200°F in sheltered positions.

The advantage of a solar extractor is that no slumgum is present in the melted wax and also, discolouration is kept to a minimum because there is no water to be contaminated with residues and propolis from the combs and frames. Another advantage is that old or damaged combs, as well as scraping of burr combs from the tops and sides of frames, can be dealt with daily and not kept for off season handling. If old combs are kept for too long a period they become a breeding place for wax moth and eventually will be reduced to a worthless mass.

The extractor has five parts.-

1. The body.
2. The lid.
3. A large pan in which the cappings or combs are placed.
4. A small pan to catch the melted wax and honey.
5. A basket made of heavy gauge two, three or four-mesh hardware cloth to use in the pan when cappings are melted.

The wire mesh basket is placed in the large pan with a sufficiently large piece of muslin for straining and the cappings or combs then placed in the wire basket. As the wax melts it is strained through the muslin cloth into the large pan and then directed through an opening into the smaller pan or mould.

Directions for making the extractor are as follows.

The body and most of the lid of the extractor are made from the 12' board (see list of materials needed).

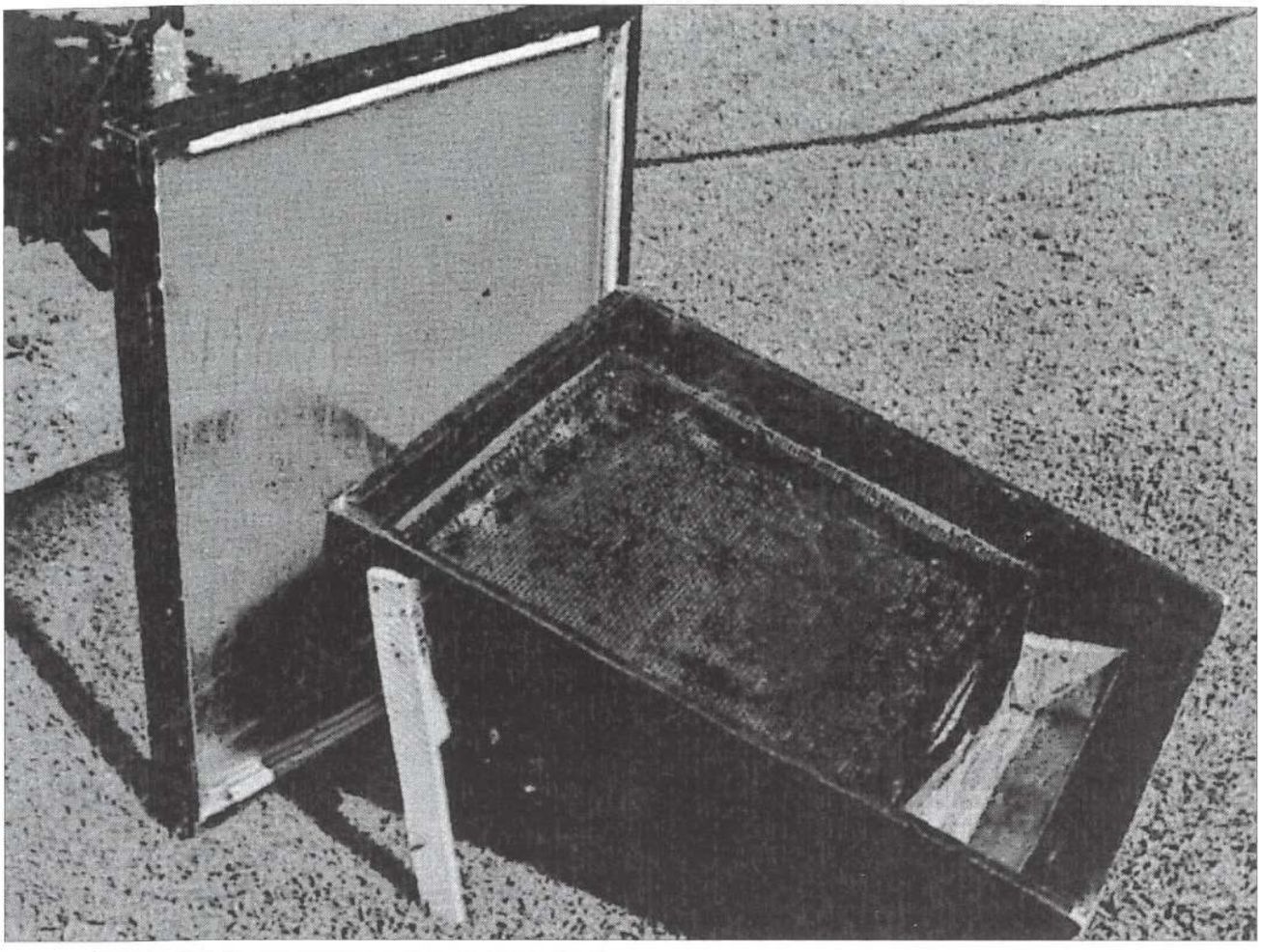
This board is laid out and cut into pieces as indicated in the diagram. The double lines on the drawing indicate where a saw cut should be made between the lines as the pieces on both sides of the cut are to be used.

The side pieces for the body of the extractor are fastened, with screws, on the ends of the two pieces cut to form the ends of the body. The four edges formed on the top and bottom of the box are not even because of the sloping side walls. There edges are planed until all four are level with the ends of the box.

The bottom of the extractor is made from the tongue-and-groove timber. The body of the extractor must be carefully squared before any of the boards are nailed to the bottom and must be kept square, as the lid will not fit if the body is not square.

The two long wedge-shaped pieces left over from cutting the side boards are cut off at their thin ends so they will be 21 1/2" long. They are nailed inside the box on the bottom.

Solar wax extractor in use. In the foreground is a block of wax previously melted.



Above: Components of the solar wax extractor.

The piece left over in cutting the narrow end of the box fits on the bottom in the space at the end of the wedges and is nailed to the ends of the two wedges.

Three small wedge-shaped pieces, each 4" long, are cut from the scraps. The wide end of each wedge should be 1 1/4" while the other end comes to a point. These pieces are also nailed to the bottom. They are intended to keep the small pan level.

The cover, or lid, is made from the two pieces of glass. Four 2 1/4" strips should be dovetailed at the corners then nailed together to form a frame for the glass. If dovetailing is not possible two of these four pieces should be cut 25 5/8" long to compensate. The corners could be strengthened by corner plates if necessary.

After the frame is nailed together, one set of 1/2" square pieces is nailed around the inside of the frame at a distance of 9/16" from the top of the frame. Two 1/4" holes are then bored through the top and two through the bottom ends of the frame through the 1/2" strips. Each hole is bored 5" from the centre of the frame. The holes provide ventilation between the layers of glass and reduce the condensation of water in this space. The holes are bored before the glass is placed in the frame.

The glass is held in place with the 1/2" square strips (already nailed in the frame) and is held in place with a second set of strips. The second piece of glass is placed below the 1/2" strips and is held in place with a third set of strips.

The extractor will last longer if the wood from which it is made is treated against rot before being assembled.

It would be desirable also to make sure that the lid fits over the body of the extractor before the glass has been placed in position. Putty may be used on the top of the cover, in the same manner as for a window sash to make it waterproof.

NATIONAL BEEKEEPERS' ASSOCIATION

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MARCH EVENING MEETING

Date: 28 March 2000 Tuesday
Time: 7.30pm sharp
Venue: Rumpletums
Avonhead Tavern
120 Withells Road, Christchurch

Supper/cover charge $2 per head

TW Corbett
Secretary

The legs are attached to the rear of the extractor to keep the rear end about 14" off the ground. The legs are made from the two 15" strips and are nailed to the body of the extractor after a wedge shaped piece 4" long is nailed to the top. The wedges keep the legs perpendicular.

The pan for the combs or cappings is made from the larger sheet of metal. It is 21 3/4" x 23 1/2" and 2 1/2" deep. The upper portion of the pan walls is made 3/4" wider and 1/2" longer than the bottom in order to provide slanting sides.

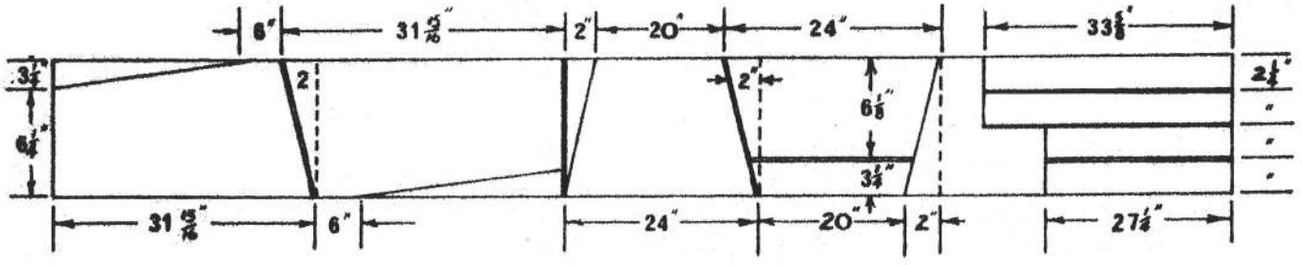
The lower end of the pan is cut back on both sides so that the sides are 1 1/2" shorter than at the centre, which when the pan is assembled, makes the front slope from the sides to the centre. This arrangement permits the melted wax to run toward the centre of the pan, through an opening, which is cut 2 1/2" wide, into a smaller pan placed below the larger one.

The pan in which the wax and honey from cappings collects is made from the smaller sheet of galvanized iron. This pan measures 4 3/4" wide by 20" along the top and is 3 3/4" deep. It is made 1/2" narrower on the bottom than at the top of the wall. This allows the cakes of wax (when cooled) to come away freely from the pan. Half an inch of the top edges of the walls is turned out, down and then hammered flat. This pan may be too large for small qualities of wax so it would be advisable to make a second pan 4" wide by 10" long.

Cappings can be rendered more efficiently if placed on a basket made from the hardware cloth. The basket is placed on the large pan. It is made 21 1/2" wide x 22" long x 2 1/2" deep. A piece of fine cheesecloth is placed in the basket to strain the honey and wax before they flow into the smaller pan.

If a basket of this type is not used, the partly melted cappings have a tendency to flow down the pan and over the edges before they are entirely melted. Old combs, however, do not flow in this way so they could be placed directly on the metal tray.

The solar wax extractor should be placed in a protected location - preferably facing north and should, if possible, be away from the prevailing winds.



List of materials

(a) One board (well seasoned) 13/16", 9 1/2" wide and 12' long.
(b) 6 1/2' of tongue-and-groove.
(c) 36' of timber 1/2" square.
(d) Two pieces of timber 13/16" x 2" x 15".
(e) Two pieces of 24oz glass each approximately 32" x 25 1/2". (The glass should be cut to fit the frame for the lid after this has been nailed and checked to make sure it is the correct size.)
(f) One piece of 24 gauge galvanised iron 26 3/4" x 28 1/2".

The birds and the bees

The subject of 'The birds and the bees' was among my favourites at school. It was my grandfather who told me a lot of what I needed to know too. I could ask him anything and he knew from experience; what to do and how to do it; when it came to bees. He kept several hives in his orchard in Darry and encouraged me to have-a-go in my teenaged years.

My grandmother has become a little well known for her wonderful sewn creations since then and one day, when I asked her what had happened to the antique, turn-by-hand sewing machine, she replied, "I gave it to the B man." Momentarily speechless I asked, 'Er, the B man?

'Yes', she insisted, 'The nice bee man. He and your grandfather kept bees in the orchard'.

It was John Donoghues's Grand Uncle who first made him interested in bees. Then, like many children, he found the next door neighbours home beckoned with more interest than his own and they kept bees too. Now, after twenty years of keeping bees, the still young John Donoghue is President of the Beekeepers Federation of Ireland and a very knowledgeable apiarist.

His trade and livelihood is carpentry, but his real vocation is honey bees. He had just come back from London when I spoke to him, having won eight prizes at an international gathering of friendly beekeepers for the honey from his thirty hardworking hives.

Bees are truly extraordinary creatures. Yet many people become hysterical, wildly flailing their arms when even the mild tempered Irish 'Black' Bee (which is actually dark brown) comes buzzing near them. But a bee's existence is really only in utter dedication to its colony - 'all for one and one for all' - tiny Musketeers in earnest, intelligent pursuit of the floral gifts in blossoms to make the Nectar of The Gods.

Honey has been a revered and cherished sweetener in sumptuous dishes since ancient, prebiblical cultures through to our era. We, in less reverence scrape it over toast or schmooze it round a crumble croissant, but the Greeks and the Arabs..ah! They create lap-dripping, finger-licking desserts luscious with honey and nuts between the elfin layers of fine pastry.

Trevor Rainsbury loves honey on his porridge. It was unwise of me to call him before his morning repast. As clever as a worker bee, he suddenly feigned deafness and asked me to