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Raising queen bees

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RAISING QUEEN BEES

Some Tested Methods

By R. S. COLEMAN, Government Apiculturist

MOST beekeepers are constantly seeking new and better methods of raising good queen bees and these suggestions, while capable of many refinements, will give good results for small-scale beekeepers when they wish to re-queen their hives. Most commercial apiarists have their own favourite methods incorporating variations of these ideas.

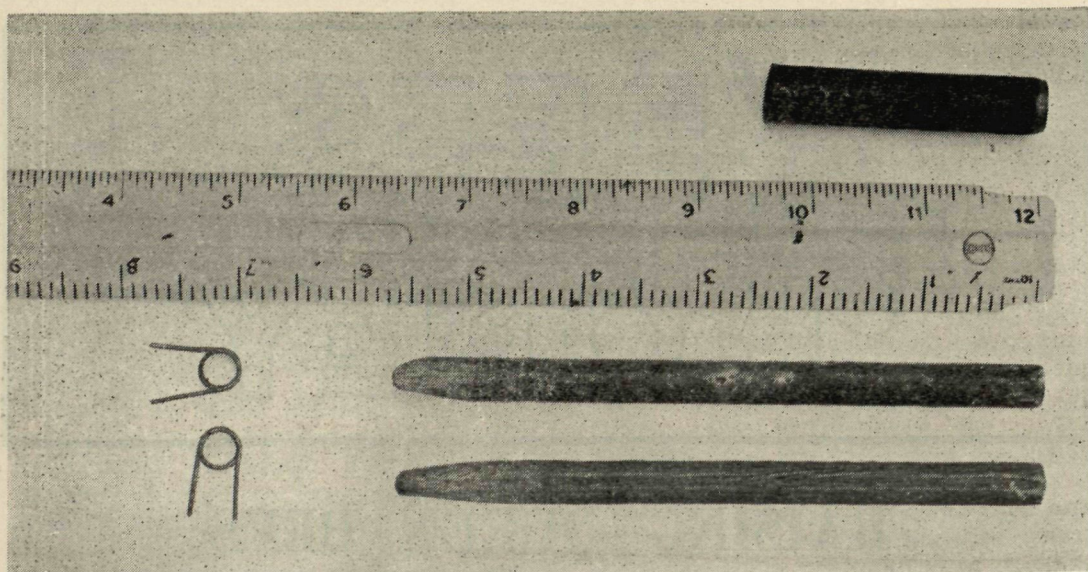
It is generally believed that a queen bee raised from the egg is superior to one raised from a grafted or transplanted two-day-old worker larva. Therefore, in this article I have described several methods of using eggs rather than those in which larvae are transplanted.

The most important factor which makes for good qualities in the future queen is adequate feeding during her larval life. For this reason, the hive used to rear queen bees should be strong in young bees to give the ample supplies of royal jelly necessary to healthy growth. The migratory beekeeper can usually arrange this by placing his apiary in a district rich in varied sources of pollen, and with a light stimulating flow of nectar. For the smaller or stationary beekeeper the best queen-raising period is the swarming season.

Strong hives may be built up by combining two or three colonies by the paper method, or by shaking bees in front of the hive, from brood frames taken from other hives.

When a suitable strong colony has been built up, six or eight frames of emerging brood covered with bees should be placed in a super on top of the hive but separated from it by a fly-wire travelling screen. Make sure that the queen is not carried up above the screen, and give the bees in the queenless top super a flight hole, either by placing "risers" on three sides of the screen, or by boring an inch hole through the hive body.

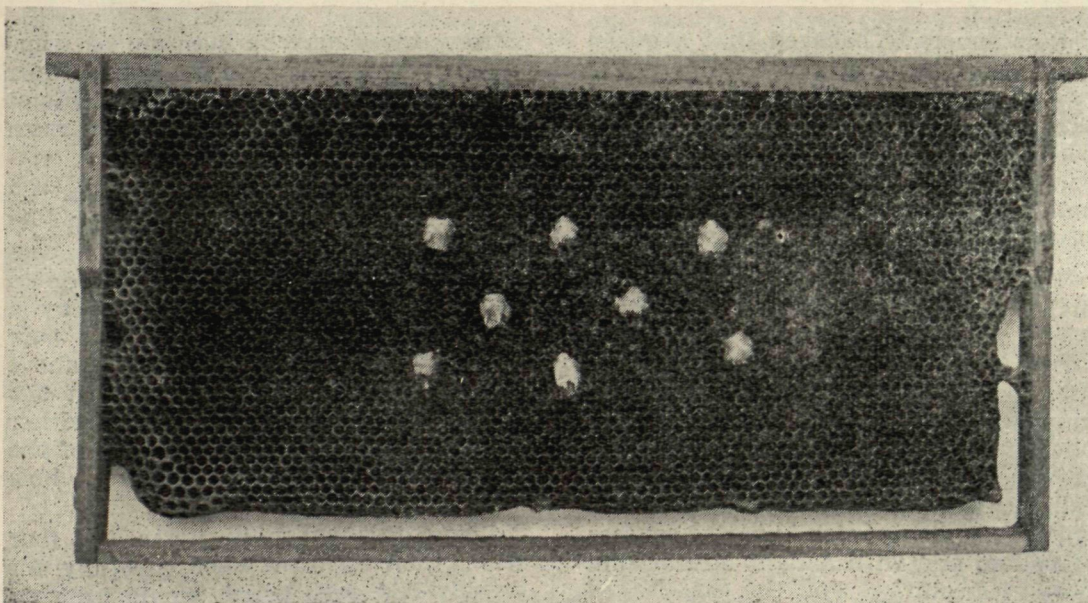
Leave this super in place for four days, then check it over carefully for freshly-laid eggs which would indicate that the queen was accidentally included. At the same time break down



Cell punch (top); sticks used for pushing cells from the punch, and wire spirals used for attaching cells to comb.

any queen cells which are under construction. With this done your hive is ready to raise queen cells and to do this you should introduce eggs from the best queen in the apiary. Such a queen

should be from a hive with the best record of honey production and she should have other good qualities to recommend her such as the uniform marking of progeny and a reputation



Cells attached to a comb.

for breeding long-lived workers, good clean housekeepers and good comb builders.

INTRODUCING THE EGGS

The simplest method of obtaining queen cells is to introduce into the queenless super a frame containing only eggs from the breeding queen.

This may be arranged by removing all the brood from the hive of the selected queen except the frame upon which the queen is working. The brood frames are replaced with dry, drawn combs, and it will be found that a good queen will soon fill a frame on which she is laying and will move on the adjoining empty frame which will then only contain eggs.

If this frame is transferred to our queen-raising super the bees will raise a number of queen cells from these eggs, the number depending upon the pollen supply, number and age of the bees and the amount of nectar available.

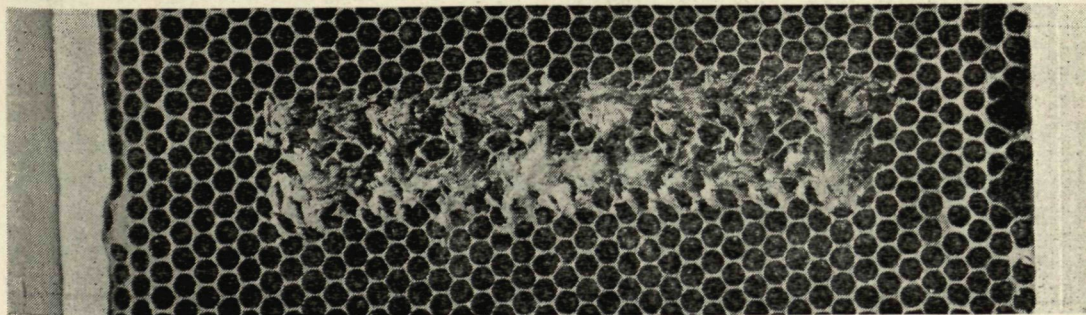
An alternative method of utilising the full frame of eggs is to empty the cell-raising super of all its frames with the exception of two frames of emerging brood on each side of the ten-frame box. Make up the numbers of bees, by shaking in as many frames of young bees as possible, then place the frame containing eggs laid by the selected queen face downward with the ends of

the frame raised on the frames of brood. This method will give queen cells hanging at right angles to the frame where they may be more easily removed.

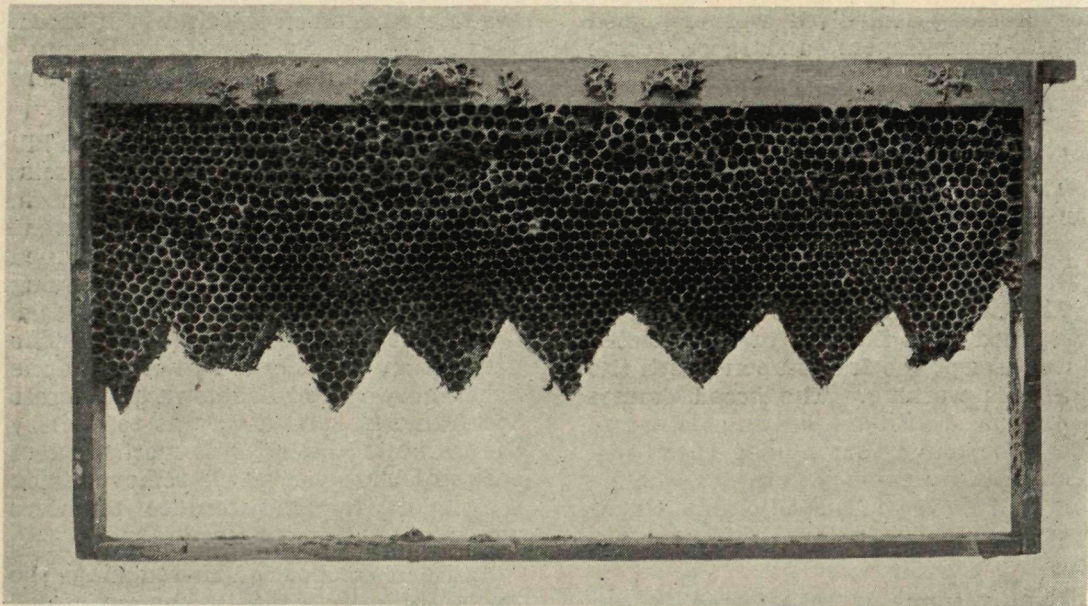
A refinement of this method is to kill two rows of eggs horizontally then miss one row, kill two more rows and so on. Next, working vertically, kill two rows, miss a row, kill two rows and continued throughout the frame thus leaving single eggs isolated from the other eggs by two rows of destroyed cells. The destruction of the eggs and cells is done by running a hot knife down and across the frame in such a way as to destroy the unwanted cells. This method gives cells which are very easily removed from the frame for transference to hives where re-queening is necessary.

Another method of introducing the frame containing eggs to the queen cell raising super is to cut away portion of the comb leaving the bottom of the frame portion in a saw-tooth pattern with the points about two inches apart. The bees tend to raise queen cells from the eggs near the points. The portion of comb removed from the frame may be attached to an empty frame and used in another queen cell raising hive.

Another method that has all the advantages of grafting plus the added advantage of raising queens from eggs is to cut out the worker cell with the egg in it and insert this in a wire spiral which can be pinned on to a brood frame to be raised and may then



Showing method of destroying two rows of cells vertically and horizontally to leave isolated cells for queen raising.



Comb cut in a saw-tooth pattern to facilitate the building of queen cells.

be removed easily when the cell has been capped, and transferred to the hive to be re-queened.

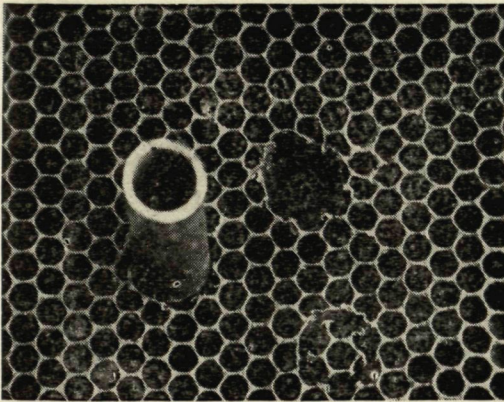
The cell containing the egg is removed from the comb by means of a hollow punch $7/16$ ths of an inch in internal diameter and about two inches long. This punch can be made by rolling up a piece of tin or sheet brass in the form of a tube. The edge is sharpened by filing down the outside of the tube so as not to reduce the inside dimensions.

Heat this tube by standing it in boiling water and then punch out the required cell with a quick rotary movement going right through the comb. With a tapered stick, too large to fully enter the cell, the cell may be pushed out of the punch and is then held with the stick and one end is fitted into a wire spiral and secured by dipping into hot wax. Only a quick dip which immerses a small portion of the cell is needed otherwise the egg may be endangered by overheating. When the cell is securely attached to the wire expand the top of the worker cell with the tapered stick until it approximates

the diameter of an embryotic queen cell, and place it on a comb of brood in the queen cell raising super.

POINTS TO REMEMBER

1. Make the queen cell raising hive as strong as possible by shaking young bees into it, using brood combs from other hives. This can be done by shaking the bees into the super when it is placed above the fly wire screen.
2. Check after four days to make sure that there is no queen and no queen cell in the super.
3. If there is the slightest doubt about the nectar flow, feed the bees with a sugar or honey solution so heavily that if the rate of flow was increased the bees could be swamped out. In other words feed your queen cell raising bees to their maximum capacity. In addition to this there must be a plentiful supply of pollen available.
4. Try to do the work on days when the temperature is above 75 degrees and less than 98 degrees. The ideal temperature is between 85 degrees and 90 degrees.



Punching cells from comb.

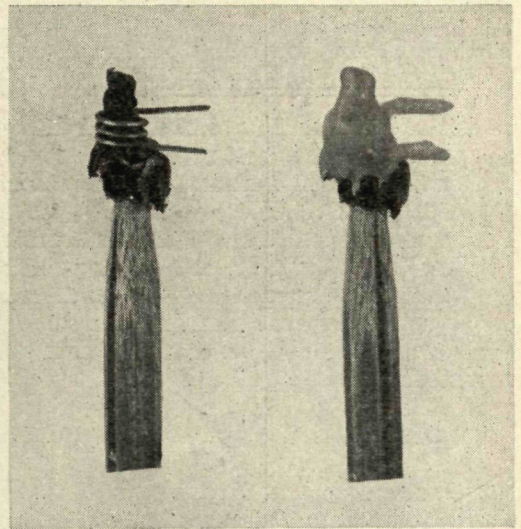
5. It is almost useless to try to work with queen raising hives when severe robbing is taking place in the apiary, so at the slightest sign of robbing, stop work and wait until conditions are normal.

6. Do not expect many cells under the superseding method, as the idea is only to raise a few, but that few of high quality.

RE-QUEENING

After six or seven days the capped queen cells may be removed from the queen cell raising super and placed in the hives which require re-queening. Alternatively, they may be placed in a queenless hive which will care for them until they are ready to be introduced.

Where the wire spirals have been used it is a simple matter to remove the cells from the combs in the queen cell raising super and transfer them to brood combs in the hive to be re-queened. Where the spiral has not been used, the cell is removed from the super, a small frame nail is pushed through the upper wax of the cell and it is then attached by means of the nail to a hollowed-out portion in the brood frame of the hive which is ready for re-queening.



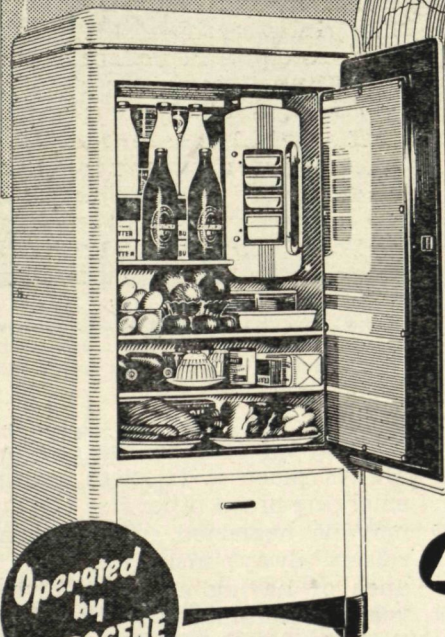
Left, cell removed from comb and fitted with wire spiral holder. Right, same cell after dipping in hot wax to secure wire.

When introducing the cell to a hive, always place it in close contact with emerging brood otherwise the queen cell may be neglected. Commercial queen raisers always insist upon the importance of having a strong hive for the young emerging queen. This ensures that the young virgin is well fed and will result in the evolution of a better queen than if she is mated from a weak hive.

It is customary to remove or kill off the old queen about a week before the introduction and then to examine the hive two days before introducing the new queen cell to make sure that there is no queen and to break down any queen cells which may have been built in the meantime.

Many beekeepers do not take the trouble to remove the old queens but simply place two frames of brood in the top super with the queen cell between them. In nine cases out of ten, the young virgin queen on emerging will search for and destroy the old queen so that the labour entailed in searching for her may not be warranted.

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