A POINT IN QUEEN-REARING

Will Bees, When Left to Themselves, Rear the Best Queens?

By Dr. C. C. Miller,
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In reply to a questioner, I favored the idea that, left to themselves, bees might rear as good queens as when they were restricted to eggs or larvæ of a certain age. Referring to this, Hon. R. L. Taylor says in Review:—

"He argues (A. B. J., 295) that in a colony made queenless, with eggs and larvæ of all ages present, it looks rather reasonable that the bees will select what will make the best queens if it is left entirely to them. It may look reasonable that they should, but they don't; at least, they don't altogether; and the trouble is that, when they err, as they generally do, I suppose, from their eagerness to get a queen as soon as possible, by selecting one or more larvæ for the purpose that are too old to produce the best queens, the queens from such hatch first, and so the later and better ones are destroyed. The remedy is to remove the larvæ, in four or five days, from all but three or four of the most satisfactory cells."

So important is it to have the best queens possible, that the matter should be very seriously considered before following a plan that, in Mr. Taylor's judgment, would bring such bad results.

One might suppose that, if the bees have intelligence enough to select an older larvæ because it would give them an earlier queen, their intelligence might carry them a step farther, and make them willing to wait for a better queen. But it isn't always safe to trust the bees to do what might seem best to reasoning creatures. In some cases man's reason comes in to direct the bees. Mr. Taylor says when the matter is left to the choice of the bees "they don't" select what will make the best queens. In their hurry they select larvæ too old. Scientists tell us that the food the worker larvæ gets for the first three days is the same as the royal larvæ gets throughout its entire existence, and that a larvæ three days from the egg is as good as the best to produce a queen. So the difference between a worker and a queen is made in the last two or three days of feeding before it is sealed up. But although the difference is made in that two or three days, it makes more than that length of time in the development, for the worker is five or six days longer in coming to maturity than the queen.

Now, suppose a queen is taken away from a colony, there being present eggs and brood in all stages. One set of bees say, "Here's a larvæ three days old; we'll rear a queen from that." Another set says, "Here's a larvæ two or three days older, just ready to be sealed over; let us rear a queen from this, and we shall have a queen two or three days sooner." Now, this latter larvæ, if it were continued as a worker, would not emerge from its cell until twenty-one days from the laying of the egg; and, changing from its original destination so late in life, it will be only an abortive sort of queen, taking nearly as long to develop as a worker; so it will turn out that the larvæ three days old will come out of its cell sooner than its older sister. In general, it may be said that any larvæ more than three days old in a worker-cell has had a change in its food unfitting it for a perfect queen, and lengthening the time of its maturity so much that any gain in the way of age will be more than counterbalanced by the longer time it remains in the cell after being sealed up. Considered in that light, is it not easy to see that it is not possible for any queen to emerge from its cell earlier than one from larvæ three days old?

Keep in mind that the oldest larvæ that is unsealed in a worker-cell is only two or three days older than a three-day larva that will produce a perfect queen, and that, after the first three days of its existence as a larvæ, every day that it grows older before it is chosen for a queen makes more than a day's difference in the time it remains sealed up.

Let us look at the matter in a little different way. How long does it take from the laying of the egg to the emerging of the queen, under favorable conditions, in a full colony? Forty years ago seventeen to eighteen days was considered the right answer. On page 19 of the American Bee Journal, vol. i., 1861, no less authority than the Baron of Berlepsch gives, as the result of very careful observation, that in one case the queen emerged in eighteen days, and in a second case in seventeen days. He then remarks:—"These experiments show that the opinion generally entertained that the queens emerge between the seventeenth and eighteenth day after the eggs are laid is correct." But Berlepsch used a small