

Success in Bee-Keeping.

BY THE EDITOR.

If there were two points in bee-keeping I would single out as the most important in management, and not generally recognized, they would be, "wintering bees with the least loss of vitality," and "keeping the bees from having the desire to swarm when there is a large number in one colony." I first headed this article "Notes for Beginners," but I could not do so with sincerity. What I am about to say should certainly be of value to beginners, yet I feel equally assured that there is many a bee-keeper considered advanced, who can read and follow out the suggestions I am about to make with profit.

At this date of writing another winter has passed, and the experiences of another winter have, I trust, enriched me in apicultural information. Some seventy-five colonies were wintered in the cellar, and although some were very light, every one, I believe, is in good condition. I have had quite a number of bee-keepers see the bees during the winter, among them, Jacob Alpaugh, S. T. Pettit, Chris. Edmondson, and all thought they were wintering well. The bees clustered very quietly.

I wintered with artificial heat and constantly gave fresh air. During the past year a shaft of cold and fresh air was brought from outside into the compartment which contained the stove, and from this the warmed air was distributed, by means of pipes, into the bee cellar, and a pipe again took the foul air away from the cellar. I enlarged the fresh air pipe to fourteen inches square. Last winter it was only four. I find this an improvement. The pipe contains a slide which regulates the size of the pipe. The cellar, as far as possible, was kept at about 42°. During the time that the outside temperature was above freezing, and the nearer the outside temperature approached to the inner the greater was the difficulty in securing a change of air in the cellar. I have studied and planned in this direction for years, and at last I believe I have a method by means of which a steady change of air can be secured at all times and at no great expense. Also that an even temperature can be secured. My

plan is this: By means of a simple clock-work arrangement an air pump is worked in the shaft; and as it is not intended to form a vacuum in one compartment, or compress the air in the one into which the air is being pumped, there will be no great pressure on the pump and it will work very easily. As fresh air is pumped into the cellar an equal quantity must be forced out, and in this way a regular quantity secured irrespective of temperature, velocity of wind, etc. Now to regulate the temperature of this air, it can be forced when the weather is cold through the stove compartment; or when thawing in winter or towards spring the temperature rises, this air can be pumped through a shaft containing a block of ice. It may be said this costs something; but what is an outlay of \$25 or even \$35, good for twenty years or more, when we can husband thereby the vitality of 100 colonies of bees.

There are too many content with bringing bees through alive, or with some bees in the hive still alive, when it is a question of, how little vitality has been lost during the winter.

The cost of the production of honey is, to a considerable degree, dependent upon this. Winter better, get a larger honey crop, cheapen the cost of production, and you will have larger profits from your apiary.

KEEP STRONG COLONIES.

Another factor of immense importance in bee-keeping, cheapening the cost of production and getting the largest profits from an apiary, is to keep bees from desiring to swarm when strong. There is no difficulty in keeping bees from swarming when they are weak and do not fill the hive, but when they fill the hive and are gathering a full quantity of honey and especially when running them to secure a nice lot of comb honey it requires good and careful management to keep them together and get good returns from them.

The larger the number of bees that can be kept together in a contented way the better. As in a business, so many dollars worth of goods must be sold at a gross profit before the fixed expenses of a business is paid for. Or in live stock, when fattening animals it takes so many pounds of food to keep up the requirements of the animal, and what is digested, beyond that goes to give the increased weight. So in bee-keeping we have a problem on a somewhat similar basis. It takes so many bees to do the work of the hive; that is build comb, attend to the queen, feed the larvae, keep up the warmth of the hive and