

ELEMENTS OF THE AIR AND SOIL,

but only four of them, comprising about 3 per cent of the make-up, are usually considered. The reason for this is that the rest of the atmospheric elements can be easily acquired, and that the rest of the mineral or soil elements are in abundance in the soils. By-and-by, when we know more of the science of plant life, we may discover that the availability of these abundant mineral elements may require consideration, as the necessities of an expanding population in the world demands more food.

For the present, however, we will try and work within the bounds of what we know. Of these four elements then: nitrogen gives us what we term growthiness or size; potash induces fleshy parts; and phosphate makes bone and force, and after acting upon the other substances during growth, finally carries the plant or animal to ripening, and prepares for the continuation of species. The lime and the phosphoric acid are included in the term phosphate.

(To be continued.)

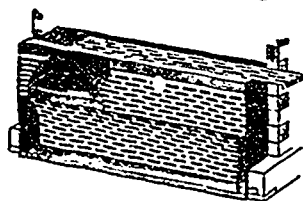
The Use of the Drone and Queen Trap, Also, "Taylor's" Swarm Catcher

Written for "Farming" by R. F. Holtermann, Brantford, Ont.

One of the difficulties the average farmer has in the keeping of bees is to look after the swarms during the swarming season, and prevent the loss of swarms, also, the inconvenience of hiving them at all times of the day. The methods in use in modern bee-keeping have enabled us to largely overcome the difficulties in connection with swarming. Some bee-keepers place their bees in the vicinity of the kitchen window, hoping, or expecting the women of the house to do the work of the house and also keep their minds and eyes on the bees, and detect swarms as they issue from the hives. I have never been an advocate of doing two things at one time, or being engaged in one line of work and having one's mind on another, and the difficulties connected with such a method of bee keeping are great. The swarming season generally begins during the last days of May, and continues through June and a portion of July. In the buckwheat districts we often have swarms during August. Any farmer who has kept bees and been called home to hive them when he may be engaged in distant fields doing work with horses knows how annoying this is.

The Alley drone and queen trap here illustrated is placed at the entrance of the hive, completely closing it before there is any danger of swarming.

The way in which this trap works is as follows: The queen is a little larger than the worker bees, and in the trap is placed a piece of perforated metal of such a size that the worker bees can pass through it, but not the queen. This perforated metal is also used between the body of the hive and the supers; the worker bees passing through it can enter the super and deposit honey in the combs without allowing the queen entrance. No frame is



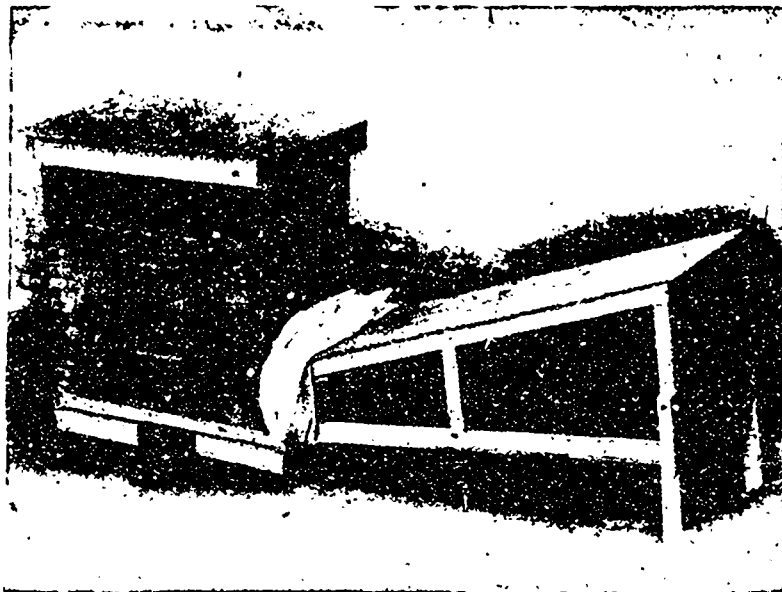
ALLEY DRONE AND QUEEN TRAP.

complete without a queen; in fact, the frame consists of the old queen and the old bees, they leaving the old hive to the young queen and the younger bees. As the swarm issues the worker bees pass through the perforated metal, as they have been doing ever since the trap has been put at the entrance;

the queen attempts to issue with the worker bees, but is stopped by means of the trap, and in her efforts to follow the swarm, on the same principle as in the fly trap, she passes through the comb into the upper

compartment of the trap, and is there caged. The swarm now on the wing notice the absence of the queen, and, failing to find her, return to the hive and cluster in part in the upper part of the queen trap, the remaining bee re-entering the hive. The bee-keeper, looking at the trap at noon, or evening, finds the queen there, and knows that the swarm has issued. He now takes the new hive, shakes about three-quarters of the bees in the old hive into the new, and, after that, the queen out of the trap. The new hive should be placed in the old stand, and the old hive some distance away, in this way, the bees are hived without watching or climbing trees, and the farmer has avoided possible loss, and, if he takes an interest in his business, a great deal of anxiety, for, if the bee-keeper loses his first swarm, he practically loses the season's profit.

The "Taylor" swarm catcher wants no adjusting; it has a cage which is placed at the entrance of the hive the moment the swarm begins to issue. It could be used to good advantage by the bee-keeper in the apiary, or a child or timid person could cage the swarm in this way when they would not be in a position to climb trees to shake down swarms. By using this swarm catcher the danger from absconding bees is also lessened. In using the catcher care must be exercised to close all means of communication with the outside; the catcher must not be emptied of bees until after the first excitement and desire to fly. It is well to leave them there for at least one-half-hour, until they cluster; a cloth at the mouth of the swarm catcher could be used to close the latter; then, when the farmer or bee-keeper returns to the apiary, even if it is



TAYLOR'S SWARM CATCHER.

twelve hours later, he could hive the bees. I know one case in particular, where the bee-keeper is a market gardener. He has a daughter about twelve years of age, and one dozen of these swarm catchers in the apiary; she places the swarm catchers in position as soon as the swarms begin to issue, and leaves them in the catcher until her father's return in the evening. By means of appliances such as the above the labor connected with bee-keeping could be reduced and better profits secured.

Fine Bone and Good Flesh

A writer in a recent issue of the *London Live Stock Journal* points out that the crude old notion that mere size was of the first importance has given place to advanced ideas of the relations between the structure and the flesh which an animal carries, experience and observation having shown the inverse ratio of the tendency to make meat and the tendency to make bone. The rule that as bone became refined fattening became more rapid, and could be done on less food, is now fully recognized, and breeders are