

abundance of richer flora, the bees visit other species in preference.

In localities where the golden-rod abounds, there is usually an abundance of yellow ray-flowers, commonly called "sun-flowers," and these I know to be good honey-plants. I am never disappointed when I look for bees reveling in their golden dust, if within range of the apiary.—EUGENE SECOR, in *American Bee Journal*.

E. O. YOUNG.—Commenced in the spring with 18 colonies. Increased to 37. Got 2,200 lbs. extracted, and 100 lbs. comb honey.
Hampton, Ont.

Speed of Bees on the Wing.

A GOOD deal has been said about how far bees will fly for honey. Some writers claim that they will only fly two to three miles, while others are just as sure they will go from five to seven miles. Now a bee's wings vibrate, or beat the air, at the rate of 190 strokes in a second. Some claim that this will produce a rate of flight of a mile per minute. In windy weather, when they take advantage of trees and other obstructions near the ground, they fly at a very slow rate, perhaps not more than ten miles per hour. In fair summer weather, however, when there is little wind, and they fly high in the air, they go like a shot, but I am satisfied that they do not go as fast as sixty miles an hour. Thirty miles perhaps is more nearly right. Now if they travel a mile in two minutes, it is fair to suppose they can easily keep this up for twenty minutes. This would take them ten miles from home. We think they will often go that distance to a buckwheat field. It can, however, be easily understood that they would gather much more honey when pasturage is nearer, as they could then make more trips. When bees make long trips, as ours are now doing, they return almost exhausted, often dropping at the entrance, and sometimes resting a minute or two before entering the hive.—C. H. DIBBERN in *Western Plowman*.

HIBERNATION.

IN its general acceptance this term is somewhat misleading. One is very apt to think it refers to a state of insensate quiescence simulating death, in which the subject temporarily loses the power of movement, and, at the same time, the sense of feeling, a sort of trance, like semi-death in point of fact; anyway such seem the symptoms of hibernation. To be correct, to say the least of it, we should take a much broader view; in its best and freest rendering we must call hibernation a mere wintering, a passiv winter in a state of seclusion, or in

lethargic sleep, in torpid, sluggish, numb inactivity; in a drowsy rest. So pass away the hibernal months with our honey bees; so, too, in a similar way, but in varying degrees of intensity, all animate nature exhibits a tendency towards inactive rest and sleep when the temperature of the surrounding air falls below the normal point necessary for activity and progression. The amount of cold, (more correctly decrease of heat) necessary to produce this wintering condition varies, of course, with the susceptibility of the subject, a continued decrease of heat producing the sleep of death, whilst an increase develops a tendency towards life and activity.

We have then to ascertain what degree of cold can be borne by our bees and yet survive until revived by returning heat, and this is a question more easily asked than answered. They have been known to winter in this country under a hive floor-board with no protection for the cluster other than that offered by a few pieces of comb; and every bee-keeper knows how he may take quantities of bees from a surface of snow, after they have been out all night, with the glass below freezing, and bring them round again to humming, stinging life by simple warmth. To freeze the queen bee slightly and then thaw her majesty results in no further mischief than the destruction of the live contents of the spermatheca, thus rendering her a confirmed drone-egg-layer henceforth. It more concerns us to deal with the temperature within the hive. Reaumur is distinctly of opinion 'that during the greater part of the time in which the country furnishes nothing to bees, they have no longer need to eat. The cold which arrests the vegetation of plants, which deprives our fields and meadows of flowers, throws the bees into a sort of torpidity, in which no transpiration from them takes place; or, at least, during which the quantity which transpires is so inconsiderable that it cannot be restored without their lives being in danger. In winter while it freezes, one may observe without fear the interior of hives without putting any bee into motion.' Huber, on the contrary, tells us that, far from being torpid in winter the heat in a well-peopled hive is 86° or 88° (Fahr.) when it is below freezing in the open air.

Both of these eminent men are evidently in error on this point. Huber, first, inasmuch as he had to disturb his bees in order to get his temperatures, he would thus get a false register of the normal heat of the well-filled hive when in a quiet state, with the outer air at freezing. Reaumur, too, proves himself wrong by stating that bees are so