

it is not so generally known—because it does not strike us so forcibly—when and in what manner most bees die. A discussion of this subject might not therefore be without interest to bee-keepers.

Very few bees, indeed, die a natural death from the infirmities of old age, unless we regard as natural that kind of death which finally overtakes them through inability of their wasted wings to carry the weight of the body any longer, when, especially during high winds, they fall fatigued to the ground at some distance from the hive and perish. When incessantly at work in the summer, the life of most bees does not exceed six weeks, but during the period of rest in autumn and winter and in queenless hives there is little or no change in the appearance of the bees, and they may then live for nine or even twelve months, of which any one may convince himself by allowing a colony to remain without a queen.

Baron von Ehrenfels, in expressing the opinion that worker-bees, escaping from all dangers which threaten their existence, might attain the age of queen, must have been greatly deceived. The queen possesses much greater vitality than worker bees, and consequently lives to a greater age. Ehrenfels, however, is correct in stating that most bees die a premature and violent death. The largest number of bees are destroyed by their greatest enemy, the cold, partly inside the hive and partly in the open air. We all know that many bees die on the snow, especially when loose and of a dazzling white appearance. They fall to the ground and remain there, not only near their hives, but frequently at a considerable distance from it, as many a bee arriving half chilled will rise again and be borne away by the wind as long as it is able to move its wings. In the direction in which the wind blows the greatest number of bees may therefore be discovered lying on the snow. Most of them having cleansed themselves, it might be quite worth while to have them collected by children, and, after warming them a little, to put them into a hive which requires strengthening; their bodies must not, however, have been exposed to a cold at freezing point, which but too frequently happens when the sun is obscured or near setting, for in that case it will not be possible to revive them. Large numbers of bees perish in March and even in April, at which time they show an extraordinary desire for fresh pollen, which induces them to rush out of the hive every time the sun appears, and to venture on long excursions, during which they get chilled and fall to the ground, when the sun is hidden behind

the clouds, or when the wind is getting cold. In spite of breeding the loss of workers at this time of the year is frequently so large as to make the colony appear weaker at the beginning of May than at the beginning of March. In May and June, however, the population of every healthy stock increases from day to day, because the air has now become so warm that bees do not get easily chilled, when the sun rises to the highest point in the sky, our colonies, as a rule, have the largest populations, so large indeed do they become that in many hives there is scarcely room enough for all the bees, and a part of them are obliged to remain outside the hive day and night. But as soon as the days begin to shorten and the honey sources become scarce, the bees of the colonies which have remained undivided decrease at the same rate at which they increased previously. Now how is this visible loss in population to be accounted for, as on account of the still high temperature of the air, but few bees get chilled, and being less active now they do not get worn out so quickly? Most of the bees which perish at this time, doubtless, become a prey to their numerous enemies. The number of bees snapped up by birds is exceedingly small compared to the number destroyed by their small, but more numerous enemies, the field spiders, hornets and wasps. The latter, which increase enormously if favored by warm and dry weather, destroyed an incredibly large number of bees, especially in August. The wet weather of the past summer, however, put a stop to their proceedings; and this explains why, according to all reports, the colonies at the end of the season, though they had accumulated but little honey, were found to be strong in numbers.

A good many bees, especially old ones, in their anxiety to collect as much honey as possible, no doubt venture upon long excursions to distant moors when no longer any pasture is to be found near the apiary, and overtaken by contrary winds or rain are unable to return to their hives.

We know that some bees, and often a great number die inside the hive, the cause in most cases being their not following the gradual contraction of the cluster of bees when the temperature is falling, but especially when, as often happens, cold weather sets in suddenly; they then get chilled and die unless restored to vitality by the application of heat within twenty-four hours.

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(To be continued.)