

[Essay on Bees, Honey, and Honey-Dews]

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Description

An extensive discussion of the flower preferences and habits of bees followed by an argument for keeping bees in Nova Scotia. An appendix to the article explains that the article's treatment of bees has not been published, nor will be until the author has made "actual experiments upon these useful insects." nn.423-27. Microfilm Reel 8062.

Transcription

ESSAY ON BEES, HONEY, AND
HONEY-DEWS.

AS the keeping of bees, in all countries where they succeed well, is very advantageous, and, as it cannot until it has been thoroughly tried, be known but that they might succeed in this Province. I must own that I have been rather surprised when I see no one in these parts ever once making the trial, and the more so, as it appears to me that upon a proper trial there is good prospect of success; and though some few bees may have been brought to these parts heretofore, yet I am far from thinking that any such trial as is sufficient to shew that bees cannot be kept here to advantage, has ever yet been made: Indeed there appears to me a much better chance that bees would succeed here now, than even ten years back, as the country is more cultivated: For all land, after it is cleared and cultivated, produces many more flowers, from whence bees can gather honey, than while it remains uncleared. And if we attend to the way that bees obtain their honey in all places where they are kept, I think it

will make it so probable that we might keep bees here with success, as may well encourage a thorough trial in all parts of the Province.*

It has been thought by many, that bees make their honey, but this is undoubtedly a mistake; their honey is ready made, and they have only to separate it from any heterogeneous matter that may be mixed with it, and to collect it. 'Tis past a doubt, that honey often falls in dews, though I think it is very probably that these honey dews are much more considerable in some parts of the world than others. In that part of America where I was born and brought up, they were common, and I did not then suspect but that the same was the case in other countries: so that I was surprised afterwards to find Quincy, in his Dispensatory, under the article honey, speaking of it as what had been noticed by some medical

writers and naturalists, and quoting several ancient authors to prove it: By this I perceived, that if known at all in Britain, yet it was not so common there as in America. He quotes from Galen the following words: 'I remember I have sometimes in the summer observed honey upon the leaves of trees and plants, inso-much that the hinds have, with joy, cried out, Jupiter rains honey.' This, from Galen, is a description of a honey-dew: it falls, like other dews, upon all leaves and plants, but is not like them soon evaporated by the sun, but continues all day. I once saw such a dew the whole of the day, for two days together, when the bees, leaving their flowers, were spread all abroad gathering honey from every leaf: The dew that was on the leaves at this time differed nothing from honey, either in looks, feeling, or taste; and I took from the lower point of a leaf a drop of as pure virgin honey as I ever eat in my life: Yet I am far from thinking that bees collect the chief part of their honey from dews so considerable as the above; they may collect much honey from dews in which there is not honey enough mixed with the other dew to be perceived by men; and that this is in fact the case will be very manifest if we attend to the following things: 1st. There are certain flowers up-

*It is truly surprising if the experiment has never been made. We hope the writer of this essay and others will avail themselves of the present winter, to procure a sufficient number of hives, to make a trial in the ensuing summer. We cannot see any well grounded reason to doubt the success.

on which bees work only in the dew of the morning. 2d. There are others upon which they never will till the dew is off; and a third sort upon which they work all day. Of the first sort, are buck wheat,

mullein, &c. However many bees you see in a field of buck wheat in the forenoon, yet you may in vain look for a bee in it in the afternoon; the same is true of mullein and many other flowers. Further, the flowers, upon which they work in the dew of the morning have generally, but on petal or flower-leaf, and are funnel shaped, standing with their wide tops open to the air above, and ending in a honey cup, or coming to a very narrow point at the bottom; and that which would be too inconsiderable to be noticed, even by a bee, when spread over a large surface, would be very perceivable when collected all into one small point; and I never yet found flowers of this shape in the woods, in a country where bees are kept, but in the morning I could find bees upon them, but never at any other time. Now I would query, why the bees work upon these flowers in the dew of the morning and at no other time? The answer doubtless must be, because they collect something from them then, which they cannot find when the dew is off: For if the same was to be obtained when the dew was off, no reason, I think, can be assigned for their ceasing to work upon them at the going off of the dew, it remains then to shew what that something is, and as bees are never known to collect anything but honey or wax, * I think

** I am sensible that some will be ready to tell me that there is a third thing which the bees collect that is commonly called bee-bread, and 'tis thought by some that this is a necessary part of their food: But if we attend to the following consideration, it will appear to be something of a different nature: 1. In swarms of the first year there is but little of the bee-bread to be found, yet it is a substance that is constantly increasing as the swarm grows older, so that in some very old stocks it will be difficult to find any comb that is eatable. 2. There are several months every year that the bees never go out; and yet all this time they live by eating, being not like some animals in a*

sleepy state, as any one will perceive by putting his ear to the hive and giving it a little rap. But the stores of honey that they consume in that period, in which they keep wholly within, sufficiently shew, that they eat then as at other times. 3. We know of no animals, however small, that are constantly supported by eating, but must also have proportional evacuations; this then can be no other than the excrement of the bees: they have no sooner built themselves some comb than some cells are set apart for that purpose, which are no sooner filled than they are scared up, perfectly tight, impenetrable even by air; in this way their streets and alleys, their houses, their honey, &c. Are all kept perfectly clean and neat, and there are no bad smells to affect their fine and delicate organs through the whole of their confinement.

there can be no doubt which of the two it is, if we attend to the following things: First, these flowers have generally a honey-like sweetness, very perceivable in them, even to that degree, in some instances, that some have thought it worth their while to make use of some means to extract the same as may be seen in the dictionary of arts and sciences, under the word *verbascum*: This alone, makes it very evident, that honey is what they collect from these flowers; and if it should appear most probable that they collect their wax from those flowers upon which they work after the dew is off, and at no other time, this will make it more evident.

Now the anthera which grow upon the tops of the stamina of flowers, contain an exceeding fine yellow dust, which is found, when carefully examined, to be of a glutinous adhesive nature, like wax, and is doubtless the wax itself in exceeding minute grains, and needs nothing more than to be squeezed and worked together by the bees into a more solid body, to take the appearance of wax as it does on their yellow legs, with which they appear loaded when they work on flowers after the dew is off.

Let any one make the trial, and he will find it very difficult to make small pieces of wax adhere together when they are wet; but let them be dried, and a little softened by lying in the warm sun, and the difficulty will be removed. The same is the case with the savina in flowers; to that as the dew of the morning appears to be the chief time for collecting honey, so the sunny dry part of the day appears to be peculiarly suited for collecting their wax. Another thing should be observed here, which is, that the flowers upon which they work in the dry part of the day, appear, many of them, to abound very much with the aforementioned savina, so that one's cloaths would be covered with the same, only by walking through the flowers where they stood thick.

Now, since the flowers which they work upon in the dry part of the day only, abound much with that substance, from which they undoubtedly make their wax, and those which they work on in the dew of the morning only, all evidently taste of ho-

ney, I think there is not much doubt but that they collect their honey from the latter; and that they can do this only in the dew is also evident from their ceasing to work in these flowers at the going off of the dew.

And this honey, I think, must fall with the dew; for if it was separated from the natural juice of the plant by secretory vessels, and by them deposited in the honey glands, at the bottom of the flowers, it might be obtained at all times as well as in the dew of the morning; which is not the case with respect to that particular kind of flowers we have been speaking of. But then there is a third kind of flowers, as we observed at the first, upon which the bees work all day, both when the dew is on, and when it is off: Of this kind is the white clover, which is also by many called white honeysuckle, as it is said to taste of honey; this has a compound flower, consisting of many tubular florets,

which though of some depth, are very slender and small at the top as well as bottom, so that the dew having one settled to the bottom of these slender tubes, would hardly be dried off through the whole day; and thus they might be found gathering honey from flowers of this kind through the whole day, though there was no honey but what fell in the dews: But it is rather my opinion that in flowers of this kind, the honey is separated from the natural juice of the plant by secretory vessels; and deposited in honey glands in the flower: For these flowers have no wide tops spread abroad to draw in the dew: The same is the case with the blossom of every species of willow; and yet each catkin, or little head of flowers, has in the middle of it, a cylindrical gland filled with honey.

Honey then, it would seem, constitutes a part of those vegetable juices which are prepared in the earth by nature, or rather by the great Author of Nature, for the nourishment of vegetables in general; part of which is taken up by the plants of the earth, and part of which being like the other moisture of the earth, rarified by the sun's heat, and raised into the air, falls down in dews.* Of that which is taken

**This would to us, in itself, appear unaccountable. We are much more disposed to adopt the theory of the Abbé Bouffier, whose remarks we annex at large, not only as an explication of this phenomenon, but as they exhibit another very curious source of honey. Whatever may be the cause that produces these dews, it would be of more importance to ascertain the fact, whether they have been found upon plants in this province.*

up by plants, in many of them a part is separated by secretory vessels, and deposited in honey glands or cups in the blossoms; and that which is raised into the air by the rarifying influence of the sun, and falls

down in dews, is a part of it collected in the bottoms of such flowers as spread their wide open tops like a funnel abroad in the air; though sometimes nature, dealing it out with a more bountiful hand, not only the flowers, but every leaf is spread over with it: But however wide it is spread, or however many flowers contain it, at best it is so thinly scattered, that mankind could receive but very little benefit from it, were it not that a little insect is prepared for the purpose of collecting it--small indeed--but very numerous, and with organs every way suited to the purpose. These with the greatest industry spreading themselves abroad on every flower, and every place where honey is scattered, carefully gather the minutest grains of it wherever they find it, till thus by little and little, in the course of the season, they lay up large stores. Thus they who keep bees, without any labour of their own, or any other cost than that of finding houses for these emblems of industry, are furnished yearly with good store of that, which is past a doubt, the most wholesome, and elegant sweet in nature, and one of the greatest delicacies of life.

Now, why should we of Nova-Scotia, be so inattentive to our own interest as never once to try if we may not be sharers with others, in that which is manifestly intended as a common benefit? It is indeed possible, that upon trial, bees would not be found to do well here: Yet it appears to me, that it is much more likely that bees would do well here than otherwise.

Buckwheat, mullein, and white clover, are the most capital flowers, that they have in New England for bees to work on. Buckwheat bids fair to succeed the best of any grain in Nova-Scotia; and mullein, where it is put in, thrives well; so that I have no doubt but that we may soon have it growing in our highways, old fields, &c. And as to white clover, whether we keep bees or not, the sooner we have our feed-

ing pastures covered with it the better, for nothing equals it for feed, both for horses and cows; and I think, by some little trial that I have made, that it will thrive well, even upon our gravelly hemlock land. As white clover is a flower from which bees undoubtedly gather honey the whole day through, there is no one perhaps, of more consequence to bees than this. Besides the above, have plenty of wild flowers here, upon which bees used to work much in the American States. The white willow thrives well here; and upon some ground I have seen other species of willow springing up spontaneously by little runs of water, and other places where the land was cleared; as the blossoms of the willow are rich with honey, this affords them a supply early in the spring, before many other blossoms open.

Perhaps it may be thought that the winters are too cold: But there can be no great difficulty upon that account; for with very little trouble the bees might be kept warm enough, even if the winters were much colder than they are: The length of the winters has more the appearance of an objection than their coldness; but even this does not appear to me to be of any great consequence: Our springs may be a month later than they are in the State of Massachusetts; but then the frost keeps off two and sometimes three weeks later here at the fall than it does with them: But let it be that our winter is really a month longer than theirs; that is, that they have five months and we fix, in which the bees must live upon their stores, yet I am persuaded that the bees there, in the course of one summer, often collect honey enough to last twelve months instead of six. But supposing those bees which are left to stand through the winter, should not always have honey enough to last them through the winter, as was sometimes the case with some hives there; yet it is but a light thing for their owner to feed them, towards the

spring, if he should perceive their hives grow light, with some part of the honey which he had from the hives he took up in the fall. Upon the whole, if the summer here should prove as rich in honey in proportion to the length of it, as it is in Massachusetts, Connecticut, &c. every other objection, it appears to me is of no consequence: If the same flowers here are as well loaded with honey as they are there, the summer is long enough; we may keep bees here to good profit. Some countries doubtless abound more with honey than others, when the same kind of flowers flourish alike in both. Whether that country is better than this, or both are equally good, can be ascertained only by the trial. A field of buckwheat here, smells as strong of honey as it does in the States, nor shall I conclude that it is not as plenty till I see it tried: I cannot but wish therefore that the trial might be made; and that it might be made not by a few, but by many persons in different parts of the province: For in that case though some might not

succeed, others might. Some people in the States have failed in their first attempts, who have afterwards repeated it with good success

G.

*** We omit the treatment of bees recommended by this writer, with many of his remarks. Thinking what we have inserted sufficient, until we shall have learned (which we hope will be soon) that he is making actual experiments upon these useful insects. To his observations we will then give a ready reception.
