

a honey producer; a letter from Mr. Manum, in which he gives the result of his experience and observation, is herewith appended.

This plant, which Dr. Beal of the Michigan State Agricultural College and Mr. Scribner, Assistant Botanist of the U. S. Department of Agriculture tell us is *Echinops Sphaerocephalus*, is an imported perennial, native of Central France, and like all of the family to which it belongs, very rich in honey. This plant will probably be popularly known in this country as the Chapman Honey Plant, so named on account of Mr. Chapman being first to cultivate it and being first to bring it to the notice of those engaged in bee-keeping.

We found three acres of the plant in bloom, the height of the mature plant is from 3 to 4½ feet, and each root bears from five to fifteen round balls or heads from one inch to 1½ inches in diameter. These heads stand upright and the entire surface is covered with small white flowers bearing bluish stamens.

The stalks and leaves so nearly resemble those of the common thistle, that, were it not for the head the difference would not be easily noticed. There is, however, in this particular, a very marked difference, the appearance of the head being aptly described by its botanical name, which signifies round-headed and in appearance like a hedge-hog.

The flowerets on the top of the head open first then they open later along the sides of the ball, continuing in order of nature around the entire surface of the sphere. Near the stem the last flowerets open, after the blossoms on the top of the heads have disappeared and the seed capsules of the first blossoms have hardened.

Unlike the thistle, the seeds are provided with no baloon by which they may be borne by the wind. The seed is, in weight and appearance, very like a small grain of rye, is enclosed in a capsule and falls directly to the ground if not seasonably gathered, not spreading more than oats if left to fall without harvesting.

From the time of the appearance of the bloom upon the tops of individual heads until the fading of the last blossoms upon the lower part of the head near to the stock is about eight days, the continuance of the blooming depending upon the nature of the soil and the season; but the heads or buds sent out from each individual shoot and forming each individual cluster, vary in degree and size, so that the natural term of blooming and honey bearing may be safely reckoned at from twenty to thirty days. The term of blooming may also be prolonged to a considerable extent by cutting back a portion of the plants, and the facility with which the honey harvest may

be thus prolonged constitutes an important feature when estimating the value of this plant. The plant is hardy, easily propagated, perennial, and appears to flourish in all kinds of soil and there is no danger of its becoming a pest or noxious weed. It does not bloom until the second season and, as it does not spread in seeding, its extirpation would be easily accomplished. Its seeds may be scattered in waste places or it may be sown in drills or hills like onion seed. It seems to be characteristic of the plant to root out all other vegetation and take possession of the soil. No weeds and but very little grass was seen growing in the three-acre plot observed. A ten acre field sown broadcast and harrowed in like rye has also made a vigorous growth and seems to be taking possession of the soil in opposition to quack grass and weeds. As to the value of the plant to the honey producer there seems to be no room for doubt whether quantity or quality or both be considered. Within reach of Mr. Chapman's apiary no other resources were accessible for honey gathering, the severe and prolonged drouth having destroyed all other honey yielding blossoms and yet in some instances the bees were making an excellent showing in the hives. No definite conclusion could be reached as to the probable returns in pounds of honey from a given area. That the returns would be satisfactory was evidenced by the fact that the entire area was "alive with bees" and they visited the flowers from daylight until dark and sometimes eight or ten bees were upon a single head at one time. Mr. Hubbard, who cultivated some of these plants obtained from Mr. Chapman, reported that he had counted the number of visits made by bees to a single head from 5 a.m. to 7 p.m. He reported the number as being 2,135, actual count.

In order that the committee might have some idea of the quantity of nectar secreted in the flowers of a single head, the day before our arrival Mr. Chapman had wrapped a thin paper about a head, the half of which was in full bloom, and tied the paper around the stem with tape, thus preventing the bees from appropriating the nectar for 24 hours. Upon removing the paper on the forenoon of the day of our visit, the flowerets were found to be dripping with nectar and the drops sparkled in the morning sun. Each of us have made similar tests with like results since that time. We cheerfully and confidently recommend this plant to the bee-keepers of North America as a most valuable acquisition to the list of bee-torage plants.

We believe that a trial of the plant will, better than any words of approval from us, publish its own commendation.

Respectfully submitted,

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