

4-1976

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Recommended Citation

Nye, W. P. 1976. Beekeeping in Utah. *Gleanings in Bee Culture* (April), 2p.

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Beekeeping in Utah

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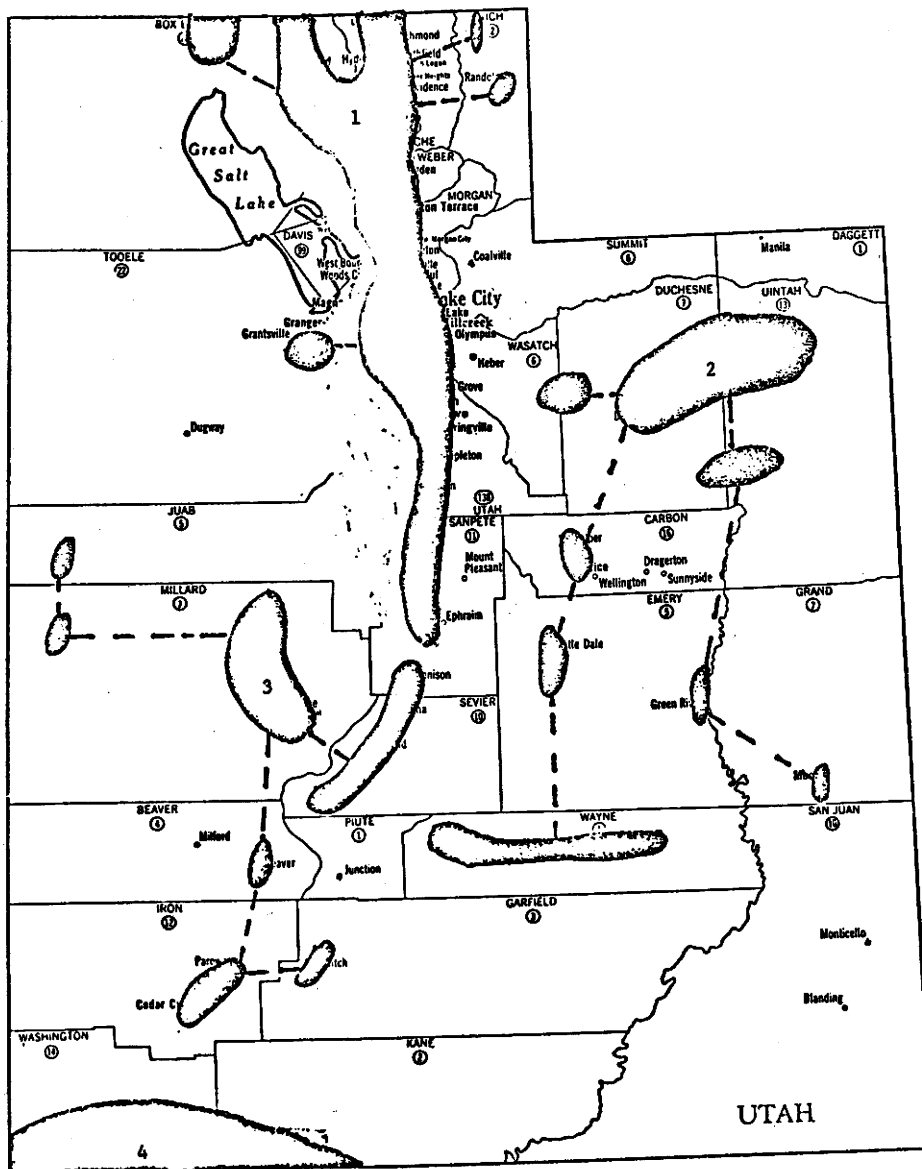
BEELKEEPING IN UTAH makes a significant contribution to the agriculture of the state. Forty-three thousand colonies produced over one million pounds of high quality honey in 1973. Honeybees, *Apis mellifera* L., from these colonies were the principal pollinators of alfalfa, berries, and deciduous fruits.

Colonies of honeybees were brought into the state in covered wagons in 1848. The 1850 census listed only one colony in Deseret (now Utah), but in 1851, Brigham Young reported that several colonies of bees were doing well under Utah conditions. He urged pioneers to try beekeeping as a source of sweets and for use in medicine. In 1872 when the Deseret Bee Association was formed, there were approximately 2,000 colonies of bees in Utah. In 1880 a law was passed initiating bee inspection in Utah, thus more or less acknowledging that beekeeping was an important aspect of agriculture, both for the production of food and for the pollination of crops. The great seal of Utah displays the straw skep beehive, and the original name for Utah was "Deseret," a book of Mormon word meaning honeybee.

Utah, which is located in the south central part of the mountainous beekeeping region of the United States, covers an area of 84,916 square miles, about five percent of which is cultivated. The general elevation of Utah is about 5,500 feet above sea level. The Wasatch mountains run generally north and south from Nephi on the south to Idaho on the north, and the Uinta Mountains, which run east and west in the northeastern part of the state, have crest lines mostly above 10,000 feet. Smaller mountain ranges are scattered over the rest of the state. The lower part of the Great Salt Lake Basin is below 4,500 feet elevation. The surface level of the Great Salt Lake is about 4,200 feet. The lowest area in the state is the Virgin River Valley in the extreme southwestern part; it is 2,500 to 3,500 feet in elevation. The average annual rainfall in most cultivated areas ranges from about 10 to 16 inches. The low relative humidity usually ranges from 35 to 45 percent. Much of the farm lands are near the mountains, and where possible, farming is done with irrigation. The water for irrigation comes largely as runoff from winter snowfall in the mountains.

Beekeeping Regions

In 1949, Vansell (revised by Nye in



1971) divided the state into four geographical regions. The criteria for identifying the regions were as follows: the flora, land topography, rainfall, supply of irrigation water, and climate, as they affect plant conditions and beekeeping methods. The four regions are: (1) Wasatch Front, (2) Uinta Basin (including areas south to Wayne County), (3) Delta (including areas south to Iron and Garfield counties), and (4) Utah's Dixie, the extreme southwestern part of the state. The main source of nectar in all four regions is now alfalfa though until a few years ago, sweet clover was also an important source of nectar. However, in many parts of the state, sweetclover has been largely eradicated

by county roadside weed-spraying programs. In the Dixie area, various species of native trees and brush plants such as mesquite, ceanothus, and arrowweed bloom at the beginning of the warm season and are important as early sources of nectar. These four regions may also be divided by climate and topography. Colonies in the mountainous areas must be protected from the cold, and in certain forested areas, from bears. In the desert, colonies must be protected from drifting sand; and in the southwest, shade must be provided to protect the hives from the hot sun. Migratory beekeeping is extensive in all areas other than Utah's Dixie. Along the Wasatch Front and in the Uintah

Basin, colonies are usually not moved frequently nor far. By Utah and California standards, these can be considered regions of stationary beekeeping, especially when fruit orchards, mustards, dandelions, and miscellaneous early nectar and pollen sources are available for spring buildup. Practically all colonies of honeybees are taken from the Delta region during winter because fall and spring nectar and pollen sources are deficient. Most of the 15 to 25 thousand colonies that produce honey in this region are wintered in California or in the mountains on the eastern edge of Fillmore in Millard County and are moved back into the region at the beginning of the honey flow. There is probably no other region in the country that has so many colonies moved in from such long distances in so short a period. This region produces a major portion of the alfalfa seed produced in Utah.

The Uintah Basin region includes agricultural sections of land south of the Uintah Mountains. The small agricultural valleys to the south produce a considerable amount of alfalfa, alfalfa seed, and the well-known Uinta Basin honey. Here alfalfa and sweet clover provide the honey most prized in Utah and neighboring states.

A small southwestern portion (Utah's Dixie) is quite different from the rest of the state. It is at a much lower elevation (2,500 to 3,500 feet), and the season is earlier and warmer than in the other three regions. Here the colonies may be maintained year around. The native nectar and pollen plants include mesquite, catsclaw, manzanita, ceanothus, arrowweed, and others more commonly found in Arizona. Since pollen plants bloom in this area late in the fall and early in the spring, bees have early and late sources of pollen and nectar. This area could be used to produce queens and package bees for shipment to the north.

Bee Management

Delta is the only region to have a migratory type of beekeeping though there are variable amounts of colony movement each year in the other regions. Many larger beekeepers move hundreds of colonies to several locations each season to take advantage of early nectar flows from deciduous fruits, dandelion, and mountain flowers. These colonies are able to build up in strength for the main nectar flow even after a nucleus has been taken from each.

From the end of the spring flow in the latter part of May to the main nectar flow in June and after the June flow until the middle of July, the bees sometimes barely survive until the second crop alfalfa hay and the alfalfa seed crop comes into bloom. However, the main honey flow may start anytime after the middle of June. During those

years when the main flow comes in the middle of June, it is sometimes possible to obtain a honey crop from both the first and second flowering of alfalfa. In good years, it is possible to obtain 120 pounds or more per colony. The average yield during a typically short season is less than 60 pounds per colony.

Most beekeepers care for many colonies to offset the relative low-per-colony yield. Less than 30 beekeepers in Utah keep bees as their sole means of livelihood, and they operate 3,000 to 6,000 or more colonies with only one or two full-time helpers. One man can manage up to 2,000 colonies with only part-time help during the extracting season. There are approximately 100 beekeepers in Utah that keep from 100 to 600 colonies as a side line and depend on other employment as their main source of income. Also, 500 or more hobbyists maintain from 1 to 100 colonies. Most Utah beekeepers don't manage colonies, they manage apiaries.

Problems

Beekeepers in Utah have many of the same problems as other beekeepers. The major source of honey in all four regions in Utah is alfalfa. Alfalfa is grown on about 40 percent of the cultivated land. More than 10,000 acres were harvested for seed in 1973, and much of it was treated with pesticides. Bee losses from pesticides are extensive and are reducing the number of colonies in the state at the rate of approximately 1,000 colonies per year. Poisonous plants such as locoweed cause local bee losses some seasons.

Beekeepers have learned that locations with good nectar flow are hard to find, which makes it difficult to obtain the needed spring buildup of the colonies. This creates a situation of competition among beemen. Operating costs for most commercial beekeepers are high because of the amount of travel required in managing apiaries that are widely scattered.

Foulbrood disease is not much of a problem. Most beekeepers feed antibiotics as a preventive, and the annual losses are less than one percent. Hobbyists and "sideliner" beekeepers have more trouble with foulbrood, but it rarely gets out of hand.

Equipment

Most beekeepers in Utah use standard Langstroth hives with the California-style top and bottom board, but a few use telescope covers and reversible bottom boards.

Most beekeepers move their colonies at night or early morning when the bees are inside the hive. However, when the daytime temperature exceeds 100° in the southwestern part of the state, bees are more easily moved at midday when they are inside the hive rather than at night when they tend to cluster at the

entrance. Colonies placed side by side on flatbed trucks with their entrance open are tied down with rope. A lumite screen cover is placed over the whole truck load for long trips.

Most extracting is done with tangential rather than radial extractors. Utah honey contains only 13 to 16 percent moisture and is difficult to remove from the combs. Many commercial operators are now using automatic uncappers and self-loading extractors capable of handling up to 400 supers per day. Hot rooms are used in most honey houses to speed up extracting.

Pollination

Deciduous fruit production in Utah is concentrated along the narrow strip of land west of the Wasatch Mountains (Wasatch Front). There a few hundred colonies are rented for pollination of apple, cherry, and pear orchards. Fruit production depends on bees for pollination; however, rental fees for bee colonies do not add significantly to the beekeeper's income. A few beekeepers rent colonies for pollination of alfalfa seed, but they are not very successful, usually for reasons beyond the control of the beekeeper. Most alfalfa seed producers want bees in their fields but are rarely willing to pay for their services.

Research in apiculture started in Utah in 1935 when arsenic poisoning from industrial smelting wastes and from untimely insecticide treatments were studied at Utah State University in Logan by G. F. Knowlton and associates. Since 1947, research on pollination and effect of pesticides on bees has been conducted at Logan by members of the Utah State University staff and members of the ARS-USDA Legume Seed Research Laboratory, later called the Wild Bee Pollination Investigations Laboratory, and presently designated as the Bee Biology and Systematics Laboratory. One course in beekeeping is offered by the University; and until recently, a course in insect pollination was offered.

A wholesale market for honey and beeswax and complete lines of beekeeping equipment are available in Salt Lake City, Utah.

The Utah State Honey Producers Association presents an opportunity for commercial and hobbyist beekeepers to share their interest with others and keep abreast of the latest developments in the industry. Their annual convention is usually held in Salt Lake City during late November or early December.

Literature Cited

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- Vansell, G. H. 1949. Pollen and nectar plants of Utah. Utah Agr. Exp. Sta. Circ. 124. 28p.