

First Prize Essay.

An Essay on Apiculture, by George B. Bailey, Mill Creek.

Written for the Deseret Agricultural and Manufacturing Society, 1872.

Bees, from the earliest ages of the world, have been invested with peculiar interest and have claimed the attention not only of the unlearned and ignorant, but of the student and the naturalist.

The mystery which so long enveloped them, and their habits, added not a little to the interest with which their history was invested. The ancients called the honey bee Deborah, or she that speaketh. The word honey is derived from the Hebrew ghoneg, which means delight. We read in Scripture about the bee. Deuteronomy 1, 44, "They shall chase you as bees do." Also Judges 14, 8, "There was a swarm of bees and honey in the carcass" that Samson found. When speaking of a goodly land, it was called a land flowing with milk and honey.

History informs us that as early as 1765 a premium of two hundred pounds was offered in England to bee-keepers for any one that would produce from his own stock ten pounds of clear wax and at the same time preserve the bees and leave enough honey to winter them. At the commencement of the present century Mr. Francis Huber and others made some very important discoveries on the habits of the bee, in regard to the mode of building comb, how the bees produce the wax with which it is built, also the habits of the queen bee, examining and trying experiments with them in a glass hive. To these persons we are indebted for much valuable information.

Apiculture made but little progress from the year 1800 to 1850, and then it appeared to take a new start. In the last twenty-two years many valuable improvements have been made, so that to-day the apiarian can examine every bee and every comb in the hive by adopting the moveable frame hive. This hive was first patented by Mr. L. L. Langstroth, and since that time we have had a great many patent hives, almost all claiming some new feature and improvement over other hives, which pretensions would, if heeded, make shipwreck of all our young and inexperienced bee keepers.

A majority of the bee keepers of Salt Lake and Davis counties, through the recommendation of Mr. Seth Putnam, a practical apiarian, have adopted the K. P. Kidder patent bee hive, and I consider it a very convenient sized hive, easy to work with, and a good wintering hive.

The management of bees can only be successful when it is conducted with a perfect understanding of their habits and instincts, and the natural laws that govern them, for that law which governs them differs from those which govern every thing else. The queen or female bee governs the colony of male and worker bees. The male bees are called drones. The worker bees are all undeveloped females. The queen bee on an average is much larger and longer than the other bee, and has one other peculiar habit—the immense number of eggs deposited by her majesty in one season, also the length of her life compared with that of her offspring, the queens living from three to four years, while the worker bees live from three to four months. They have many laws which are fixed and immutable, and when we deviate from them loss must follow.

In this essay I will not attempt to explain all these laws, but will aim to give the reader such directions and advice as will be suited to the practical management of bees in this our mountain home, the infant state of Deseret, which signifies the Honey Bee, our emblem being the Bee-hive, our motto, Union is Strength; no Excellence without Labor.

I shall not recommend any thing that I have not tried myself, although I have had but three years experience with bees in Utah. Utah abounds with honey-producing plants from spring time until autumn, and the honey which is secreted in the flowers is of a very superior quality and flavor, which cannot be surpassed by the honey-producing fields of California, which are considered by some to be the best in the known world, for we have in spring the broad-leaf willow, box elder, cotton wood, currant, plum, apricot, peach, gooseberry, strawberry, apple, pear, dandelion, dog-

wood, oak, cherry, service-berry, columba plant, &c. In summer we have the red clover, white clover, sweet clover, Alsike clover, milk weed, catnip, raspberry, holly-hock, mignonette, sweet alyssum, cucumber, squash, melon, corn, buckwheat and many wild flowers. Then we have for fall pasturage sweet clover, sorghum or sugar cane, rabbit bush, sunflowers, chrysanthemum, golden rod and some seasons considerable honey dew; also we have many plants and trees producing pollen or bee bread, which is necessary to feed the young brood upon. Therefore I can safely say that in the Territory of Utah can be produced honey sufficient for her consumption without any importation and at less cost, being a superior article, if the present stock of bees are properly managed and cared for. If I am rightly informed Mr. W. D. Roberts did import bees from California and the States, also Mr. J. S. Harbisson for Mr. M. Thurston and others this last spring.

There are in this county three kinds of bees—the common brown or black bee, the hybrid or mixed bee, and the Italian bee. The Italian bees are favorites with me. They work earlier in the morning, and in colder weather. They gather more honey and are more prolific. The queen can be easier found, owing to her bright color and her quiet and peaceful disposition.

THE MOVEABLE COMB HIVE

Is no longer a question of doubt or uncertainty. To do without it I would give up bee keeping, but now that we have a good moveable comb hive in possession and in use, we can ascertain to a certainty the exact condition of our bees at any time, and if the moths have entered the hive or comb they can be traced, found and destroyed, which cannot be done in the common box hive. Bees will gather and store just as much honey in a hollow log or square gum, if all is right inside, as they will in any patent hive. But how do you know all is right inside the box? You may surmise it is right or not right, by observing the movements of the bees at the entrance of the box, but it is a game of chance in such hives or boxes. In the moveable frame hive it is a certainty, and we have it in our power to become conversant and acquainted with the habits of the busy little insects, and it is our own fault if we let them perish or get them destroyed through neglect. If the hive is queenless you can supply the loss by introducing a new queen, or by giving them eggs and brood from some other hive, which will enable them to raise a queen for themselves to fill the place of the lost one. All queens should be removed when three years old, for at that age they cease to be prolific, and a young queen should be given them if you wish your bees to prosper and do well.

I recommend every bee-keeper to keep a journal or record, also to number the hives, that they may be known, also the age of queen when divided, how much surplus honey given, and other items. It will be a sure reference at any time, and save the apiarian much unnecessary trouble. You may regulate the raising of drones by removing the frame containing drone comb to the outside frame of the hive, to be filled with honey, or place it in your hive containing your purest Italian bees, to raise pure Italian drones to mate with your virgin queens. This plan will improve your stock of bees instead of allowing them to make misalliances by mating with a dark colored drone, for I consider that the male or drone bee has more to do with keeping the Italian stock pure than the female or queen bee. There are too many drones raised to be of profit to the apiarian. In an apiary of from twenty to one hundred hives, the drones raised in two hives are all that are needed. Therefore it is a waste of honey to raise and fatten a lot of drones to be destroyed by the bees in the fall, for the worker bees will not let them board with them all winter to eat up their stores, as they have done through the summer. Drones, in honey gathering time, are treated as privileged characters, for they will enter and be received kindly in any hive throughout the apiary. If you have too much drone comb cut it out of the frames in the brood chamber and place it in the surplus honey boxes or frames to entice the bees to work and store their surplus

honey instead of lying around the entrance idle; for sometimes it is difficult to get them to work in top or side honey boxes.

Another item in favor of the moveable comb hive is that if a colony is weak you can strengthen it by giving it one, two, or three combs of brood, bee bread, or honey, whichever it needs, from a strong colony, and thus equalize your bees.

ARTIFICIAL SWARMING OR DIVIDING

can be accomplished, and much needless waste of time be saved in watching and waiting for the bees to swarm naturally, if you take a fumigator, fill it with dry catnip or peppermint, light one end of it, and blow two or three puffs of the smoke into the entrance of the hive (a roll of rags or a dry chunk of rotten wood will answer the same as the fumigator), to subdue the bees. Then take your new hive, of the same size as the hives your bees are in; for instance, if you have four hives with bees in them, take one or two frames from the center of the hive No. 1, and place them in the new hive with all the bees remaining on or adhering to the comb, sprinkle them with a little honey water and the essence of peppermint or nutmegs, to prevent them from fighting, place frames of empty comb or empty frames in No. 1 and close it. Open No. 2 and serve it the same, also No. 3 and 4. Thus you have from six to eight combs of bees and brood with honey in your new hive, and have not weakened your hives to their detriment. Most of the old bees on their first flight will return to their own hive from which they were taken, and leave a swarm of young bees in the new hive to raise themselves a queen. If you have a queen cell or a surplus queen, by giving it to the bees on the next day you will save much time and have the new swarm in one week as good as any hive or colony in your apiary. You may repeat this operation as fast as they refill those empty frames you gave them. It all depends upon the season, the length of time intervening between making the swarms. Some seasons they will fill these frames in less than one week, if honey is plenty out of doors. To divide your bees in the middle of the day, do as I have recommended above, only as you take out the frames brush off all the bees from the frames into their own hives, place the combs into your new hive, remove your strongest colony away one rod, place your new hive in its stead, and all the returning bees from the field will enter the new hive and carry on the work of feeding the brood, raising the queen, &c. In all of your operations be sure not to remove your queen from her own home. But if you want surplus honey, keep your colony or colonies very strong in numbers. Do not let them store too much honey in the brood chambers to cramp or curtail the queen in her dominions, for if young bees are not raised inside of the hive to take the place of those that die and are lost in the fields, your hive will dwindle and become useless for gathering surplus honey, hence the necessity of using the honey extractor to remove the honey stored in the combs in the brood chamber, and by returning those extracted combs to the hive the queen will fill most of those combs with eggs before the workers have time to fill them with honey, thus keeping up the strength of your colonies. The honey extractor is a machine, invented by Major Von Hruska, to empty the combs of the honey without breakage, so that the comb can be used repeatedly to be refilled with honey or brood, which is a great saving of labor to the bees and profit to the apiarian, also producing a superior quality of honey, free from the mixture of the melted old comb and the bitter bee bread and very often dead bees. There are several styles of mell or honey extractors, all made on the centrifugal force principle. I have used this season the geared machine of Messrs. Gray & Winder, and have extracted three thousand five hundred and fifty pounds for myself and neighbors, and I can say that it has been a great benefit to the colonies, besides a profit in honey to the bee keepers.

To make bee keeping profitable, as well as a pleasure, you must subscribe for and read the bee journals, and learn from the experience of others many things that will be of profit and advantage to you.

The way to raise surplus queens

for yourself, first to use and have on hand when you need them in artificial swarming, or to supersede an old queen, is, have a hive of the same size or a trifle wider than your standard hive, with an entrance to the east, one to the south, and one to the west, each side painted a different color, to enable the young queens on their bridal trips to return each to her own home or quarters. Have this hive divided into three apartments, with a partition made of perforated tin; place three combs in each apartment, one frame of brood, one of honey, and one of empty comb, or hatching brood, and enough bees to keep the brood warm, and feed them. Insert your queen cells, or let these nuclei raise their own queen or queen cells, and when the queens are about five days old they will take their nuptial flight and return to the red painted side, or the blue, or green, and each enter her own dominion. In three or four days they will commence laying their eggs. If all is right in the nuclei one part generates heat to be divided with the other two through this partition. Thus you can have queens on hand at all times, which is necessary in a well conducted apiary.

Hives should be well made and oil painted. They should be made of good seasoned lumber, and no person unacquainted with the habits of bees should make hives without a pattern or model. A hive should contain about 2,000 cubic inches, and be so made in size as to economize all the room. Do not make a hive of ungainly proportions, for the purpose of dodging a patent. If any patentee benefits you, pay him for it. There is no improvement but what has cost the inventor time and money in making experiments. Therefore honor to whom honor is due. There are many patent hives, with many so-called improvements, but many are humbugs to make money out of the over-confiding public. For instance, a patent moth trap. Now I think that the best moth trap you can have in your apiary is a light, well made hive, and a strong colony of bees inside.

The best antidote for a bee sting is to extract the sting immediately and rub the place with cold water, the colder the better. Some recommend indigo, some hartshorn.

I think that apiculture is a good, healthy and profitable employment for women, especially for those who have to labor. My wife has assisted me with my bees this summer and has been a great help to me. One of our most practical and able apiarians or lady bee keepers is Mrs. Ellen S. Tupper.

I do not recommend to make your summer stands or bee house in a shady orchard, but out, so that the morning sun can warm the front of the hive to stimulate your bees to go to work, for they are not naturally loafers. There is more honey secreted in flowers through the night than through the day, for the heat of the sun evaporates the sweets, hence the necessity of having the bees work early in the morning.

Cellar wintering of bees is a great saving of honey to the apiarian if properly managed. You should examine your bees in September and see that you have plenty of brood and honey. If not, feed them a syrup made of sugar and water, with a little cream of tartar. You should equalize your hives before putting them away for winter in December. My mode of wintering in the cellar is as follows: I close the entrance with a piece of wire cloth, to keep out the mice, give them plenty of upward ventilation but not a cold draught through the hive, and keep the cellar dark, cool, and quiet, the temperature about 40 to 45 degrees. Every cellar will not do to winter bees in. It must be cool, and especially dry. If not the combs will get mouldy, and be offensive to the bees and breed disease. A cellar under the kitchen where you do your cooking all winter, potatoes in one corner, squash, carrots or beets in another and the bees some where else, will not do, you will destroy your bees. Rather leave them on their summer stands to take their chance.

If you have no cellar suitable, make your summer bee stand as tight as you can with boards. Close the entrance of the hive, so that one bee can pass in or out at any time. Pack chaff or straw around your hives, give them upward ventilation to let out the steam or sweat of the cluster of bees, but do not let the sun shine on your hives to entice the bees to leave the hive to perish on the snow.

If you have or can get an extractor to take out the honey from two combs and give the empty combs for the bees to cluster upon they will winter much better upon them than upon combs filled with cold honey. They should have at least thirty pounds of honey for out door wintering, but for cellar wintering fifteen pounds is sufficient. Then if you have one hundred colonies and place them in a cellar you save fifteen hundred pounds of honey, which sells in Utah at 35 cents per pound wholesale, thus realizing or saving the sum of \$525.00, which is sufficient to build a good rock cellar, and if one man has not got one hundred stands of bees, five or ten men have, and they could co-operate and build it for the benefit of the busy little bee who has toiled and worked for them all summer.

In early spring, just as the buds are opening, place some corn or rye meal where the bees can get at it. A deep box or trough is good to put the meal in, its deep sides prevent the wind from blowing it away, likewise it shelters the bees from the cold wind of spring. The meal will stimulate early brooding, it answering the place of bee bread to the young bees.

HINTS TO BEE KEEPERS.

1. Get your hives made before the month of May.
2. Be not too eager to get rich in one season.
3. Do not wait until you need an extractor before you purchase one.
4. Buy new oak barrels to store honey in.
5. Do not get excited with the bees.
6. Subscribe for a bee journal and read it.

Per Deseret Telegraph.

Serious Accident—Fine Weather, etc.

ST GEORGE, FEB. 10th.—On Saturday a boy, about fourteen years of age, son of William Long, was driving a team, which ran away and threw him violently from the wagon, breaking nearly all of his ribs and otherwise seriously injuring him, but it is thought not fatally.

It rained most of last night, but it has cleared off and is pleasant this morning.

Almost everybody is busy planting gardens.

The second term of the normal school, under the supervision of Prof. Kesler, has commenced.

News from Pioche.

Editor Deseret News.

PIOCHE, 9.—The South Side Mining company, to operate in Ely district, Nevada, was incorporated here yesterday, capital three million dollars. The trustees are E. F. Brown, D. C. Clark, Wm. H. Atkinson, Gibson Clarke and E. F. Badgely.

The Floral mill, situated in the northern suburbs of town, was completed yesterday, and everything works well. It will commence on ores from the Hermes and Huhu & Hunt mines to-morrow.

The stages are running regularly again, and shipments of bullion are resumed. About seventy-five thousand dollars was shipped last week. The stages as yet are unable to haul heavy loads, the roads being in such a very bad condition.

Numbers of prospectors are leaving daily for Death Valley and Sacramento districts, Arizona.

Joseph Inkersall was sentenced, yesterday, to fifteen months in the State prison, for grand larceny.

It is almost impossible to find horses or mules to haul ore to the mills. In some cases oxen are used.

It commenced snowing about noon to-day and it still continues.

A Malignant Disease.

SPRING CITY, Sanpete Co., Feb. 10th.

Deseret Evening News.

Spotted fever, of a malignant type, is raging amongst the children of this place, proving fatal, in some instances, in from eight to twenty-four hours after the first attack.

NEWS FROM THE SOUTH.—Elder Chas. N. Smith writes from Rockville, Kane County, Jan. 27th:

"Next Saturday and Sunday, Feb. 1st and 2nd, President B. Young and party will hold two days meetings at Virgin City, and will proceed from thence to Kanab and the settlements in Long Valley."

"An expedition started three days ago, under the direction of Bishop Roudy, of Kanab, for the purpose of exploring the country across the Colorado."

"You have probably heard that Elder Erastus Snow, is going on a mission to Europe. He expects to start in about two or three weeks."

"The weather here is delightful. House flies are quite numerous."

The indictment against Susan B. Anthony charges that she "was then a person of the female sex, contrary to the form of the statute of the United States of America in such case made and provided, and against the people of the United States and their dignity." Susan is old enough to know better than to set herself in opposition to the peace and dignity of the people of the United States by being a person of that description.