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## **The Nebraska bee-keeper and irrigator. Vol 7, No 5 May, 1896**

York, Neb.: L.D. Stilson, May, 1896

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# The ❖ Nebraska ❖ Bee-Keeper AND IRRIGATOR.

A MONTHLY JOURNAL DEVOTED TO APICULTURE AND IRRIGATION.

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## Effects of Bee-Stings on the Human System.

BY HON. EUGENE SECOR

I am not a doctor. I can't read the human body like a book—especially if the book is easy to understand. I am not skilled in pathology or therapeutics. But if I may be allowed to express a humble opinion based on unprofessional observation, I will say that one effect of bee-stings on the human system is in the nature of a stimulant. The virus introduced through the cuticle by the bee herself is exceedingly stimulating, if not exhilarating. It beats tobacco or any narcotic. It is way ahead of intoxicants.

I am led to this conclusion by effects produced on one of my visitors after one application of the medicine, hypodermically administered. It doesn't seem to make much difference on what part of the anatomy the fluid is injected. It works just as effectually in one spot as another, and operates instantaneously. If the patient would prefer the scar in his back hair, hidden from vulgar observation and irreverent remark, he will feel its effects, and respond to its influence with alacrity. Whether administered behind the right ear, or on the ornamental appendage which sometimes obtrudes itself into other people's business, or "below the belt" under the trousers, it "gets there" just the same. The laziest man in America will get a hustle on him instanter after one dose. He can run through a troop and leap over a wall like a trained athlete. A ten-wire fence barbed to stop swine is no obstruction to him when he gets under motion. He feels as if he could outrun a tornado or swim Lake Erie. He doesn't wonder that Samson twisted the jaw of a young lion or slew a regiment of Philistines. He could do it himself with another application of this formic acid preparation, administered from the "business end" of a lively bee.

It is a little strange that any one should resist the application of an agent promising such wonderful results. But I suppose it is only another evidence of our depraved condition. I never knew a man, no

matter what his profession might be, that wouldn't be willing that the hired man experiment with the stuff rather than take it himself.

Another effect produced on some human systems by the toxic action of this concentrated essence of *Apis mellifica*, is the respect for the eighth commandment—especially when the thing coveted happens to be honey, and the said honey happens to be policed by a select company of trained and fearless guards, equipped for such service.

An instance may be cited to show the respect for moral and statute law, which one application of our favorite remedy produced:

One bright, moonlight night in the early part of September, Anno Domini Eighteen-hundred and some odd years, a convivial company of young men thought to round out the festivities of the evening by a visit to a neighbor's bee-ranch for the purpose of appropriating the tempting morsels of forbidden sweets—all the more sweet, as some think, because the moral code says, "Thou shalt not steal."

One young man was posted to watch. One—more self-assured than the others—volunteered to go after the honey. Two timid ones waited in the edge of a sheltering corn-field to share the spoils. Young man No. 2 proceeded to his self-appointed task. Of course, he wasn't afraid! He had robbed bumble-bees' nests, killed rattlesnakes, fought flying ants, and had swum in water where bloodsuckers scented a boy afar off. He went to a hive that happened to be the home of a colony of real healthy hybrids, but he didn't know it. He rapped on the hive to see whether it was "empty," or whether there was prospect of plunder. Having satisfied himself they were all right, he attempted to remove the cover. It was glued fast by propolis. He couldn't budge it. As he hadn't any jack-knife to pry it off with, he picked up a stick and tried to loosen it. Finally, with a sudden jerk, the cover came off with a snap, and the enraged bees covered the young man as the locusts covered the land of Egypt in Pharaoh's time. He ran. Half a thousand bees kept him company. The other young men expressed their sympathy by trying to help him. Result: They beat a mad retreat covered with bees if not with glory. The next morning they were wiser, if not handsomer. They gave it that they had been to a "wake." From that time to this they have never appropriated their neighbor's pancake sweetener without permission.

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### Increasing the Number of Hives.

Bees for profit may first be considered in reference to the multiplication of colonies and adaptation to the greatest amount of honey in a given time. It is a well established fact among well-informed apicult-

urists, that bees when left to their own instincts in regard to swarming do not secure profitable results. The reasons, briefly, are as follows.

The first swarm that comes off takes with it the old queen, generally too large a proportion of the old stock of bees, thus leaving the old stand without a fertile queen; hence from five to ten days elapse before eggs are supplied to fill up the hive again with bees, leaving the comb exposed to free access of the moth miller. Thus a large proportion of these old hives are destroyed by moth. But the trouble does not stop here. There are usually several queen cells at this time, and as they may hatch in successions for many days, this weak, old hive may be divided into still smaller colonies, until they are comparatively worthless. So it may be truly said: "They have swarmed themselves to death."

Again the extreme may obtain. A rich old hive may stand for years and never swarm. It may have too much honey and pollen, so the queen has not room to deposit eggs sufficient to supply waste of stock and produce surplus for swarming—or it may not be moved by an impulse to "multiply and replenish." This hive differs from the first only in this, it is fortified in its own strength, and seems willing to live alone, and without the healthful stimulus of division, it loses its energy, and is therefore of no profit to the owner. The greatest profit in raising bees, is secured by a well directed method of dividing the colonies when in a proper condition to do so, and restraining their instincts, as far as maybe, to swarm when the surrounding circumstances are unfavorable for an increase of colonies.

The manner of division depends much upon the caprice of the keepers. The one most easy in practice and that will secure the greatest profit, as a rule, is to take frames from at least three hives, with honey (food) in the comb, and all the old bees that can be removed with the comb, placing the frames alternately from each hive, thereby confusing the bees by being thus mixed in the new hive, so that they are not disposed to fight or sting each other. Thus three frames from each old hive will start a new one quite strong to begin' provided the hive just made is supplied with a fertile queen, caged for 24 hours. The necessity of having ready a proper number of fertile queens at the time desired to multiply the colonies, is apparent, as the new colony thus furnished, will in a few days be strong enough to divide again. This method will secure at least twice as many colonies in the same time, as when the one hive has to produce a queen for itself.

Again, the three old colonies being comparatively strong, with the three empty frames being placed alternately in the center of the old hive (being particular to have a full frame in the side next the hive), will be

filled in less than a week, and are again ready for a safe division, as at first. But it is proper here to remark that no division or multiplication of colonies is safe or profitable, except in the midst of a good honey harvest. The great secret of success is in maintaining all the colonies strong. This object must not be lost sight of in the desire to multiply. This is readily done by exchanging the frames of strong colonies for those of weak ones.

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## MISSOURI BEE-KEEPING. Its Extent, Pleasures, Possibilities and Profits.

E. T. ABBOTT.

In discussing the resources and possibilities of Missouri, there is one industry which is very apt to be over-looked, owing to the limited knowledge which the public has of it. I refer to what is known in modern parlance as apiculture, or bee-keeping. It is true people in general know some-thing about bees, but much of their knowledge is vague and unreliable, and fact is badly mixed with fiction.

Just when bees first made their appearance on this continent is not definitely known. I have seen it stated somewhere that they were first introduced into Florida by the Spaniards, sometime in the 17th century. Let that be as it may, they are here, and are of vastly more importance to the country than many are aware.

Apiculture is a product of civilization. The aboriginal inhabitants of this country knew nothing of bees until the pale face made his appearance. The Indians looked upon the "sting fly" as the harbinger of the white man, and as he came westward, and the red man disappeared toward the setting sun, the bee found a habitation in the hollow trees of the forest, and the crude "gums" or "skeps," which the early settlers prepared for her habitation. However, for many years the busy little workers were not regarded as of much value. The early settlers, with a rich and fertile soil to till, new fields to explore, and a great many other things to look after, gave them but little attention. After a time, however, a few people, mostly Germans, began to utilize the energies of these active workers to add to this income and general comfort. Their methods were crude and imperfect, but notwithstanding this, some of them found that the bees paid them well, if not better, in proportion to the money invested, as any other branch of rural economy. The result was that more attention was given to the industry. In time a few began to make a specialty, some of whom found it very profitable and succeeded in accumulating, out of the profits of their bees, what was in those days called a small fortune.

In 1851 Rev. L. L. Langstroth invented what is now called the Lang-

stroth hive. This hive has movable frames, and is so constructed that access may be had to every part of it. This enables the bee-keeper to examine his colonies and learn of their condition, so he can manipulate them in the way that will bring the largest returns for the least outlay.

The movable frame hive and Langstroth's book, "The Hive and the Honey Bee," published in 1852, wrought a revolution in the methods of handling bees, and the industry gradually grew, until now there are thousands of people who look to it for a part, if not all, of their living.

Tons and tons of honey, to say nothing about the wax, are produced every year in the United States, the value of which amounts to millions of dollars. There are a number of factories, one of which is in Missouri, devoted to the manufacturing of hives and other implements for bee-keepers.

Wonderful progress has been made in this industry in Missouri since the writer came here from the east twelve years ago, but there is great opportunity yet for improvement and advancement, which is sure to come as the people in the rural districts become better acquainted with modern apicultural implements and methods of manipulation. I said above that some had made a competency but it is not along this line that I look for improvement in the future, especially in our own state. I consider bee-keeping a legitimate branch of agriculture, and as such I think it should receive recognition on every farm. While the income and comfort by making provision for keeping a few colonies of bees in connection with the other industries of the farm. While the income of each individual might not be increased in this way, yet the total sum which might be placed to the credit of our farmers would amount to thousands of dollars.

In order to make the industry profitable on even a small scale, one must have some knowledge of the economy of the hive, and be thoroughly posted as to modern appliances and methods.

Perhaps, I could not do my readers a greater service than to devote some time to an explanation of what constitutes a colony of bees, and a description of some of the methods and implements known to advanced apiculture.

During the time of active honey gathering a colony, contains three kinds of bees, if in normal condition, each of which has its special part to perform in the economy of the hive. They are workers, drones and one queen. The workers are undeveloped females, or neuters. They sometimes lay eggs, but all such eggs, not being fertilized, produce drones only. The workers secrete the wax, build the combs, guards



the hive, care for the young, and do all of the rest of what may be denominated work in the bee hive. They also gather and carry into the hive nectar and pollen from flowers, and a resinous gum, which is technically called "propolis," the exudation of plants and trees. The nectar of the flowers is sometimes improperly called honey. It is cane sugar, but the bee adds to it a secretion from a gland found in her head, and changes it to grape sugar. She also adds some formic acid, and evaporates much of the moisture. When the process is completed the nectar becomes honey, one of the most delicious and healthful products known.

The pollen of the flowers is mixed with honey and supplies the nitrogenous food of the young bees. The propolis is used for stopping up the cracks of the hive, and for covering any objectionable substance which may find its way into the hive, that the bees are not able to move.

The wax, out of which the combs are builded, is not gathered outside of the hive, as was believed in early times, but is secreted in the bodies of the bees, the same as a cow secretes milk. It is deposited in the form of scales on the lower part of the worker bees' abdomen. The glands which secrete it lie directly under these pockets. It is taken from here by the bee with her wonderfully deft legs, passed forward to the mouth, mixed with saliva, or other secretions, softened and worked, when it is ready for comb building.

The eggs which produce the workers are laid by the queen in the ordinary cells of the hive, and it takes twenty-one days from the time the egg is laid for a perfect worker to emerge from the cell. Several transformations, which space will not permit me to explain, take place from the egg to the perfect bee. There are many things about the development and anatomy of the honey bee which are intensely interesting to the student, aside from their economic value.

The queen lays all of the eggs, and this about the sum total of her use in the hive. She lays eggs very rapidly during the time of active honey gathering, ranging from two to three thousand per day. She is hatched from the same kind of an egg which produces a worker, but she begins life in a cell from which the workers are developed. Her cell is many times larger, is hung perpendicularly, or nearly so, instead out horizontally as do ordinary cells. From the moment the egg hatches the young queen larva, as it is called, receives a larger quantity of food, which perhaps is somewhat different from that given the worker larva. This treatment is what makes the difference in the development of the queen. She emerges from the cell in about sixteen days, and possesses organs and functions which are not found in the workers.

The queen is not the ruler of the hive, as is supposed. As I said once

before, her sole function is laying eggs. There is no such a thing as government in a bee hive. In fact, none is needed, as each bee knows her work and does it at the proper time. Perhaps it would be an improvement if human society were modeled a little more after the economy of the bee hive.

The drones are the male bees, and serve no known purpose in the economy of the hive except the fertilization of the queen. This takes place only once in her lifetime, and occurs in the open air between the fifth and twenty-first day after she emerges from the cell. After she is fecundated she returns to the hive, and seldom, if ever, leaves it afterwards, except when the bees swarm. After being fertilized, the queen can lay at will eggs which will produce drones or workers, the latter being the product of a fertilized egg, while the former is not. Queens which have not met a drone lay eggs which produce male bees only.

It is about twenty-four days from the time the egg is laid before a drone emerges from the cell, and the cell in which he is developed is much larger, but of the same shape as the worker cell. The drone has no sting and flies with a loud, buzzing noise. The queen has a sting, but she seldom uses it except on one of her own kind, upon whom she looks as a rival. One can handle her without any danger of being stung.

A queen lives four or five years. The drone rarely lives more than one season. During the time of active work, the life of the worker is confined to from six to eight weeks, but when they are not engaged in active work, they will live as many months.

The essential thing in caring for bees is the right kind of a hive. Not that the bees will gather any more honey in one hive than another. This is a fake of the patent hive vender, but some hives are more convenient than others, and enable the bee-keeper to so manipulate them that he can get his honey in marketable shape. Some of the essentials of a good hive are ease of access, every part moveable and interchangeable, freedom from all superfluous traps, drawers, etc., and a surplus arrangement holding boxes which may be taken out one at a time. Such hives may be bought in the open market of those who manufacture or deal in them; or a pattern may be secured, if he finds this to be the cheapest method. There is no patent on anything of value in the construction of a beehive, and anyone can make a modern hive, if he wishes to do so. Competition, however, has so beaten down prices in these goods that in most cases they can be bought in the flat, cut ready to nail, for about what the lumber would cost in small quantities.

After the hives, comes a few simple and inexpensive tools, which facilitate the work of handling bees. Chief among these is what is

known as a smoker. The fact was recognized long ago that when bees are disturbed or alarmed, they at once fill themselves with honey. When filled with honey they seldom sting, unless hurt in some way. They dislike smoke of any kind very much, so that when a stream of it is thrown into the hive, they at once fill their honey sacs. After this they may be driven from one place to another simply by blowing a current of smoke upon them. The smoker is an implement for generating smoke, so constructed that the current may be directed to any point the operator wishes. Cotton rags twisted into rolls and tied in knots, so they will not burn too fast, or rotten wood, make the best fuel. If one understands how to manipulate the smoker properly, he can handle an ordinary colony of bees without any great danger of being stung. A very fair smoker may be had for an outlay of 50 cents. The timid, and those who have a number of colonies to manipulate, and want to work rapidly, will find it convenient to have a bee veil to protect the face, as a sting about the head or near the eyes is apt to cause some inconvenience, to say the least.

There are other tools, such as an extractor, a drone trap, a swarming box, a bee escape, etc., which will be found necessary by those who carry on certain phases of bee-keeping, or conduct it on a large scale, but the farmers can manipulate a few colonies without any of them.

Bee-keeping has an extensive literature, and a good book on the subject, such as "Lanstroth on the Honey Bee," revised by Dadants, will be found exceedingly interesting and helpful.

I said that bee keeping was a creature of civilization, but at the same time the progress of civilization has it unprofitable in many localities. When the forests of Missouri were filled with basswood or linden, trees, white clover grew plentifully in every pasture, field and all waste places, and the spanish needle and golden-rod, with their rich, yellow flowers, were seen on every hand, then the bees revelled in their luxuriant sweetness, and filled their hives to overflowing with delicious sweets, which delighted the palate of man and gave strength and vigor to his entire physical organism. But now the woodman's axe has felled the forests, and the plow and harrow have rooted out many of the honey-producing plants. There is, however, a future for apiculture in our state, as the people are gradually becoming awakened to the value of the clovers, such as red, alsike and crimson, and that wonderful and world renowned forage plant, alfalfa, all of which are rich in nectar. If the farmers of our state only realized to its fullest extent the value of these and other plants as soil renovators and forage producers, I think it would not be long until there would be food for thousands of colonies of bees in every part of the state.

It will not pay to plant anything for honey alone, but it will pay to cultivate such leguminous crops as will make the soil richer, furnish tons and tons of hay, abundant pasture for live stock, and at the same time furnish thousands of pounds of the most healthful and delicious sweet known to man. Keep bees and cultivate all the clovers for which you have room, and especially alfalfa, one among the greatest honey plants known, and a forage plant which has no superior anywhere.

The value of bees is not confined alone to the honey and wax they produce. Modern research has proved them to be of great value to the gardener and fruit-grower by aiding in the more perfect fertilization of the flowers of the garden and orchard. Many trees which bear no fruit now might be rendered profitable by the introduction of a quantity of bees in close proximity to them. N. F. Murray, a prominent horticulturist of this state, has often said to the writer that he considered bees of great value in the orchard. This is a phase of bee-keeping which should receive the careful attention of everyone who loves perfectly developed fruit.

## IRRIGATION.

"A boat, a boat, to cross this ferry."

Officers of the State Irrigation Association:—President, A. G. Wolfenbarger Lincoln; Vice President, H. E. Babcock, Ord; Treasurer, Joseph Oberfelter Sidney; Secretary, James L. McIntosh, Sidney; State Lecturer, I. A. Fort North Platte. Next meeting will be held at Lexington, Neb.

## ALFALFA FOR THE SAND HILLS.

SOMETHING FROM I. A. FORT ON ITS CULTURE.

He says: "We have been quite successful in getting alfalfa started on our sandy lands. On the first breaking they are very successful as a rule.

The sod is first broken, then immediately after, the land is cross harrowed with a disk harrow, then the alfalfa is sown upon the breaking about twenty pounds to the acre being generally used. The land is then harrowed with a disk harrow again, and this is followed by a reversible drag harrow. This smooths the land and puts it in good condition. We generally break the land and sow in April.

Experiments made here by farmers show that the method above given for sandy lands is the best as the blowing and drifting of the sand is reduced to the minimum. The grinding effects of the blowing sand is the principal thing we are compelled to avoid, but if the alfalfa makes a start it soon forms a sod that prevents any drifting, and the longer it is allowed to remain, the more compact the sod becomes. Where we irrigate we generally sow with barley. After the barley has been cut, the alfalfa continues to grow steadily and by the second year a strong sod has formed. This is a very good way, if the land can be irrigated, or there

is enough moisture in the soil to supply moisture in the growing crop.

Some are sowing the seed with press drills. We sow alfalfa and barley at the same time. We aim in sandy land to put the seed down one to two inches. We do not always succeed in getting a stand here, but we keep trying until we do get a stand.

I am acquainted somewhat with the country laying between the Loups and Platte Rivers, and have noticed it particularly in reference to alfalfa culture, and I should say that you have between these two rivers from Grand Island east to the mouth of the Loup one of the finest alfalfa sections of country in America, as I noticed that there was an immense amount of land that was sub-irrigated.

We have alfalfa fields here that have been cut regularly for ten years, the cutting generally being done three times during the growing seasons, if it used merely for fodder. If used for seed, in fair years it is cut twice if not irrigated. I have seen fields on the Cache la Poudre River in Colorado where alfalfa had been cut steadily for fifteen years, and no diminution in yield. Our cuttings yield here from two to four tons per acre annually.

Alfalfa is grown on our sand hill lands successfully, where it is unirrigated and the depth to water is from 150 to 200 feet. The main difficulty is getting it started. In Colorado on the Arkansas River, where where the land is irrigated and quite valuable, they are troubled somewhat with the drifting of the sand, that is blown off of the low sand hillocks adjoining the river. As this sand greatly injures the growing crop, as a matter of compulsion the farmers are compelled to prevent it. They level down with plow and harrow the worst hillocks and then sow the land very heavily to alfalfa seed. Over the sand they scatter straw and throw brush upon the straw to prevent its being blowing away. The alfalfa finally takes root and holds down and prevents the sand from drifting,—it does the same here. A Mr. Bratt, who owns what is known as the Gokay Island that lays about four miles south-east of town, has the island planted to alfalfa for about three miles of its length. Part of the island is formed by sand that has blown out of the river bed. The alfalfa has steadily gained upon the sand until now it produces a crop from nearly all of its surface. Mr. Bratt has in about 200 acres in this crop. The island is not irrigated, the depth to water being from three to five feet, but the alfalfa thrives growing by sub-irrigation that it draws from below.

W. F. Cody, (Buffalo Bill) has now about 700 acres planted to alfalfa on his large farm adjoining the city. Since our people have taken up the growing of this plant many farmers have engaged in raising of bees. This furnishes the bees with an abundance of feed from which

they make a very pure white honey. In feeding it we generally aim to mix the fodder given with some wild hay for cattle or horses. We keep our hogs growing from birth until fattening or finishing off time on alfalfa and then give them all the corn they can consume. I have heard farmers say that they could grow hogs and make money off of them at one cent a pound. I have had farmers when I have stopped at their houses, say to me "come out and let me show you my hogs." They would carry a bucket of corn along call them up and then feed them: go to the alfalfa hay into the yard or pen. The hogs would at once leave the corn and go to eating alfalfa. I have seen this so often repeated that it is an old story with myself as well as many others among our residents here. Geese, turkeys, and poultry of all kinds eat it with great relish.

When it is planted on or near alkali spots or land it slowly gains upon the alkali spots until it generally covers all but the worst of it. It will gradually spread out and finally cover up lands of most every character and quality. In wet years in your vicinity you should cut three crops per year. In dry years, two crops. On sub-irrigated lands they should cut three crops per year. Great profit is realized from the seed that sells here for \$5.00 per bushel, this sometimes brings up the profits per acre to from \$15 to \$25 dollars per acre, with the fodder a clear gain. For your vicinity I would advise planting on old land with a press drill, and planting it with barley. Oats take out too much moisture from the soil so there is but very little left for the alfalfa. Any way that can be devised to keep the sand from drifting or blowing and thus grating or grinding the plant when it is starting, will be of great benefit. The alfalfa roots will go down through hard pan sub-soil in wet years, and once down they will bring up the moisture from below. Get alfalfa started and keep trying is the rule here. If you fail, try, try again.

I have written to quite a length on this question in answer to your letter but have not written from theory but from actual knowledge and observation. Believing that Nebraska will realize great benefits from this plant and wishing you success, I remain, I. A. FORT.

### John Tannahill of Columbus, tells about Orchards Under Irrigation.

He says; In November, 1894, I built, from ideas of my own, a wind-mill similar to the "Jumbo," having added many improvements, and as a consequence I think I have the best, most powerful, and at the same time the cheapest mill in Northern Nebraska for pumping water by wind

power. The cost of the mill with two six inch pumps all complete was \$100. This is merely what was paid out for material, as I did all of the work and made no account of the time. My mill is never out of order, and is always ready for work. My reservoir is 50x100 feet in area and seven feet in depth. During the first three months, December, 1893: and January and February, 1894, I let sixty-four feet of water out of it during the time the reservoir lost by seepage an average of one inch in twenty-four hours, a total of seven and one-half feet, which made a total of seventy-one and one-half feet of water, or 2,674,100 gallons of water in three months, or 29,712 for each twenty-four hours. The reservoir after ten months had no seepage, whatever, but, during the dryest weather last summer the evaporation was sometimes one-fourth inch per day. It was noticeable several times when the weather was dry and there was absence of dew that vegetation eight or ten rods distant from the reservoir and in the direction of a light wind that blew during the night, would be covered with moisture, and there was always dew where I irrigated.

From an orchard of apple trees, of which 190 are beginning to bear, I got twenty bushels of apples in 1894, and this year I got from the same trees over 300 bushels. The trees are twenty feet apart; water is run between the rows, and I find that it does not take nearly so much water this winter as it did last, for the reason that the subsoil has been moist since last winter. As an experiment, I left some apple, cherry and apricot trees unwatered last winter; those apple trees not watered were in bloom just six days before those that were watered; the apricots bloomed three days before those that were watered, with the exception of one tree that I mulched, after watering, which was six days later and was loaded with fruit. The spring frosts hurt some of those that were watered, but, as they were not overloaded, the fruit was much larger and very superior in quality to that of the others. Of those trees not watered, two died and seven had some fruit set, but it kept dropping until time of ripening when there was but very little of it left, and that was poor, almost worthless. My cherry trees, ninety-three of which I watered, bloomed two days later than those not watered, and all were heavily laden with large, juicy fruit, none dropping off or drying up; of the the eighteen unwatered, ten died, eight bore inferior fruit, hardly worth picking, and the trees made but six inches of growth of wood, while those watered made a growth of twelve inches. The cherry trees were watered during the last week of December, and received no water before or after; the apple trees were watered previous to this and when the ground was frozen. Water goes much farther and does more good in orchards, if used in winter, but in no case let the water come in contact

with the body of the tree, as freezing will injure it. Always have the ground a few inches higher around the tree.

I irrigated six acres of vegetables and made more profit off those six acres than off thirty acres unwatered. I grew from one-fourth of an acre that was watered three crops of cabbage, and the best part of it was that I got a good head of cabbage from every plant. At the same time I had two acres of unwatered cabbage, and I did not get one-fourth as many as from the one-fourth acre, and they were very poor. I plant cabbage two by four feet and water between the rows. The ground should be kept not only moist, but quite wet for them. When I see a cabbage beginning to head I set a plant close by it, and, when it is ready to cull, pull the roots and give room to the plant set a week or ten days beforehand. On all other vegetables on which water was used we were well repaid, as they were larger, smoother and of better quality, and the crop always sure. I have been in Nebraska twenty-seven years, and am satisfied that a practical man with five acres under private irrigation would make more money than from fifteen without irrigation; and no one need be without it in our valleys, as we have plenty of water just a few feet below us, also plenty of wind above us, and by combining the two I believe we can irrigate more land than we can from rivers and creeks by ditches, believing that there is more water passing in the underflow than passes down rivers and creeks.

We see in some of the eastern papers, "that the terrible drouth has again fastened itself upon Nebraska." The writer of such stuff and the editor who will allow its insertion in their columns should receive the gratitude of the Nebraska people and if they would only come out here we could well afford to furnish water in abundance for soaking their heads a while. Nebraska has had a great amount of rainfall this spring and the prospect for immense crops is good, and with full cribs and low prices all over the country if the general impression could be created that Nebraska, one of the greatest corn growing states in the union, would produce no corn this year these writers or their friends, members of the Chicago Board of Trade, could unload their holdings at a handsome profit, and is a part of the schemes of these leeches who are fattening from the proceeds of the western farms.

The Summer meeting of the Neb. State Horticultural Society will be held in York the third week in July. We want to see a good attendance. A one-way rate plus \$2.00 has been given for all points between the Mo. River and Buffalo, N. Y. and Pittsburg Pa. We can give cheap hotel rates, and we want you to come. If you are interested write to L. D. Stilson, York Neb. for full particulars.



# The Nebraska Bee Keeper

Published Monthly.

Subscription Price, 50 Cents per Year.

L. D. STILSON, EDITOR.  
YORK, NEBRASKA.

Official Organ of the Nebraska State  
Bee-Keepers Association.

Entered at the postoffice as second class matter.

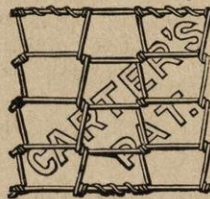
Officers of the North American Bee-Keepers' Association 1896:—President, A. I. Root, Medina, Ohio; Vice Pres., Wm. McEvoy, Woodburn, Ont; Secretary, Dr. A. B. Mason, Auburndale, O.; Treasurer, W. Z. Hutchinson, Flint, Mich. The next meeting will be held at Lincoln, Neb.

Officers of the Neb. State Bee Keepers Association:—Pres., E. Whitcomb; Vice Pres., H. E. Heath, Lincoln; Sec. and Treas., L. D. Stilson, York.

We learn that the voters of Saline Co. are proposing to honor E. Whitcomb President Neb Bee-Keepers association with the nomination for State Senator. That's right, and we hope they will elect him too as he is level headed and would be a good worker for the masses.

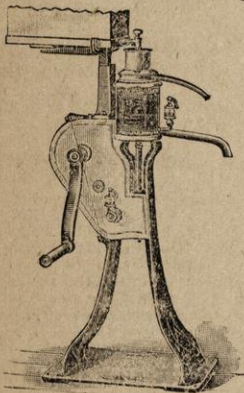
Bees so far this season have built up very strong, but unless care is taken they may starve yet, as the stores of honey left from the winter have been used largely in rearing brood and there will be a drouth of honey blossoms before the summer bloom begins

It seems to be a settled fact now that the North American Bee-Keepers Association will meet at Lincoln this fall. Make your arrangements to attend.



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J. FREMONT HICKMAN, Agriculturist,  
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Wooster, Ohio, April 6, 1899.

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