

SECOND ANNUAL REPORT

OF THE

STATE BEE INSPECTOR

TO THE

GOVERNOR OF THE STATE OF IOWA

FOR THE YEAR 1913

TOGETHER WITH PAPERS READ AT THE SECOND ANNUAL CONVENTION OF  
THE IOWA STATE BEEKEEPERS ASSOCIATION AT DES MOINES  
DECEMBER 10, 11, 12, 1913

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FRANK C. PELLETT  
STATE BEE INSPECTOR

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SECOND ANNUAL REPORT  
STATE BEE INSPECTOR  
GOVERNOR OF THE STATE OF IOWA  
FOR THE YEAR 1913  
REPORT OF THE BEE INSPECTOR TO THE THIRTY-THIRD GENERAL ASSEMBLY, SHOWING THE WORK ACCOMPLISHED IN 1913  
FRANK C. PELLETT  
DEPARTMENT OF AGRICULTURE, DES MOINES, IOWA

LETTER OF TRANSMITTAL

Atlantic, Iowa, December 15, 1913.

To the Honorable George W. Clarke, Governor of Iowa:

I hereby submit my second annual report as State Inspector of Bees as required by chapter 169, acts of the Thirty-third General Assembly, showing work accomplished for the year 1913, together with information of value to bee keepers in the care of their apiaries and the prevention and treatment of disease.

Respectfully offered,

FRANK C. PELLETT.

## STATE BEE INSPECTOR'S REPORT

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The year 1913 has been a very favorable one to the bee keepers of Iowa in spite of the severe drouth. There was an unusually heavy honey flow from white clover over nearly the whole state, and this was followed by a good fall flow in many localities.

The business of honey production has been given so little publicity until recently that there seems to be a very general idea that the business does not amount to much in this state. On the other hand the honey producing possibilities of other states have been so widely advertised that Iowa bee keepers have been induced to change locations, only to find, in many instances, that they left a better locality than they found. In making a comparison of the value of the bees on the farms in Iowa with those of other states it will be found that only one other state of equal area exceeds that of our own. Without regard to area Iowa ranks near the head of the list, only California, Texas, Missouri and New York ranking ahead of her. California and Texas have such exceedingly large areas that there is no fair basis for comparison and Missouri is but little ahead in spite of her greater area. Area considered New York alone ranks ahead of us. Colorado and Idaho whose possibilities in this direction have been so widely advertised in our state, are both far behind us in value of their apiaries in spite of their larger areas. The fact is, that Iowa's bees are worth more than both of these states combined, as shown by the census of 1910.

The men who are engaged in honey production as an exclusive business in this state are getting results equal to those derived from other lines of agriculture with less capital invested and with less risk. The fact that the business is open to men of small capital who are unable to engage in general farming because of the high price of land surely makes it desirable to encourage the industry as far as possible. Bee keeping as a business requires high grade talent and comparatively few men succeed in making it profitable as an exclusive line. This is not the fault of the business or of the locality, but of the men. It looks so easy that men are not willing to serve an apprenticeship or take the necessary



time to become fully familiar with the business in all its details as they would expect to do in other lines.

The value of the presence of large numbers of bees to orchards and gardens in pollinating the blossoms cannot be overestimated, so that the value of the industry cannot be measured by the honey production alone.

Unfortunately for the bee keeping industry no statistics were gathered by the census bureau relating to bees and hive products excepting those kept on farms of three acres or more in extent. A large portion of Iowa's most successful bee keepers live in the towns and were not enumerated. This being the case probably not more than seventy-five per cent of the actual number of colonies were shown by these figures. The following table shows the number of colonies in each county as reported by the census of 1910.

Adair	1,598	Emmet	428
Adams	1,156	Fayette	2,615
Allamakee	1,840	Floyd	1,037
Appanoose	2,735	Franklin	1,200
Audubon	1,088	Fremont	792
Benton	2,281	Greene	1,162
Black Hawk	1,707	Grundy	874
Boone	2,035	Guthrie	1,104
Bremer	1,688	Hamilton	1,593
Buchanan	1,631	Hancock	725
Buena Vista	1,104	Hardin	1,496
Butler	1,904	Harrison	1,473
Calhoun	1,190	Henry	1,806
Carroll	1,218	Howard	924
Cass	1,899	Humboldt	823
Cedar	2,948	Ida	1,251
Cerro Gordo	1,391	Iowa	1,708
Cherokee	1,332	Jackson	2,186
Chickasaw	1,065	Jasper	2,835
Clarke	1,440	Jefferson	1,854
Clay	1,025	Johnson	1,882
Clayton	3,079	Jones	1,860
Clinton	4,189	Keokuk	2,758
Crawford	1,570	Kossuth	815
Dallas	1,799	Lee	2,362
Davis	3,086	Linn	2,613
Decatur	1,968	Louisa	1,850
Delaware	1,771	Lucas	1,715
Des Moines	1,309	Lyon	433
Dickinson	377	Madison	2,288
Dubuque	1,721	Mahaska	2,787

Marion	2,848	Scott	1,704
Marshall	1,399	Shelby	1,642
Mills	560	Sioux	695
Mitchell	1,030	Story	1,761
Monona	1,389	Tama	1,604
Monroe	1,742	Taylor	1,565
Montgomery	895	Union	1,148
Muscatine	1,923	Van Buren	2,278
O'Brien	807	Wapello	2,215
Osceola	266	Warren	2,840
Page	1,403	Washington	2,400
Palo Alto	637	Wayne	2,332
Plymouth	1,454	Webster	1,496
Pocahontas	607	Winnebago	503
Polk	2,505	Winneshiek	2,076
Pottawattamie	1,561	Woodbury	2,137
Poweshiek	1,484	Worth	566
Ringgold	1,691	Wright	1,268
Sac	1,201		

According to the census report more than one farmer out of every eight in Iowa keeps bees. The average value of bees per farm reporting was only \$17.88 in 1910. The fact that most of the extensive bee keepers of the state do not reside on farms and were not enumerated accounts for the small average. The same report shows an increase of 15.3 per cent in value of bees on Iowa farms in ten years, though no increase in the number of farms reporting bees is shown.

The reason that the development of bee culture has not kept pace with other lines of agriculture in this state, lies in the lack of organization and interest on the part of the bee keepers. They have not had state aid to stimulate interest as has been the case with the other agricultural and horticultural societies. The individual bee keepers have been isolated so that improved methods have been slow to be generally adopted. With other lines of work certain methods are in very general use over the entire state. With bee keeping it is different, and one is surprised to see what a diversity of utensils and methods are to be found among Iowa bee keepers.

Now that the Iowa Bee Keepers Association has become strong enough to attempt a systematic improvement of the industry along all lines this condition will soon change and Iowa will take first place as a honey producing state, area considered.

The association has taken up the matter of better premiums and better facilities for exhibiting hive products with every

county fair in the state and asked that the industry be given the same consideration that is offered to other branches of agricultural activity. This has already resulted in greatly increased premiums at many county fairs and cannot but be of much help in stimulating interest in bee keeping.

#### DECREASE IN BEES.

From the census report the fact is well established that there has been a great falling off in the number of farmer bee keepers taking the United States as a whole. At the same time there has not been anything like a corresponding decrease in the number of colonies of bees. This indicates that those who continue to keep bees are specializing to a greater extent and keeping more bees. The presence of bee diseases is undoubtedly largely responsible for this condition, killing off as it does the bees of the careless apiarist.

The work of inspection can best be done early in the season, but as our appropriation is not available until July first the work must of necessity be somewhat prolonged. There is now available the sum of fifteen hundred dollars annually for inspection of bees. At the convention of the bee keepers association of Iowa in December, 1912, it was decided to ask for an appropriation of ten thousand dollars yearly for this work. The amount asked for was based on the fact that disease was then known to be present in thirty-three counties, or more than one-third of the area of the state with probably fifteen thousand bee keepers residing in these counties. At least this amount would be necessary if the State was to undertake the task of eliminating the bee diseases known as American and European foul brood. In my opinion, however, it would be unwise at present for the State to undertake such a gigantic task. Rather should the present appropriation be used to meet emergencies, to do thorough work in such neighborhoods as extensive honey producing interests are seriously threatened.

The most important thing to be attempted, in my opinion, is extensive educational work. Once the bee keepers come to understand the serious nature of these diseases, how to recognize them, and the proper treatment, the inspector's services will be much less needed. It may, and quite likely will, be necessary to ask for some increase in the present amount at some future time, but as yet sufficient time has not elapsed since undertaking the present

plan of work to know definitely whether the amount now available will be sufficient. It would hardly seem to be more feasible for the State to undertake to examine all the bees in Iowa and treat all diseased colonies than to undertake to do the same thing with hog cholera or other animal diseases.

The fact that many bee keepers never examine the brood nests of their hives or know anything of disease and care less, makes it imperative that there be authority to compel proper attention in cases where there is a serious outbreak of disease. It is the present policy of this office to use the funds available where there is most at stake.

The past summer the work has been in the hands of three persons: J. W. Stine of Salem, who is the regular deputy, Harry A. Dooley, a student in the University of Wisconsin, who assisted for a short time, and the State Inspector.

The following is the result of the personal visitation of the three inspectors:

Apiaries in which disease was found.....	140
Apiaries visited .....	311
Total number of colonies .....	6,973
Number of diseased colonies .....	483
Number treated by inspectors .....	52
Number destroyed .....	32

A considerable portion of the whole number of 483 diseased colonies have been treated by the owners under direction of the inspectors. A number were also destroyed by the owners.

Total expense of inspection for 1913—per diem.....	\$468.60
Office and traveling expenses .....	416.14
Total .....	\$884.74

#### EDUCATIONAL WORK.

The above statement only represents a part of the work accomplished, however. A constant correspondence has been carried on with enquiring bee keepers and much information has been conveyed by mail. So effective has been the work accomplished by many bee keepers without assistance, other than instruction as to methods of dealing with disease, that I am now hopeful of accomplishing much more with the funds available than at first seemed possible. It is highly desirable that every bee keeper be fully informed as to the diseases likely to be met with and the proper treatment. To that end much information along this line is in-



cluded in this report. Proper equipment and up-to-date methods are of great assistance in the prevention and treatment of disease. The bane of successful bee keeping is the box hive bee-keeper whose ignorance is his only excuse. Disease is harbored by such apiaries for many years and is thus a constant menace to every progressive bee keeper for miles around. It is to be hoped that this matter will soon become so well understood that a man will be as much ashamed to keep bees in such a slovenly manner as he would to drop his corn by hand and cultivate with an old fashioned "A" harrow and single shovel jumping cultivator. Once the matter is called forcibly to their attention most men will either take sufficient interest to get proper equipment or quit the bees entirely.

It is in such apiaries that there is greatest need for inspection and where the inspector finds his greatest difficulty because of lack of understanding of the need of inspection, and the difficulty of reaching the brood nest and thus getting at the seat of the disease.

#### IOWA LAWS RELATING TO BEE DISEASES.

Acts of the Thirty-third General Assembly, Chapter 169. Prevention of disease among bees and inspection thereof.

Section 1. *Inspector of Bees—Term—Deputies.* The governor is hereby authorized to appoint a competent man as inspector of bees, who shall hold his office for a term of two years, or until his successor is appointed and qualified; and said inspector shall have the power to appoint deputies.

Sec. 2. *Powers and Duties of Inspector.* It shall be the duty of such inspector, when notified in writing, by at least three beekeepers of any locality, of the existence, or supposed existence, of the disease known as "foul brood" among the apiaries of such locality, to at once thoroughly examine such apiaries as are reported to be diseased and all other apiaries in the same locality, and thus ascertain whether such disease exists. If the bees in any apiary are in such place or condition as to prevent a thorough examination by the inspector, he may order the same to be put into proper place or condition for such examination. If such order is not complied with, and the inspector has reason to believe such bees to be diseased, he may cause them to be destroyed. If upon examination the inspector is satisfied of such disease, he shall give the owner or person in charge of such apiary full instructions as to the manner of treating the same. Within reasonable time after such examination the inspector shall, without other notice, make further examination of such apiaries, and if the condition of any of them is such as renders it necessary, he may burn, or cause to be burned, all the infected colonies of bees in any apiary, together with all the combs and hives, in order to prevent the further spread of the disease.

Sec. 3. *Annual Report.* The inspector shall make a yearly report to the governor stating the number of apiaries visited, the number of those diseased and treated and the number of colonies of bees destroyed. Such report shall also show the expenses incurred by the inspector while in the discharge of his duties under the provisions of this act.

Sec. 4. *Sale or Removal of Diseased Colony of Bees—Penalty.* Any one who knowingly sells, barter or gives away, moves or allows to be moved a diseased colony of bees, be they queen or workers, or infected appliances or who exposes any infected honey to the bees without the consent of the inspector, shall be deemed guilty of a misdemeanor and be liable on conviction before any justice of the county, to a fine of not less than twenty-five dollars (\$25.00) nor more than one hundred dollars (\$100.00) or to imprisonment in the county jail not exceeding thirty days, or both fine and imprisonment.

Sec. 5. *Sales after Destruction or Treatment—Penalty.* Any person whose bees have been destroyed or treated for foul brood, who sells or offers for sale any bees, hives or appurtenances, after such destruction or treatment, without being authorized by the inspector to do so, or expose in his apiary or elsewhere any infected honey, or other infected thing, or conceal the fact that said disease exists, shall be deemed guilty of a misdemeanor and on conviction thereof shall be liable to a fine of not less than twenty-five dollars (\$25.00) nor more than fifty dollars (\$50.00) or imprisonment in the county jail not exceeding thirty days.

Sec. 6. *Failure to Comply—Resistance—Penalty.* Any owner or possessor of bees who disobeys the directions of the inspector, or offers resistance, or obstructs said inspector in the performance of his duties, shall be deemed guilty of a misdemeanor and upon conviction thereof before any justice of the peace of the county, shall be fined not exceeding fifty dollars (\$50.00) or by imprisonment in the county jail not exceeding thirty days.

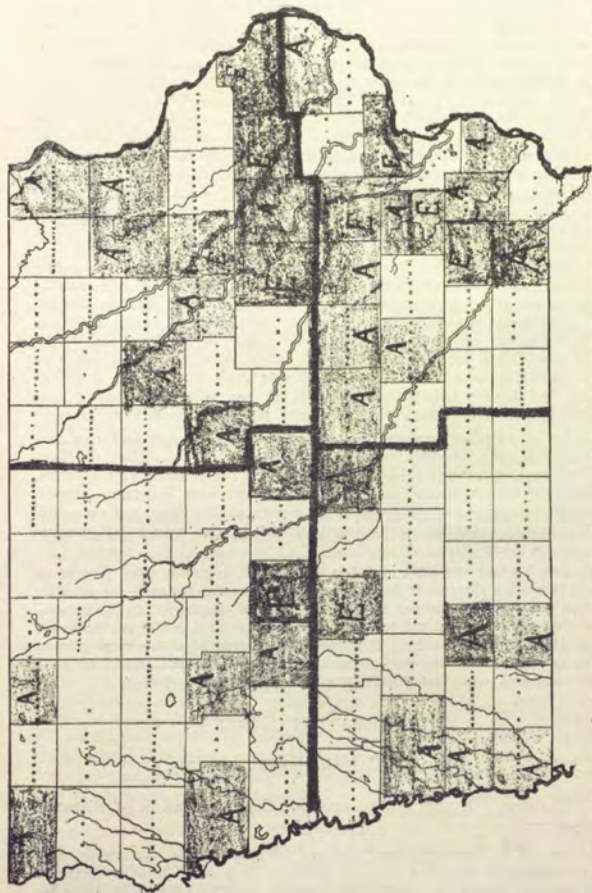
Sec. 7. *Compensation and Expenses.* Such inspector shall receive as compensation the sum of five dollars (\$5.00) per day for each day actually and necessarily employed in the discharge of the duties as herein provided together with his expenses actually incurred while so employed, provided, that the amount to be paid on account of such expenses shall in no event exceed the sum of one thousand five hundred dollars (\$1,500) for any one year, including salary and expenses of deputies.

#### IMPORTATION OF BEES.

(Acts of the 35th general assembly.)

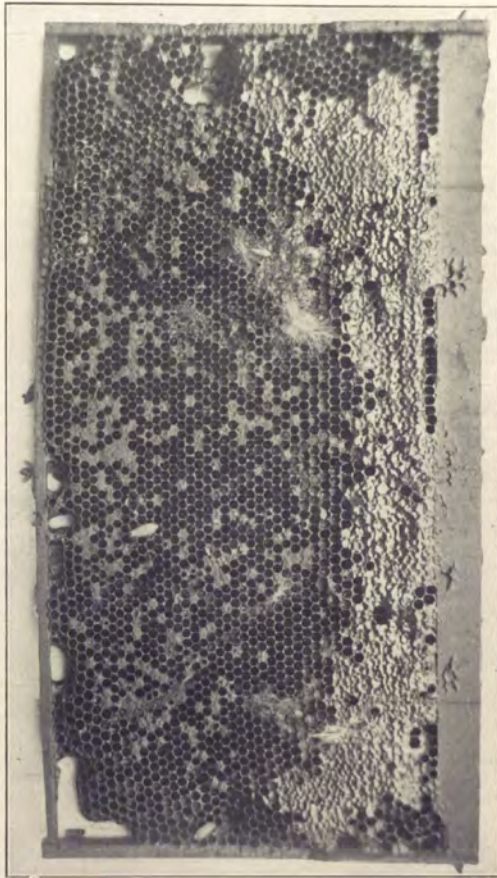
Chapter 209. An act to prohibit the importation of diseased bees.

Section 1. *Diseased Bees.* It shall be unlawful for any person, firm or corporation to bring into, or cause to be brought into the state of Iowa, any apiary or honey bees infected with foul brood or other infectious disease, or bee destroying insects.



Map showing counties where foul brood is known to be present, based on actual examination of diseased samples. Its presence is suspected in several others. A indicates American foul brood, E, European foul brood. The heavy lines indicate the four inspection districts.

Plate 1. Brood comb from colony affected with American foul brood. The dried down scales can be seen at bottom of cells. Three adult wax moths may be seen on the comb, and burrows of the larvae are beginning to show. (O'Rourke.)





Sec. 2. *Certificate of health.* No common carrier shall accept colonies of bees for delivery at Iowa points unless the said bees be accompanied by a certificate of health signed by some duly authorized state or government inspector.

Sec. 3. *Violation—Penalty.* Any person convicted of a violation of this act shall be fined not less than twenty-five dollars (\$25.00) nor more than one hundred dollars (\$100.00).

#### DISEASES OF BEES.

The worst thing with which the bee keepers of Iowa have to contend at present is the brood disease known as foul brood. This occurs in two forms, called American foul brood and European foul brood. Both diseases are present in the state. In a few instances both are present in the same county and possibly in some cases in the same apiary. Where these diseases are present, large numbers of the young bees die in the cells, with the result that the colonies are greatly weakened, and eventually perish from the disease. The following description of the two forms is by Dr. E. F. Phillips of the U. S. Department of Agriculture.

#### AMERICAN FOUL BROOD.

American foul brood (often called simply "foul brood") is distributed through all parts of the United States, and from the symptoms published in European journals and texts one is led to believe that it is also the prevalent brood disease in Europe. Although it is found in almost all sections of the United States, there are many localities entirely free from disease of any kind.

The adult bees of an infected colony are usually rather inactive and do little toward cleaning out infected material. When the larvae are first affected, they turn to a light chocolate color, and in the advanced stages of decay they become darker, resembling roasted coffee in color. Usually the larvae are attacked at about the time of capping, and most of the cells containing infected larvae are capped. As decay proceeds, these cappings become sunken and perforated, and, as the healthy brood emerges, the comb shows the scattered cells containing larvae which have died of disease still capped. The most noticeable characteristic of this infection is the fact that when a small stick is inserted in a larva which has died of the disease, and slowly removed, the broken-down tissues adhere to it and will often stretch out for several inches before breaking. When the larva dries, it forms a tightly adhering scale of very dark-brown color, which can best be observed when the comb is held so that a bright light strikes the lower side wall. Decaying larvae which have died of this disease have a very characteristic odor, which resembles a poor quality of glue. This disease seldom attacks drone or



queen larvae. It appears to be more virulent in the western part of the United States than in the East.

#### EUROPEAN FOUL BROOD.

European foul brood (often called "black brood") is not nearly as widespread in the United States as is American foul brood, but in certain parts of the country it has caused enormous losses. It is steadily on the increase and is constantly being reported from new localities. It is therefore desirable that bee keepers be on the watch for it.

Adult bees in infected colonies are not very active, but do succeed in cleaning out some of the dried scales. This disease attacks larvae earlier than does American foul brood, and a comparatively small percentage of the diseased brood is ever capped. The diseased larvae which are capped over have sunken and perforated cappings. The larvae when first attacked show a small yellow spot on the body near the head and move uneasily in the cell. When death occurs, they turn yellow, then brown, and finally almost black. Decaying larvae which have died of this disease do not usually stretch out in a long thread when a small stick is inserted and slowly removed. Occasionally there is a very slight "ropiness," but this is never very marked. The thoroughly dried larvae form irregular scales which are not strongly adherent to the lower side wall of the cell. There is very little odor from decaying larvae which have died from this disease, and when an odor is noticeable it is not the "glue-pot" odor of the American foul brood, but more nearly resembles that of soured dead brood. This disease attacks drone and queen larvae very soon after the colony is infected. It is as a rule much more infectious than American foul brood and spreads more rapidly. On the other hand, it sometimes happens that the disease will disappear of its own accord, a thing which the author never knew to occur in a genuine case of American foul brood. European foul brood is most destructive during the spring and early summer, often almost disappearing in late summer and autumn.

#### Sacbrood.

Fortunately sacbrood, which is commonly known by the name pickled brood, is not serious and usually disappears within a short time during or after the honey flow. Killing the old queen and giving a new one to the infected colony is usually all that is necessary with this disease. While the disease is not serious it is mildly infectious and may be spread from one colony to another. On two different occasions the state inspector has been called long distances to see what was supposed to be foul brood but what did in fact prove to be sacbrood.

The following description of this disease is by Dr. G. F. White of the United States Department of Agriculture.

#### Symptoms of Sacbrood.

"The strength of a colony in which sacbrood is present is frequently not noticeably diminished. When the brood is badly infected, however, the colony naturally becomes appreciably weakened thereby. The brood dies after the time of capping. The dead larvae are therefore always found extended lengthwise in the cell and lying with the dorsal side against the lower wall. It is not unusual to find many larvae dead of this disease in uncapped cells. Such brood, however, had been uncapped by the bees after it died. In this disease the cappings are frequently punctured by the bees. Occasionally a capping has a hole through it, indicating that the capping had never been completed. A larva dead of this disease loses its normal color and assumes at first a slightly yellowish tint. 'Brown' is the most characteristic appearance assumed by the larvae during its decay. Various shades are observed. The term 'gray' might sometimes appropriately be used to designate it. The form of the larva dead of this disease changes much less than it does in foul brood. The body wall is not easily broken as a rule. On this account often the entire larva can be removed from the cell intact. The content of this sac-like larva is more or less watery. The head end is usually turned markedly upward. The dried larva or scale is easily removed from the lower side wall. There is practically no odor to the brood combs."

#### SOURCES OF CONTAGION.

The spread of foul brood in the immediate neighborhood of the diseased colonies is usually by means of robber bees which visit those which because of their weakened condition are no longer able to defend their stores, and the disease is thus rapidly spread. Every bee keeper should be very careful to guard against the robbing of weak colonies. In case a colony dies from disease the hive should be at once removed, the contents destroyed, and the hive and fixtures thoroughly disinfected.

The past season I had occasion to visit an apiary where disease was suspected and found that when a colony had died the owner had opened it up and exposed the contents to the bees. As a result foul brood had been spread throughout his entire apiary and others of the surrounding neighborhood. In this case the owner was unaware that his bees were diseased and as a result his loss will be heavy.

Another source of the disease is the use of second hand honey containers. A large part of the western honey crop goes to market in sixty pound cans. These cans when empty are sold at a very low price and many bee keepers are tempted to make use of them. While these cans were being refilled they have often been visited by the bees with the result that foul brood has been carried to the apiary often in a minute drop of honey. Bee keepers have sometimes brought the disease home by the use of western honey for feeding in time of short supply of stores. I have been surprised at the extent of the complaint of the spread of disease from these two causes. There is so little to be saved by the use of a second hand container that bee keepers can hardly afford to take the risk. In case it becomes necessary to feed the bees, good sugar syrup should always be used unless the honey is known to be from apiaries that are free from disease.

The use of hives, frames, etc., in which bees have died is not safe unless they have been disinfected. While the disease sometimes appears from some unaccountable source, the bee keeper should take every precaution to avoid its spread.

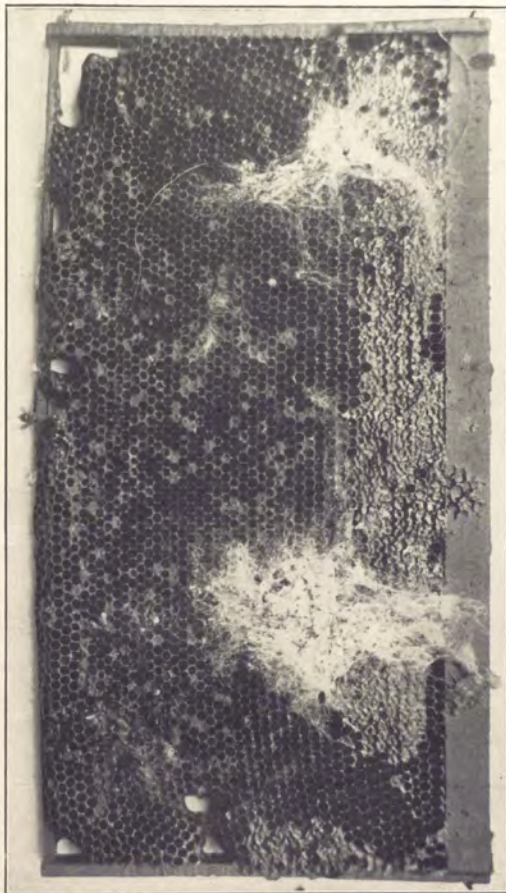
The presence of foul brood in an apiary is a serious matter to the owner and cannot but result in serious loss. Frequent reports come to this office of the loss of entire apiaries, sometimes of hundreds of colonies from disease.

#### The Wax Moth.

It is a common complaint among the inexperienced that the wax moth is the worst thing with which they have to deal. The adult moth is a small grayish white insect, three of which may be seen at rest on the comb shown in Plate I. The larvae when nearing maturity are repulsive caterpillars nearly an inch in length which burrow in the combs and soon destroy them. The moth, however, is not nearly as serious a pest as is commonly believed. The expert bee keeper is seldom heard to complain of them, as he has long since learned that by keeping his colonies strong there is little to be feared. Colonies that have become weakened by disease fall an easy prey to the moths.

The writer has often had occasion to appreciate the work of this insect in neighborhoods where foul brood is prevalent. Not infrequently do we find hives where the bees have died of disease and been left without attention by the owners. When the bees first die these brood combs have the appearance of that shown in Plate I. Plate II shows the work of the moths in a little more

Plate II. Brood comb from colony affected with foul brood, showing work of wax moths. The sunken capings are typical of American foul brood in advanced stages. (Original.)





advanced stage. Where the insects are undisturbed the combs are soon entirely destroyed, thus removing a menace to all the bees in the neighborhood. Where bees die of disease the honey left in the hive is soon carried away by visiting bees and the disease thus spread among surrounding apiaries.

In the case of colonies dead of foul brood, while the moth does not destroy the diseased scale the wax in the combs is so effectively removed that there is little attraction for robber bees who might spread the disease.

The Italian bee is much more resistant of moths than are the black or hybrids and persons complaining of moths are advised to requeen all colonies with pure Italian stock and take care that all colonies are kept strong. This done there need be no further uneasiness about the wax moth.

#### TREATMENT OF DISEASE.

It must be remembered that thoroughness is essential in dealing with bee diseases. One can no more expect to get rid of foul brood by careless methods than they can expect to prevent the spread of small pox or diphtheria without careful disinfection. European foul brood spreads very rapidly at times and seems almost impossible to control. At other times it is less malignant and is easily managed. Some of the most practical bee keepers of my acquaintance make a practice of taking diseased colonies to an isolated situation several miles from their healthy apiaries as soon as the presence of disease is discovered. In this manner they can treat the diseased colonies with less danger of spreading it. It is not an uncommon practice to destroy utterly the diseased colony together with hive and honey, where only a few colonies are diseased. This is undoubtedly the safest plan where the owner has a large apiary, as the resulting loss is small compared to the risk of spreading the disease among all his colonies. If the disease is far advanced and the colony weakened it is not advisable to attempt to save the colony unless it be united with another diseased colony. The hive and frames can be saved, however, if thoroughly disinfected. Fire is the best thing for this purpose, as ordinary disinfectants are not sufficiently strong to be of much use. Scorching the inner surface of the hive with a painter's torch, or painting with kerosene and burning it out is a common way.

## AMERICAN FOUL BROOD.

This disease is rather slow in its progress but very sure and once a colony becomes infected its final death is certain unless the bees are removed to a clean hive and the infected brood destroyed. In the hands of the average bee keeper the McEvoy treatment or some modification of it is best. This is known as the shaking treatment. It is seldom advisable to attempt treatment excepting during a honey flow as results are likely to prove unsatisfactory.

The treatment is as follows:

In the evening after the bees have quit flying, brush or shake all the bees from the combs into a clean hive containing frames with foundation starters.

Bury or burn the old combs at once, not the next day.

Take great care that no honey, not even the smallest drop, from the diseased colony be exposed to robbers, or the disease may be carried back to the healthy colonies.

A second shaking at the end of four days is frequently recommended and sometimes necessary, but so large a percentage of cases are successful with a single shaking during the honey flow that it seems as well to recommend only one, with the caution that the bee keeper watch very carefully for the appearance of the disease among the shaken colonies and promptly treat any that show symptoms of the return of foul brood.

Thos. Chantry's method is to insert a dry extracting comb in the center of the hive in which the bees are shaken. They will proceed to store all honey carried with them in this comb which can be removed at the end of twenty-four hours and a frame with foundation inserted in its place. This seems to be equally effective as the second shaking and is much more economical. Edw. G. Brown of Sargent's Bluff who has had much experience in the treatment of foul brood reports this modification of the McEvoy treatment as very successful with him.

The object to be attained is to rid the bees of every trace of the diseased honey before new brood appears in the hive and any method that will accomplish this result is likely to succeed.

When a number of colonies are to be shaken it is well to replace the frames of brood in the old hives and to pile one above another on top of some diseased colony which may be reserved for treatment for a few days until the brood is hatched and thus save most of the healthy brood which may remain in all the hives. This plan has been carried out very successfully in some apiaries.

## EUROPEAN FOUL BROOD.

Too much stress cannot be placed on the advantage of requeening all colonies with pure Italian stock where European foul brood is known to be present in the neighborhood. This race of bees is much more resistant to this disease than the common strains and will frequently pass through an epidemic without injury when all common stock will be destroyed by it. The experienced bee keeper can sometimes eradicate the European foul brood by caging the queen until all brood has hatched before requeening and thus avoid the necessity of destroying all the brood-combs.

In order that this plan be successful a sufficient time must elapse for disease scales to be removed by the bees before the new queen is permitted to begin laying. Pure Italian stock is also essential to success. This plan is never successful with American foul brood, as before mentioned, for no method has yet been found that will eliminate the disease germs from the combs. European foul brood, however, is the result of a different germ which the bees are able to clean out under favorable conditions. If one has this disease among common bees the best plan is to kill the queens at once and shortly introduce an Italian queen by the queen cage method. The queen should not be released too soon, however. This plan succeeds only with strong colonies.

Dr. Phillips of the U. S. Department of Agriculture strongly urges the shaking method for this disease as advised for American foul brood. In the hands of any but an expert bee keeper that is perhaps the best method for either disease.

In treating bees by the shaking method it is quite possible to save most of the honey and wax if one is very careful that none of it is exposed to the bees. The honey is perfectly wholesome for human consumption and if of sufficiently good quality may be used on the table. Once it has been melted and rendered into cakes there seems to be no further danger from the wax.

## PUBLICATIONS RELATING TO BEES.

There are a number of free publications relating to bees that should be secured by every progressive bee keeper. Among them may be mentioned the following:

Bee Keeping in Iowa. Extension Bulletin No. 11, College of Agriculture, Ames. Address State College, Ames, for this bulletin.

All the following are to be had from the United States Department of Agriculture at Washington:



- Bees. Farmers' Bulletin No. 397.  
 Comb Honey. Farmers' Bulletin No. 503.  
 Treatment of Bee Diseases. Farmers' Bulletin No. 442.  
 Rearing Queen Bees. Bureau of Entomology, Bulletin No. 55.  
 Report of Meeting of Inspectors of Apiaries. Bureau of Entomology, Bulletin No. 70.  
 Occurrence of Bee Disease in U. S. Bureau of Entomology, Circular No. 138.  
 Cause of European Foul Brood. Bureau of Entomology, Circular No. 157.  
 Sacbrood. Bureau of Entomology, Circular No. 169.

There are four journals relating to bee keeping published regularly in this country. The bee keeper who is interested will do well to send for sample copies and decide for himself which is best suited to his needs; the price of all alike is one dollar per year.

- American Bee Journal, Hamilton, Illinois.  
 Gleanings in Bee Culture, Medina, Ohio.  
 Bee Keepers' Review, Northstar, Michigan.  
 Western Honey Bee, Covena, California

Any bee keeper will find it to his advantage to have two or three good books relating to bee culture in his library. The following are all good books and can be had from the publishers of the journals or from any dealer in supplies:

- A. B. C. and X. Y. Z. of Bee Culture by Root. A splendid reference work.  
 Langstroth on the Honey Bee, by Dadant. One of the best of bee books.  
 Advanced Bee Culture. Hutchinson. Fine for the specialist.  
 How to Keep Bees. Comstock. By a well known woman author.  
 Fifty Years Among the Bees. Miller. Very interesting.  
 First Lessons in Bee Keeping. Newman-Dadant. A good beginner's book.  
 A Year's Work in an Out Apiary. Of value to the large producer.  
 Townsend Bee Book. Full of practical directions.  
 Alexander's Writings. The methods of one of the most successful bee keepers of modern times.

#### IOWA BEE KEEPERS' ASSOCIATION.

The Iowa Bee Keepers' Association is an organization which has for its object the elevation of the business of honey production to a place of eminence among agricultural activities. It aims to instruct and protect its members in their legal rights; to assist in marketing the crops, to secure recognition for the industry at state and county fairs equal to that offered to other lines, to cooperate in checking the spread of brood diseases, to spread in-

formation regarding improved methods of culture, and to render any other aid possible to its members or others interested in bee keeping.

At present the society is affiliated with the National Bee Keepers' Association and the membership fee of one dollar and fifty cents per year pays all dues in both societies, including the subscription to the official journal published by the society, "The Bee Keepers' Review." Members wishing membership in the Iowa society only, without the benefits of the National Association, or the official journal, are required to pay only fifty cents per year.

All communications relating to the society or membership fees should be addressed to the secretary.

Officers for the year 1914 are:

- President*—FRANK C. PELLETT, Atlantic.  
*Secretary*—S. W. SNYDER, Center Point.  
*Vice President*—J. W. STINE, Salem.  
*Treasurer*—C. H. TRUE, Edgewood.  
*Directors*—DR. A. F. BONNET, Buck Grove; HAMLIN B. MILLER, Marshalltown; E. C. WHEELER, Marshalltown.  
*Attorney*—RUSSELL E. OSTRUS, Des Moines.

## TREATMENT OF DISEASE.

EDWARD G. BROWN, SARGEANTS BLUFF.

My experience has been limited to sac brood and foul brood; the ropy kind that leaves one with a dark-brown taste in his mental vision and a raw chill around the bones of his financial constitution.

Of course, we all know what it is; simply a disease of the larvæ which causes it to turn to a ropy, dark-brown mass. But how many actually know what it looks like in the first stages? When there are only a few cells, possibly ten or twelve in a hive—the time when you can do the most effective work of checking and eradicating it?

I had an apiary system of about 500 colonies well salted before I woke up. I know a man who had written several articles on bee culture and who was always preaching the dangers of the disease, who took a one-frame observatory exhibit to the state fair, and when a man who had had considerable experience with the disease asked him if it was an exhibit of foul brood, he said he did not know that he had any in his apiary; but there were 25 or 30 infected cells on that comb and when they went to look over his apiary, they found a fair start all through the yard.

Judging from the articles in the bee journals Dr. Miller had things well infected and in the advanced stages before he knew it was there.

Now my advice is: first get acquainted and that, not for the love of it but because an enemy loses half his power if his tactics are well known.

When I say get acquainted, I do not mean by reading and talking about it or seeing an old dried-up sample, but by seeing a real, fresh, live case in the first stages and preferably not in your own yard, but in some of your unfortunate neighbors' and God grant, for your sake, that that neighbor be quite a distant one, too. If you are interested in bees to any extent it will pay you to go a hundred miles or more if necessary to get this introduction.

If a man can locate the first traces of infection in the first cases in his yard, he can control it much easier than when it has reached the advanced stages and his financial loss will be much less.

It is not the dark-brown, dried-up scale we want to know, but the light-brown, almost cream-colored, the just collapsed larva that we must know, and nothing fits us for its detection like actual contact and a little friendly advice from an afflicted neighbor.

The essential points in treatment are: to remove all the honey and old combs from the infected colonies and to do so in such a way and at such a time that no other bees will come in contact with it and in this way carry it to other colonies, and to accomplish this it is imperative that the utmost care be exercised.

It is best to do the work when there is a good natural honey flow on, and for my part I would not attempt treatment under but one other

condition, and that would be where I contemplated an immediate move of the treated colonies.

If one has a yard in which one-third or one-half the colonies are infected it would be my advice to put the whole thing through a treatment at one time and clean up clean, providing he is reasonably sure that he has the source of his infection out of the way.

In severe cases and for beginners the McEvoy treatment is probably the best, although there are other good plans and some short cuts.

The McEvoy treatment is to shake onto inch starters and in three days shake onto full sheets of foundation and burn or render up all the old combs and the part built on the starters.

My short cut for this method is to shake onto full sheets of foundation, placing one dry, clean drawn comb in the center of the hive, then if the shake is made in the morning, I go late in the evening and quietly withdraw the comb, brush the bees off and replace with a full sheet of foundation. If the shake is made in the afternoon I wait until morning to exchange the comb.

It is necessary to be very careful with the shaking work and especially in taking this one drawn comb, so as not to scatter any of the thin nectar in it and to get the bees off as quickly as possible.

The theory of this method is that all the honey carried into the sacks of the bees after the first shaking, which is largely fresh nectar, will be used for wax building or stored in this dry comb and fresh nectar stored over it and when it is removed carefully, all the diseased honey is gotten rid of.

All the brood from the old colonies are set to one side in good tight hives and left to hatch and at the end of two weeks these hospitals are treated.

The most essential points in the treatment of foul brood are to know and locate the cases when they first start and to use all possible care in the handling of the combs and honey from these colonies.

I also believe much can be gained by breeding of queens, as I believe that robbing sometimes develops into a profession with some colonies and the elimination of robbing is one of the best controls of the disease.

The sac brood with which I have come in contact has, with the exception of two cases, been of very little bother and a good honey flow or heavy feeding have stopped it, although I have tried to change queens wherever it has shown up in any number of cells.

Black brood is a plague that so far has not come my way, and having had no personal experience, do not feel capable of discussing it.

As I understand it, it does not require such radical treatment, but that it works with a greater rapidity, and for this reason requires quicker action and closer attention.

## HELPS AND HINDRANCES IN DEALING WITH FOUL BROOD.

J. W. STINE, SALEM, IOWA.

In writing on helps and hindrances in dealing with foul brood, I found it rather hard to determine which was the greater, the helps or the



hindrances. From the standpoint of an inspector I will try to briefly line up the helps on one side and the hindrances on the other and come to some practical conclusion as I have found the situation in southeastern Iowa the past season, and I presume the situation here is not altogether unlike we would find in other places.

The Bible says: "No man liveth to himself and no man dieth to himself." This is true in beekeeping as in any other line of work. We are either a help or hindrance to one another. This leads me to say that I believe the beekeeper himself can be either the greatest help or hindrance pertaining to the foul brood situation. I quite agree with Mr. Pellett in what he says in his article in *Gleanings* for December 1st, page 856: "Making the best of inspection," that the greatest good to the beekeepers of the state in general can come through some state-wide educational system." It is surprising how many beekeepers we find who know nothing about even the inside life of the bee-hive, saying nothing of the ignorance of bee diseases. Then there is the man who thinks he knows all there is to be known about bees, and is not willing to learn. He is the hardest to convince. One man whose bees we inspected this summer had known about foul brood for 25 or 30 years he said and held himself up as a model for other beekeepers. He let three swarms die out where we had marked the bees diseased and asked him to treat them. He failed to do so, and we had to go to the extreme as much as we were loath to do so and burn one weak colony that we knew would not winter, before he would believe we meant to carry out the letter of the law. This same man even made his threats that he would shoot the inspector if he came back to his place again, but we made up our minds at our first visit that he was like a barking dog that never bites, perfectly harmless only so far as his talk would harm. I am glad to say we left him in much better humor even than he was at our first visit, and we hope he may profit by this experience.

This is only one of the many cases: "Where ignorance is bliss it is folly to be wise." This is the most extreme case we have found, and as a rule we find the beekeepers ready to get all the information and help they can. One of the greatest helps we have is good foul brood and quarantine laws backed up by a loyal fraternity of beekeepers and friends. While the laws of the different states may differ somewhat, they are as far as I have been able to ascertain essentially the same. Iowa, I believe, has as good a foul brood law as any state in the Union, and what we need most in Iowa is a larger appropriation of money from the state to carry the law into effect in a more general and educational way.

Two other helps should be mentioned and those are the bees and the hives in which they live. Mr. W. D. Wright, of Altamont, New York, has the following to say in an address on the subject: "The Italian bee as a Factor in the Extermination of European Foul Brood," delivered at the New England N. S. & Canada Bee Inspectors' Convention at Amhurst, Mass., February 7, 1912: "Facts are greater than the actual reason in favor of the Italian bee." He said he always advised introducing the Italian bee wherever he inspected bees. At first the New York beekeepers were slow in using this method and after using it a

while became very enthusiastic over the Italians. Some of the men used the dequeening method with Italians this year with good success. For several reasons I believe the Italians are better in fighting foul brood. In regard to the hives will say I much prefer the 10-frame Langstroth hive to any other kind, but the main thing is to have the bees on movable frames.

I have spoken of the helps in dealing with foul brood, first because I believe in looking on the bright side. We have spoken of it at greater length than we had meant to do, and will only mention or emphasize some of the hindrances. We said the beekeeper was the greatest help, and he may also be the greatest hindrance. We have already cited one instance among many others which were more or less of the same kind, and we recall one other instance of a case where we did not see the owner of the bees, but the boys tried to pilot us around through the blackberry bushes and underbrush in the back yard and show us the bees. Such a time as we had trying to find those bees. Finally we found all but one new swarm down in the corner where they left it after hiving. The boys watched me at a safe distance saying those were the crossiest and blackest bees in nine counties. I proceeded to give the bees a good smoking and the poor things, so unaccustomed to such a thing as being handled at all scurried up among the combs in the old box glad to find a place of refuge in the farthest corner. I lifted the box from its bottom board and found it had been placed on top of bees and evergreen brush and the poor little fellows had to make their way through that brush all summer to gain the inside of their home. I gladly removed the brush and placed the box back on the bottom board, and not one of those little blacks offered any resistance. But such a way to keep bees. It is just keeping them, it isn't caring for them. Not a frame hive in the whole bunch and the only way I could get a peep at their brood was to tip the boxes up or break a piece of comb out of the hive to examine it. It is nearly impossible to do even this in some cases, as the hives or boxes are nailed to the bottoms, and some are so badly decayed that it is nearly impossible to handle. Thus we find in this case as in many others, the man, the bees and the hives are the greatest hindrances.

#### ADVERTISING.

A. F. BONNEY, BUCK GROVE.

Our handsome secretary, Mr. Snyder, coaxed me a long time to talk to you today; that is, he wrote me, stating he would like me to choose a subject, and I picked on advertising. When I told wife that I was going to talk here today she giggled.

"You do nothing but talk," she declared. This is a libel, but I may as well confess that I have a very discerning little wife, the best one I ever had, and I did not get her by advertising for her, either. To show you how cute she really is, she remarked to me one day that "a bee hive is just like a home. The men do all the flying about, while the wives stay at home and raise the families."

Bee men differ from other, common people, in that to properly discuss a question they must know what they are talking about, and therefore I ask: What is advertising? Well, a dozen women at a pink tea will come as near doing it as anything I know of, but that is not what Webster says about it. I read there that advertising consists in giving public notice, or describe with a view to sale, and that covers the ground, but since that definition was formulated there has been great changes in advertising *methods*. In the good old days a few words on a brick wall, a fence or a rock, or some circulars scattered broadcast sufficed to inform the then scanty population of the small affairs of the time, in some cases a bellman was all that was needed, while today the English language is overworked to tell in newspapers, magazines, personal letters, catalogues and postcards the merits of the things we have for sale. One big mail order house today pays out more for advertising than the entire business of the United States did 75 years ago.

Now, let us consider this definition in its relation to honey. "To describe with a view to sale." "To make known," says Mr. Webster.

I do not care to antagonize anyone in this matter, though wife declares I am in hot water half the time from that cause, but I do think I know a little about the art, "craft or science of ad writing," and I state emphatically that honey is today just as well known as it ever will be. It is, very likely, the oldest known sweet; it has been an article of human diet for untold ages. So well known is it that city people, some of whom never saw a cow, know that it is the product of the bee. A pretty young girl from Chicago was visiting in the countryside, and coming to the table for the first meal saw a big platter of honey. She looked at the pile of sweet with a radiant smile. "I see you keep a bee," she said to her hostess.

Why spend money to make honey any better known to such as her? Still, honey may be advertised to some benefit, and in this connection I will mention two forms of advertising to show what may apply to our goods. These are the continual and occasional ads, and if I am any judge, only the occasional will do much with our goods, to producers, I mean, and particularly the small ones. I take this stand because our supply is not *continuous* and cannot be made so. Even if it was a perpetual thing on the market is no sign it will do any good to advertise it, for like eggs it may not need it. Four hundred million dollars' worth of eggs are sold in the United States annually, and I hear no one proposing a national campaign of advertising for hen fruit. Egg producers pay not one cent in advertising. Biddy's cut-cut-cut-ca-doo is the first and only notice that fresh eggs are on the market. You can search the world over and all the advertising about eggs you will find will be the signs in the stores of "eggs." Sometimes the sign will read "fresh eggs," and sometimes they are fresh, and if it is not possible to profitably advertise eggs is it to make honey known? I think not, for it is already known as well as eggs are; in fact, I should not be surprised to learn that honey was used as a food even before eggs were, for it is mentioned in the book of Genesis, and was in common use among the ancients. When, in 1905, some explorers opened an ancient tomb in Egypt they found a jar of honey which

was still liquid and still retained the characteristic odor of honey. It had been lying there more than 3,000 years.

Let us take a squint at honey advertising from another angle. It is an axiom in advertising circles that it does not pay to advertise unless it is done all the time, after one has something to sell, for you can no more sell with last year's advertising than you can grind with the water that is passed. It does not pay to advertise honey in this way, because the yield of honey is variable, some seasons we have immense crops, while in others we have none, and there is no possible way known to man and the pure food law to supply the deficiency. Other things, as the glucose messes and breakfast sawdusts are advertised continuously, because the supply can be kept up, but if we had a continuous distribution of honey could we advertise as these abominations do? No, little children, because the fake syrup fellows and the hundreds of breakfast food concerns spend more for advertising in one year than the entire honey crop amounts to. Twenty-four million dollars. Do you believe it? I do, for I understand advertising, and I know what space costs in the larger magazines. One dollar a page for each thousand of circulation per month. The Saturday Evening Post on that basis should get close to \$1,000 a page a month, and the Karo Kusses buy lots of that kind of advertising room. I know, also, that there are something like 20 or 30 food concerns in Battle Creek, Mich., alone, and they are all heavy advertisers.

I am betraying no advertising secrets when I tell you that to do business successfully by advertising there must be a margin of about 90 per cent profit. This means to sell some article not known to or needed by the world, to create a demand. There is that much profit in the goods I have mentioned. Think of this in connection with honey. Consider for a moment that if an article sells for \$1.00 the cost must not exceed ten cents. This will apply to such goods as automobiles, sewing machines and many other manufactured articles. Breakfast foods are made of grains which cost far less than a cent a pound, while the ultimate consumer pays ten to twenty-five cents a pound. They are advertised extensively, as you all know. In the case of a honey failure we should have to stop advertising were we doing any, but the sawdust manufacturers just put on a little more steam and buy a little more oats and rye and make the supply equal to the demand. The glucose people do the same by buying a little more corn and a few more carboys of sulphuric acid.

I have had the statement contradicted that there is a difference of 90 per cent between the cost and selling price of automobiles, but not long ago ten cars were destroyed in a wreck, and the company sent in a claim for \$10,000. The railroad's expert got in his work, however, and the auto manufacturers got just \$1,000, or \$100 each for the machines. My father, still alive at 85, was a hardware manufacturer for many years, and assures me that sewing machines that sold for \$100 cost less than \$6, and bicycles the same. It is the constant advertising that costs.

While it is not likely that we can ever inaugurate a campaign of advertising for honey such as is carried on for glucose, breakfast foods and patent medicines, as many beekeepers think we can, I believe indi-



vidual stocks may be advertised advantageously, but to do so one must understand the art, for such it is. It would be well for the man who has goods to sell to consult an ad writer, but for the bee man the cost would be prohibitive, therefore he must do it himself, and perhaps I may be able to give you a few hints to aid in future efforts.

I am going to begin by telling you a great advertising secret, and that is that no man alive can tell what an ad will do until it has been tried out. I made a considerable number of postcards before a fool thing caught the popular fancy and brought me a great deal of trade. I assure you solemnly that millions of dollars are annually wasted in advertising, particularly trying to popularize some secret nostrum, commonly called patent medicines, while *injudicious* advertising costs honest advertisers vast sums.

Now that I have started telling trade secrets I will confide to you that the fewer words there are used in advertising the better. The reason is that one person may wade through a two-column ad in a paper; two may read a one-column ad; one hundred may peruse a half-column display; five hundred will see a four-inch story, a million will read two lines, while even the kids on the street will see and read the one word HONEY. They know what it is, and want it. But this one word says and tells nothing about my particular goods, so I added the word Bonney, for no other reason than that it has a sort of a jingle. Bonney Honey. To show that it is an ad I hitch on the word Eat, making it read: Eat Bonney Honey. Only three words, but in connection with a picture on a post card they were enough to sell my crop.

Most ads are far too long, while some are carelessly written. "The more you drink of our soda water the more you will want of it," is not a good ad for a thirst quencher, but it was displayed over the front of a drug store for years, and I remember a pamphlet gotten out by Mr. York while he was editing the American Bee Journal which stated plainly that if you saw a cake of honey in a jar surrounded by liquid honey it was proof positive that it was adulterated, yet that little book circulated for years and probably a million of them were sold before I called their attention to it. Dr. C. C. Miller, who wrote it, responded to my howl, thanked me for calling his attention to it and changed it. At the best, however, it was a poor ad, for it was far too long, because people will not wade through so much matter, and if they did they would find a lot of literature about honey as a food and a medicine.

Regarding the food value of honey, I think ink is wasted in lauding it, because people do not buy honey on account of its nutritive value, but simply because it is a delicious sweet. Of course I know that our goods is a concentrated food, and predigested at that, but I also know a man would starve to death on it in a short time, for man must have a mixed diet, cereals, meats and sweets, and he can live longer on the coarser foods than on the finer.

Much is written about the medicinal value of honey, but, as a rule, by men who have no medical education. Let me assure you that honey has no medical properties whatever, and my authority is the United States Dispensatory, which is the last word on medical substances and drugs.

This work says honey has a slightly cathartic action. I think it is slight, for I have often eaten a pound at a sitting, or a standing, rather, while I was at work and noticed no results save a loss of appetite for my meals. As to cooking recipes, people will not use honey in place of sugar, because it costs too much. Of course the manufacturers of cookies use some, but only the cheaper grades, and the consumer pays.

The next thing to be considered in an ad is the illustrations used. Mr. York, again, used to get out a postcard for sale—with a bear, and a spoon and a skep on it, and a text: "Come spoon awhile and bee my honey." I wrote him about it, and I remember that he resented my criticism. However, I do not see it advertised any more. It was not a good honey ad. Neither a bear nor a spoon have any place on a honey ad. Of course the same criticism might apply to one of my cards, but the proof of the pudding is in chewing the string, and a picture of an automobile wreck with a squalling baby, a dog on top a sign and all the rest merely called attention to the sign, which read: "If anything happens while you are traveling near Buck Grove stop and get some Bonney honey." One of those cards sent to the Council Bluffs postoffice brought orders for a hundred pounds of honey, and I had several similar experiences.

To be of permanent value an ad must be true. This applies to foods and other things, but need not to patent medicines, whisky, breakfast foods and face powders, for no one knows what they are made of.

And don't brag, for somewhere, in some other puddle is a toad as big as you are and he may be a deal better looking. No one cares for your family history when looking for honey. The fact that you and yours have been beekeepers for generations will not add one little bit to the pulling power of an ad. Go hide yourself in a honey can.

Aside from brevity oddity in an ad is a good thing. Theodore Hook made a bet with a friend, a century ago, that he would get up a word that everyone would be using by morning, then went out and wrote QUIZ all over Londontown. Today someone would snap it up to use in advertising a pill.

It is useless to advertise when you have nothing to sell, and for that reason it is impossible for the most of us to profitably advertise honey continually. Our crop is often limited, and when once we stop advertising we are forgotten. Under these circumstances it is a waste to put much money into advertising.

It does not pay to spend two dollars to sell a one-dollar article.

It does not pay to advertise prices unless they are low, and honey prices should never be.

I have only touched on some of the salient points of advertising, for it is a mighty question, someone is even using the daily papers to print extracts from the Bible; advertising the Good Book, of course. Will it pay? Not where only eight or ten lines are used in the entire paper to quote a text while whole pages, illustrated, are given over to detailing what a crazy murderer is doing, the story of an ocean disaster or some horrible murder or other revolting crime.

Our business is a small one compared with many others, but I think personal, individual advertising can be made to pay, and I also incline to the opinion that personal advertising is the only kind for the small honey producer, the man with only honey enough to supply the local demand, if he can find that demand, and by personal I mean the individual appeal to a community, and for this purpose there are few better things than a government postcard printed and sent out; and here comes the test of the ad writer, for few men can write as they would talk. In casual conversation a man will say:

"Hello, Smith. How's everybody? Say, have you bought your honey yet? No? Well, I have a lot of very nice white clover honey that is thoroughly ripened that I am selling at a shilling a pound. Can't I send you up a can? All right. Thanks." When, however, this same man tries to write a postal ad a card will not hold it if set in small type. He tries to give a history of the bee business from the year one, makes a few digs at his neighbor beekeeper, brags about his honey *ad nauseum*, then wonders why he does not sell.

I might give you a few forms for this postcard manner of selling, but to do so successfully I'd have to know your market thoroughly. However, in a general way a card might read:

"I am now taking off a fine crop of white clover honey. I have both the comb and extracted, and shall be pleased to supply you at regular market prices."

Now what more can one say to sell honey in a community where he is known? Quote prices? Declare the honey is pure? Neither. They can find the price when they are ready to buy, and to declare an article is pure is to advertise the fact that there are adulterated goods.

If you have been selling in a community for years, you might say: "I am again ready to fill your orders for comb and extracted honey. It is white clover honey, and very nice."

Anything more would distract the customer's attention from the fact that you are now ready to sell.

I do not have to tell you that if a man is producing honey by the dozens of tons he will require different advertising than the man who has but a thousand pounds to sell. Generally you find that such men have a regular market. Otherwise, they advertise in the bee journals, and to save time writing letter quote their price. At the same time you will find they have a home market, also, selling in all sized containers from a pound or less up. However, there are but few such men in the country, while there are hundreds or thousands who have small crops to dispose of. These are the ones I hope to help, if they survive my talk.

#### MARKETING THE CROP.

W. F. SOUTHWORTH, SIOUX CITY.

Marketing the products of the soil or the products of manufacture is the greatest problem today. Almost anyone can produce something of real value to his fellow man from the soil or manufacture articles of use or comfort, but to tell your neighbor about these articles and get him to

buy them is another problem, especially so when you have to go to a distance to find customers. This solicitation and transportation of your article cost, and then you are confronted with the problem of keeping the price of your article within the purchasing power of the consumer, or within the limits of competition.

Honey is no exception to this rule. The world is really hungry for honey and millions of people would enjoy better health if they used honey instead of the cheap injurious substitutes for Nature's best sweet. And yet if I was asked to name one of the hardest lines of merchandising today I would say "honey" because people are being weaned away from honey by the constant presentation of other substitutes which are sold at a uniform price. There is a feeling of suspicion in the minds of a great many people that the article offered is not really honey and that they are being deceived and paying someone a large profit for doing it. This condition will continue to increase as disease among bees puts the production of honey into the hands of the specialist, a condition that is coming rapidly.

If all honey tasted alike it would be much easier to convince the people that they were buying honey, but the great variety of taste is one of the hindrances to the more extensive use of honey, but when honey producers come to understand the necessity of building up a market for their product they will unite and blend their honey (in this I refer to extracted honey and it constitutes the largest part of the commercial honey) so that people will get a uniform article.

Under our present system of marketing it is the producer of a small amount of honey that is establishing the retail price of honey and compelling the extensive producer to sell his honey for less than it is really worth.

If a man is willing to sell his honey to a consumer for a price no higher than he would get for it at wholesale he is establishing a retail price because the honey merchant must buy honey so as to compete with his surrounding market conditions.

It is natural at first thought for the honey producer to think that there is an enormous profit for someone in handling his honey when he sees his choice honey for which he has received 6 cents sold to the consumer for 18 cents, but he does not stop to consider the first cost of a sack of corn meal or a package of breakfast food, or a bottle of olives.

The farmer receives about 10 cents for the corn that is required to make a sack of corn meal that is selling for 35 cents, and 3 cents for the wheat that goes into a 25 cent package of breakfast food, and the process of making meal or breakfast food is but little more expensive than bottling honey and everyone uses the former and is demanding it while the demand for honey must be created and a large part of the people never eat it.

It costs to handle any commodity, and every time a quantity of honey is shipped, stored, and interest and taxes paid upon it, it must increase in value until the consumer purchases it, and naturally the producer reasons that he will market his product direct to the consumer and cut



out a lot of that expense and make a saving to the consumer, but does he do so? If he is a normal man the time spent in preparing and marketing his honey is worth as much as the time of any other normal man and he has an investment in the honey and depreciation on his buildings and equipment which are equal to storage and interest, and why should he not have pay for them.

Do not understand that I am advocating that all producers shall send their honey to some of the large markets instead of selling it at home, for that is not what I mean, but I do wish to be understood in this. If the producer wants a higher wholesale price for his honey he must inform himself as to what it costs to do business and be willing to establish a retail price for his product that will allow his servant, the honey merchant, a reasonable compensation for his services in preparing this honey for market and finding a market for it. For the merchant is the servant of the producer and the servant is worthy of his hire.

We of the rural class feel that it is an injustice that we must sell our product in the lowest market and buy our supplies in the highest market, but while the mind is taken up with this seeming injustice we do not realize that we have the key to the great treasure house of the Creator and can draw on His resources each season and that one dollar in the rural life is equal to two in the city, because so much of the family living comes from the soil and is fresh and nutritious.

The business world has learned that it must co-operate and that much must be in common. To all outward appearance the keenest kind of competition exists in the business world, and competition is keen, but that competition consists in better service, not in price cutting, for they have learned that that thing means ruin.

We of the honey industry are business men, or should be, and should understand that we cannot build up a business by selling our product cheap; we must give service in the way of good quality and attractive package and publicity, thereby increasing the consumption of honey.

As an illustration I will use the cases of Jones and Thompson. Jones is getting a price for his honey that makes the production reasonably profitable and worth while marketing it. Thompson is producing a little honey and disposes of it at a lower price. Mrs. Consumer has bought of Thompson, but he is sold out and she goes to Jones who is asking a higher price, but she will not buy because his price is too high according to her estimate and consequently two persons are injured. Mrs. Consumer wanted honey but did not get it, and Jones lost a sale.

We need to get together in the matter of prices for our honey and we need to understand the work of the other fellow if we are depending on selling honey to a merchant, for under the present system the prices of honey must go lower and production diminish, for men are not going to invest in honey unless they can sell it at a profit and consequently must buy it considerably below the local retail market, and it is the necessity for this cheap honey that is flooding our markets with the cheap Cuban and Hawaiian honey that the wholesale grocers and large packers must buy in order to put out a honey that will compete in price with the

local honey produced and make the packer a profit to pay for his services.

I am not advocating a combine of beekeepers to boost prices to where honey will be out of reach of the common people for honey is one of the great gifts of the almighty Creator and his people would be better off if they used it rather than the cheap injurious substitutes. Higher prices would not curtail the consumption of honey, but would give the fraternity a margin of profit that could be used in publicity of honey and educating people to the use and need of honey. No doubt you think I am talking as if honey was comparatively a new thing to people instead of being as old as the history of the human race. If you meet as many people as I do that know nothing whatever about the production of honey, but think that they know it all in regard to how the comb is made artificially and filled with a cheap syrup and masqueraded for comb honey, and when you offer extracted honey they turn away disgusted, for they are sure that that is the vilest of adulteration although the label is all covered over with state and national guarantees, you would realize that publicity in regard to honey and something besides the individual names of Thompson and Jones is necessary to give it meaning to the public. Children must be educated to understand what honey is and how it is taken from the combs or how the bees build the section honey that they see in the stores.

How many in this assembly can tell what it costs to produce a case of No. 1 comb honey or to produce 100 pounds of extracted honey? We say we live in a commercial age and yet we do not stop to consider these things, but in many cases the little honey crop is considered a by-product, a side issue, or clear velvet in connection with the farm, orchard, or poultry business.

Bee supplies at first cost are quite expensive and it takes time to fill them with bees and every season does not yield honey like the past has done and if one is unfortunate enough to lose his bees the salvage from empty fixtures is very small, therefore the business of producing honey must be profitable or thinking men are not going to engage in the enterprise.

#### SELLING HONEY DIRECT TO CONSUMER.

J. L. STRONG, CLARINDA.

To produce a crop is one thing, but to sell it to the best advantage is quite another. I find by the market reports that extracted honey in 60-pound cans is selling for 7 to 10 cents per pound. At these prices what does it net the producer? It will cost about 1½ to 2 cents per pound for cans to ship in, including freight and drayage. Then freight and commission will be about 2 cents more. From these figures the crop will net the producer from 4 to 6 cents per pound.

In selling comb honey we find about the same conditions, except the danger of it breaking if we ship as local freight.

The one who sells to the consumer realizes from 10 to 15 cents per pound, as it is customary to charge for the can or pail that the honey is sold in.

From the above it seems that it would be a good business proposition for one who can to sell his own crop, thus filling in the time when the flowers do not yield honey and the bees are enjoying their long winter nap.

How have I worked up the trade? It has not come spontaneously without an effort, as the dear people do not take naturally to extracted honey. They must be educated to the use of extracted honey. To sell it take a sample of the best in the most attractive shape and call your prospective customer's attention to it. Explain the difference between this and the strained honey of our fathers, and if this does not have the desired effect, give a sample sufficient for each one to have a taste and thus be able to express an opinion.

I have made several good customers by giving a sample to a prospective buyer. I have never tried anything that would convince one as quick of its purity and fine flavor. It also proves to them that the money is not all that we are after.

My trade is taking all the honey that I can produce and frequently I have to buy to supply the demand.

#### "A SEASON'S WORK."

F. W. HALL, COLO, IOWA.

First, I wish to say about "season's work:—" Get ready a season in advance, as a good chopper would not be apt to "make the chips fly" very fast if he went out to work with an ax in poor condition for chopping.

If you are a comb honey producer, get the sections all ready and in the super, ready to place on the hives at a moment's warning. Don't be satisfied with a mere starter in the sections, but full sheets, with bottom starters.

One of the most important things is my work table, used mainly to unsuper and clean sections. Am sorry that I was not able to bring it along, but will endeavor to tell you of it so you will get the idea. To make: Make a shallow tray four or five inches in depth and about thirty-six inches wide and sixty to seventy-inches long, or as much larger as your business calls for. Make another tray, same dimensions as the first. This second tray will become the table top, and should be made of lumber  $\frac{3}{4}$  inch in thickness. Take four square posts about eighteen or twenty inches in length and nail one in each corner of the table top, the other ends to be nailed in the corners of the tray. Next take a piece of burlap, canvas or most any kind of stout cloth and tack it on the inside of the tray. This should be tacked on the inside and the long way of the tray. This will then be the lower part of your apron. Next take a piece of spring wire long enough to reach almost around the waist or far enough to grip the sides. This should be sewn in the upper part or waist end of the apron.

To use the table sit on a stool, spring the wire about the waist and with a super of filled sections, wrong side up, knock out the follower, loosen the super from the holders, lift the super off and, with the scraping knife, made as this one here, pry apart the sections, scraping them, also the section holders and separators and place them back into the super.

The beauty of the arrangement of the aprons is to keep all the wax and propolis off the clothes and floor and guides it down into the tray below where it can be shoveled out when filled. All that is necessary to remove the apron is to step away from the table. If two people are to work at the table, duplicate the apron.

Next is an arrangement for cleaning off the top bars of the brood frames. Take a light box as high as the hive on one side and four or five inches higher on the other, set it behind the hive, tight up against the back end of it, and, with a common garden hoe (with a shortened handle) hoe the propolis and wax off the top bars into the box behind. Of course the bees must be driven down out of the way and the hoe worked lively.

You will be surprised at the amount of wax that will accumulate from four or five hundred colonies and the comfort in handling the frames after cleaning. The extracting frames of course will be cleaned with the dull knife at extracting time. There are many other handy appliances which can be used to advantage, but what might satisfy one, might not meet with the approval of another, and, for that reason I will not take up more of your time.

I wish to give you a "season's trip" through my bee yards and get you back in time for the evening train home, so I will have to hasten along and stop only at important points of interest. Taking bees out of the cellar—this may seem a very commonplace affair, but in reality it is an important proceeding. I have about four hundred colonies in six yards. Each yard has a wintering cellar over which there is a bee-tight building in which the extracting is done and in which the supers are stored when not in use.

When the time comes to get the bees to the summer stands, with the help of another man I spread four or five thicknesses of newspaper on the quilt and place the cover over the papers, stuff the entrance with fine blue grass or an entrance closer, except a small space, and with two hives on a stretcher or "carry-all" it is but a short time until we have them all on the summer stands. As we place them on the stands, if they appear too light, or need any other attention, we place a stick of some kind on the cover and, after all are out, those having been marked with a stick on the cover are given a comb of honey from the honey house, or adjusted according to their needs, then we are ready to drive to the next yard.

A few days later when the weather becomes suitable for opening up the hives, all are examined for queens and fixed according to what seems to be the best for them, not forgetting to keep a close watch for any signs of disease, sticking a small peg (painted red) into the ground at the left side of the entrance where we find suspicious cases and in front of the left entrance for those found diseased. If treated, I move the peg to the center of the entrance, and, if after a week or so, they show no disease,



move the peg to the right of the entrance and add one peg for each examination made thereafter until fall. Then if no disease shows remove all pegs.

Previous to the honey flow (clover) I keep going the "rounds" of the yards looking for their needs, spreading their brood nests as their condition and the condition of the weather will permit, adding super room from time to time as needed. Equalizing by the exchange of brood frames until about eighteen or twenty days before the expected end of the honey flow. By this time the most of the colonies are fairly "boiling over" with bees, and where there are any drone cells to be found, they are filled with brood. Some of the most forward colonies are building queen cells, and now, it is time to begin the dethroning operation. With a boy to handle the smoker and another man to help look for the queens, we start in on the yard, killing all the queens that are two years old and all of the others except what are needed to fill out what hives are empty from winter loss or be increased if others are wanted. Perhaps a colony may be in such a condition that it may be run through the season with little chance of swarming. These are given more room if needed and passed by.

With this system of handling the swarming problem, it is necessary to have some easy method of record to keep account of what has been done from time to time in the yard. Book records do not appeal to me, and for that reason I use the following: In the first place I secure three wood pegs for each hive. These are about five inches in length, and are sharpened at one end and used as follows: As we kill the queens, if we find one that we do not wish to kill, we stick one, two or three pegs on the left side of the hive, this means a laying queen. One peg means a fair queen, two pegs a good queen and three pegs a choice one. The last are usually used for breeding if needed for that purpose. If the queen is killed, one, two or three pegs are stuck behind the hive to designate the standing of the queen killed. Nine or ten days later, at the time of cutting the cells, leaving a grafted cell or one of its own kind, one peg is stuck in the ground at the right of the hive, this means a cell. At the next examination which is made a week or ten days later, they are examined for queen or eggs, if only a queen is found, two pegs are stuck at the right of the hive, if eggs are found, three pegs appear. These pegs remain in this position all summer and the record is marked on the hive before they are removed to winter quarters. This record is made with pencil on the side of the hives. By these records, a glance at the hive in the yards will enable me to tell the exact condition of each stand at any time.

A yard of seventy-five or eighty colonies can be gone over by two men and a boy in a day. That is, they have ample time to either kill queens or cut cells.

The next thing is to go over the yards again in nine or ten days and cut out all the cells but one in each colony. Saving all of the choice cells from the best breeding queens and destroying all of the poorer stock. A number of nuclei are started from the surplus cells to supply

any colony which may fail, or supply any colony which may have a poor grade queen.

Whenever a comb that carries a good cell can be exchanged, we do so, otherwise a cutoff cell is slightly pinched between the combs just above some brood, or pinned on with a small stick or toothpick. A little caution should be exercised at the time the queens are killed to see that there are no cells left that might hatch before cell cutting time. In other words, cut all cells as well as kill queens so that all of the cells will be of the same age. We also see that there is no unsealed brood in the hive at cell cutting time, as cells might be started and swarm when the grafted cell hatches.

After thoroughly going over a yard in this way a man could not earn his board hiving swarms. I have not handled swarms enough of late to keep in practice. Have been asked how it will work in the production of comb honey to kill the queens in this way. Why not? There are as many bees for the harvest as there would have been, had the old queen remained in the hive, since it takes twenty-one days to rear a worker besides the brood is not there to require feeding for a part of this time, and, by the time the fall flow is on, the young queen has gotten acquainted with all of the levers of egg laying and the colony goes into winter quarters with a hive full of young bees. Nothing else hindering, that means good wintering, and, good wintering means a good crop.

After the combs get a good start of honey in them, I try to go over my yards and change the empties to the middle, and those with honey in them to the outside of the supers; this makes uniform combs at extracting time. At this round all of the brood nests are examined for queen or eggs and marked accordingly.

A little about extract and extracting machinery and I am done. When the honey is ripe and ready to extract I load my outfit of tanks and four-frame automatic extractor—Root's make—steam capping knife, and sufficient five-gallon cans to hold the day's work (about one ton). As the yards are six or eight miles out, it is well toward ten o'clock before we get there. Team off, and turned to the pasture, the machinery is gotten inside the building, and, in less than five minutes, all is set ready to run. Honey is rushed into the honey house until noon, when fifty to sixty supers of nine frames in ten-frame supers are in the house. The fire is started under the cap knife boiler, and, while we eat our dinners, the capping knife is getting hot. If it is too cold and the honey is too thick to strain well, a two-wick oil stove is set under the extractor.

At five o'clock we are ready to start home, and, while the man gets the team, I rush the empty supers back on the hives. The five-gallon cans having been washed off, carried out and loaded as fast as they are filled. The position of the machinery in all of the houses is the same. First, to the right of the door, in the corner of the room, is the extractor, mounted on a low bench. A two by four about twelve feet long is shoved under a block nailed at the end wall of the house, and sprung down over the back of the extractor and locked under a block nailed to the side wall. This holds the extractor solid and is all the fastening needed. Five seconds will have it ready for use.

Next to the left is the comb box, next the capping tub, then the stove and steam boiler, and across the back end of the room are the honey and other tanks. An electric bell which is worth its weight in gold is used to tell us when the five-gallon can of honey is full. The arrangement is simple and is made ready for use in ten seconds. It takes up scarcely any room in the house or wagon. The trip arrangement is simply a short board with a short piece of number nine wire fastened across it, a short distance from one end, this is used to act as a tilting fulcrum, a brick is laid on the other end at a point that will balance the can of honey when it is full. When the can is almost full it tilts down and makes the electric connection, rings the bell for us to either change cans or shut off the flow of honey.

When the capping tub is full of caps I break them up fine and empty them out onto a strainer cloth that is spread out over another coarsely woven burlap cloth that is tied over the top of a can and allowed to bag down enough to hold the tub of broken up caps. When the cap tub is full again, the four corners of the strainer cloth is caught and the "wad" is dumped into another can with a screen bottom. At the end of each day's work this is hauled home and the next morning, after drawing off the accumulated honey at the bottom, it is dumped into another tank in the storage house at home, similiarly arranged and allowed to drain until time to melt up the wax. My storage house is a building 24x68 two stories high and in it I have a great many handy contrivances that I would like to show you but time will not permit.

You will notice that I have said nothing about marketing the crop, and time will not permit my saying anything further than that my home market takes a great deal of honey. Then I attend the farm sales and other gatherings with my "honey rig." I have also a large mail order trade. Whenever I go any place on the cars, or otherwise, my little five-pound pail of honey goes with me. While there is much yet that I have left unsaid on the subject, yet I think that I have given you a pretty good glimpse of my season's work, and if I have said anything in this short talk that will enable you to keep bees better, or rear better bees, or helped you in any other way, I feel that my efforts have not been in vain. I thank you.

#### BEEKEEPING AS A SIDE LINE AND THE FUN OF THE THING.

HAMLIN B. MILLER, MARSHALLTOWN.

My subject today is of such a nature and my beekeeping experience of so short a duration, that I needs must confine myself to personal experiences, more or less, in order to make my remarks of sufficient length and interest. I don't presume in this effort to teach you old-time beekeepers anything. I am just going to be satisfied if I can only entertain you a little and perhaps take you back to your beekeeping youth.

Were you an audience of overworked office men, business men and professional men, I would not feel like I was about to make a fool, or a laughing stock of myself, before a wise, or otherwise, beekeeping audi-

ence. You will therefore listen between the lines and allow for discrepancies, by being generous enough to realize that I may "come out of it some day."

It tickles me every time I think of the funny things I have read in Dr. Miller's "Fifty Years Among the Bees." I am not related to Dr. Miller, the pioneer bee man, that I know of, but I have experienced some of his early and peculiar symptoms of bee troubles in my own bee work infancy. I often congratulate myself upon the fortunate escapes I several times have already made, and fully appreciate the many hints and experiences that others have given in the bee journals, that have helped me to avoid many pitfalls and needless humiliations that I otherwise would have fallen heir to, in spite of my already fast accumulating experience in bee culture, or "bee smartness." Right here I do not want to forget to mention that I owe the greater part of my bee knowledge to the bright, up-to-date and resourceful bee journals.

Just as soon as I discovered I was coming down with the "bee fever" and had become thoroughly infected with the disease, I consulted Brother E. C. Wheeler of my home town and (by the way, he is one of the honorable board of directors of this association) he at once diagnosed my case' at first sight as a very serious attack and almost hopeless. He thought a go-slow-poultice of caution should be tied on tight and with the three colonies of bees I had already secured and no knowledge whatever about the pesky Italians, I certainly had been thoroughly stung with the "bee fever." He also recommended Gleanings in Bee Culture, as a good prescription for my ailment. I never knew mails to be so slow in all my life as they were after I had sent in my \$1.50 for my first year's subscription. He gave me an old sample copy he had and I read every word in it, advertisements and all, including the chicken ads and Mr. Root's Home Department, before my subscription got started. I studied the markets like an old-time board of trade habitue. Mr. Wheeler also recommended that I get ABC & XYZ of Bee Culture.

Oh, I was going some. My wife couldn't get me to stop long enough to eat my meals. My physician had ordered me to go on a diet. I even overworked that. I fasted, I didn't eat at all, seemingly. Soon lost thirty-five pounds of flesh with my fasting and "bee fever." But then it did me good. Have regained part of my flesh, but have never been able to break the fever.

I saw by advertisements in Gleanings that there were other bee journals. I subscribed for the American Bee Journal and the Review—also joining the National Association at the same time. Didn't hear of any others, or probably would have kept on subscribing. I was simply reading everything I found that had the word bee in it, so you can readily see I soon became possessed of a book knowledge of bees as well as one of fool experiences. Let me thank the writers who have exposed their foolish notions and ideas, as well as wise experiences in the bee journals. They have helped me wonderfully and no doubt have also helped others. Keep up your good work. It assists the beginner and there are always beginners.



Going back to my original thought, how would any of us ever attain to the eagle heights of bee-dom occupied by Mr. Root, Dr. Miller, Inspector Pellett, Dr. Bonney and a few others I might mention, if none of us initiates undertook making fun-sticks of ourselves for the amusement of the graduates in bee culture.

Now every man has, or at least should have, a hobby. That is what the general run of humanity recommends for the overworked and tired out business man. A hobby is supposed to be a sort of play or amusement, on the side, that takes up, or rather lets loose a cramped and tired nature into a relaxation, or what otherwise might be called recreation. Maybe you old beekeepers know what that means, or maybe you don't. I sometimes think a real beekeeper never gets tired, or rather, he should not ever get tired.

Some men I know of think a hobby is chasing a golf ball for hours over a forty-acre field. Others think it is to travel on foot twenty miles or more, over the roughest localities, carrying a heavy gun and ammunition just to get a chance to see a flock of ducks, too far away to even hear a gun.

On the other hand, did you ever stop to think that there are in this world a very few one-talent men? I doubt if there is a single one-talent man in this room today. Why you would not be real beekeepers if you were, for how many of you know nothing else but the bee work? Well, I just picked out the bunch of fellows that know a thing or two on the side, and joined them—I mean the fellows who like to fuss with the "buzzies" and have made bees the chief of my hobbies.

My physician having ordered me to stay out of the printing office, adding that I must rest from the nervous strain I was carrying, I immediately landed on my neglected lawn with a lawn mower, a rake and a spade. It was fun—never had really enjoyed it before, because I did not know I possessed another talent besides the acquired printing office habit. Then my wife also landed on me for flower beds and various other yard improvements. It just seemed as though she would like to sidetrack my hobby for hers, she was so industrious about it, but I was too far gone to lose out on the bees.

While all these new found pleasures were becoming settled upon me, a new neighbor, in the meantime, had moved in next to me and he had a couple of colonies of bees. I was just a little bit leary of the pesky things, for the sight of a bee had always affected me just the same as it does the majority of mankind—I was never unprepared to make my getaway.

It wasn't long before my neighbor was making an awful smudge and monkeying with those bees. By tip-toeing around and peeking over, I saw it all. Standing on somewhat higher ground, I was paralyzed with astonishment as I beheld him actually putting his hands down in that hive, *right among those bees*. The cold chills ran relay races up and down the full length of my nervous body, as I watched him lift out the frames covered with the yellow-banded fellows and dozens of them unning over his hands. "Hello, George! What are you doing?" I asked, as calm and possessed a manner as I could muster up. Without lifting his eyes he said: "I'm trying to see what these little fellows are doing."

His calm answer and the seemingly indifferent manner with which he turned those frames of comb and bees over and around, all the while critically examining them, captivated me and I *was stung with the bee fever*. Maybe you think it strange, but the fever has not yet abated.

Well, my confidence soon grew bolder and I was finally near enough to peek over into the hive. *Wonderful, delightful, entrancing*. I suppose you fellows know how it feels when you feel that way?

But, horrors! He asked me to hold a frame for him while he did something or other that needed attention. My nervous chills immediately changed to "shiveriness." My teeth would have chattered themselves loose had I not set my jaws solidly together, and would you believe it, when some of those varmints ventured to run over my hands, the water seemed to ooze off of me in a manner that would put a turkish bath to shame. After it was all over, I went home weak as a cat and laid down to ruminate, resuscitate and recover, for I had experienced a drenching equal to any turkish bath I have ever had administered to me.

I just couldn't rest. I wanted some bees; and because they did not sting me was one of the best reasons I should have them, and then again I had never before, in all my life, had enough honey to eat.

My neighbor was Mr. George Belt. I asked him to find me some bees. He did. We soon became fast friends, just because we had found true pleasure in the same hobby—bees. My wife soon called me "nutty." George and I were both fatally afflicted with the malady. Many an hour we ruminated on the possibilities and the pleasures we had discovered in the yellow-banded friends, growing more nutty every day. Ever after we have hailed each other as "George B." and "Hamlin B."

I soon secured three colonies, brought in from the country in home-made hives. Gee, but I was afraid of them just the same. Setting them on boxes in the back yard I carefully pulled off one of the cleats that kept them in the hives and ran away to a safe distance. They were so overjoyed at the fresh air I had let in that the whole yard seemed to be full of bees and their (I did not then understand) music, as they played in and out of the hive. As soon as their enthusiasm had waned, I stole up and liberated another hive. Now George B. did not see this, or he would have laughed, I know.

My wife also became interested (or rather a little "nutty") at this juncture and began handing out advice as to how I should conduct myself and manage the newly acquired back yard friends. Many have been the fool things we thought of, tried and experienced during the past three years.

This was in the fall of the year and I put those three hives in the cellar, and shut the cellar up tight from air as well as light. Every time I went down cellar, I hurried out again. My wife always made me go down for vegetables and canned fruit. I had to be bold, of course, but I was really afraid, just the same. The bees would come out and fly around. The floor was becoming thickly covered with them. I was awfully worried. I knew they would all be dead on the floor before spring. They got so noisy at times, and so bold, that I put off taking them out of doors until after the middle of the following April, and when I did grow bold

enough to do so, I had another case of chills, for while carrying out the second and third hives the other bees took special delight in settling on me as the most likely object and place in the whole back yard to rest; and they actually turned my hat and clothes into a brown spring suit. It made me somewhat disgusted, but my wife wisely remarked that "you can't expect much ease from bees." She knew so much about it, of course. Well, there were less than one million bees in those three hives after all had died in the cellar that wanted to die there.

This proved to be the beginning of the worst year in bee history. I always have had the knack of biting off my piece at the wrong time. Not a swarm issued from those three hives that whole summer. I know, because I watched them unceasingly. My wife said: "You just ain't got any sense left. You put those bees to bed every night and wake them up in the morning. You're getting to be a regular old fool." I said: "I don't care, it's grand to be foolish, and I am going to learn all about those bees."

We harvested, or rather stole, sixteen pounds of bulk honey from one of these colonies that fall, but had to feed two colonies all winter. The other colony fell dead on the hive bottom three days before I put the others out the following spring. Starved, of course. "Fool trick," my wife said. "I know it," was my response. I pined for thirty days. Never felt more uncomfortable in all my life, for I really thought they had enough to live on until it was time to put them out.

Things began to get better. I had six strong colonies in the fall, took out one hundred and fifty-nine sections of honey, ate honey all winter and sold the balance at twenty-five cents a section.

I wintered the six colonies perfectly, had a thermometer in the cellar and kept the cellar window open nearly all the time, but darkened the opening with a long heavy curtain, and discovered that everything else also kept better in the cellar with the temperature around 45 degrees.

During the past summer I increased to eleven colonies. Lost two of my queens and then consolidated three stands into one leaving me—I'll tell you how it was. The colony that had, up to the time, made me 108 sections of fine honey, did not swarm until the last day of June. I was lounging in the yard swing, watching a half a bushel or so of the tenants hanging on the front of the hive, when all at once they came out of that hive like a cloud, rose in the air and left like a roaring tornado. I was mad. I never before had had nerve enough to clip a queen. My wife was excited also. More advice was given me as to how I could have prevented such a blunder. I got out my tools, jerked the supers off from that hive and found the queen—I think now she was a virgin—slipped the scissors under her wing and clipped her. Also clipped the queen of another colony that had just swarmed. After it was all finished I repented what I had done, as my book knowledge had then had time enough to soak through and leak out and I realized what I probably had done. The next day I found one of those clipped queens balled on the front steps of the next door hive. I sprinkled water on the ball, she emerged and ran into that hive before I had time to stop her. Something happened to that colony as it became queenless. So did the other hive

where I had clipped the queen. I don't know about the colony with the runaway swarm. They kept on working. But I do not know yet whether it still has a queen or not. Presume I will find out next spring. Another fool notion I suppose. Presume my wife will tell me about it at that time. Maybe some of you can tell me about it now.

Now while clipping these queens, my wife as usual got busy helping (?). I set a cover loaded with bricks against the fence behind the hives. She took a seat on a pile of bricks nearby, close by the cover, with her dress comfortably spread out. Bees, I have discovered (and so has my wife) always travel up and not down. It was not very long until I heard a cry of surprise: "I'm stung." Well, she was, too. Infection set in and after the physician had discontinued his attentions, I was stung—for \$6.50. The super of honey I took off at that time sold for \$6.00. The doctor overshot the mark just fifty cents, but he succeeded in getting it all for that time. But in spite of her many experiences, she still persists in running out every time I monkey with those bees and makes me as much bother to keep her off the job as any "fool bee" that ever endeavored to attract all my attention.

However, I harvested 247 nice sections of honey this year. Much of it No. 1 fancy and all selling at 25 cents per cake. I weighed ten sections that I sold to one party for \$2.50 and the scales showed ten pounds and four ounces—25 cents per pound, you see, and the customer wanting more.

I also have another assistant in my back yard apiary that must not be overlooked. My neighbor's boy. He was less than two years old at the time, but nevertheless took the contagion from me. Whatever he saw me do was, in his mind, worthy of emulation. While mowing the lawn one day, I heard screams of terror and pain coming from the bee yard. Running as fast as I could, I discovered my little helper covered with bees and the balance of them trying to find a place to get at him. In his hand he held a flat paddle with which he had occasionally seen me swatting pestiferous bees. He had just been poking and striking the bees as he stood in front of the hive, just like he thought Ham did it. Giving his little dress a jerk, most of the bees fell to the ground and I carried him out, expecting to see him soon assuming the aspect of his toy balloon that had been given to him at the circus. Again jerking his dress and brushing off the remaining bees, I found he only had seven stingers fast on his face and hands and after free applications of ammonia and carbolic acid he soon quieted down and to my extreme satisfaction he did not puff up like his toy balloon. He is now a full-fledged helper and never misses a chance to look into the hives every time he sees me opening one, or taking off honey. He always wants to taste. Well, so do I. It never tastes better to me at any other time, so we eat together.

If there ever was a hobby to get a man's mind off of everything else he ever got his brain busy with, *the bee is it*. They say fish and cabbage are foods for the brain. Well, I do believe the bees are the emergency brakes in cases of overwork and brain fog. I have wasted thirty-five years of pleasure and fun, as well as profit and better health, by not having discovered the interesting and industrious bee as my friend.



I really believe there would be less subjects in the insane hospitals had these same people been a little "nutty" about bees. Was there anybody ever sent to the insane asylum because bees had made them crazy? I never heard of any such. Have you? I also believe there would be fewer broken down business and professional men if they had taken time to become interested in a few colonies of bees. I also believe the outdoor treatment of bee culture, taken early in life by the average individual would eliminate many cases of the white plague, commonly called tuberculosis, not to mention many other ailments that the outdoor life would benefit.

Are there any weakened-faced beekeepers here today, because of having associated with one of God's greatest blessings to outdoor-loving mankind? You all look to me like you would take care of a square meal of victuals every time the meal hour came around.

God made the bees for us. He has heralded the praises of honey in the book of Holy Writ. Man makes sugar and molasses by chemical processes. The bees make honey by the process invented by God Himself, who never patented the process and never has changed or invented any better way than he started the bee out with from the beginning, notwithstanding all the theories that Dr. Bonney and the many other wise and learned fellows are continually contending about in their endeavors to make over the bee and his habits.

Do you know I have learned to appreciate and love, more and more, God's outdoor of life since I got this bee trouble? I never had seen the sun rise since I was a little boy on the farm until the bees gave me the morning boost. I have got so I cannot successfully night-hawk it any more, and neither can I lie in bed in the morning while the bees are out and at it. But I have never been able to get out soon enough, that I have not seen them coming home as well as going out. So you see, for me, it has been grand to be "nutty."

My health is better, I feel better and really am better, because I have learned to love the bees.

#### MAKING INCREASE.

J. W. BITTENBENDER, KNOXVILLE, IOWA.

There are two ways of increasing, by natural swarming and by artificial swarming or dividing. The artificial swarming is entirely in the hands of the apiarist. If he uses good judgment in making his increase, they should be as good in every respect as natural swarms. Now my way may not be the best method for all localities, but for my locality it is essential to lay the foundation and pave the way for a larger honey crop. Every beekeeper should be well informed in regard to the time of the opening of honey flow and prepare his bees accordingly. Many a good honey flow has passed by for the lack of having the bees in proper condition to harvest it. In my locality the first honey flow begins to open with the first few warm days in spring. With the opening of soft maple, willow and elm, followed up with dandelion, and closes with fruit bloom

about May 10th. Honey gathered from any of these blooms is not very desirable for market or home consumption, but is excellent for building up colonies and making new swarms and to prepare for the main honey flow that usually opens about June 5th. By the close of the first honey flow, about May 10th, if the weather has been favorable I have my bees very populous and working in supers and beginning to cast natural swarms.

There is nothing much in bloom now for four weeks until the white clover opens about June 5th. If colonies have prepared to swarm and have queen cells they will destroy them and many will get in starving condition and often destroy much of their brood. At the opening of the white clover they are in very poor condition to harvest honey and store surplus. Now right here the apiarist must step in and help run the thing. At about the close of the honey flow I examine, and all that have made preparation for swarming begin feeding before the check in the honey flow affects the bees. The others prepare to divide, and there is no other time in the season that it is more profitable to make your increase, and bees are in natural condition to swarm at this time. But I do not wish to be understood that all colonies in an apiary will be in swarming condition. All colonies that have brood in seven and eight frames and are hanging out or working in super are only fit to divide. There are many advantages in increasing at this time. You get your idle bees employed; to rear young bees you get your queens to lay out by the time white clover opens, and the swarming fever is kept down. The eggs that are laid during these four weeks will mature the bees that will gather the white clover crop. By feeding I stimulate the queen to lay at her highest capacity, and I get young bees of the proper age to gather the honey harvest.

I make my increase just at the close of the first honey flow. All the colonies that have not cast natural swarms I divide by taking two combs of brood with the adhering bees and the old queen and place them on the old stand and move the old colony away to a new place and give them a caged young laying queen. I move the combs together and leave the space on each side vacant. The new hive I give four empty brood combs, this having six combs also. Now I proceed until I have made as much increase as I want. In twenty-four hours I make a close examination. If more bees have left the old colony so that the brood cannot be cared for I take some more combs out and give it to the new colony. Now for three days these divisions need good attention and by this time they become well established. After the third day I fill in the two combs at the side with full sheet of foundation. I now place on my feeder and feed half pound of honey every day in the evening. I use a feeder especially made for this purpose.

At the beginning of the white clover harvest I have my colonies in prime condition with young healthy bees. The queens have about finished their spring season of laying and the swarming fever is about over and the bees have settled down to business. I use the eight-frame hives and a loose hanging frame. Now I want to draw your attention to these two outside frames of foundation. When the bees have built in these combs

and filled them with honey and are about ready to cap is the proper time to put on your supers. The wax secreting bees will enter the super more readily now than any other time.

#### INSTRUCTIONS FOR SWEET CLOVER GROWING.

FRANK COVERDALE, DELMAR.

Sow sweet clover on ground well prepared, on a good mellow seed bed. A sod field that has been plowed the previous fall is best of all. Spring plowed sod is all right, and will answer nearly as well, but work into a good seed-bed; and where the rainfall is sufficient, harrow the seed in shallow. But in arid sections a drill is best, putting the seed sufficiently deep to insure enough moisture to make sure of a good come-up. Sweet clover sown on such ground will grow a heavy crop of nodules on its roots; and by the end of second season this ground will be thoroughly inoculated, and can be depended upon for all time to come for routine methods, as these bacteria will live in the soil for several years. A good stand of alba is usually sure when sown on land that would grow 60 bushels of corn per acre, and a nurse crop sown with it of barley, wheat, or early oats seeded somewhat thinner than usual; and after the ground is inoculated from growing previous fields, a fair cutting of excellent hay can be mown in October after the grain has been harvested, making a crop of small grain and a cutting of hay the same season.

After the fields are inoculated by the actual growing of the sweet clover on given fields, this method will be best of all. For pasture for cattle, seed with timothy or any of the native grasses for best results, as the clover causes the timothy to do much better, and is richer in carbohydrates, and the sweet clover is much richer in protein; and if the season should be so dry that the clover might be lost, other grasses might appear. No other pasture is quite as good and safe for cattle to graze upon.

For hog pasture, seed with oats on good ground. At first old hog lots are ideal to plow and sow as above. Turn in the hogs as soon as the oats will afford a bite, and let them have the field all summer till all is frozen down. This pasture will be found to be superior to the swath seeding generally recommended by our leading agricultural papers. Have enough size in field so the hogs won't have to eat it too short. Those sweet clover fields will furnish immense feed for two seasons; and if the alba threatens to grow too tall, and to become woody, mow the field only the second season from sowing. This will keep the clover succulent and fresh. Mow with the guards turned very high, to prevent killing any of the plants. Enough of it should be left to grow seed to reseed thoroughly the pasture. Keep the hogs well rung or they will dig up and eat the roots toward fall of each year, or in throwouts in winter.

#### HANDLING FOR HAY.

After sweet clover has been growing on land for two years, a field can be seeded alone on clean ground not too foul with weeds, and almost 1½ tons of extra hay per acre may be cut in October; and it should in no case be mown for hay until the crown sprouts have begun to show up on

the top of the roots about one inch under ground. Then the field can be mown just as close to the ground as one wishes, without any harm, and we have never known such a field to winter kill. This will be the same kind of hay that is cut after the grain crop in October, and will be mown at the same time.

The second year's hay crop must be handled differently, and will be ready to mow early in June, just as soon as it attains the height of 22 inches; and the field must be mown sufficiently high to leave some branches and leaves on each plant; so when the mower is started let the operator, after starting, look well at the stubble and see that some leaves and stubs of branches are left on each plant. If this is not the case much of the alba is liable to be killed; so the above precaution must be adhered to. The hay should be left lying in the field until nearly dry, but not dry enough to shatter off the leaves. It may then be raked into winrows, and made into small cocks before the leaves will shatter from being too dry; and while it is still in a tough state, fit to be hauled to the mow, care must be taken not to let it get too dry, as the leaves would then be largely lost, which are as rich in feeding value as wheat bran. Then, again, if put into the mow too soggy, it will mould in the center of the stack or mow.

We find that, with a little experience, we are getting much better hay than we ever had since we began to make sweet clover hay. This second year's crop will make three cuttings here; but it must be got at on time. The first cutting will not be in bloom yet; but the second and third cuttings will be continually in bloom soon after the second growth comes on, and the second cutting should be made when 22 inches tall on an average, and must be mown high, as at the first cutting. But the third mowing can be done close to the ground, as its time of usefulness will be at an end then. The second cutting may be taken for seed, which makes the best crop of seed; but in this case only one cutting of hay can be made and a crop of seed. If seed is harvested, the field will be well reseeded for the coming season.

#### GATHERING THE SEED.

It is always best to take a cutting of hay first. By doing this a much better crop of seed of better quality will be the result; and the seed crop will handle with one-half as much labor, as the straw will be shorter and much finer. A self-binder is the right thing to harvest this seed crop, binding it up like oat bundles just as soon as the seed shows to be three-fourths black, and the rest a yellow brown. If harvested at this time a heavy seed crop will be secured. Set those bundles in shocks, two and two, just as long rows as you wish, until dry; then, as either stock or hull seed left in the hull often heats badly, we recommend hulling the seed when thoroughly dry.

#### CONCLUSIONS.

Sweet clover will thrive best on soils that contain most lime; and a good liberal amount of lime applied to most worn soils will be found to cause the alba to make greater growth; but it is not necessary for the



successful growing of this legume if the foregoing plans are adhered to. Twenty pounds of hulled seed is about the right amount of seed to sow per acre. We used a side delivery the past season, delivering the hay into the rows when not quite dry. Then we let it dry a little more; in those delivered rows, then used a hay loader when all was about dry; but the moisture from the ground and the hay, still a trifle green, all made up very nicely. Only a few leaves were lost. I believe this will usually work well, and it saves much labor over the cockup plan.

In handling the seed bundles it will be found profitable to spread a canvas over the wagon rack to catch the shattering seed.

The growing of sweet clover is the best possible way to prepare ground for the successful growing of alfalfa.

Sweet clover will not live long unless the bacteria nodules begin to form on the roots; and these nodules will be very slow to show up unless good rich ground is used to begin with, or the land is limed, or a good covering of manure, or both, are used; and when all the above precautions are taken into consideration, and any of them applied, very few indeed will fail to make sweet clover a paying proposition on the farm, and he who is in the corn belt, and sets himself to the successful growing of this legume, will soon find himself growing much larger yields of not only hay and pasture, but a large increased yield on each acre of corn.

#### TO INOCULATE SEED—A PLAN THAT WORKS WELL.

Dig up strong sweet clover roots on ground where this legume has been growing for years, carry to a place where the sun never shines, shell off the dirt with the nodules, and let dry and pulverize into a fine dust.

This dust is teeming with the fresh bacteria, and is at this time ready to use for the purpose of inoculating either sweet clover seed or alfalfa seed.

Prepare water with sufficient granulated glue stirred in to make a thin sticky syrup. It will be necessary to heat the water some so the glue will dissolve. When cool it is ready for use. Empty the seed on a floor in the shade, then pour over the seed sufficient of this syrup, and shovel it over and over until glue is all on the seed, when it will be ready for the dust. Sprinkle sufficient of this dust to dry the seed, so that the seed will no longer stick together. When done every seed will be coated with this dust that contains the bacteria, and is exactly in the right place to cause the young plants to grow nodules at once.

When the above work is done the seed is ready to be sown either with nurse crop or alone. Be sure that when sown the seed is covered at once, as sunlight will kill the bacteria, and the thing that makes for success is to keep these operations always in the shade or on a damp cloudy day.

If this method is used, sweet clover will thrive on very poor land, and build it up very fast. In any case where this legume has not grown successfully, the seed should be treated as above. The application of ground limestone applied to the land at the rate of one and one-half to two tons per acre causes the alba to grow an abundance of nodules, and in this case no inoculation is needed.

## EXHIBITS.

R. H. LONGWORTH, POLK CITY.

To the Iowa Beekeepers' Association in Second Annual Convention Assembled. Greeting: When your secretary requested me to present the subject of "Exhibits" I had no idea of the array of talent that would here be mobilized. And since I have read the printed program it has been hard for me to get away from the impression that in appearing before you at this hour, the chief exhibit I would be presenting would be that of nerve.

Surely at the close of a series of sessions so replete with interest and enthusiasm, something of the nature of nerve is required of him who would introduce the comparatively uninteresting topic up for our present consideration. I say comparatively uninteresting advisedly. With 40,000 beekeepers in the state you can count on your fingers without using your thumbs the exhibitors at the State Fair for the past ten years.

That the beekeeping industries exhibits are not without interest for great numbers of fair visitors is clearly evident to one who has spent a day among the throngs of sightseers passing through the apiarist's section of Agricultural Hall.

When we speak of exhibits, naturally we think of fairs, and when we talk of fairs we are discussing educational institutions. If our fair should happen to be falling short of fulfilling the requirements of our ideal as an educator, it is our privilege and duty to give to it our best thought and effort.

As your ideal for your fair is high, let your ideal for your own exhibit be none the less so. Be satisfied only when you have given it your highest thought and your most conscientious endeavor, your closest application and your keenest effort. Then wherever awards may fall, the true reward will be yours.

We do not believe that we will be breaking faith with the preceding proposition if we plan for the appropriation by our own families of a large proportion of the educative influence set in motion by our exhibit. If you have no family are you a young man? I would say quit it.

Are you an old man? Interest some young persons with you. Someone has said that to educate a child properly you should begin with the grandmother, and so it might be said with regard to training an exhibitor, but we are talking of exhibits and not of exhibitors. However, take this from me: your exhibit will be better if your family is enlisted in the campaign to make it so, and your family will be benefited if your exhibit is used as means for their moral and intellectual as well as material advancement. As a wave goes out from the center where it is born and joins hands with the wave running to meet it, and these two with others, so the interest of those connected with you are carried out through the influence of your exhibit, and acquiring added and increased interest there ensues a blending with a broader and more significant life.

To return to the suggestion. Your exhibit will be better with the help of your family. Your exhibit should be as extensive as practicable for

you to make it, and you will need help. Your exhibit should be as attractive as it can be made, and again, and more so, you need help.

There is no discredit given, but rather an honor shown, the goods we exhibit through the employment of the decorator's art, and here you need the help of wife and daughter. After being fully established your exhibit will need careful attention, and the admiring and the curious, the prospective customer and the man with a hobby, the amateur seeking to imbibe bee lore, and the past grand master in agriculture are all to be met and satisfied—remember that last word, satisfied.

If you will pardon this reference to our own exhibit at our last State Fair. There are six of us in family, the father and two sons, the mother and two daughters. We employed two helpers and later on for part time two more, all young persons, none too many. I do not feel that I should exact from you at this hour time to go through all the details connected with making your exhibit attractive and withal effective. Not only should your exhibit be as extensive as practicable, and as attractive as possible, but it should be as persistent as the inevitable "others may come and others may go" but you should go on, if not forever at least to success.

Our friend Mr. Bittenbender, of Knoxville, is a splendid illustration of this persistency. For twenty-seven consecutive years he has been regularly at the State Fair. I well remember the illuminated countenance of our good brother as he told me, a number of years ago, of reaching the \$100 mark in premium winnings, a goal he had been striving toward for years.

Mr. James Heathershaw, just outside the city, owner of what is probably the finest market garden farm in this part of the state, has exhibited at the State Fair without one failure for thirty-five years, and his winnings this year at the age of 76 amounted to over \$200.

The late Mr. Clute, of Manchester, an exhibitor in vegetable and apiary departments died an exhibitor, his last State Fair rounding out forty years.

If I may have seemed in the outset to deplore the necessity for appearing at the close of so great a program with this rather grouchy paper, I appreciate the fact that if the paper rightfully has a place before you, this is the logical time, for more intimately than we may think is this question of exhibits connected with those preceding it. Look down the number that have been discussed. Is Mr. True planning to arrange his apiary in the most effective manner? Let him make a home exhibit of it. Does Mr. Secor want to increase the consumption of honey? Let him exhibit. Is Mr. Pinney in doubt as to whether he should run for comb or extracted? He, too, should exhibit. Does Mr. Strong wish to sell direct to the consumer? Let him exhibit. Does Mr. Aldrich desire to lead to his beekeeping the dignity of a business? He should exhibit. Has Mr. Southworth problems connected with marketing his crops? Advise him to exhibit. Does Mr. Bonney question the value of advertising? We prescribe for him an exhibit. Is Mr. Miller looking for another side line of the fun-developing sort? Tell him for me to hitch onto an exhibit. Has Mr. Hall rounded out a great work for the season? Perhaps all that

is lacking to bring out in striking clearness the outlines for the picture of that work is an exhibit.

Mr. Bittenbender already stands committed as an exhibitor. He can't help it. Maybe he was born that way. But away back there in the early days of the Iowa State Fair he came up against the proposition that if he would exhibit he must produce and then he began to get busy. Then along came the germ whispering in his ear: "Exhibit more extensively, Mr. Bittenbender," and our genial friend yielded to wooing, and there you have his well worked out scheme of increase.

Let me say here, Mr. True has made two very interesting and promising exhibits, winning a goodly number of blue ribbons. You quote sometimes these words: "Sow a thought and reap a habit; sow a habit and reap a character." Will you allow me an application of the quotation: "Sow a thought now—get it started to growing while conditions are so favorable concerning your exhibit. Get the exhibit habit and be an exhibitor."

#### HOW MAY WE INCREASE THE CONSUMPTION OF HONEY?

BY EUGENE SECOR, FOREST CITY, IOWA.

What do you suppose is the average amount of honey per inhabitant consumed in this country? I have not at hand the figures of the production of honey in the United States as shown by the last federal census, but from what I know of my own locality by actual sales, and of other places by observation, I am convinced that the amount of honey used isn't one pound per capita per annum. Just think of that! There are more pounds of tobacco sold and used ten to one than there are of the nectar of heaven! The consumption of sugar as an article of food is out of all proportion to honey used for the same purpose. It is quite a common thing for families to buy fifty or a hundred pounds of granulated sugar at a time, but I seldom hear of the head of a family carrying home anything like the same quantity of honey. Perhaps that is why we are a nation of dyspeptics. It is an *effort* for the stomach to digest sugar. Honey is more assimilable. It requires less vital force for the stomach to convert it into blood and bone and muscle and fat.

But someone will say honey is a luxury, and he can't afford luxuries. Honey is a luxury. It is unattainable by the arts of man. No alchemist can make it. It is the very soul of the flowers and they are the poetry of nature. Science cannot compound it nor perfume it with the essence of heaven. It is distilled by the sunshine in the secret chambers of the corolla and is poured into delicate new-made chalices of wondrous workmanship by the servant of man for his inexpressible delight. Yes, honey is a luxury. But isn't sugar a luxury? Don't you think you would live just as long and perhaps a little longer if you didn't eat so much sugar? Sucrose sugars are responsible for many kidney troubles. Did you ever know of a case of diabetes in a constant user of honey?

Someone else says honey is too expensive. He can't afford it. Yes, honey is higher than sugar, but not so high as meat. Meat isn't a neces-



sity. We think it is but it's a mistake. Don't you think we'd live just as long and perhaps a little longer, don't you think we'd be just as strong and perhaps a little stronger if we didn't eat so much meat? How many millions of people there are in this old world who scarcely ever taste it—people just as strong and just as healthy as we who kill and devour helpless creatures just to satisfy a perverted appetite! Statistics gathered by the Department of Agriculture for 1911 show that the people of the United States consumed *one hundred and seventy-two pounds of meat per capita* and I said they didn't average *one pound of honey!*

But I don't need to lecture you beekeepers on the benefits of using honey, unless it is to urge its use a little more freely in your own households. And don't forget to extol its virtues to the heathen round about who use meat so excessively.

I have known men who kept a few colonies of bees to take the very first filled supers to town to sell instead of leaving them in the kitchen and telling the women folks to help themselves. This class of beekeepers does more to make honey unpopular than many suppose. They are generally farmers who have little experience and who don't seem to realize that honey is a luxury and therefore must be put up in attractive style. Perhaps they take it to their local market in the super just as it came off the hive, propolized and travel-stained, and by the time the grocer gets the sections out it is a mess. He is disgusted with it and wishes the stuff in Ballyhack. It is anything but tempting to a customer who might be in a humor to buy if it looked nice.

Getting back to my subject, I will say that one way to increase the use of honey is to use more of it on the table in the home where it is produced.

When company comes what luxury is more dainty and inviting than a section of the finest honey you have in the house? Call the attention of the guest to it. Nine-tenths of all the visitors we have eat honey. They like it. Perhaps when they go home and plan to entertain company themselves they will think of the delicious honey they ate at The Shelter and buy some. I will here state that our table is seldom set without honey, *and we eat it*. We never get tired of it. A pound section disappears in company with a pound of butter—both going the same route to the gastronomic laboratory along with pancakes, bread, biscuits or muffins as the case may be. The good Book says, "Butter and honey shall he eat when he knoweth to refuse the evil and choose the good."

By the way, isn't it a wonderful laboratory that we carry around with us, the stomach? While we're working or walking, standing or writing, loafing or sleeping, the heterogeneous conglomeration of materials we have dumped into it are assorted in this laboratory and assigned, each particle to its proper work and function in the building of a man.

The way to increase the use of honey is to popularize it. Advertise by any method you choose but be sure to advertise by selling only the best. If we produce comb honey every section ought to be so clean and attractive that it will tempt someone to buy. I never put on the market an unfinished section, and every section is as thoroughly scraped for

the local trade as though it were going to the great city. If we would take more pains to cultivate the home market by selling only a prime article and keeping it before the people we would sell more honey at home and make more money out of it. Remember that honey is a luxury, and it must be put on the market in such attractive shape that it will be admired and bought. In other words it will sell itself. If honey on the grocer's counter is mussy or in uncleaned sections few people will be tempted to buy it. The eye is the key that unlocks the purse. People advertise to catch the eye. We must advertise *our* goods by keeping in sight the finest quality and handsomest product that skill can produce. It is a good plan to have a bulletin board near the highway on which is displayed in large letters *Honey for Sale*. It will bring many a customer.

I suggest that the local price be not held at such a high figure that the people will not take hold of it. An example to the point: In my own town most of the resident beekeepers got together early in the fall and agreed to hold comb honey at twenty cents. The consequence was it didn't move, but a little later at fifteen cents it sold fast. Fancy comb was selling at the time in Chicago at sixteen cents. Now, it wasn't just the wise thing to do to hold at twenty when, if shipped it wouldn't have netted the producer more than twelve to fourteen. Better put the home price at a figure that will sell as much as possible of it and save freight and commission.

Another way to advertise honey is to show it at fairs. I believe every exhibitor of honey will say that an attractive display of honey is always admired and commented upon. It whets the appetite. Live bees are shown just to tempt visitors to stop and ask questions. If bees didn't make honey they'd be no more attraction than a nest of ants. But the attention once arrested the opportunity opens to talk of the wonderful work done by the bees; of the different kinds of honey and why different; that bees do not mix honey from different flowers; that white clover is distinct from linden, sweet clover from buckwheat and alfalfa from goldenrod; that comb honey is never capped till it is ripe; and when fully ripened and sealed it is a product which man with all his inventive genius cannot copy or excel; that there are many uses to which honey may be put beside eating it in its natural state; that cakes of various kinds and cookies and doughnuts and preserves and vinegar may all be made, honey taking the place of other sweets. If it is known that honey is a more healthful sweet than cane or beet sugar and that a delicate stomach is by its use saved from some of the arduous labors of digestion perhaps the listener will be reminded to buy honey instead of some of the canned stuff now so plentiful. It ought to be known that honey on the table takes the place of sauce and preserves—at least it does at our home. If honey is always on the table the housekeeper doesn't need to fret and sweat over the stew kettle nearly so much.

My remarks thus far are mostly concerning comb honey. The producers of extracted honey are generally those who keep a large number of colonies and who understand how to handle and how to market it, but if any one thinks of trying this branch of the business I want to caution him against extracting and selling unripe honey. Nothing will

sooner demoralize trade and disgust would-be users of our product than to buy a can or jar of so-called honey when it is little better than nectar-sweetened water. Wait till the combs are well sealed before extracting. For the retail trade extracted honey ought to be as pure as comb honey and put up in an attractive package, with a label on the can or pail just as handsome as other canned goods. Explain why honey granulates and tell how to liquefy it without spoiling the flavor. Such an article will "taste like more"—blessing him that buys and him that sells.

A good deal of honey could be sold to farmers if one is adapted to the business of peddling. In my part of the State not one farmer in twenty keeps bees, but it is a dairy county and every farmer has money. If they were solicited in the right way I am convinced they would buy a lot of honey and by so much increase the consumption, for they seldom buy it at the grocery. When they go into a store to do the week's buying they see so many other things on the shelves, and their list from home is so large, they pass by the luxuries. Take honey to them when nothing else is in sight and they will buy. People need to be solicited. They expect it. How many farmers would carry insurance if they were not solicited? How many would buy automobiles if they were not persuaded by the agents? How many would plant orchards if the smooth-tongued tree agent didn't call? One can sell honey in the same way, and in large quantities.

#### REPORT OF SECRETARY.

S. W. SNYDER, CENTER POINT.

The report of this office will not of necessity be very lengthy. There might have been much more accomplished through this office if the secretary had no bees to look after and a few other irons in the fire.

The first duty performed after returning home was to make up enough typewritten copies of the proceedings of our first convention to fill the demand of those applying for them.

It was soon discovered that if we obtained any favors through our legislature we must get busy at once, accordingly a letter was mailed to each member requesting them to get after their representative and senator and urge them to support the foul brood bill which was then on file. Through the Secretary of State we obtained a list of all representatives and senators and a strong letter was mailed to each one, urging their support of the pending bill, and after much anxiety and several reverse reports we finally landed on top with enough state funds backing us to begin a much needed work.

At the suggestion and offer of the Secretary of the National Association to furnish the Iowa bee keepers one or more carloads of cans, through this office I accordingly notified our members to send in estimates of their needs. A good many responded, some in a great hurry for the cans and others in no hurry which made it apparent that it was going to be hard to pull them all together soon enough to serve all satisfactorily but I thought I had everything all arranged to make

it go when either the loss of a letter from the secretary or the omission to send it caused a delay, during which time a number of those in the greatest need of cans ordered theirs individually, thus cutting down our estimates too low for a carload. The above mentioned delay occurred about the time the business affairs of the National Association was transferred from Detroit to Northstar. Finally enough later estimates came in to make it apparent that we would yet get up a carload, but it was getting late and we must act at once, so price lists were sent to all those wanting cans with a request to send in their orders at once; accordingly the orders and checks came rolling in and among the first orders received it was apparent that there had been a misunderstanding of the price list. I immediately wrote for the can company to give us a further explanation of some items in their price list which resulted in a revised price list, making it necessary to write some members having already ordered to send us more money. I thought it too late to go over the ground again so returned the orders which had been received and let each one order cans for themselves. Co-operative buying of supplies can undoubtedly be made profitable to the members of our Association if we can get together early enough in the season to serve all satisfactorily.

Several years ago when N. E. France was general manager of the National Association, he sent out to members some printed matter covering some supreme court decisions relative to the rights of bee keepers. I have carefully preserved the copies sent me and last spring I had an opportunity to use them in a most gratifying way. Under pressure of several agitators, the city council of Center Point was about to adopt a resolution declaring bees a nuisance and to pass an ordinance requiring their removal without the city limits. The measure had about reached the point of final action before I heard of it. I chanced to hear one of the promoters of the scheme speak of it; I promptly took the matter up and informed him that they could do nothing of the kind.

The bees in question were the property of Geo. H. Frey, a member of our Association. He keeps about 240 colonies within the corporate limits of Center Point. I requested Mr. Frey to keep me informed as to the progress of the ordinance and notify me of the time of the meeting for final action. When the time arrived I appeared before the council armed with the supreme court decisions and pointed out where similar ordinances had been set aside, showed them the strength of our Association and what they might expect us to do in case they passed such an ordinance. The mayor and council kindly received the information, read over the supreme court decisions and other legal precedents relative to bee-keeping, after which the mayor remarked: "Gentlemen of the council, you see what we are up against, we have no money to spend on a matter of this kind. A motion to lay this proposed ordinance on the table will be in order." The motion was forthcoming and received the unanimous support of the council. This settled the ordinance question but did not entirely settle a couple of the most rabid agitators. Finding themselves beaten in the ordinance matter they constructed some traps and hoped thereby to destroy Mr. Frey's bees. I made some roundabout investigations and dropped a few strong remarks



where I thought the parties aimed at would get to hear it, stating that they might just as well go into my pasture and deliberately kill one of my horses as to trap and kill Mr. Frey's bees and for the commitment of either they might find themselves behind the bars in state prison. I do not know if it was due to our investigations and insinuations, or if they were unsuccessful in trapping the bees, at any rate the traps disappeared and Mr. Frey is keeping bees in Center Point undisturbed.

In the establishment of the aforementioned precedents and legal rights of bee keepers, we as an Association owe a debt of everlasting gratitude to former general manager N. E. France for his untiring and vigorous efforts on our behalf.

An effort was made through this office to induce the county and district fairs of our state to give the products of the apiary a more prominent and extended premium list than has been customary by sending the secretary of each association in the state a letter outlining a suitable premium list. A few replied, stating that the matter would be duly considered by their board of directors.

Our last effort now under way is to increase the membership of our Association. Our president prepared copy for a printed card to be inclosed with the correspondence of business firms dealing with bee keepers, soliciting them to join the Association.

Through a kind and generous offer of the editor of The American Bee Journal the badges for this convention were supplied in exchange for our list of members and their addresses.

#### COMB OR EXTRACTED HONEY.

C. L. PINNEY, LE MARS.

As we proceed with the consideration of this subject I want you to bear in mind that I am talking to a convention of Iowa beekeepers; and we must consider our conditions as they exist in Iowa.

Our main honey flow, from which we procure the most of our commercial honey, is white clover.

Of course, there are some favored locations where we get some basswood or linden, and there are other places in the eastern part of the state where we get minor flows from other sources.

In my own locality, excepting a slight flow from heartsease in August, about one year in three, our only marketable honey is produced from white clover.

It covers this great state during the months of June and July.

It thrives in every county, and I doubt if there is a section of land in the state which would not support profitably at least a dozen colonies of bees.

And why not; a soil that will produce a banner crop of corn will produce white clover, and climate that will mature corn will cause clover to produce nectar and give it that thick heavy body and that delicious aroma and flavor found only in Iowa.

White clover honey; the finest honey in the world.

Start from the Missouri river on over west and travel east to the Atlantic Ocean, over the white clover belt, and the farther east you go the lower the average temperature, especially nights.

And let me say to you the higher the temperature and dryer the climate the thicker will be the nectar as it is gathered from the flowers, and the less the bees will be obliged to reduce it.

For this reason the more flavor it will have, and the thicker or riper the honey the longer it will retain that flavor.

In proof of this go out in your apiary any still evening when your bees are gathering honey and if you are an experienced beekeeper you can tell from what source they are gathering honey, from the aroma that pervades the atmosphere.

Our late Bro. Alexander of New York state artificially ripened his buckwheat honey, and during the process of ripening he reduced that strong metallic buckwheat flavor, making it more palatable to the average consumer, but with our white clover honey we should strive to retain as much of that delicate clover flavor as possible.

For this reason I seal my extract honey in jars as fast as I extract, or after it has stood in the settling tank from 12 to 24 hours, and I never allow my comb honey to be exposed to the atmosphere for any length of time.

I want to say to you, that I consider it the duty of the Iowa Beekeepers Association to establish a brand or trade mark and have the same registered for our Iowa white clover honey.

If each producer or member of this organization will use this trade mark on the labels of all of this class of honey he sells, it will in a short time materially increase the price of our honey.

I don't know as it would increase our sales to any great extent for it is an easy matter to dispose of a crop of this kind of honey now.

I never produced a crop of clover honey so large that I was not able to sell it at a fairly satisfactory price, except one year in the 35 years I have kept bees in this state.

That year, 1910, while the price was as high as other years, I carried over to 1911 about 50 cases of comb honey, which I sold to my customers during the fall of 1911, for 15 cents per case more than the same grade sold for the year before, being a fair interest on the money and another demonstration of the quality of our Iowa white clover honey.

In the western part of the state we have some years a flow of honey in August from heartsease.

This honey, while the color is good, has a strong, and, to me, rather disagreeable flavor.

For this reason I turn my comb supers crossways so the air can circulate through them, and my extract honey I allow to stand in the settling tank for at least 30 days.

In the meantime I send to Wisconsin and buy a few cases of basswood honey and blend it with this heartsease, making a fairly good article.

Now there is one more honey flow I want to call your attention to, and that is from dandelion, during the month of May.

The first blossoms appear about the 25th of April, or at the same time as the first early fruit blossoms, and it continues to bloom if the weather is favorable until the 1st of June.

It has been steadily increasing for the last 20 years, until last spring it covered the ground with a mantle of gold as far as the eye could reach.

This honey commercially is of little value, but as a stimulant to build up our bees, and put them in prime condition for the white clover in June, is of the greatest value.

I was reading in one of our magazines not long ago where some writer seemed to doubt as to the dandelion producing very much nectar.

Let me read you from the record of my scale hive for one week, commencing May 22, 1913.

This was a 10 frame hive, with a 5 inch extraction super on top, containing a strong colony of Italian bees.

Fruit bloom was over. The clover blossoms were just beginning to appear. Nothing on which the bees could work except dandelions.

22d. Shower in the morning, clear in the afternoon, gathered 7 pounds.

23d. Cloudy in the morning, clear after 10, gathered 8 pounds.

24th. Clear day, gathered 13½ pounds.

25th. Clear, cast an 8 pound swarm.

This was the largest swarm I ever had this early in the season.

It was hived and placed on a new stand, for the reason that I wanted every queen cell there was in the mother colony, which I will explain later.

26th. Fair and warm, gathered 6 pounds.

27th. Fair and warm, gathered 7 pounds.

This record for the 26th and 27th, seems wonderful to me, that a colony casting off an eight pound swarm could muster forces enough to go out and gather nectar and pollen to the amount of 6 and 7 pounds, the first and second days after it had swarmed.

It shows you what an immense amount of nectar was within reach of the bees at that time.

And I have often wondered what the scale would have shown if this colony had not swarmed or what other colonies in the apiary of equal strength gathered during these three days, the 25th, 26th, and 27th of May.

It is my guess that the amount was from 15 to 18 pounds.

Now, if our president will allow me, I would like to digress from our subject long enough to read further from the record of this scale hive during the first half of April last spring.

My bees were set out of the cellar the last day of March.

April 1, 2, 3, cold.

4th, warm, gathered 1 pound from soft maple.

5th and 6th, cold.

7th, 8th, and 9th, snow. The snow fell to the depth of 18 inches, according to the record of the weather man, and containing 2.15 inches of water.

April 10th, sun shone bright, shoveled the bees out of the snow. Flew in the afternoon. Saw many on the snow. I think all succeeded in getting back to their hives before night as it was warm and the snow settled at least 2 inches.

11th, warm, still day. Bees flew strong. Snow settled down to about 12 inches. Scale showed a gain of 1 pound. What! Something wrong with the scale.

12th, warm and still; bees flying strong; snow went down to about 6 or 8 inches. Scale showed an increase of 2 pounds. Will take that scale out and test it as soon as the snow is off.

13th. Weather still and warm; snow settled to 4 or 5 inches. I had begun to look around to find out what they were doing by this time. Bees working on soft maple and scale shows gain of 2 pounds.

14th. Weather fine; opened 12 hives and found an average of three frames of brood in all stages and 1 Hoffman frame of new honey or nectar gathered during these four days, when the snow covered the ground from 2 to 18 inches deep.

I consider this the most wonderful thing that I have ever encountered in the 50 years I have kept bees.

At the time I thought I would report it to our bee journals, but later changed my mind. I was afraid some of the older boys would call me names and I would not be there to defend myself.

Now gentlemen such experiences as this and the flow from dandelion I have just mentioned is what gives older boys a relapse of that disease we call bee fever, and I had it bad last spring. In fact it has stayed with me all summer.

There is one matter we should consider before we decide on whether we produce comb or extract honey.

If you want to produce a crop of honey with the least amount of labor and expense, and receive for your crop one-half what the consumer eventually pays for it, then produce extracted and after you have harvested that crop put it up in 60 pound cans or barrels and send it to some commission man in our large cities. This is the easiest and cheapest way to handle a crop, but you will find when you receive your returns from that commission man that it will be still easier to spend your summer's wages.

Again, if you want to produce a crop of honey with the maximum amount of labor and expense produce extracted honey and put it up, in up-to-date packages of from 6 to 24 ounces to the package, and go out and sell it to some man who will in turn sell to the consumer, thereby receiving the full retail price, less one commission.

This will double your bank account, but it will mean lots of good hard work, and a large expense account.

But if you want to produce a crop of honey at a medium amount of expense and labor and receive the maximum amount of money for your crop, my advice is, produce comb honey.

But you will ask, to whom will we sell our crop; we have not the time nor inclination to go out and peddle from house to house.

Let me answer that question by asking you a few questions. Who is it that our wives, mothers, or housekeepers, in our towns and cities, phone to regularly every morning for the necessary provisions to supply our tables each day? Who sells to us as consumers nine-tenths of all the food products we consume?

Why, it is the retail groceryman.

Then he is the man I would cater to in disposing of a crop of honey. Did you ever go into a first class grocery store and take notice of the stock of goods as displayed along the shelves?

Do you see any honey among these goods?



If not, then we are not keeping abreast with the times and can't expect to receive the highest market price for our crop.

And another thing you will note that two-thirds the goods sold in that grocery store will be priced from 10 cents to 35 cents per package.

For this reason, I pack my extracted honey in glass containers to retail from 10 cents to 35 cents and my comb honey in cartons.

Of course, I sell a great amount of comb packed in plain cases, the old fashioned way, and extracted in tin as ordered, but three-fourths of my sales is put up in small glass packages.

Gentlemen, we read in the newspapers every day of the high cost of living.

I want to tell you it is these small sanitary packages that have increased the cost of living more than any one thing.

These packages are expensive. First, there is the package, labor of filling, expense of labels, and shipping case, and many other expenses when grouped together would astonish you.

Take this jar of honey (for instance) at 10 cents and you are paying 100 per cent more for the honey than the producer received.

When you buy a one pound package of seeded raisins at 15 cents you pay about 200 per cent more than the vineyardist received for the grapes, and when you buy breakfast foods in cardboard boxes you pay from 3 to 16 dollars per bushel for wheat, corn and oats, which our farmers in Iowa are selling at from 40 to 85 cents per bushel.

Now, to get back to our subject, comb or extracted honey, under the conditions as they exist in Iowa, depending on white clover for the most of our surplus.

I say comb honey. I can produce more revenue from an apiary run for comb honey than I can from an apiary run for extracted, and I can put it in the hands of the retail groceryman in proper packages for the retail trade, at one-half the cost and with one-half the labor.

It is dollars that count in the bee business as well as any other business.

Now this may seem to the most of you a rather strong assertion, but if you will give me your attention for a few minutes I will try and prove to you that this can be accomplished.

First I want to say to you that I am in the business of producing honey for the income I receive from the business.

That while I am producing comb honey, I also produce some extract.

This is absolutely necessary if I want to conduct the business economically.

There are certain conditions under which a colony will store some surplus in an extracting super with drawn combs, where they would not do any work in a comb super, and again I often have an out apiary so far from home that I visit it only three or four times during a season, which I run for extract.

And another thing—the older I grow the more I try to avoid all unnecessary work in the apiary and,

I want to confess I'm sixty-three,  
And not as spry as I used to be;  
I'm wearing glasses that I may see  
To properly handle the honey bee.

I am physically unable to do hard manual labor.

For these reasons I am using all short cuts possible in handling my bees.

Now let us go over the various manipulations necessary to produce a crop of honey and I will touch only on such parts as vary more or less from the teachings we find in our books and magazines.

We will commence the fall previous to the production of our crop, say from the 25th of August to the 1st of September.

Our comb honey supers have been all taken from the hives, and in their place have been put shallow extracting supers, containing worker combs, all except possibly the two outside frames, which may contain some drone cells.

It will not be necessary to look to these bees again until after a killing frost the last of September or first of October.

During the month of October I go over my apiaries carefully and examine each colony, if any have more supplies than they need I take out frames of honey from the extracting super and replace with empty combs.

If any are short of stores I add frames of sealed honey in the super, but I never take honey from the brood chamber.

These supers are of considerable importance to catch any late fall flow, and again there will be some of the colonies that have produced comb honey whose brood chambers contain too much stores, in which case the bees will carry these extra stores up into the super, thereby relieving the brood chamber.

(I once lost at least one-half of a fall flow from red clover, the first week in September, by not having a super of any kind on my hives at this time.)

Now, I want to say that these supers remain on my strong colonies all the year or from the time the comb supers are taken off in August and until they go back on in June.

They give extra room and ventilation, during the winter, and room for storage and brood during the spring.

In fact they become a part of the brood chambers at this time and when they are changed for the comb supers the bees more readily start work in the sections because they are accustomed to storing above the brood frames.

Our bees in Iowa should be put in the cellar about the 1st to 10th of December. I put mine in rows and tier them up three high, with an alley about three feet wide between; hives facing the alley so I can pass through and note the condition of them at a glance.

The hives are set on the frame, about fifteen inches from the floor, so they slope slightly toward the back of the hive.

I don't expect any moisture to condense and run out of the entrance for my cellar is dry, but I do expect to run water in at the entrance before I set them out in the spring.

Of course the heaviest colonies I place on the first row at the bottom, and as fast as I put them in I break the sealed cover loose and put a piece of section between the cover and hive so the weight of the hives

on top will not press down and reseal them during the time they are in the cellar.

This is for the purpose of allowing the moisture from the cluster to escape.

The entrance remains open the full width of the hive and three-quarters of an inch deep.

The second row is treated in the same manner, while the lightest colonies are placed on the top row and the seal of the cover broken.

One word about cellars.

My cellar is 25 feet long, 16 feet wide and 10 feet deep.

The greatest trouble with our cellars is the depth.

I want my bee cellars at least 10 feet deep.

Then you will get proper air space and ventilation without fussing with sub-earth ventilators, if your floors and the sides are of dirt.

Of course, if you build expensive cellars of concrete, thereby shutting out the air, you will need expensive ventilators, otherwise your bees will suffer.

We will now have a rest until the middle of February or about the time of our February thaw, at which time I go down into my cellar and standing still, with the light turned down very low, I listen to the murmur of the bees.

If I hear two or three bees leave the entrance of their hives and fly off into the darkness of the cellar, thereby committing suicide, it is time for action.

I get out my large sized sprinkling can, the same I use in the garden, and fill it with water, sprinkle the fronts and alighting boards, until they are all thoroughly wet, or until the water stands on the alighting board one-fourth inch deep and has run back into the hive two or three inches.

Now this water will remain on the alighting boards for five or six hours before it is all absorbed by the wood and the atmosphere, and if you observe closely you will see many bees, especially in the strong colonies, come to the entrance and load up with water.

This watering I repeat once a week until I put the bees out on their summer stands, and if they become too uneasy during a warm spell in March, I take a sponge about the size of my fist or an old cotton or linen cloth, dip it in a pail of water and lay it close against the entrance on the alighting board.

Experience has taught us that bees confined, to ship by freight, express or parcel post, even in queen cages, require water, then why not if confined in a dark cellar for three or four months. I think they do.

It has been my experience to find brood in a majority of my strong colonies when I set them on their summer stands in the spring. Sometimes as much as one-half a frame of sealed brood and we all know that bees require large quantities of water when rearing brood.

But let us hurry along, it is now spring, and we are wondering when to set the bees out.

If I were to set an apiary of bees out of the cellar in any part of Iowa, I would watch the soft maple and as soon as the first bloom appeared on these trees, the next morning just daylight, if not storm-

ing, out would go the bees no matter whether it was March or April, and as I set them out I note the condition of each colony and if any need stores I give them frames of honey in the supers, only at this time I uncap these frames.

A 25 cent steel tooth hair brush, you can buy at any drug store, will do the business.

If I was a young man I would use the Alexander plan of taking from the bees all sealed combs of honey about the first of May, extract the same and feed back. I believe it would pay well for the labor.

I handle my bees very little during the months of April and May.

Of course, I watch the entrance indications, and if I see some colony not up to standard I make an investigation as to the cause.

My colonies are mostly in ten frame hives with a five inch extracting super on top and with plenty of stores, there is very little to do during the spring.

Each year in the early part of April I order one dozen leather colored Italian queens from some breeder in the south to be shipped me to arrive the first of June.

I do this to keep up the standard of my bees, as I don't raise queens and am obliged to use queen cells reared in colonies that have cast natural swarms.

Well, it is, say from the 1st to the 10th of June.

My comb honey supers are ready having been prepared during the winter, the hives are full of bees, and stores, probably four or five colonies have already swarmed.

My scale hive shows a gain of one-half or one pound for the first time this month.

Tomorrow the comb honey supers must go on.

This is the critical time with the comb honey producers.

For your year's crop will depend a great deal on how we handle our bees at this time, and on this first super we place on the hives.

You will note this is an Ideal super, or a super containing Ideal sections.

I use this style of super, first, because it holds thirty-five sections or about what I can comfortably handle when filled and I am not obliged to buy or handle as many supers in the production of a crop.

Second, because I can clean two cases of plain sections in the same time it takes to clean one case of bee way sections, and the sections cost less.

Third, because the shipping cases are more compact and cheaper, requiring a smaller and cheaper shipping crate, and

Last, but not least, because I can use a five inch extracting frame at the outside on each side of the sections in this first super.

In preparing my supers during the winter, I use a blank extracting frame on the outside of each super.

These blank frames I use simply to keep the sections in place till the super is ready to go on the hive.

Next is the sections.

I cut my foundation so it fits accurately the inside of the section, then with a 15 cent camel's hair brush, that you can buy at your drug



store, and a basin of hot wax I fasten the foundation to three sides.

Now this method of fastening foundation in sections is far superior to any machine or wax tube and much better; with the brush the hot wax is rubbed into the pores of the wood so that even if you tear out the foundation the edges will still remain attached.

The only way to remove a starter put in in this manner is to cut it out with a knife.

Of course, this is extra thin super foundation.

Years ago I used the same grade of foundation below as above, but I found that before the bees got the upper part drawn out and filled this bottom starter was all gnawed out, nothing left but a mark on the wood where it had been fastened.

Next I tried thin super foundation with the same results.

Five years ago I commenced to use light brood foundation for bottom starters which I have been using since, and I have yet to hear the first complaint.

I have a few bait sections here that will illustrate this matter probably better than I can explain it to you.

Here is an Ideal section in every particular.

Here are two sections that were filled, but not capped.

Note how uniformly the comb is attached to the wood, and here are sections showing how the bees will gnaw away even light brood, under certain conditions.

And let me call your attention to the fact that, while the center of these starters are gnawed away, the corners remain intact so there will be no pop holes or passage way in these corners when this section is finished.

And here is a section with a starter that any bee keeper will say is thin surplus foundation, which was light brood when I placed it in this section.

These conditions are easily accounted for.

Our empty supers are put on the hives next the brood and as the young bees leave the brood nest for the supers, the first thing they encounter is these bottom starters, and here is where they commence their work.

A crop of honey produced from foundation, put in sections as I have shown you, will weigh from one to two pounds to the case more, and will average one grade higher and bring on any market 25 cents per case more than it would if we used a small top starter only.

And another thing, these sections of honey will stand twice the rough usage in shipping that a section will where only a small starter is used.

Now, let us put this super of sections on the hive.

We will place it at one side of the colony and on the other side an empty extracting super which has been stapled to a regular bottom board.

The entrance is closed tight and a cover on.

Don't forget that each of my colonies has a five inch extracting super on at this time.

Now, with your left hand remove the cover while your hand is working the smoker.

As soon as the bees have left the top of the super, remove a frame and either shake the bees back in the super or at the entrance. Then set it aside.

Now, with the left hand pry each frame over towards this empty space and smoke the bees down into the brood chamber, not that we care about the bees but we want to be sure the queen is down in the brood chamber.

And as you pry these frames apart, select one that is seven-eighths full of sealed honey, all sealed but a few cells on the ends, and across the bottom.

As soon as the young bees return to cover this frame take it out with the bees and put it in the comb super, in the place of the blank frame, on one side.

I then select a frame similar to the first for the opposite side.

Now, remove the extracting super from the hive. Put it on the comb super and return both to the hive. There you are, gentlemen.

These bees were storing honey in that super *before* it reached the hive and had been for a week or ten days, and they will go right on storing until it is full.

And what is of immensely more importance is the fact that they have been secreting wax for the purpose of repairing these old combs and capping this honey they have stored during May, and will continue to do so and draw out foundation as soon as this comb super is in position on the hive.

I have many times seen the row of sections next the bait combs in these supers drawn out ready for the storage of honey the next morning after these supers were put on the hives, and I consider my crop of comb honey assured just as soon as my bees are drawing foundation and storing honey in this first super.

One word in regard to the secretion of wax and building comb in the production of comb honey. We all know that nature is a lavish provider; she causes hundreds of blossoms to appear on our fruit trees in the spring where one apple or plum is matured on the tree. There are fifteen or twenty queen cells produced in the hive where only one or two is needed, we often see 400 or 500 drones where only one is necessary. Is there any reason to think our bees would not be able to supply the necessary amount of wax to build comb for the storage of any and all honey the field bees are able to gather no matter how heavy or fast the flow may be?

Our wax workers are busy twenty-four hours each day. Would it not be reasonable to believe they would be able to prepare combs, or, what would be still easier, draw out foundation sufficient to store all honey the field bees could gather during ten or twelve hours work, especially if they have the help of the full force of field bees each night? And I think they do, I don't believe there is a bee in a normal colony that loafs or rests for more than a few moments at a time day or night during a honey flow, if there is work that should be done in the hive.

The reason I selected these frames two-thirds full for the comb super

is that I want all my white clover honey in my sections, and when these combs are taken out with the sections later in the season, they are set aside to use for feeding back in the fall or the coming spring.

Returning to this extracting super, I select two full frames of honey and place them on one side of the empty super on the bottom board, which will now become the lower half of a divisible brood chamber.

I then remove all the frames containing brood and place them next to these frames of honey.

There will probably be some empty frames, and frames with honey, still in the super on this colony.

If so, I use a bee escape between the two supers, put on the cover and proceed to the next colony, which I treat in the same manner, and so on till this divisible hive is full of brood and honey which will then contain twelve five inch frames with more or less brood in each frame and bees enough to look after this brood. Eight full frames of honey, and a young queen.

Now, I forgot to state that before I put any brood in this hive I take one of the queens I ordered from the south, to be delivered the first week in June, remove the cork and with the small blade of my knife remove most of the candy, leaving only enough to confine the queen, three or four hours, and lay the cage on the bottom board near the entrance.

These artificial swarms are then set aside in the shade until towards evening, when I remove them to some out apiary, or if working at an out apiary I bring them to the home apiary, open the entrance and by morning they will be able to take care of themselves.

From forty colonies in my home apiary last spring, I made twelve in this manner which produced twenty-three cases of comb honey, a little less than two cases each during the season.

I consider the taking of this brood from my strong colonies at the time of putting on the comb supers a benefit for it has a tendency to discourage swarming.

In about a week or as soon as the brood begins to hatch in these artificial swarms I put a comb super on each one the same as the first super used on the other colonies, and when my stock of laying queens is exhausted I use sealed queen cells from some colony that has cast a swarm.

I have entered into details in regard to these artificial swarms in order to show you how I convert the low grade dandelion honey gathered in May into bees, and get a fair crop of honey from them the same season.

From this time until the close of the season I pursue the same methods as are generally used in the production of a crop of comb honey.

At the close of the season I sort my comb supers and group together all unfinished sections that are more than half filled, returning them to my best colonies and feed till finished.

This year I had 280 such sections which I placed on three of my strong colonies and fed sixty pounds of extracted honey.

They were all nicely finished in seven days.

Now, for the results.

I have not kept a record of my out apiaries for the reason they are changed about more or less each year, but the home apiary like one of our family is always present, and, of course, it receives the best care and attention and the record is this:

From the home apiary and one out apiary in 1910, 100 colonies run for comb honey, my crop was 8,000 finished sections and 3,600 pounds extracted honey, an average of 80 sections and 36 pounds extracted honey per colony.

Figuring the average wholesale price for the last five years for comb honey at 15 cents, which is low, and 10 cents per pound for extracted, which is less than I actually received.

My average income from each colony that year was \$15.60 with increase of seven swarms.

1911 in my locality was a dismal failure. The only season in the thirty-five years I have kept bees in Iowa when they gathered no surplus.

While this was a misfortune, the winter of 1910 and 1911 was a calamity.

I am going to confess I lost that winter almost 90 per cent of my bees, not because they starved, but on account of the poor stores they were obliged to consume.

We can't winter bees in Iowa on bug juice and cider.

Had I taken these stores from them and fed granulated sugar syrup enough to have carried them through the winter, returning their stores after setting them out in the spring, they would have returned me during the years 1912 and 1913 500 per cent on the investment for sugar, but sugar was \$8.00 per hundred that fall, and I did not have a particle of bee fever in my system.

1912 from twelve colonies in my home yard, I produced an average of ninety sections and twelve pounds extracted honey, an average of \$14.50 per colony, and increased to forty colonies, or 233 per cent increase.

1913 my average from forty colonies in the home yard, was 127 sections and 25 pounds extract, an average income from each colony of a little over \$22.15, and my increase was 42, being a trifle over 100 per cent.

These bees received my best care and attention to such an extent that while they were all grouped together in the home apiary, during the month of May, at the close of the season they were in three different yards of thirty-five, twenty-five and twenty-two colonies, thereby giving them the advantage of pasturage.

And another thing, drouth prevailed during the entire season as the record of our weather observer will show.

Let me give you the rainfall for the season:

June .....	1.18 inches
July .....	1.80 inches
August .....	1.65 inches

It seemed wonderful to be where the bees found this nectar after the first of July.



I think we can credit the white sweet clover that grew by the road sides with furnishing the greater part of it.

I don't claim to be an expert in the production of extracted honey, and am not able to produce any more extracted honey than I can comb honey per colony, the best report I have seen in our bee journals this fall is that of H. H. Root on the yield of Mr. Holterman, of Ontario, one of the largest producers of extracted honey in the east, who with modern utensils and plenty of help produced something like 100 pounds per colony, which at 9 cents per pound, the price in Iowa, would bring him an income of \$9.00 each, his best apiary producing 160 pounds, or an average of \$14.40 each. I think you will all admit 100 pounds or \$9.00 per colony to be a fair average for the extracted honey producer the last year.

Comparing this with Dr. Miller's 266 sections per colony from seventy-two colonies, or an average of \$39.90 per colony, or even my own average of \$22.15 with an increase of 100 per cent, it would seem to me a good business proposition for you to produce more comb honey.

And another thing our western brothers are each year producing more and more extracted honey on account of the high freight rates and breakage. For this reason we, as producers in Iowa, with a market in our own state, should produce more comb honey.

I have regular customers whom I supply each year and when my own stock is exhausted I buy to supply my trade.

I have found that it is almost impossible to buy Iowa white clover comb honey after the first of December, and if I am fortunate enough to locate any, the price will be so high that there will be no profit in handling it, or, many times, an actual loss.

For this reason I advise you to produce more comb honey.

The demand is greater than the supply.

But not so with extracted honey.

I can buy the finest white clover every fall at from 8 to 9 cents per pound wholesale, because your extracted honey comes in competition with western honey, which is shipped into the state by the carload every year, thereby increasing the supply until it is greater than the demand, for this reason I advise you to produce more comb honey.

There is a legend that has been handed down to us from olden times that reads something like this: A colony or an apiary of bees will produce twice as much extracted honey as they will comb honey, under the same conditions. Now this might have been true when they produced comb honey in boxes six inches square and twelve inches long, with glass sides, as they did when I was a boy, or even later when they used a small triangular piece of starter in the top of the section only, but not today.

With our present management and full sheets of foundation in the section I don't believe there is a man in Iowa that can produce 50 per cent more extracted honey than I can comb honey (under the same conditions); no, not even 25 per cent more.

You will have to show me, I am from Missouri.

And after reading the report of Dr. Miller's crop for 1913 in the American Bee Journal it seems to me that the rule should be trans-

posed so it will read something like this: An expert can produce twice the revenue from an apiary of bees run for comb honey as can be produced from a similar apiary run for extracted honey.

In conclusion I want to say that it seems to me a shame, almost a sacrilege, that honey with the color, body and flavor of our Iowa white clover honey should be extracted and put up in nasty, rusty second hand tin cans and sold for 8 to 9 cents per pound, even in a wholesale way.

If some of our great corporations had the control of all this crop, they would put it in proper containers, and by advertising it, even at one-half the expense they are to in advertising Karo Glucose, it would be all sold at 25 to 30 cents per pound, which would be only a fair price as compared with other food products at the present time.

Honey is one of our Creator's choicest gifts to man.

It contains as much nutriment and life sustaining properties as butter, cheese, or meat and the price should be just as high.

Ladies and gentlemen, for your patience and attention, I thank you.

#### BEE KEEPERS' LEGAL STATUS.

RUSSELL E. OSTRUS, DES MOINES, IOWA.

It is not my purpose in the presentation of this paper to cover all the legal questions which might be suggested by the title of this paper. However, I will treat on the subjects that I feel it is possible for me to partially cover in the time allotted for this paper.

Originally bees were considered as coming under the rules which were applied to the wild beasts or birds or fish but as the industry of man has gradually placed the bees under such confinement that they may be handled similar to the method of handling domestic animals, our own courts have gradually applied the same rules of law for the bee as is applied to domestic animals until at the present time we find that as near as practicable our courts are treating the bees under similar rules as they treat the domestic animal.

Bees are by nature *ferae naturae* (wild by nature); but when hived and reclaimed a person may have a qualified property in them by the law of nature, as well as the civil law. Hiving or enclosing bees gives property rights in them to the person who has hived such bees. An unreclaimed swarm, like all other wild animals, belongs to the person who first takes control of them and continues to control them. It is the act of hiving that gives a person property rights in bees. If a swarm of bees fly from the hive of another, his qualified property continues so long as he can keep them in sight, or in other words, while he can distinguish and identify them in the air, and he possesses the power to pursue them. Under such circumstances no one else is entitled to take them.

If any domestic animal of one person strays onto the premises of another the owner of such domestic animal has no right to follow such animal onto the premises of another and take such animal back to his own premises, because by so doing he becomes a trespasser. However, the absolute right of ownership would still continue in him. Now the same rule applies to bees because when hived they are considered as being under the same rules as domestic animals, although they cannot be controlled in their every act as is the case with most domestic animals.

There are a number of decisions by our higher courts that have held that when bees in swarming leave the owner's hive and have gone into a hive or a tree on the premises of another that such owner may maintain an action in damages against a third party who has entered the land, hived the bees, and taken the honey away.

In case bees have been taken away from the owner or are being wrongfully detained from him, such owner may bring an action of replevin and

either recover the specific bees or their value, the same as may be done for the recovery of any other personal property.

Having now partially described the property rights in bees we will next turn to the criminal liabilities as applied to bees.

Many of the state legislatures have considered passing an act making it a crime to poison bees, and some have passed such acts. Section 1247, Revised Statutes of Kentucky, provides that if any person on land or premises not in his possession or under his control shall lay or expose any poisonous substance with intent to destroy honey bees he shall be fined not less than five nor more than fifty dollars. Section 7161 of the Statutes of the State of Washington is much similar to the Kentucky statute except that it includes unlawful or malicious killing as well as poisoning, and places the fine at no less than ten dollars or more than one hundred dollars. Many other states prosecute poisoning or malicious killing of bees but it is done under some general statute such as our statute of malicious destruction of property. It is a well established fact that a person has no more right to destroy the bees of another than to destroy any other property of another.

It is, indeed, probable that in every state in the United States a person could be prosecuted under some form of larceny for the stealing and carrying away of any hive or other contrivance containing honey or honey bees. However, the legislature of the state of Ohio has passed the following special statute applying to bees, Revised Statute of 1890, section 6840, provides that "whoever unlawfully enters the premises of another for the purpose of disturbing or carrying away any box, gum or vessel containing bees or honey, or injuring or carrying away any such property shall be fined not more than five hundred dollars or imprisoned not more than sixty days or both. The state of Nebraska passed a similar statute in 1879, section 81, which also includes poisoning or malicious destruction of bees as well as the stealing, but the fine shall not exceed one hundred dollars and such person shall be confined in the county jail not less than ten nor more than thirty days, and such person shall be liable to the party injured in double the value of the property stolen, injured or destroyed. The state of Connecticut has a statute which differs from the statutes of any of the other states which I have examined. It (section 1460) provides that every person who shall place upon the premises of another any tub, box or other contrivance for the purpose of enticing swarms of bees from the premises of their lawful owners shall be fined not more than seven dollars or imprisoned not more than thirty days.

It would be possible to enumerate many statutes from other states which would in some manner protect the industry of bee keeping, but I feel that from our discussion so far we can readily determine that it is the thought and aim of the public in general to foster and protect the industry of bee keeping just as completely as any other legitimate industry, and in some ways there has been an unusual amount of attention given to legislation which is applicable only to the industry of bee keeping. Yet I feel that this can be easily explained, and that explanation is that the bee is so much different in every respect from any other living thing which is treated as domestic animals, that special legislation must naturally follow.

Having now shown that bees are considered under practically the same rules of law as any other property, it must naturally follow that the owner of bees is also liable for any damages caused by his bees.

We have very few decisions by the Supreme Court of Iowa on the subject of bees but I have found two Iowa cases in which I think our Supreme Court has given some very good opinions regarding the rights and liabilities of bee keepers, and with your indulgence I will read a portion of these opinions. In the case of the *State of Iowa vs. Victor Repp*, reported in the 104 Iowa, page 395, we find the following discussion: "Wild game is under the control of the state, and only becomes the subject of private ownership when reclaimed by the art and industry of man. A somewhat

different rule applies to bees, though *ferae naturae*. These have a local habitation. Blackstone states: 'It hath also been said that with us the only ownership in bees is ratione soli; and the charter of the forest, which allows every freeman to be entitled to the honey found within his own woods, affords great countenance to this doctrine that a qualified property may be had in bees, in consideration of the property of the soil whereon they are found.' The same rule is laid down in Cooley on Torts, 435, where it is said that bees 'have a local habitation, more often in a tree than elsewhere, and while they may be said to be within control, because the tree may at any time be felled; but the right to cut it is in the owner of the soil, and, therefore, such property as the wild bees are susceptible of is in him.' By the law of nature, the person who hived the swarm would be entitled to it; but, under the regulation of property rights, since the institution of civil society, the forest, as well as the cultivated field, belongs to the owner thereof, and he who invades it is a trespasser!"

The case of *Parsons vs. Manser*, reported in the 119 Iowa, page 88, was an action for damages where plaintiff's horses were stung to death by defendant's bees. Briefly the facts are that the plaintiff had hitched his team to a post a little west of the gate leading to the house of the defendant, in the highway south of the house, and about five feet from the fence. There were two bee gums about twenty-five feet north of the post in defendant's yard, and three more ten or twelve feet farther on. Trees stood close together west and north of this yard, and shrubbery and bushes to the east. The only unobstructed passage was to the south and southeast. Shortly after the horses were hitched to said post they were attacked by the bees. The horses plunged forward and in so doing overturned two of the bee gums. Immediately the horses became covered with bees. Shortly thereafter the horses died from the bee stings thus received. The court, in rendering its opinion, gave the following discussion:

"The plaintiff was entitled to the free use of the highway, and had the right to assume that those keeping animals of whose mischievous nature everyone is presumed to have knowledge would exercise reasonable care for the protection of others from their depredations. True, bees may not be confined like the wild beasts. To roam seems to be necessary to their existence. The *Bombus terrestris*, and other species of bees, or their cousins obstructed, are likely to resent by the use of their only available weapon. Every harboring creature *ferae naturae* is charged with knowledge of their habits and evil propensities.

There is no reason for an exception in favor of the bee. Indeed, their disposition to make themselves felt is a matter of common observation or experience from early childhood. But they are very useful, the apiary often furnishing a livelihood, and generally proving a source of pleasure. The books seem to look with more favor upon the keeping of animals useful to man than those which are worthless save as curiosities. For this reason the rule of absolute liability for the consequences of injuries received from wild beasts kept in confinement, declared in the earlier decisions, even of regard as sound, ought not to be extended to creatures so nearly domesticated."

"Liability for safe-keeping depends not so much on the classification of animals into wild and domestic as upon their natural propensity for mischief. If they are ferocious and savage, like the lion, tiger, etc., the keeper is bound to know the danger incident to their confinement; and the more charge of not having been so restrained as to avoid injury is tantamount to an allegation of negligence. But bees, while generally classed as *ferae naturae* are so useful and common as to be all but domesticated. Keepers of the apiary have carefully studied their habits and instincts, and control them almost as certainly as domestic animals. Serious injuries from them are very rare, and, unless some want of care in their management is shown, the owner ought not to be held responsible for damages occasioned by them. Nothing could be done by the keeper of bees to protect all from their attacks. These might occur miles from the hives, and beyond his reach. But they have fixed habitations. The location for these is always a matter for his determination, and it is not too much to exact of him the exercise of ordinary prudence in so placing the hives as to avoid unnecessary danger to those who are likely to make lawful use of the premises or the highway nearby. In other words, he must so use his own as not to interfere with the rights of others."

The plaintiff was given judgment by the trial court for the damage to his horses and upon appeal the Supreme Court affirmed said judgment.



One of the questions of great importance at this time is, can any city or town council compel a bee keeper to remove his apiary from within the corporate limits? It is impossible to completely answer this question because of the fact that we had had very little law on this subject and there have been very few cases in which this question has arisen, and in those cases where the question has come up the courts have seldom given a direct opinion on the subject. One engaged in the business of keeping bees may not rightfully keep his bees in a place upon his premises so as to annoy his neighbors. This rule was substantially laid down by the New York Supreme Court in the early case of *Olmstead vs. Rich*, 6 N. Y. Supt., 826, and many other courts have very closely followed this case in the more recent decisions. The city councils of several cities have at different times threatened to pass and have passed ordinances which made the owning, keeping or raising of bees within the city's limits a nuisance per se. Ordinances of this character have been held to be entirely too broad but the cases on record are very limited. About the only case directly in point is the case of *Clark vs. City of Arkadelphia, Arkansas*, reported in the 52 Ark., 23, wherein that court held that:

"Although bees may become a nuisance in a city, an ordinance which makes the owning, keeping, or raising them within the city limits a nuisance whether it is in fact so or not, is too broad and is not valid."

The precedent established by the Arkansas court in this case is valuable in that it is stimulating good law for the protection of the bee keeper and his property.

## THIRD ANNUAL REPORT

OF THE

# STATE BEE INSPECTOR

TO THE

GOVERNOR OF THE STATE OF IOWA

FOR THE YEAR 1914

TOGETHER WITH PAPERS READ AT THE THIRD ANNUAL CONVENTION OF  
THE IOWA STATE BEE KEEPERS ASSOCIATION AT AMES  
NOVEMBER 17, 18, 19, 1914

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FRANK C. PELLETT  
STATE BEE INSPECTOR

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