BRIEF HISTORY

OF THE

NORTH AMERICAN

Bee-Keepers' Society,

WITH A DIGEST OF ITS

Annual Conventions from 1870 to 1884,

AND A

Full Report of the Proceedings

OF THE

Sixteenth Annual Convention,

HELD AT DETROIT, MICHIGAN,

On Tuesday, Wednesday, and Thursday, December 8-10, 1885.

By THOMAS G. NEWMAN,

Ex-President of the Society.

CHICAGO, ILLINOIS:

OFFICE OF THE AMERICAN BEE JOURNAL,

1886.

A BRIEF HISTORY

OF THE

NORTH AMERICAN

Bee-Keepers' Society,

WITH A DIGEST OF ITS

FIFTEEN ANNUAL CONVENTIONS,

AND A

Full Report of the Proceedings

OF THE

Sixteenth Annual Convention,

HELD AT DETROIT, MICHIGAN,

On Tuesday, Wednesday, and Thursday, December 8, 9 & 10, 1885.

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REV. L. L. LANGSTROTH, *of Ohio.*

MOSES QUINBY, *of New York.*

INTRODUCTION.

Life is too short, and Americans are too busy to spend the time necessary to delve into a multitude of volumes in order to post themselves on the general history of the past in reference to the formation of Societies of Apiculture. They have long needed a digest of Convention History in general, and of the Continental Society in particular. They want to know what was done, and what subjects were discussed at the former meetings. Heretofore this could only be ascertained by carefully examining over 20 volumes of the AMERICAN BEE JOURNAL, and other papers; and some of these are possessed by comparatively very few of the apiarists of to-day.

Frequently have the members of the Society voted to have the proceedings published in pamphlet form, but so far the Society has done it but ONCE, and then only published one-third of what was voted to be done (see page 9), by publishing the report of one convention instead of three.

In 1877 the publishers of the AMERICAN BEE JOURNAL issued a pamphlet of 32 pages containing a report of the Convention of that year. They also publish this pamphlet at their own expense, and have published a report each year, varying from 4 to over 40 pages, in the AMERICAN BEE JOURNAL.

In the following pages, we have endeavored to supply this want by stating the place and time of each meeting of the Continental Societies during the past 25 years, and naming the principal officers elected, as well as to note all the business of importance transacted.

We have also mentioned all the subjects discussed, and enumerated all the essays read at each meeting; so that the history is complete, without a broken link, so far as it can be ascertained at the present time, and we feel sure it will now become a book of reference in our National gatherings.

Only a few years ago, at one of the annual meetings, no one had even a list of the officers for the year, (the Secretary being absent); at other meetings, persons were elected to fill offices not warranted by the Constitution, which had been amended, re-amended, and the amendments entirely lost sight of. There will be no excuse for such things hereafter; if this pamphlet is consulted, confusion will be avoided.

The organization of Societies are of immense advantage to our pursuit, and help to obtain for it that recognition which it richly deserves among the productions of America. They open up avenues of trade for honey by informing consumers concerning its excellence for medical and mechanical purposes, confectionery, table use, etc.

They help producers by looking after their interests in the use of the mails for the transmission of bees to all parts of the world, and the use of the railroads for the shipping of honey and getting it into the proper classifications, etc.

When the North American Bee-Keepers' Society, in October, 1878, appointed the editor of the BEE JOURNAL to represent the Society at the Conventions and among the bee-keepers of the Old World, it exhibited a wisdom for which it has not received proper credit from the bee-keepers of America, and foresaw the advantages to be derived from the cultivation of closer relations with foreign bee-keepers.

In 1879, the Delegate visited most of the more prominent apiarian societies of Europe, and was everywhere received with cordiality and courtesy. But much prejudice existed against American products, and especially honey. In England the public had been frequently imposed upon and had become disgusted with vile trash sold as "Pure Strained Honey;" while in France, Italy and Germany, it was incomprehensible how the Americans could produce such vast amounts of apparently superior honey, and compete with their own producers, after paying exorbitant freights.

The Delegate appreciated the immensity of the market awaiting our product, but realized the necessity for removing distrust; and, wherever he went, labored with this object in view. It was not enough to assert that our honey was superior, but he was obliged to prove WHY it was so; nor was it sufficient to claim that we could produce pure honey and meet the public demand at popular prices, but he found it best to demonstrate HOW it would be accomplished.

Scarcely had the Delegate returned, when our market became stronger; the foreign demand was strengthened, and a healthy competition sprang up. The following in a letter from a honey dealer in England, to the Delegate, is good testimony :

"You might cover Europe with the most approved modern bee-keeping appliances, but you could not prolong our honey seasons. Bee-keeping here can never be pursued as a business, because our honey seasons are of no consequence; so all fears of our competition can be discarded as absurd and ridiculous. You here rendered me great assistance in abolishing the unfair prejudice existing about that time in the minds of English consumers against American honey; in fact, it was remarked by many that the whole of your valuable time was devoted to this most important desideratum. Time which almost all visitors to this country would have spent in sight-seeing, you occupied in counteracting the many absurd stories about 'stuffed honey combs' launched into this country from America. You deserve great credit for your tireless efforts in that direction."

Now we have the gratifying intelligence, in German figures, that the sale of foreign honey in Germany has nearly doubled in the past few years, reaching an aggregate almost equivalent to one-eighth of the entire product of North America.

The Hamburg JOURNAL, in Germany, has formulated a table showing the following result: The total amount of American honey received at Hamburg in 1877, was 1,018,000 kilos (a kilo is 2 pounds). In 1878 it was 1,529,500 kilos; and in 1880 it was swelled to the enormous amount of 1,912,500 kilos, or nearly four millions of pounds. The amount imported in 1880 is double the amount given for 1878.

This shows what MAY be done by associated labor and organization.

The expenses of this trip, aggregating about $1,500, were entirely borne by the Delegate, who donated not only the money but five months' time to the interests of the apiarists of America; and the results show that both time and money were well spent.

Let us hope that the bee-keepers of America will sustain their organizations and help to make them more useful.

THOMAS G. NEWMAN.

Chicago, Ill., Jan. 1, 1886.

THE EARLY CONVENTION HISTORY

OF AMERICA, TOGETHER WITH

A DIGEST OF THE PROCEEDINGS

OF THE

FIFTEEN ANNUAL CONVENTIONS

OF

THE NORTH-AMERICAN BEE-KEEPERS' SOCIETY,

FROM 1860 TO 1884, INCLUSIVE.

First Bee-Convention.

The first Convention of the bee-keepers of America was held at Cleveland, O., on March 15, 1860. The following persons were then elected as officers :

President—Prof. J. P. Kirtland.
Vice-President—Wm. M. Cunningham.
Corresponding Sec'y—E. T. Sturtevant.
Recording Sec'y—J. Kirkpatrick.
Treasurer—E. Gallup.

The first question discussed was: "What is the best mode of wintering bees?" The Rev. L. L. Langstroth was present, and advocated cellar-wintering. Others favored burying them in clamps. The subjects afterwards engaging their attention were ventilation of hives, feeding bees, robbing, feeding rye flour for pollen, Italian bees, swarming, bee-houses, etc.

When this convention was held there were no periodicals devoted to the pursuit of bee-culture in America, and the report of the convention was published in the "Ohio Farmer." Mr. Samuel Wagner started the Monthly AMERICAN BEE JOURNAL in the following January (1861), and in the March number of the BEE JOURNAL he re-published the proceedings under the heading of the "First American Bee-Keepers' Convention," and editorially remarked as follows :

"We take pleasure in placing on record in our columns, the proceedings of the first American Bee-Keepers' Convention, which met at Cleveland, O., on the 15th of March, 1860. The time is approaching when bee-culture will occupy a higher position than it has yet held in this country, and when it will be interesting to trace back its history to those pioneer movements which conduced to revival and progress."

The Second Convention

was held in Cleveland, O., on March 14, 1861, President Kirtland in the chair. The discussions were mostly on the adoption of the movable-frame hives, and a resolution was passed welcoming the advent of the AMERICAN BEE JOURNAL, and recommending it to all bee-keepers. This meeting was adjourned to Nov. 21, 1861, when a semi-annual meeting was held.

The Third Convention

was called to order by President Kirtland on Nov. 21, 1861, and the members discussed many important matters, among them wintering, feeding, and handling bees.

On account of the "civil war," attention was called from the pursuit of bee-keeping, the AMERICAN BEE JOURNAL was suspended for 4½ years, and we know of no Convention of bee-keepers of any importance until 1866.

Other Conventions Organized.

The Wisconsin Bee-Keepers' Association was formed in Madison in 1866.

On Oct. 4, 1867, the "Northwestern" was organized, in Des Moines, Iowa, on the State Fair Grounds, about 150 bee-keepers being present; no business of any importance seemed to have been done. R. R. Murphy was elected President, and M. M. Baldridge, Secretary.

The Kentucky Bee-Keepers' Association was formed at a convention held in Lexington on Nov. 20, 1867. Dr. John Dillard was elected Pres., and W. Spencer, Sec.

The Michigan Bee-Keepers' Association was formed on April 7, 1869. Mr. E. Rood was elected its first President, and Prof. A. J. Cook its first Secretary. The first Convention lasted two days, and the discussions extended over nearly the entire field of the apicultural pursuit. Its second Convention was held on Sept. 21, 1869, and Mr. A. F. Moon was elected President. Both meetings were held at Jackson, Mich.

The Ohio bee-keepers met in convention at Toledo, O., on Sept. 15, 1869, and adjourned to Cleveland at the call of the Secretary, Mr. J. F. Martin. The Cleveland Convention was held on Jan. 14, 1870, when it was decided to hold annual sessions thereafter. This was the continuation of the first American Bee-Keepers' Society (formed in 1860), and the President, Dr. Kirtland, and Secretary, E. T. Sturtevant, were re-elected.

The Chautauqua Co.(N.Y.) Bee-Keepers' Association was organized on Jan. 29, 1870, by adopting a constitution and by-laws and electing T. S. Moss President, and C. E. Benton, Secretary and Treasurer. It was decided to hold the first annual convention at Mayville, on Sept. 20, 1870.

The Northeastern (New York) Bee-Keepers' Association was instituted in March, 1870; but we can find no minutes of that meeting. A semi-annual session was held at Utica, N. Y., on Sept. 27 and 28, 1870. At this meeting it was agreed to institute a National Convention, and a call was issued for such to be held at Cincinnati, O., in February, 1871.

The Michigan Bee-Keepers' Association met at Lansing on March 23, 1870. President A. F. Moon strongly urged the formation of a National Bee-Keepers' Society, and several letters were read from prominent apiarists, urging the formation of such a Society. After considerable discussion the following was unanimously adopted:

"WHEREAS, The subject of a National Bee-Keepers' Association was much talked of at our last gathering; and

"WHEREAS, In our judgment, the time for the same is fully come; therefore

"*Resolved*, That we issue a call for a National Bee-Keepers' Association to be held in the city of Indianapolis, Ind., on the 10th and 11th of August next."

The date was afterwards changed to Dec. 21, 1870, as will be seen by the following, which is copied from the AMERICAN BEE JOURNAL of February, 1871:

North American Bee-Association.

"On Feb. 10, 1870, Prof. A. J. Cook, Secretary of the Michigan Bee-Keepers' Association, issued a circular, which he mailed to the members of that Association, to the prominent bee-keepers of other States, and to the press, inviting everybody interested to meet at Lansing, Mich., on the 21st of March, for the purpose of discussing special questions on the subject of bee-culture, prominent among which would be the holding of a National Bee-Keepers' Convention, at some central point during the year. On the day announced, the convention was held at Lansing, and the question of holding a National Convention was discussed with the wildest enthusiasm. As was anticipated, the discussion resulted in a call to the bee-keepers of America for a National Convention, to be held in Indianapolis, Ind. The location was happily chosen, and has given very general satisfaction, it being centrally located, and readily accessible by a complete net-work of railroads.

"Accordingly, on Dec. 21 (the day finally fixed upon), a large number of the most prominent and enterprising of bee-keepers of the United States and Canada, met in convention at the House of Representatives, in Indianapolis, and held six sessions, the last one ending at midnight on the 22d of Dec., 1870. Every seat in the house was occupied; the States represented being Indiana, Illinois, Michigan, Ohio, Wisconsin, Kentucky, Iowa, New York, Tennessee, Missouri, and Pennsylvania. Delegates were also present from Utah and Canada. On the whole, it is safe to assume that never in the history of America has bee-culture been represented in a convention by so large an assemblage of wide-awake, intelligent, and enterprising bee-keepers."

The convention was called to order at 10 a.m., by A. F. Moon, President of the Michigan Bee-Keepers' Association, who was elected temporary President, and M. M. Baldridge, of Illinois, temporary Sec.

On motion of Dr. Bohrer, of Indiana, a committee of one member from each State represented, was appointed to prepare a Constitution and to nominate officers, viz: Z. S. Richardson, of Indiana; Ezra Rood, of Michigan; D. L. Adair, of Kentucky; M. L. Dunlap, of Illinois; Aaron Benedict, of Ohio; Adam Grimm, of Wisconsin; Elisha Gallup, of Iowa; Dr. T. B. Hamlin, of Tennessee; Robert Bickford, of New York; W. D. Roberts, of Utah Territory; Daniel McIlvain, of Pennsylvania; J. L. Smith, of Missouri, and Wm. F. Clarke, of Canada.

This committee reported a constitution which, with a few amendments, was adopted; and recommended the following as officers during that meeting:

President—A. F. Moon.
Vice-Presidents—Elisha Gallup and Dr. G. Bohrer.
Secretary—M. M. Baldridge.
Assistant Sec'y—Wm. F. Clarke.
Treasurer—N. C. Mitchell.

The report was adopted, and President Moon thanked the convention for the honor conferred upon him, and expressed the desire that it might be the means of promoting the best interests of the Association, and bee-culture generally.

The exhibits at this convention were: 18 movable-comb hives; 3 cages for fertilizing queens in confinement; 3 queen nurseries; 2 bee-feeders; 1 trap for catching queens and drones when leaving the hives; 1 wax-extractor; and 4 machines for extracting honey from the combs.

The election of officers for the ensuing year was then announced as in order.

On motion of R. C. Otis, of Wisconsin, the Rev. Mr. Langstroth was made an honorary member of the Association.

In view of what Mr. Langstroth has already done in promoting the interests of bee-keeping, not only in this but in other countries by the introduction of an improved system of bee-management, Mr. Otis moved that Rev. L. L. Langstroth, of Oxford, O., be crowned with the honor of being the President of the North American Bee-Keepers' Association for the ensuing year.

The motion was warmly seconded, and there being no other nomination, Mr. M. L. Dunlap moved that President Moon be authorized to cast the unanimous vote of the Association.

The motion prevailed, and the tellers announced the result of the ballot. On motion the Secretary was instructed to notify Mr. Langstroth of his election.

On motion of Mr. W. F. Clarke, the constitution was amended so as to provide for three additional Vice-presidents, making the number five instead of two.

The following officers were unanimously elected: Vice-presidents—W. F. Clarke, Ont.; Dr. T. B. Hamlin, Tenn.; Robert

Bickford, N.Y.; E. Gallup, Iowa; A. F. Moon, Mich. Secretary—M. M. Baldridge, St. Charles, Ills. Treasurer—N.C. Mitchell, Indianapolis, Ind.

The following resolution was adopted:

"*Resolved* That the Executive Committee be instructed to publish the proceedings of this Association in pamphlet form at the earliest practicable day, provided the funds will warrant, and that the Secretary forward a copy to each member as soon as published."

The following were admitted as honorary members:

Samuel Wagner, editor of the AMERICAN BEE JOURNAL, Washington, D. C.; M. Quinby, author of "Myateries of Bee-Keeping," St. Johnsville, New York; E. S. Tupper, Brighton, Iowa: Rev. John Dzierzon, Karlsmarket, Lower Silesia, Germany; A. Schmidt, editor of the "Bienen-Zeitung," Eichstadt, Germany; L. Gerster, inventor of the Wax-Extractor, Berne, Switzerland; T. W. Woodbury, Mount Radford, Exeter, England; Major Von Hruschka, Germany, inventor of Mel-Extractor.

As the Rev. L. L. Langstroth was not present, he was notified of his election as President, and accepted it, adding that he hoped "that the interests of practical and scientific bee-keeping may be greatly advanced" by the organization.

The topics discussed were: Management of an apiary; diseases of bees; Italian and Egyptian bees; swarming and increase by division; queen-rearing; bee-pasturage; transferring bees; marketing honey; comb foundation, etc.

The convention adjourned to meet in Cleveland, O., on Wednesday, Dec. 6, 1871, at 9 a.m.

American Bee-Keepers' Association.

The Cincinnati "Gazette" remarks as follows:

"Various States of the Union, either singly or two or three of them united, have formed bee-keepers' associations, but hitherto no national association has existed in this country. The impetus given to bee-culture by the discoveries of Huber, the distinguished Geneva apiarist, at the close of the last century, has sent hundreds into that pursuit. The progress of skill and knowledge in it has not lagged behind the advance made by science and skill in other departments of knowledge and industry since the blind Huber died. The necessity of associated action and effort for the benefit of bee-culture has been widely felt and that feeling has been manifested in forming numerous local associations.

"About a year ago, two of these associations, at nearly the same time, conceived the idea of issuing a call for a convention to form a national organization. One of them was the Michigan, the other the Northeastern Bee-Keepers' Association. The North American Bee-Keepers' Association, organized at Indianapolis last December, and the American Bee-Keepers' Association, organized here, are the results of calls issued by the above local bodies respectively, viz: the Michigan and the Northeastern. Between these associations there has been some controversy—with but little, if any, ill feeling—as to the claim of priority in issuing the call for the National Convention.

"The Convention called by the Michigan Association met in December last; that called by the Northeastern Association is the one in session now in this city. Both associations have the same man, the Rev. L. L. Langstroth, of Oxford, O., for President. Many members of the Association formed yesterday are members of the North American formed at Indianapolis. Mr. Langstroth, of the former body, in retiring from the active duties of the chair last evening, called to officiate as Chairman of the American, the Rev. Mr. Van Slyke, of the Northeastern Association. The union of the two National Associations at their next meeting, which, for both, is at the same time and place, is a moral certainty."

About 150 delegates from various States assembled in Convention at 1 p.m., and an organization was effected by electing Rev. Wm. F. Clarke, of Toronto, Chairman.

Gen. D. L. Adair, of Kentucky, moved to adopt a constitution, which he presented, and make this convention an association, to be known as the American Bee-Keepers' Association.

This was objected to as needless, since we have already a North American Bee-Keepers' Association. Mr. H. A. King, of New York, favored Gen. Adair's motion. This would be the first step toward uniting the North American Association and the one proposed to organize here.

Dr. Bohrer, of Indiana, a delegate to the Convention that met at Indianapolis, Dec. 21, 1870, spoke in favor of maintaining good feeling. He desired that there should be but one Association, i. e., the North American or the American, as should be agreed.

Mr. R. C. Otis, of Wisconsin, moved, as an amendment to Gen. Adair's motion, to appoint a committee to negotiate for union with a like committee of the North American Bee-Keepers' Association.

Mr. H. A. King, of New York, moved to amend the amendment, that the Convention should first organize by adopting a Constitution, and then propose a union.

By carrying the previous question, the debate was cut off.

Mr. King's amendment to Mr. Otis' amendment was adopted.

The "American" Society organized by adopting a Constitution similar to the "North American," adopted at Indianapolis, and elected the Rev. L. L. Langstroth President, Rev. H. A. King, Secretary, Gen. D. L. Adair and L. C. Waite, Assistant Secretaries, N. C. Mitchell, Treasurer, and 15 Vice-Presidents.

The Rev. L. L. Langstroth took the chair, but being feeble, he called the Rev. E. Van Slyke, Vice-President for New York, to preside.

Rev. W. F. Clarke, the retiring temporary President, offered the following resolution, which was unanimously adopted:

"*Resolved*, That this Association, when it adjourns, adjourn to meet at Cleveland, O., at 9 a.m., on the first Wednesday in December, 1871, at the same time and place as the North American Bee-Keepers' Association; when, provided the other organization shall instruct its officers to do the same, the officers of this body shall resign, with a view of there and then consolidating both associations into one."

On motion of Mr. Peck, amended by Mr. Clarke, Mr. King, Mr. Peck and Mr. Otis were appointed a committee to confer with a similar committee appointed by the North American Bee-Keepers' Association, with a view to a union of that with this organization, and report the same to this Association.

The topics discussed were: Winter management of bees; artificial swarming; prevention of natural swarming; Italian bees vs. hybrids and black bees; hindrances to bee-culture; drones; honey-plants; introducing queens; extracted honey, etc.

Mr. E. Gallup read an essay entitled, "Successful bee-keeping in a nut-shell."

The following were made honorary members: T. W. Woodbury, Mount Radford, England; F. W. Vogel, Lekmanshofel, Prussia; Rev. George Kleine, Luethorst, Prussia; Andreas Schmidt, Eichstadt, Bavaria; Rev. John Dzierzon, Karlsmarkt, Silesia; Baron A. and Baroness L. Von Berlepsch, Munich, Bavaria; Prof. C. T. E. Von Siebold, Munich, Bavaria; Maj. F. Von Hruschka, Dolo, Italy; Dr. A. Dubini, Milan, Italy; Viscount De Saliceto, Milan Italy; A. S. Packard, Salem, Mass.; C. V. Reily, St. Louis, Mo.

Statistics: 120 bee-keepers reported that they owned 5,051 colonies of bees; and the honey produced amounted to 83,065 pounds, and the average price it sold at, was about 30 cents per pound. Beeswax, 1,046 pounds—4,612 colonies were in movable frame hives, and 439 in box-hives.

The Rev. L. L. Langstroth was the recipient of an expression of the gratitude of bee-keepers (in the shape of a well-filled purse), and, by unanimous vote, he was accorded the special privilege of speaking when, and as long as he chose to do so, on any subject. He solved many knotty questions, and often "poured oil on the troubled waters."

This Association adjourned to meet with the North American, at Cleveland, O., on Wednesday, Dec. 6, 1871, at 9 a.m.

The Two Associations Consolidated.

Pursuant to adjournment of both, the "American" and "North American" Bee-Keepers' Associations met in joint session at Temperance Hall in Cleveland, O., at 10 a.m., on Dec. 6, 1871. The President of both societies, the Rev. L. L. Langstroth, being absent on account of illness, Vice-President W. F. Clarke called the meeting to order, and, by unanimous vote, both associations were dissolved for the purpose of consolidation.

Moses Quinby was elected temporary chairman, and Rev. H. A. King temporary secretary.

By vote, all the officers of the dissolved associations present, were created a committee to present a constitution for permanent organization. This committee were: Rev. W. F. Clarke, Dr. G. Bohrer, A. F. Moon, Dr. T. B. Hamlin, S. Hoagland, Aaron Benedict, L. C. Waite, Gen. D. L. Adair, and N. C. Mitchell. The committee reported the following constitution, which was then unanimously adopted.

CONSTITUTION.

ARTICLE 1.—This organization shall be known as the North American Bee-Keepers' Society, and shall meet annually.

ART. 2.—Its object shall be to promote the interests of bee-culture.

ART. 3.—The officers of this Society shall be a President, one Vice President from each State, District, Territory or Province represented, Secretary, Recording Secretary, Corresponding Secretary, and Treasurer, whose duties shall be those usually performed by such officers. They shall be elected by ballot, and hold their offices for one year, or until their successors shall be elected.

ART. 4.—The President, Secretaries and Treasurer shall constitute an Executive Committee.

ART. 5.—Any person may become a member by giving his or her name to the Secretary and paying one dollar, excepting ladies, who shall be admitted free of charge.

ART. 6.—This Society may from time to time elect suitable persons as honorary members.

ART. 7.—No member shall be entitled to the floor more than five minutes in the discussion of any motion, resolution or petition, without the consent of the Society.

ART. 8.—All committees shall be elected by ballot, by a plurality vote, except by special resolution.

ART. 9.—Each annual meeting of this Society shall be held at such time and place as shall be designated by a majority vote at the preceding regular annual meeting.

ART. 10.—A special meeting may be called by the Executive Committee at any time on requisition of five of the Vice Presidents.

ART. 11.—This Constitution may be amended at any annual meeting, by a two-thirds vote of all the members in attendance.

The following were elected a committee on honorary members: Messrs. Root, Moon and Bohrer. Their report was adopted. It read thus:

"Such persons as were made honorary members of both the North American Bee-Keepers' Association, held at Indianapolis, and the American Bee-Keepers' Association, at Cincinnati, be, and they are hereby declared, honorary members of this Society."

The Society then proceeded to the election of officers for the ensuing year, which resulted as follows:

President—M. Quinby, St. Johnsville, N.Y.

Vice-Presidents—Aaron Benedict, O.; J. E. Hetherington, N. Y.; E. J. Peck, N. J.; Seth Hoagland, Pa.; D. L. Adair, Ky.; T. B. Hamlin, Tenn.; G. Bohrer, Ind.; Ezra Rood, Mich.; M. M. Baldridge, Ills.; R. C. Otis, Wis.; J. W. Hosmer, Minn.; E. S. Tupper, Iowa; S. A. Stillman, Mo.; L. J. Dallas, Kans.; W. D. Roberts, Utah; W. F. Clarke, Ont.; Hugh Cameron, D. C.

Secretary—H. A. King, N.Y. Recording Secretary—A. J. Cook, Mich.: Corresponding Secretary, A. I. Root, O.; Treasurer, N. C. Mitchell, Ind.

The following business committee was appointed to serve during the session: Messrs. Clarke, Waite, Adair, Hoagland, Hosmer, Moon, and Mrs. Tupper.

Dr. Bohrer, of Indiana, offered the following resolution, which was adopted:

"*Resolved*, That the proceedings of the North American Bee-Keepers' Association held at Indianapolis, and the American Bee-Keepers' Association held at Cincinnati, also of this session of the North American Bee-Keepers' Society, be published in pamphlet form, and a copy sent to each member of this Society free of charge; the expenses to be paid out of the funds of the treasury."

Mr. Rood, of Michigan, offered the following, which was adopted:

"*Resolved*, That a committee on publication, consisting of Messrs Adair, Mitchell and King, be appointed, and that they be empowered to employ assistants in reporting."

It was resolved, that when this Society adjourns it will adjourn to meet at the city of Indianapolis, Ind., on the first Wednesday in December, 1872, at 10 a.m.

The meeting was pleasant and instructive, and great harmony prevailed. Among others, the following resolutions were passed unanimously:

"WHEREAS, Millions of wealth have been annually lost to the people, through ignorance of bee-culture; and

"WHEREAS, It is the desire and object of this Society to enhance improvement and prosperity in this regard; therefore,

"*Resolved*, That we earnestly recommend the appointment of an apiarian professor in each of the Agricultural Colleges on the Continent, and that we respectfully call the attention of State and other executives to this subject.

"*Resolved*, That the Secretary be instructed to forward copies of these resolutions to the Governors of all the States, Territories & Provinces in North America.

"*Resolved*, That the thanks of this Society be tendered to our worthy President, Mr. M. Quinby, for the satisfactory manner in which he has presided over our meeting."

The topics discussed were: Why do bees swarm? why do bees rear queens? artificial swarming; can swarming be prevented? best method of handling bees to prevent anger; bee-pasturage; bee-keeping experience; transferring bees; honey-dew; extracted honey; comb honey; marketing honey; controlling the fertilization of queens; mortality among bees; wintering bees; feeding bees with rye meal, etc.

Addresses were given as follows: Gathering the nectar, and how to market it, by President Quinby; popular bee-keeping, by Rev. H. A. King; prize poem, by Rev. W. F. Clarke; the experiences of a beginner, by Mrs. Savery; bee-keeping for ministers, by Rev. W. F. Clarke; reconstructed comb, by Gen. Adair; honey from the linden, by Le Roy Whitford.

Adjourned to meet at Indianapolis, Ind., on Dec. 4, 1872.

The Third Annual Convention

was held at Indianapolis, Ind., on Dec. 4, 5 and 6, 1872. The Rev. W. F. Clarke was elected president, and the Rev. H. A. King, secretary.

At this meeting the office of Recording Secretary was abolished by amendment to the constitution, and Art. V. was changed to, "Any person may become a member by giving his or her name to the Secretary, and paying an annual fee of $1, except ladies, who shall be admitted free of charge."

This resolution was also passed:

"*Resolved*, That no member shall be entitled to the floor more than five minutes in the discussion of any motion, resolution or petition, without consent of the Society, nor a second time, unless by consent of the President or a majority of the members present."

The report proceeds as follows:

"Dr. Bohrer, from the committee to settle with the Treasurer, made a report, showing that the Treasurer's receipts at the three former meetings had been $296, and that he had paid out $295.27, leaving a balance of 73 cents due the Society. On motion the report was received and adopted.

"Dr. Bohrer proposed to petition for some plan of registration, by which the security of queens sent by mail may be guaranteed.

"Mr. King, of New York, said that the Postmaster General had lately decided that bees were not mailable matter."

Resolutions were adopted as follows:

"*Resolved*, That the President of this Society be authorized in its name and behalf, to address a circular to all the bee-keepers of this Continent, urging the formation of neighborhood, county, State, territorial and provincial associations, auxiliary to this Society.

"*Resolved*, That D. L. Adair be paid $50 for his services as reporter of this Society.

"*Resolved*, That the thanks of this Society be tendered to our worthy President, Rev. W. F. Clarke, for his able opening address, and the impartial manner in which he has presided over our deliberations."

President Clarke gave an interesting address on the prospects of bee-keeping, and referred to the loss which apiculture had sustained in the death of Mr. Samuel Wagner, the able and talented editor of the AMERICAN BEE JOURNAL.

Dr. Bohrer read an essay on "The objects of the Society," recommending that the proceedings of each annual Convention be printed in pamphlet form.

Gen. D. L. Adair read an essay on "The capacity of a colony of bees for producing honey," and concluded with this remark:

"Now 15 square inches of comb, will, on an average, hold one pound of honey, so that each square foot of honey in the comb will weigh nearly nine pounds and two-thirds, and, if they continued at that rate, they would construct the comb for nine hundred pounds in about ninety-three days, or about three months.

"Another and stronger proof of their capacity to supply the comb, is the fact known to all, that 20,000 bees that constitute the working force of an ordinary colony, do produce the comb in which 100 pounds of honey is stored, and I can see no reason why nine times as many cannot build comb to hold nine times as much honey."

The following topics were discussed: Will right management of bees develop peacefulness of disposition, as we know wrong management develops the opposite? bee-keeping on farms and suburban homes; prevention of losses of bees in winter; Italian bees compared with black bees; increase; feeding bees; getting surplus honey; wintering bees; queen-rearing, etc.

Adjourned to meet at Louisville, Ky., on the first Wednesday in Dec., 1873.

The Fourth Annual Convention

was held at Louisville, Ky., on the first Wednesday in December, 1873. Seth Hoagland was elected President, Abner Pope, corresponding secretary, and D. L. Adair, recording secretary. Vice-presidents were elected for 28 States and Provinces.

Owing to the inclement weather and sickness of several members, but few persons were in attendance, and to meet current expenses, it was voted that each member present, pay an additional dollar to the regular annual fee, which was to be credited to them as a year's payment in advance.

Gen. Adair stated that it was proposed to hold a Centennial Exposition in Philadelphia, and moved that a committee of three be appointed to correspond with the managers, and see what arrangements could be made for having the bee-interests represented. The resolution was adopted, and subsequently the chair appointed a committee, and authorized them to appoint sub-committees in such States as they should deem proper.

The topics discussed were: clipping queens' wings; the quantity of brood produced by a prolific queen; the cause and cure of foul brood; the cause of queens deserting their hives; bee-pasturage; introducing queens; the use of the honey-extractor; swarming; cure for bee-stings, etc.

Gen. Adair read an essay on "The wings of the bee, physiologically considered, as organs of flight and of special sensation."

Adjourned to meet at Pittsburgh, Pa., on Wednesday, Nov. 11, 1874.

The Fifth Annual Convention

assembled at Pittsburgh, Pa., on Wednesday, Nov. 11, 1874, at 10 a.m., President Hoagland in the chair, who delivered an opening address.

The Rev. W. F. Clarke was elected President; Rev. H. A. King, corresponding secretary; Dr. L. Brown, recording secretary; J. S. Hill, Treasurer; and Vice-presidents for 9 States; in other States the former officers were to "hold over."

The committee appointed to make arrangements for exhibits at the Centennial in 1876, reported that space had been obtained, and that every arrangement was made for a display of apiarian implements.

The topics discussed were: Advantages of bee-keeping; queen-rearing; securing swarms; moving bees; breeding in the fall; introducing queens; bee-forage; wintering bees; prevention of honey-granulation; selecting a locality for queen-rearing; spring management of bees, etc.

The Rev. W. F. Clarke delivered an address on "The sting of the honey-bee."

The Rev. H. A. King gave an address on "The adulteration of honey," and resolutions condemnatory of the practice by honey dealers in large cities, were passed.

The death of Vice-President Hamlin was announced, and resolutions passed, enumerating his many virtues.

Adjourned to meet in Toledo, O., Dec. 1, 1875.

The Sixth Annual Convention

met at Toledo, O., on Dec. 1, 1875. None of the officers were present, except the Treasurer, and after much discussion the general opinion was that the Society should hold one more meeting (at the Centennial Exhibition in Philadelphia, Pa.), and then cease to exist.

Some discussion on general topics was indulged in, and G. W. Zimmerman was elected President; B. B. Overmeyer recording secretary; J. W. Lindsey, corresponding secretary; and J. S. Hill Treasurer. Philadelphia, Pa., was selected as the place for the next meeting.

Pres. Zimmerman remarked: "After holding the meeting at Philadelphia, I think the Society had better adjourn, sine die."

Adjourned to meet at Philadelphia, Pa., at the call of the Secretary.

The Seventh Annual Convention

convened on the Centennial Grounds at Philadelphia, Pa., on Oct. 25, 1876. Owing to the interest displayed by those in attendance in the Centennial Exhibition, sessions were only held on two evenings.

The following topics were discussed: Introducing queens; wintering weak colonies; how to control swarming; how to produce the most surplus honey; how to obtain industrious bees; home market for honey; and how to promote the interests of the National Society.

The Northeastern (N. Y.) Bee-Keepers' Association offered a prize of $25 for "the best and most practical essay on how to keep bees successfully during winter and spring;" open for competition to the world. The essays were to be read at the Centennial sessions of the North American Bee-Keepers' Society. The judges on the essays were: J. P. Moore, of New York; Henry Alley, of Massachusetts; and J. S. Hill, of Ohio. Essays were presented and read from Prof. A. J. Cook, Rev. E. L. Briggs, Dr. W. B. Rush, and W. H. S. Grout. The judges awarded the prize to Prof. Cook's essay.

Capt. W. J. Andrews was elected President; N. N. Betsinger, J. S. Coe, R. R. Murphy, G. W. Zimmerman and J. Vandervort, Vice-presidents; J. H. Nellis, Secretary: and J. S. Hill, Treasurer.

The Secretary was instructed to issue an address to the bee-keepers of America, earnestly advising them to organize and protect their interests; and also requesting each organization to send one or more delegates to the next North American Convention instructing them concerning their views of how the continental body can best subserve the interests of the fraternity at large.

Adjourned to meet in New York on the third Tuesday in October, 1877.

The Eighth Annual Convention

convened in Cooper's Institute, New York, on Oct. 16, 1877. President W. J. Andrews occupied the chair, who gave the usual annual address.

The Constitution was amended, so that only one Vice-President and one Secretary were to be elected. J. H. Nellis was elected President; W. J. Andrews, Vice-president; Thomas G. Newman, Secretary; and A. J. King, Treasurer.

The following were appointed a committee to consider the best means of promoting the interests of the National Society, and to increase its usefulness: W. J. Andrews, Thomas G. Newman, A. J. King, J. E. Hetherington, and E. D. Clark. This committee reported through its President as follows:

"Your committee on the best means of promoting and advancing the interests of our Society, would recommend the organization of local societies, and as a further incentive to the organization of these local societies, we would recommend an insurance feature therewith. That in addition to the annual fee of one dollar now provided by our Constitution, that every member of the Society, upon being notified of the death of a member, shall forward to the Secretary the sum of one dollar, and that such fund when so collected shall be paid over to the beneficiary designated by the deceased member while living. As the time allotted your committee will not permit a full written report at this time, we would therefore recommend that your committee be continued until the next regular annual meeting, to prepare plans, etc."

The report of the committee was received and further time granted—but it was never heard from afterwards, nor were any "plans" ever presented by it.

The following essays were read, followed by discussions: Marketing honey, by Prof. A. J. Cook; honey dealers, by W. M. Hoge; the honey market, by F. B. Thurber; comb foundation, by Capt. J. E. Hetherington; organization and its relation to the sale of honey, by Thomas G. Newman; importing foreign races of bees, by Dr. E. Parmly; rearing of Italian queens, by Martin Metcalf; preparing brood-combs for winter, by N. N. Betsinger; management of an apiary, by Prof. Hasbrouck; and introducing queens, by Silas M. Locke.

A letter was read from Mr. S. C. Dodge, of Chattanooga, Tenn., requesting that a petition be circulated, asking the Postmaster General to rescind his ruling which excluded queen-bees from the mails of the United States.

After some discussion Ex-president W. J. Andrews was appointed a committee to wait on the Postmaster General in person to endeavor to have the ruling in question reversed.

The Secretary was instructed also to get up a petition to Congress praying for a modification of the postal laws of the United States, so as to allow the transmission of living bees through the mails, when properly caged and protected, and to have it numerously signed by bee-keepers, and presented to Congress. This was done early in January, and by March 1, having secured several thousands of signatures, the Secretary sent it to a congressman, requesting him to present it to Congress, and also wrote to other members of the House, from several districts, requesting them to use their influence to secure the passage of a law, granting the use of the mails for the transmission of living bees. The Hon. G. B. Loring replied that he had consulted with the Postmaster General, and found that no law was necessary, House Bill No. 3850 being sufficiently liberal to admit bees to the mails, at the discretion of Postmaster General, when properly caged. Here the matter rested, awaiting the action of the Postmaster General.

An address to the bee-keepers of America was presented by the Rev. J. W. Shearer (who was appointed a committee for that purpose), and it was unanimously adopted, and $25 was appropriated to defray the expense of having it printed and circulated.

Dr. Parmly offered the following prizes: $25 for a successful method of fertilizing queens in confinement, and $10 for the best method of rearing and fertilizing queens, with the use of fewer worker-bees than the present methods—making queens cheaper, and the purity of the race certain.

Adjourned to meet again in New York on the second Tuesday in October, 1878.

The Ninth Annual Convention

convened at Cooper's Institute, New York, on Tuesday, Oct. 8, 1878. President Nellis occupied the chair, and in his annual address counseled energetic measures to place the Society on a permanent basis, and to increase its usefulness.

Thomas G. Newman, chairman of "the committee on the best means of promoting and advancing the interests of the National Society, and to increase its usefulness," reported, recommending:

1. That the Society be made a representative body, and that delegates from local societies be sent to the National Society with instructions as to the needs of apiculture at large.
2. That it should encourage a local State exhibition once a year, having public manipulations with bees.
3. That the National Society award suitable medals for the best exhibit of honey in the most marketable shape, and a diploma for the most expert public handling of bees.

The committee also recommended that a Vice-President be elected in every State and Territory, to co-operate with the Society in awarding prizes at these Bee and Honey Shows. It also recommended that a representative of this Society attend these Bee and Honey Shows, and that his traveling expenses be borne by this Society, and that a committee be appointed to procure medals and diplomas.

The report was adopted, and Articles III and X of the Constitution were reinstated as recommended. T.G.Newman, L. C. Root, and E. J. Oatman were appointed a committee to carry out the arrangements.

Thomas G. Newman was unanimously elected President; Dr. Parmly, recording secretary; Professor Hasbrouck, corresponding secretary; and J. H. Nellis, Treasurer; Vice-Presidents were elected for 36 States, provinces and territories.

The newly elected President, upon taking the chair, gave an address, recommending co-operation and concert of action.

The President was, by unanimous vote, requested to correspond with the principal bee-keepers of America, and try to induce them to take a greater interest in Conventions and Bee and Honey Shows; and to give the Vice-Presidents all the assistance in his power to make Bee and Honey Shows everywhere a success.

The President was appointed to represent this Society at the meetings of European bee-keepers during the following summer, and to endeavor to open up a European market for our honey crop.

A petition to Congress praying for a law against adulteration was presented by Mr

A. J. King, and adopted. An address to honey producers and consumers was adopted and ordered to be printed and distributed, and signed by the president and secretary.

The executive committee was requested to get up diplomas or medals, to be awarded at Bee and Honey Shows and thus endeavor to elevate honey-production.

The following essays were read and discussed: Rise and progress of bee-culture, by A. J. King; bee-pasturage, by Prof. A. J. Cook; rational system of wintering bees, by H. H. Flick; our honey markets, by C. F. Muth; comb foundation, by N. N. Betsinger; bee-keeping in California, by C. J. Fox; introduction of foreign bees, by Dr. S. P. Parsons; hints to beginners, by L. C. Root; Italian bees, by James Heddon; extracted honey, by H. A. Burch; fertilization in confinement, by Prof. J. Hasbrouck. The prize of $25 was awarded to Prof. Hasbrouck, by Dr. Parmly, but he desired it to be held till another year, for further experiments.

Adjourned to meet at Chicago, Ills., on Oct. 21, 1879.

The Tenth Annual Convention

convened at Chicago, Ills., on Oct. 21, 1879. President T. G. Newman occupied the chair, and gave the annual address, remarking as follows on the subject of Bee and Honey Shows:

Creating a home demand for honey was a subject greatly recommended at our last meeting. I am happy to announce that this advice has very largely been acted upon, and I think it quite safe to say that the "home demand" has been more than doubled during the past year.

Many of our Vice-Presidents have nobly attended to their duties in the different States, Territories and Provinces. They have used commendable zeal in getting the attention of Managers of State, County and District Fairs, and having prizes for honey and bees inserted in many of the Premium Lists. To many of them this Association should give the encouraging "Well Done;" and we hope that those Vice-Presidents who have so nobly spent their time, money and energy to further the interests of their constituents may be re-elected, to still further "help on the good work" during the coming year.

The Executive Committee thought best to begin slow, and so have only gotten up Diplomas for the use of Vice-Presidents in awarding prizes, though the last Convention gave them discretionary powers, as to the getting up of medals, &c. Another year medals may serve a good purpose. The "Programmes" for this Convention, which you all have for use, have been produced without cost to the Society—the advertisers paying the entire expense.

The Treasurer reported $29.50 as a balance in the treasury.

Essays were read and discussed, as follows: The tongue of the honey-bee, by Prof. A. J. Cook; patents on implements for the apiary, by A. E. Wenzel; wintering bees on the summer stands, by J. E. Moore; monstrosities among bees, by S. C. Dodge; moving bees, by Dr. N. P. Allen; bee-forage of the South, by Dr. J. P. H. Brown; cure of foul brood, by C. F. Muth; foul brood, by Dr. L. C. Whiting; the bee of the future, by Rev. W. F. Clarke; the next progressive step, by Frank Benton; wintering bees, by H. H. Flick; sub-earth ventilation in wintering bees, by J. Wilkinson; humanity to the bees, by A. J. King; increasing the demand for honey, by Rev. O. Clute; bee-diarrhea, by E. Rood; qualities in bees, by James Heddon; bee-enemies, by N. Cameron; are cheap queens the most profitable? by D. A. Pike; comb foundation, by J. W. Porter; national apiary and queen-rearing establishment, by Wm. Williamson; how to prevent swarms, by D. D. Palmer; shall we induce people to keep bees? by W. M. Kellogg; introducing virgin queens, by Rev. M. Mahin; can bee-culture be made profitable? by J. H. Nellis; preparing comb and extracted honey for the market, by C. C. Coffinberry; fertilization in confinement, by Professor Hasbrouck. To the latter Dr. Parmly awarded the prize of $25.

President Newman reported that, in accordance with the instructions of the last Convention, he had attended three Bee and Honey Shows in England, one in Scotland, one in Switzerland, and one in Austria; had visited many of the most prominent apiarists of England, Scotland, Italy, Switzerland, Austria, Germany, and France; had endeavored to remove the prejudice existing against American honey, and believed that avenues had been created for the disposal of the surplus honey crop of America.

This report was referred to a committee of 3, who reported as follows:

"*Resolved*, That this Association has listened with much pleasure to President Newman's report of his trip to Europe, and hereby expressee its high appreciation of the able and successful manner in which he has represented the interests of American apiculture at the Honey Shows and Apiarian meetings of the Old World. It heartily approves of the efforts he has made to disseminate broad views as to the cheap production and enlarged consumption of honey, and thereby aided in securing a larger market for this important product. In view of the fact that President Newman's tour was wholly at his own expense, the special thanks of this Association are due, and are hereby tendered, to him for the eminent service he has performed.

"*Resolved*, That this Association rejoices in the cordial and enthusiastic reception accorded to President Newman by the apicultural societies and leading bee-masters in Britain and on the European continent, trusting that the harmonious feeling evinced may always be cherished by the bee-keepers of the world towards each other. This Association hopes that the friendly visit which has been made, will ere long be returned by some one or more of prominent apiculturists of Europe, to whom it will be our pride and pleasure to extend as hearty a welcome as that given to our Representative.

"*Resolved*, That a copy of these resolutions be sent by the Corresponding Secretary to the apicultural societies of Europe visited by our Representative."

Thomas G. Newman was unanimously re-elected President, Dr. Parmly, Secretary, and Mrs. Dunham, Treasurer. Vice-presidents were elected for 36 States and provinces in North America.

A substantial testimonial consisting of $153.50 was presented to the Rev. L. L. Langstroth, who being sick was unable to be present..

Mrs. F. A. Dunham and Mr. T. F. Bingham were made honorary members in recognition of their valuable inventions.

Prof. Cook exhibited and described a botanical collection of plants adapted to furnishing nectar to bees. His favorite plant was the Bokhara, melilot, or sweet clover. A large number of other plants were exhibited.

T. F. Bingham, of Michigan, was called upon and gave his experience with migrating bee-culture. He had found that the loss of brood was the most serious obstacle which he met with, in shipping by rail. He had come to the conclusion that he would have lost less by leaving his bees at home in the North.

The Northeastern Wisconsin Bee-Keepers' Association having had some correspondence with the Post-office Department on the subject of sending bees in the mails, had sent it to the Convention to be read. Mr. Detwiler also presented a letter on the subject, which was read. After some discussion it was

Resolved, That Prof. Cook, D. A. Jones and President Newman be appointed a committee to bring the matter before the Postmaster General and endeavor to have the ruling reversed.

Resolved, That the Executive Committee be instructed to prepare badges for those who may hereafter attend the National Conventions; also that they be instructed to procure medals to be awarded for the best exhibition of bees, honey and implements for the apiary.

Adjourned to meet in Cincinnati, O., on Sept. 28, 1880.

The Eleventh Annual Convention

convened at Cincinnati, O., on Sept. 28, 1880, President Newman in the chair. After the routine business, the Secretary read letters from the Rev. Herbert R. Peel, of England, and Mons. Ed. Bertrand, of Switzerland, regretting their inability to attend, offering their congratulations, and stating that they were much interested in reading the proceedings of the North American Bee-Keepers' Society. The following was unanimously adopted:

Resolved, That we return our thanks to the Rev. Herbert R. Peel, of England, and to Mons. E. Bertrand, of Switzerland, for the fraternal feelings expressed by them towards the bee-keepers of North America.

In the annual address, the President urged unity of thought and harmony of action. He advocated the adoption of some plan for obtaining statistics of the honey crop, to regulate prices; and added:

It is certain that "in union there is strength." That which in an individual capacity none of us could accomplish, is easily done by a strong, united and influential body. As an illustration, the last meeting of this Society appointed a committee to wait on the postal authorities to get a reversal of the order prohibiting the use of the mails for transporting queen-bees, and though many individuals had often petitioned that functionary, it was not accomplished until this body took the matter in hand. We are now in the enjoyment of the result of our united action in this particular.

The general prosperity of the Society is a subject for congratulation. It is steadily increasing in numbers and influence, and each successive meeting has been adjudged better than its predecessor; I therefore trust this will eclipse the meeting held at Chicago, a year since.

In conclusion allow me to thank you for the honor of being twice unanimously elected as your presiding officer. I have endeavored to serve you faithfully, and have left no work undone, that, according to my judgment, would advance the interests of this Society and be advantageous to the apiarists of America. To make this Society national in its character, and world-wide in its influence has been my aim. How far this has been accomplished I leave it to you to determine. When my successor is elected, I shall be most happy to welcome him to this chair, with all its honors and responsibilities.

The executive committee made the following report, which was adopted:

The executive committee would respectfully report that they have, in accordance with the instructions given at the last meeting, prepared badges for the use of members to designate them from others. They have also prepared letter heads, programmes and membership tickets, and made all necessary arrangements for the present meeting, and hope that it will be, in practical value, second to no Convention ever held by this Society. In reference to the letter headings we caused to be printed for the use of the officers of this Association, Dr. W. W. Hipolite, Vice-President for Arkansas, remarks as follows:

"Not long since I received some printed letter heads for the use of Vice-Presidents of the National Bee-Keepers' Association, and find them exceedingly well gotten up. I think the person who originated the idea is entitled to the thanks of the Association. When communicating with the officers of our State Fair or other Associations, or with others in the interests of our Society, it looks as though we had an existence as such, and not merely in name."

The election of officers for the ensuing year resulted as follows: President, Dr. N. P. Allen; recording secretary, Dr. Parmly; corresponding Secretary, C. F. Muth; Treasurer, Mrs. F. A. Dunham. Vice-Presidents for 35 States and Provinces were elected, and Lexington, Ky., was selected as the next place of meeting.

President Allen, on taking the chair, thanked the Society for the honor conferred on him, and congratulated it upon its prosperous condition.

Mr. Williamson then offered the following resolution, which was adopted unanimously:

Resolved, by the North American Bee-Keepers' Society, in convention assembled, that the thanks of this Association are due, and are hereby tendered to Thomas G. Newman, Esq., our retiring President, for the zealous, untiring and successful manner in which he has conducted the affairs of this Association; and we further thank him for his great liberality in traveling through Europe in the past year at his own expense, thus being the means of opening up avenues of trade for American honey, and advancing the interests of American apiculturists in a manner that could not be reached by any other method.

The essays read and discussed were as follows: Honey-plants of Kentucky, by Dr. N. P. Allen; bee-pasturage, by L. H. Pammel, Jr.; improved races of bees, by Thomas G. Newman; yellow bees, by G. W. Demaree; queens—their fertilization and peculiarities, by Dr. J. P. H. Brown; comb foundation, by C. C. Coffinberry; permanence of the bee-keeping industry, by A. J. King; the coming frame, by S. M. Locke; honey—past, present and future, by J. H. Nellis; how to make honey a staple product, by R. Bacon; best methods of marketing honey, by Thomas G. Newman; extracted vs. comb honey, by Chas. Dadant; foul brood, by C. F. Muth; apicultural failures, by James Heddon; wintering bees, by T. F. Bingham; and rational increase in the apiary, by C. F. Muth.

Dr. J. P. H. Brown, of Georgia, chairman of the committee to draft resolutions condemnatory of adulterations, reported the following resolutions, which were unanimously adopted:

Resolved, By the North American Bee-Keepers' Society in convention, that we most sincerely deplore the almost universal system of adulterations in articles of food, and particularly all attempts at adulterating honey, or the use of glucose in any manner whereby it may by any possibility become incorporated with honey.

2. That the practice of adulterating honey heretofore placed upon the market as "strained" honey, has worked to the detriment of all honest honey-producers, and thrown great discredit upon our product

3. That we demand a stringent law be passed by the general Congress of the United States, impos-

ing heavy penalties, or making it a criminal offense to so adulterate, or vend adulterated honey.

Mr. D. A. Jones presented the Society with a Cyprian queen; to be placed in charge of C. F. Muth, the bees to be tested by him for superiority, and a report to be made.

A vote of thanks was given to Mr. D. A. Jones and Frank Benton for their explorations in the Island of Cyprus and the Holy Land in search of better races of bees.

M. Hayes, of Ohio, offered the following resolutions, which were unanimously adopted:

Resolved, By the North American Bee-Keepers' Society in convention assembled, that the importation of pure Italian, Cyprian, and Holy Land bees into North America, ought to be encouraged for the sole purpose of adding new and different strains of blood to that we already have.

2. That the strain of Italian blood we now have has reached a higher standard of excellence than is to be found in the native home of the Italian.

3. That queens reared from pure selected home-bred Italian mothers, should command at least as high a market value as those bred from imported mothers, where pure Italian stock is the sole object desired.

Prof. Cook, who was appointed at the meeting at Chicago to wait on the Postmaster General to secure the use of the United States mails for the transmission of bees (and the Hon. Edwin Willetts who nobly assisted him in his mission), received a vote of thanks for their successful undertaking.

C. H. Deane, of Kentucky, offered the following resolution, which was adopted unanimously:

Resolved, That all bee-keepers in this Convention, who feel competent, are hereby requested to write for their local papers on the subject of bee-keeping.

Adjourned to meet in Lexington, Ky., on Oct. 5, 1881.

On the third day, those who could make it convenient to remain, went in a body to the residence of Mr. J. S. Hill, at Mount Healthy, O., about ten miles from Cincinnati, and spent the day with that veteran apiarist, examining his apiary and implements, and hearing him describe his management.

The Twelfth Annual Convention

convened in Lexington, Ky., on Oct. 5, 1881. President N. P. Allen, in his annual address, earnestly recommended the Convention to take steps to make the Society a representative body, by obtaining delegates from State apiarian societies or District associations.

The Treasurer reported a balance of $33 60 in the Treasury.

The statistics obtained at this meeting were only partial. Those present reported 1,499 colonies in the spring; increased to 2,700; extracted honey, 67,632 pounds; comb honey, 5,005 pounds.

The fertilization of queens in confinement was discussed, and Dr. J. P. H. Brown, Prof. Cook, G. W. Demaree, D. A. Jones, and Prof. Hasbrouck were appointed a special committee to make further experiments and report results at the next meeting.

The election of officers for the ensuing year resulted as follows: President, Prof. Cook; recording secretary, Dr. E. Parmly; corresponding secretary, C. F. Muth; Treasurer, Mrs. Dunham. Vice-presidents were elected for 35 States and provinces.

Ex-president Newman having been delayed by the trains missing connection, a committee of reception was appointed to meet him at the depot. "Dr. L. E. Brown, of Kentucky, alluded to the eminent services of Mr. Newman to further the cause of apiculture in North America," and said that "to his labors, more than those of any other, could the North American Bee-Keepers' Society attribute its success, and that he had done more than any man living to create a market for honey, and to make it a marketable commodity." He moved that the convention receive their guest standing. On his arrival Dr. N. P. Allen moved "that a recess of ten minutes be taken to allow the members to greet him," which was carried unanimously.

Resolutions were adopted, as follows:

"*Resolved*, That the President and Secretary be empowered to issue life-membership certificates to all bee-keepers they may approve, upon the reception of a fee of $10 for such membership, without further annual dues.

"*Resolved*, That the Vice-Presidents be especially instructed to appoint suitable persons in the prominent towns of their respective States to encourage exhibits of honey, bees, etc., at the local fairs, and to secure the offering of suitable premiums for the same.

"*Resolved*, That a committee be appointed to prepare a pamphlet containing statistics of the honey crop, and general information about exhibits of bees, honey and apicultural implements at fairs and expositions, and advice about the best way of conducting the same; said pamphlets to be supplied to the Vice-Presidents and others, and that the committee have power to draw on the Treasurer of this Society for all necessary expenses.

"*Resolved*, That the thanks of this Convention are tendered Mr. D. A. Jones, of Ontario, for the valuable information he has so freely imparted, and the interest he has awakened in the present and former meetings by giving his experience and views on so large a range of topics."

D. A. Jones and T. G. Newman paid $10 each, for life-membership in the Society.

President Cook gave an eloquent tribute to "the Rev. L. L. Langstroth, the inventor of the movable-frame hive."

The following essays were read, followed by discussion: The new races of bees, by Prof. Cook; can honey be made a staple product? by C. C. Coffinberry; in-and-in breeding, by P. P. Collier; prevention of swarming, by C. P. Dadant; obstacles to progressive bee-culture, by G. W. Demaree; influence of honey on wintering bees, by Chas. Dadant; swarms vs. comb honey, by Dr. C. C. Miller; how to make bee-keeping pay, by Dr. E. Drane; wintering bees in Texas, by Dr. W. R. Howard; causes of winter losses of bees, by A. J. King; wintering bees, by C. F. Muth; diseases of bees, by W. Thomas; cultivation of honey-plants, by W. T. Stewart; Albino bees, by D. A. Pike; bee-keeping as a means of support, by W. J. Davis; stepping-stones towards apicultural perfection, by Thomas G. Newman; a partial review, by T. F. Bingham; bee-keeping for women, by Mrs. L. Harrison; foul brood, by C. F. Muth; Cyprian bees, by Rev. A. Salisbury; progressive bee-culture, by Rev. L. Johnson; wintering bees in clamps, by C. J. Robinson; origin of our present races of bees, by E. E. Hasty.

Adjourned to meet in Cincinnati, O., on Oct. 3, 1882.

The Thirteenth Annual Convention

convened at Cincinnati, O., on Oct. 3, 1882. President A. J. Cook called the meeting to order at 9:30 a.m. The Secretary being absent, A. I. Root was appointed secretary, pro tem. President Cook delivered the annual address, and after selecting Toronto, Canada, as the next place of meeting, D. A. Jones was elected President, A. I. Root, Secretary, and C. F. Muth, Treasurer. Vice-presidents were appointed for 24 States.

Dr. Parmly, of New York, sent a check of $50 as a nucleus for a Langstroth fund, which those present increased to over $100.

The statistics of this meeting were as follows: 3,087 colonies in the spring, increased to 4,748; comb honey 47,451 pounds; extracted honey, 99,808 pounds.

The essays were: Experiments with bees, by Prof. Cook; bee-culture in Texas, by Dr. J. E. Lay; chaff hives, by O. O. Poppleton; advancing the science of apiculture, by J. E. Pond, Jr.; honey-plants and their culture, by A. I. Root; honey-plants of Canada, by D. A. Jones; obtaining queen-cells for nuclei, by P. L. Viallon; rearing queens, by Dr. J. P. H. Brown; courtesy in journalism, by A. I. Root; control of fertilization, by G. W. Demaree; experiments of comb-building, by P. L. Viallon; foul brood, by D. A. Jones and C. F. Muth; comb vs. extracted honey, by Dr. Miller; bee-management, J. M. Hicks.

Adjourned to meet at Toronto, Canada, on Sept. 18, 1883.

The Fourteenth Annual Convention

assembled at Toronto, Canada, on Sept. 18, 1883, President Jones in the chair, who gave an Address of Welcome, it being the first time that the North American Society had assembled on Canadian soil.

When the Rev. L. L. Langstroth arrived he was received with a rising expression of welcome, and conducted to the Mayor's chair as a token of respect, amid loud and prolonged cheers. He gave an interesting account of his early mistakes and difficulties, and of the invention of the movable-frame hive, and added greatly to the interest and enthusiasm of the meeting.

The election of officers for the ensuing year resulted as follows: President, Rev. L. L. Langstroth; First Vice-president, L. C. Root; Secretary, Dr. Miller; Treasurer, C. F. Muth. Vice-presidents for several States and provinces were also elected.

The following topics were discussed, (there being only one essay presented, and that was on teaching bee-culture in Agricultural colleges, by Rev. W. F. Clarke): comb foundation; laying workers; size of sections for comb honey; getting bees out of sections; ripening honey; when to make increase; hives for extracting honey; bee-veils; obtaining statistics; clipping queens's wings; superseding queens; feeding bees; rendering wax; preserving combs from the moth; temperature in winter repositories, and wintering bees; barrels for shipping honey; granulation of honey; introducing queens, etc.

A well-filled purse was presented to the Rev. L. L. Langstroth. Adjourned to meet in Rochester, N. Y., on Oct. 28, 1884.

The Fifteenth Annual Convention

assembled at Rochester, N. Y., at 2 p.m., on Oct. 28, 1884, Vice-president L. C. Root in the chair, who gave an interesting Address of Welcome, in the absence of President Langstroth, who was detained at home by his old malady.

In the absence of the Secretary and Treasurer, C. F. Benedict was appointed secretary pro tem, and R. Bacon, treasurer pro tem. The Report reads as follows:

A call was made for the minutes of the last meeting, which led to explanations to the effect that no official report had appeared, and that the only one available was the report which was published in the AMERICAN BEE JOURNAL. It was further stated that a report was in existence in short-hand, made by a phonographer who was engaged by Mr. D. A. Jones, the ex-President, for the sum of $100; but that owing to some misunderstanding, the report had never been completed in long-hand, the reporter considering that he had a claim on the Society for compensation, and the probability was that more would be heard about the matter at a later stage of the meeting.

The President then produced the AMERICAN BEE JOURNAL's report, and asked if it was the pleasure of the meeting to have that read by the Secretary, as the minutes of the last meeting. No motion being made on the subject, the Secretary proceeded to read the AMERICAN BEE JOURNAL's editorial summing up of last year's meeting.

Further on, the Report says:

The question of the bill of the stenographic reporter, who took the minutes of the last Convention, was brought up and referred to a committee consisting of Messrs. Pettit, Pierce, J. Van Deusen, W. F. Clarke, and W. E. Clark.

The committee reported as follows:

The committee on Mr. Bengough's claim on the Society for short-hand reporting at the last meeting, recommended settlement on Mr. Bengough's proposition submitted through Wm. F. Clarke, offering to take $25 for work already done, and hand over the short-hand notes to the Secretary of the Society, to be put on file. The report was adopted.

A motion was then made to reduce the membership fee of the Society from $1 to 50 cents; but on a question being raised as to the constitutionality of the motion, there being no copy of the Constitution at hand, the matter was laid on the table, to be considered later on.

The Report records the following:

A motion was made by W. E. Clark, and seconded by S. T. Pettit, that a committee of five be appointed by the chairman to consider what modifications, if any, should be made in the National Society.

Rev. Wm. F. Clarke, of Ontario, spoke at some length on this resolution. He said that he was the only member present who was at the organization of the Society, and claimed the indulgence of the meeting in a brief review of its history. It was first intended to call the Society by the name "National," but at his request it was called "North American," so as to include Canada. It was often called the "National Society," but it would be more proper to call it the "Inter-National," for such was its real character, and such he hoped it would continue. At the inception of the Society, there was a ring or clique among bee-keepers, which the organization was the means of

breaking up, and he boldly affirmed that there had never been a ring or clique managing the Society. Some appeared to think that the Society had had its day, and that there were those who wished to split it into three fragments, the Northeastern, the Northwestern, and the Southern; personally, he hoped that this would not be done. It was true that the constituency was a vast one, and we usually had a large local attendance, with but a small distant representation. But there was a prestige about a Continental body which gave it a good influence, and rendered its meetings important. It was an educating power wherever held. He would deprecate a division of the Society into three, mainly because it would destroy its international character. Canada and the United States had been happily united in this apicultural fellowship, and he hoped that it would continue. He had no doubt that the Society might be modified and improved in various respects, but he would not like to see it broken up.

Mr. Clarke's remarks were well received, and several members expressed concurrence in the opinion that the integrity of the Society should be maintained, and that it should continue to embrace both Canada and the United States. The resolution was unanimously passed, and the President appointed the following committee: Ira Barber, Wm. F. Clarke, W. E. Clark, Arthur Todd, and J. Van Deusen.

The Report continues to read thus:

The committee on revision of the Constitution, on consultation with Mr. Betsinger, who was present at the meeting held in Philadelphia in 1876, find that the North American Bee-Keepers' Society should be composed of delegates from all the local societies throughout North America. They would, therefore, recommend and urge that the local societies do carry out this feature, and send delegates to the meeting of this Society at Detroit, in 1885. The local societies will please correspond with the executive committee in reference to this matter.

On motion, the report was received, and a discussion on it sprung up. The fear was expressed that this action might discourage personal attendance at future meetings. It was also urged that if the Society became representative, a much larger attendance might be expected.

On mailing queens, the Report says:

The committee on programme reported recommending the reading of a communication to the Convention, from Mr. Frank Benton, accompanying a sample of his queen shipping-cages, to be followed by a discussion on sending queens by mail. On assent being given to the report, the Secretary read Mr. Benton's essay, after which a number of members spoke on the subject, all expressing their appreciation of Mr. Benton's efforts and success. Among these was Mr. Peet, originator of the queen shipping-cage which bears his name, who spoke highly in praise of Mr. Benton's device. Mr. W. F. Clarke prepared a resolution, which, at his suggestion, was moved by Mr. Peet and seconded by its author. After some highly appreciative remarks by the President and others, the resolution passed unanimously. It reads as follows:

Resolved, That we have listened with much pleasure to Mr. Benton's essay, and have inspected his sample cage; rejoice in his success in mailing queens to long distances, and we tender him our sincere thanks.

The election of officers for the ensuing year resulted as follows: President, L. Root; First Vice-president, H. D. Cutting; Secretary, W. Z. Hutchinson; Treasurer, C. F. Muth. Vice-presidents for 22 States and provinces were elected.

It was voted that a committee be appointed by the President to fill vacancies in the list of Vice-Presidents. The following were so nominated: Messrs. Peet, Vandervort, and C. C. Van Deusen.

It was moved by Wm. F. Clarke, seconded by J. B. Hall, and unanimously

Resolved, That the President, First Vice-President, Secretary, Treasurer, Miss Lucy A. Wilkins (Cyula Linswik), of Farwell, Mich., and A. B. Weed, of Detroit, be the executive committee for the ensuing year.

The programme committee reported the subject of bee-literature for discussion. Many things "wise and otherwise" were said, and finally it was

Resolved, That, while by no means disparaging the value and usefulness of other bee-papers, we as bee-keepers in convention assembled recognize in the *American Apiculturist* a paper worthy of our support, and would recommend it to the bee-keepers as one of the best bee-periodicals published in the interest of bee-keeping.

The question was asked, whether any official report of this meeting would be published? President Root stated that the AMERICAN BEE JOURNAL had made arrangements to give a full report, and he presumed that Mr. Locke would have a report in his paper. It was not the intention to get out a report at the expense of the Society, but the Secretary of this meeting, Mr. Benedict, would write out the minutes which he had made, and transmit them to the newly appointed Secretary, who would produce them for reference at the Detroit meeting.

Mr. Clarke, of Ontario, said that this would entail a considerable amount of afterwork upon Mr. Benedict, which it was not fair for us to expect him to do for nothing. He, therefore, moved that the Secretary be allowed $20 for his services. The motion was seconded and carried unanimously.

The questions discussed were: prevention of swarming; use of comb foundation in surplus honey; marketing extracted honey; reversible frames, etc.

Thomas G. Newman sent a letter to the Convention asking that a committee be appointed to demand of the railroad companies a revised classification of bees, honey, wax, etc. This brought out considerable discussion. President Root remarked that he believed that the point made by Mr. Newman, regarding railroad freights, was well taken, and that a committee be appointed as suggested.

Mr. Bacon moved the appointment of a committee of three to consult with the railroad authorities regarding rates. It was agreed to leave it to the Vice-presidents of the Society.

The following essays were read and discussed: Hibernation theory, by Rev. W. F. Clarke; comb foundation, by C. Van Deusen; foul brood, by D. A. Jones.

President Root gave a brief address expressive of his satisfaction at the success of the meeting. Though it was not so large as usual, owing to the absence of the Western brethren, it had been most harmonious, and there had been many interesting and useful discussions. He hoped that there would be a general rally at Detroit, next year.

Adjourned to meet at Detroit, Mich., on Dec. 8, 1885.

THE REPORT OF THE PROCEEDINGS

OF THE

SIXTEENTH ANNUAL CONVENTION

OF

THE NORTH-AMERICAN BEE-KEEPERS' SOCIETY,

HELD AT DETROIT, MICH., ON DEC. 8-10, 1885.

The Sixteenth Annual Convention of the North American Bee-Keepers' Society met at Detroit, Mich., on Tuesday, Dec. 8, at 10 a.m., President L. C. Root in the chair. Quite a large number of bee-keepers were present from 10 States and Canada; all were very enthusiastic, and as "sweet as honey."

After an impressive invocation by the Rev. L. L. Langstroth, the Secretary called the roll of members for last year. Those present paid their dues and received their badges, among them being six ex-presidents of the Society.

The following were duly recorded as members for the present year:

G. A. Adams, Perrysburg, O.
J. H. Andrus, Almont, Mich.
Geo. H. Ashby, Albion, N. Y.
H. J. Ashley, M. D., Machias, N. Y.
C. S. Avery, Millard, Neb.
Richard Bangham, Windsor, Ont.
Ira Barber, De Kalb Junction, N. Y.
O. J. Bedell, Kawkawlin, Mich.
A. D. Benham, Olivet, Mich.
E. Berkey, Savannah, O.
H. R. Boardman, East Townsend, O.
Sam'l H. Bolton, Benton, O.
F. C. Burmaster, Irving, N. Y.
W. H. Burr, Detroit, Mich.
Mrs. V. E. Burton, Detroit, Mich.
Hiram Chapman, Versailles, N. Y.
A. B. Cheney, Sparta, Mich.
L. T. Christiancy, Toledo, O.
F. S. Clark, Bowling Green, O.
W. E. Clark, Oriskany, N. Y.
Rev. W. F. Clarke, Guelph, Ont.
F. S. Comstock, North Manchester, Ind.
B. F. Conley, Brighton, Mich.
A. J. Cook, Agricultural College, Mich.
E. J. Cook, Owasso, Mich.
Henry Cripe, North Manchester, Ind.
H. D. Cutting, Clinton, Mich.
C. P. Dadant, Hamilton, Ills.
G. M. Doolittle, Borodino, N. Y.
Frank A. Eaton, Bluffton, O.
Will Ellis, St. Davids, Ont.
Martin Emigh, Holbrook, Ont.
Jas. Forncrook, Watertown, Wis.
A. M. Gander, Adrian, Mich.
F. A. Gemmill, Stratford, Ont.
H. C. Gibson, Burr Oak, Mich.
Geo. B. Goodell, McGee's Corners, N. Y.
John G. Gray, St. Catherines, Ont.
A. W. Greene, Florence, Ont.
J. B. Hall, Woodstock, Ont.
Benj. Harding, Kent, O.
Mrs. L. Harrison, Peoria, Ills.
M. Higgins, Windsor, Ont.
Geo. E. Hilton, Freemont, Mich.
E. L. Hubbard, Water Valley, N. Y.
M. H. Hunt, Bell Branch, Mich.
H. F. Hunt, Villa Mastai, Quebec.
W. Z. Hutchinson, Rogersville, Mich.
C. R. Isham, Peoria, N. Y.
D. A. Jones, Beeton, Ont.
August Keoffen, Flint, Mich.
A. W. Kistenbroker, Oak Park, Ills.
Otto Kleinow, Detroit, Mich.
Rev. L. L. Langstroth, Oxford, O.
Silas M. Locke, Wenham, Mass.
N. W. McLain, Aurora, Ills.
James McNeill, Hudson, N. Y.
J. J. McWhorter, South Lyon, Mich.
A. E. Manum, Bristol, Vt.
J. J. Martin, North Manchester, Ind.
Dr. A. B. Mason, Wagon Works, O.
D. F. Moe, Parma, Mich.
Elias Mott, Norwich, Ont.
C. F. Muth, Cincinnati, O.
Thomas G. Newman, Chicago, Ills.
S. F. Newman, Norwalk, O.
Geo. A. Ouram, Berlin Hoights, O.
S. T. Pettit, Belmont, Ont.
Thos. Pierce, Gansevoort, N. Y.
P. M. Puhl, South Toledo, O.
John Rey, East Saginaw, Mich.
M. G. Reynolds, Williamsburg, Ind.
J. A. Robison, Findlay, O.
L. C. Root, Mohawk, N. Y.
C. M. Ruland, Rockton, Ills.
George Schook, Three Rivers, Mich.
C. W. Shepard, Le Roy, N. Y.
Geo. Smith, Amadore, Mich.
G. W. Stanley, Wyoming, N. Y.
James P. Sterritt, Sheakleyville, Pa.
R. L. Taylor, Lapeer, Mich.
Mrs. R. L. Taylor, Lapeer, Mich.
F. J. Temple, Ridgeway, Mich.
E. W. Thompson, Hinsdale, N. Y.
N. O. Thompson, Cold Water, Mich.
W. O. Titus, Toledo, O.
James Ure, East Saginaw, Mich.
J. Vandervort, Laceyville, Pa.
J. Van Deusen, Sprout Brook, N. Y.
T. L. Von Dorn, Omaha, Neb.
E. Walker, Berlin Heights, O.
Byron O. Walker, Capac, Mich.
Mrs. Byron Walker, Capac, Mich.
H. L. Wells, Defiance, O.
W. C. Wells, Phillipston, Ont.
M. S. West, Flint, Mich.
L. C. Whiting, East Saginaw, Mich.
Edwin Willetts, Agricultural Coll., Mich.
Wm. Wilson, Burr Oak, Mich.
A. D. Wood, Rives Junction, Mich.
L. C. Woodman, Grand Rapids, Mich.
Mrs. L. C. Woodman, Grand Rapids, Mich.
M. D. York, Millington, Mich.

The Treasurer reported $48.90 in the treasury. It was voted to omit the reading of the minutes of the last meeting, as they had been published

in all the bee-papers, and it was not necessary to lose time in reading them.

Reports from Vice Presidents were called for, and some were read; others were not ready and asked for more time. They will appear hereafter.

The Rev. L. L. Langstroth was called upon for a speech, and upon arising he was greeted with a storm of applause. He gave a very interesting account of the rise of modern bee-culture in this country, and of the invention of the movable-frame hive. He spoke with much feeling of the help he had received in introducing his hive, from such men as Mr. Quinby; gave many amusing and interesting anecdotes of his childhood, which showed his love of insects; and told how he had built ants' nests, and fed the ants bread and meat. Instead of encouragements his parents and teachers scolded and shut him in a dark closet. He had no books treating of bees, and received his knowledge of them by observation. He had driven bees from box-hives by putting the hives into tubs and gradually filling the tubs with water. He gave a long and interesting account of the invention of the movable-comb hive. The times were ripe for the invention, and had not he (Langstroth) invented it, some one else would probably have soon done so. He showed how nearly he had come to inventing the honey-extractor. To kill drone-larvæ he had poured water into the cells, allowed it to remain until the larvæ were dead, then removed the contents of the cells, by swinging the combs around. He had the idea, but did not think of the practical connections between it and the extracting of honey, and all honor should be given to the man who did think of it. Mr. Langstroth had never made any money from his invention, but he felt more than repaid in what was of far greater value, viz., the *good-will* of bee-keepers.

Pres. Root appointed the following committees:

On Finance.—G. M. Doolittle, W. F. Clarke, and Prof. A. J. Cook.

On Statistics.—Thos. G. Newman, D. A. Jones, and Silas M. Locke.

On Resolutions.—Prof. A. J. Cook, W. F. Clarke, and R. L. Taylor.

On Exhibits.—Dr. A. B. Mason, J. B. Hall, and G. M. Doolittle.

Prof. Cook suggested that a birthday present be purchased for Mr. A. I. Root, by his friends contributing 10 cents each. He was expected the next day, which was his birthday.

He also suggested that a purse be made up to buy a present for Mrs. Quinby, consisting of a portrait of her late husband, whom we all delight to honor.

Thereupon the meeting adjourned until 2 p.m.

AFTERNOON SESSION.

Pres. Root called the meeting to order at 2 p.m., and announced that the first business would be the address of welcome by Hon. Edwin Willetts, President of the Michigan Agricultural College. President Willetts, on arising, was greeted with enthusiastic applause. His address was as follows:

ADDRESS OF WELCOME.

MR. PRESIDENT, LADIES AND GENTLEMEN:—It becomes my duty, and it is a pleasure, to welcome you to the State of Michigan. I know of no reason why I should be asked to do so, save, perhaps, because for fifty years I have been a citizen of the State, and at present represent the Michigan Agricultural College, which institution makes a specialty in bee-culture and instruction in the habits and propagation of bees.

We have those present who can more fitly represent that feature of the institution than myself, but neither they nor any one else can welcome you to our State with a more hearty greeting than can I. We are glad to see you in our midst. There is a growing interest here in the industry that you represent to-day. Michigan easily ranks high in the production of honey. The breezes are tempered by our inland seas, and our soil is generous in foliage and flowers. We are strangers to extreme drouths and pestilential moisture. We are not in the path of the blizzard or the tornado. Nearly every foot of land in our Southern Peninsula takes kindly to the plowshare, and rejoices in a fertility that responds heartily to the demands of the husbandman. We are a busy people, in busy homes, and we harmonize easily with the "busy bee." We understand each other—we and the bees—and each pursue our vocations without antagonism. Hence there is room for both, without hostility and mutual profit; and all we need is the dissemination of such information as you can give, to lead us to a more general pursuit of your industry.

We shall expect an impulse in that direction as the result of your deliberations. You represent no mean vocation. Ever since and before Jacob sent as a present to propitiate the hard master in Egypt, a little balm, and a little honey, spices and myrrh; ever since Columella wrote, and Virgil and Horace sang, the sweet elixir has tempted the palate of mankind. There is no substitute for it; the analysis of the chemist is unable to produce it; man cannot make it, or grow it, or rectify it, and till Millennium's dawn it will be nectar to men and gods.

Yours is no insignificant industry. You represent 3,000,000 colonies of bees, with an annual product of surplus honey of 100,000,000 pounds. Under the impulse of this and kindred associations, the product is increasing annually. The cheap sugar of to-day has no perceptible influence upon the demand or the price of the commodity. As the country increases in wealth and luxury, the demand grows with its growth, and increases with the means to gratify the appetite. The best minds in the field of science have contributed to the more successful promotion of the industry. Aristotle, Virgil, Columella, Pliny, Swammerdam, Ray, Latreille, and a host of others, ancient and modern—not to forget Langstroth, Cook, Quinby, Root, and others of our day—have studied, observed, experimented and written about bees and their habits, till we know how best to rear them, and how best to utilize their harvest of sweetness; so that to use the words of a learned Judge of one of our Courts, who said. "In modern days the bee has become almost as completely domesticated as the ox or the cow. Its habits and and its instincts have been studied, so that it can be controlled with nearly as much certainty as any of the domestic animals."

You have almost taken it out of the class *ferœ naturœ*. The propensity to mischief has been so diminished, that serious injury is almost as rare from a bee as from the horse, and far less than from the dog. The Courts take kindly to the bee. They look with favor upon animals or insects that are useful to man; with disfavor upon such as are purely noxious or useless. There is no question of the utility of bees. I note this fact, as I observe a little apprehension among apiarists, about the attitude of Courts occasionally, and the fear that there may grow up some legal limitation or liability that shall destroy your industry. Bees were here before Courts or juries, and they have the right of way, and will keep it so long as their product is desirable. The recent case that has caused some apprehension, will be found, I hope, to be based upon an utter misconception of the bee and its habits. It will be found, I have no doubt, that a sound grape is absolutely armor-proof to the attack of the bee. It is only when the armor is broken that the attack is made. A grape with a broken shell is practically valueless—worthless, except for the wine-press; and for one, I frankly say, gentlemen, that as between the wine-press and the bee—as between alcohol and honey—I am for the bee and for the honey, and I believe the Courts will give the bee the case.

But, gentlemen, I am not here to keep you from your deliberations. I again welcome you to Michigan, and trust that your stay with us shall be so pleasant that your recollection of it shall be a life-long joy.

Pres. Root said that he strongly advocated the location of this meeting at Detroit, and he was fully satisfied that there was wisdom in the choice. He had always been much interested in Michigan bee-keepers, and was very glad to meet with so many of them here. The matter of defense of our rights as bee-keepers had been mentioned by Pres. Willetts, and he was much in favor of unitedly defending our rights. As Mr. T. G. Newman is the General Manager of the Bee-Keepers' Union, an organization created for this purpose, he would call upon Mr. Newman to make a statement concerning what had been done, and what was expected to be done in the future, by the organization of which he was manager. Mr. T. G. Newman then delivered the following address, on the

NATIONAL BEE-KEEPERS' UNION.

Mr. President, Ladies and Gentlemen—

During the past year it has become necessary to form a Bee-Keepers' Union. As this society is a Continental one, it would seem to be appropriate that some notice should be taken of it by this Convention. With your permission I will state a few facts, and leave it to those present to say whether the work of the Union shall be approved by them or not.

Last June Mr. S. I. Freeborn, an extensive apiarist of Wisconsin, was sued by a neighbor, who kept a flock of sheep, for alleged annoyance to his sheep by trespassing bees.

It was understood that this was to be a "test case," and if the plaintiff succeeded in obtaining a verdict in his favor, either by the ignorance or prejudice of a jury, other bee-keepers would be likely to be sued to recover damages done to pastures, vineyards, and gardens by bees; and any one owning a few square rods of land, devoted to almost any purpose, may try to recover damages from all the owners of bees in the vicinity.

Mr. James Heddon suggested the formation of a Bee-Keepers' Union in defense of their rights, and to protect their interests. Such a Union was formed, and officers elected as follows:

President—James Heddon.
Five Vice-Presidents—G. M. Doolittle, G. W. Demaree, A. I. Root, Prof. A. J. Cook, Dr. C. C. Miller.
Manager, Sec'y & Treas.—T. G. Newman.

The officers were made an Advisory Board, with full power to act.

This Union, as soon as organized, employed attorneys, obtained "opinions of law" from bee-keepers who were also attorneys, and made *such a stir* in the sheep-bees case, showing such fighting enthusiasm, that the Judge made a thorough examination of the laws of the State, and concluded that their existed no laws or rulings upon which he could instruct the jury; and bee-keepers have cause for *pride* in the success that attended their efforts in this matter.

In California a suit has been tried in a Justice's Court against Mr. Bohn for alleged damage done to grapes by his bees. This suit was lost in the lower Court, because witnesses were obtained who testified that they had seen the perforation and destruction of the grapes done by Mr. Bohn's bees. In vain did the defendant's attorneys prove by a score of witnesses that the bee's tongue could only be used to extract sweets from the flowers—not to bore after them. The evidence of the eye-witnesses of the plaintiffs had weight with the jury, and they accordingly returned a verdict against the defendant for $75 and costs of suit, which amount to over $60. The damages claimed were $299.

The National Bee-Keepers' Union advised Mr. Bohn to appeal from the decision of the Justice's Court, and assured him that the Union would stand by him, and aid in the appeal by sending money, obtaining legal advice, depositions from scientific experts as to the incapability of bees to puncture grapes, etc. The appeal has been taken, and our California brethren are now busily at work getting members for the Union there.

A California apiarist says: "If it goes against us in the higher Court, there will be no end of the trouble that will arise, and our bee-industry will receive a death-blow in Southern California."

An apiarist in Anaheim, Calif., had the fence around his apiary torn down, all his bees killed by sulphur, the hives piled up under a valuable pepper-tree and consumed by fire. Another apiarist was threatened with hanging—all because some fruit-growers had moved into the neighborhood after his apiary had been established several years, and they wanted to compel him to move away with his bees.

As a Continental body of apiarists, have you no word of encouragement for an organization created for the purpose of defending the rights and protecting the interests of the bee-keepers of America? Do you say: "Let us co-operate, and, if necessary, maintain our rights as bee-keepers in the highest courts of the land?" That can be done only by having sufficient money to defray the expenses, and such are usually very high. To be sure, it will be a small matter, if all will bear their part of the burden. One thousand dollars of expenses when divided between 1,000 persons, is only a dollar for each, and can easily be borne; but when one has to pay it all, it becomes a heavy burden; and, to many, one that would be impossible to bear. United effort is essential to successfully defend our chosen pursuit!

The National Bee-Keepers' Union needs strong hearts, willing hands, and many shekels. Are you willing to help? Is your name enrolled among the "National Guards." If not, lose no time in becoming a member, and thus help to fight the battles of our pursuit in defense of its rights! If we can raise a column of patriots sufficiently strong to present a formidable front, we shall *dare* the envious ones to "bring on their lawsuits," and by "an imposing array" and "unbroken front," gain a lasting and permanent victory!

Chicago, Ills.

Mr. S. T. Pettit said that it was necessary to band together to defend ourselves.

Rev. W. F. Clarke said, "United we stand." He would prefer to have the National Bee-Keepers' Union consolidated with the North American Bee-Keepers' Society if it was pos-

sible. He was one of the first in Canada to join the Union, and said that if it is not consolidated, we must co-operate with the Union in the most decided way.

Mr. W. E. Clark said he agreed with the last speaker—if it can be done, he was in favor of consolidation.

Mr. C. R. Isham said that the great fight for the Union was to be fought in California in the raisin district. We must sustain the Union, and defend our pursuit.

Mr. T. L. Von Dorn said that the bee-keepers of Lower California were in danger of being entirely driven out by the raisin-growers.

Mr. C. F. Muth remarked that the matter was one for the Courts to decide—not that of one pursuit against another.

Prof. A. J. Cook said that it was a case of bee-keepers and fruit-growers on one side, and ignorance on the other. The bees are the best friends to fruit-growers, to fertilize the flowers, and thereby produce the fruit. In the spring when there are but few insects to fertilize the flowers, the bees are very valuable.

Mr. H. R. Boardman advised conciliation, when there are complaints against bees by fruit-growers and others. A crate of honey given to such complainants, will do much to cause them to feel differently.

Rev. W. F. Clarke said that in Court, a crate of honey would do no good—law must decide the case. He then offered the following resolution:

Resolved, That a committee of seven be appointed to consider and report upon the best methods of protecting the interests of bee-keeping from legal attack prompted by ignorance.

The resolution passed, and the committee was appointed as follows: W. F. Clarke, T. G. Newman, W. E. Clark. James Heddon, C. F. Muth, S. T. Pettit, and Prof. A. J. Cook.

PRESIDENT'S ANNUAL ADDRESS.

BROTHER BEE-KEEPERS OF NORTH AMERICA:—We have assembled here at our annual convention to consider that which pertains to the best interests of our pursuit. I shall not occupy your time with an exhaustive address, for the programme is full, and very complete, and our time is short at best to consider the many important subjects which will be presented. I am here as a member of this Society to assist as best I may in throwing light upon the topics brought before us. I take it as an expression of good-cheer and great generosity in those who have arranged the preliminaries for these meetings, that everything for the comfort of us all has been so amply provided, and that all arrangements are so thorough and complete. Let us see to it that we endeavor to perform our part in as faithful and unselfish a manner as our Committee has done.

We have reached a crisis in the history of bee-keeping which must be met by those who are interested in the pursuit, in a broad, honest, and unselfish way. Every well-informed bee-keeper is reminded in the most unmistakable manner that the time when large profits may be realized from keeping bees, has passed. Each year, the prices of our products have been reduced, until at the present time we find many of our markets overstocked, and our honey selling at rates which allow us little profit for producing it. These are stern facts which must be fairly met. It is not my purpose to attempt to instruct those who are already experts in the business. Their lessons have been taught them by dearly bought experience, the results of which are due to the beginner, and to those whose experience has been more limited.

We have passed through a period of great enthusiasm, and have indulged in much that has been unwarranted and injudicious. We have been far too selfish. As supply-dealers and publishers of bee-literature, we have been far too anxious to present the bright side of our callling. If we have been unwise in the past, we should be thankful that by the light of these past experiences we are able to see more clearly our way for the future. Many years ago, beginners were heard to ask if it were advisable to engage in bee-keeping as an exclusive business. The answer should have been then as now—"Commence moderately, and let experience decide as you advance." The real question now seems to be, "Shall we commence at all?" or "Shall those of us who are already engaged in it, continue?"

In answer to such questions I would offer the following suggestions: 1. Our calling is an honorable one, and is an essential branch of agriculture, in that the honey-bee is indispensable to the fertilization necessary in the vegetable kingdom. Wherever civilization advances, there the honey-bee is found. 2. Honey is a wholesome and desirable article of food. 3. It is furnished to us at our very doors, and if we fail to preserve it,

the odor of wasting sweetness constantly reminds us of our neglect and loss.

With these points in view, is it not evident that a great work is to be accomplished in applying the lessons of economy and industry taught us by the bees themselves, to the accumulation of this freely-given production in the most desirable and profitable way?

We have been extravagant in many of our expenditures. These we must endeavor to reduce, to correspond as much as possible with the reduction in prices. We have incurred a large expense by the great amount of labor which we have required in unnecessary manipulation. In this I anticipate a change as we advance, which will result not only in economy of time and labor, but also in avoiding many serious consequences. It is evident that we yet need much light upon many of the simple and practical, as well as on the scientific phases of our calling. With every advance made in apiculture, it becomes more apparent that there are new fields of investigation and research, which promise to yield information, and are destined to work marked changes in our methods of managing bees. Only those will succeed who are willing to practice the most rigid economy, and who will be satisfied with moderate pay for honest work performed.

It is evident that the effort has been too much in the direction of increasing the production, rather than to create a corresponding demand for the same. I think I am safe in the assertion that no effort of ours is needed which shall tend to an increased production of honey for our present, general, overstocked market. Last season extracted honey was shipped to New York from California by car-loads. The market was already overtocked with the best grades of Eastern honey, and the result was such that California bee-keepers will hardly care for a repetition of the experience. The present season has afforded another illustration. Honey has been shipped very largely from the Eastern and Middle States to New York, and the outcome of this has been that the choicest white honey in sections has sold at ruinously low rates, and some of it has actually been returned to grocers in our own vicinity. By these methods we practically establish these unprofitable prices ourselves.

The resource seems to be that we must enlarge our field of consumption. This can be done by each bee-keeper, by encouraging home consumption in his own immediate vicinity, and also by opening up new avenues for the uses of honey. A demand thus created would measurably relieve the overburdened city markets; and in this way we would be able in some degree to maintain reasonable prices. With the present facilities for disposing of our products, it is difficut to avoid the conclusion that there is an over-production. Whether this will grow to become a positive fact, or whether bee-keepers will succeed in causing the demand to keep pace with their success in producing, is the problem to be solved in the near future.

Much will depend upon the answer to still greater questions which are agitating the best minds of the day. If the thousands of dollars which are annually spent in nearly every community for that which tends to degrade, and to the production of evil, could be turned to the purchase of that which is wholesome and beneficial, the danger of over-production in this, as in other useful callings, would be little to be feared. My faith in the fact that in the end the right will prevail, leads me to the conclusion that any calling which presents such a wide field for the intelligent and patient worker, and student of nature, and which is so productive of a harvest of good, must always command those who will find it pleasant and profitable to continue in the work until the harvest is complete.

Mr. C. F. Muth remarked that in New York they principally demanded honey in glassed sections or in paper-boxes. In the West, such are unsalable. We, here, require it in unglassed sections with the crates glassed.

Mr. C. R. Isham said that our honey-producers can sell all their honey in glassed sections, and it is desirable to do so in order to preserve its beauty and purity.

E. W. Thompson said that he wrote to New York asking for a bid for best glassed honey, and he was offered only 10 cents per pound for it delivered in New York.

D. A. Jones—We should not forget that there are other markets besides New York. We should not neglect the small towns nor the farmers. Toronto was once an excellent honey market, but it has been overloaded. I now sell my honey somewhere else.

S. T. Pettit—Whether there is a "darkness" or not, depends upon the

color of the glasses through which we look—whether we look through the producer's glasses or through those of the supply dealers. If honey is so easily sold, why does Mr. Jones find it necessary to send his circulars broadcast all over the land? If it meets with such a ready sale, why are so many embarrassed in paying their debts, asking us to wait until they get their pay for the 1884 crop?

T. G. Newman—The market has been discouraging, but prices are now improving. High prices must not be expected when sugar is cheap.

J. B. Hall—The trouble is that our pursuit is a beautiful one, and its beauties have been magnified many fold, while the dark side—the discouragements—have been carefully kept in the background, and many have engaged in the business who never would have done so had it not been for this putting the bright side out.

Mr. J. B. Hall proposed a vote of thanks to Pres. Root for his able address.

Mr. G. M. Doolittle then read the following on

THE PRODUCTION OF COMB HONEY.

It has been announced that I am to lead in the discussion regarding the production of comb honey. Before doing so I wish to quote the words found on page 723 of the AMERICAN BEE JOURNAL for 1885: "Long articles seldom profit those who have to do with them. Life is short; time is short; moments are precious." Especially is this last true at a bee-convention, and many a person has become tired on account of the long essays read at the same. What we want is animated discussion, rather than long essays, no matter how ably written. Therefore the best part of this essay will be its brevity.

There are four things of importance in the production of comb honey: First, a good queen; second, the getting of the bees at the right time to gather the harvest; third, a skillful apiarist; and fourth, the right kind of a hive.

I put the queen first, for the whole of bee-keeping centres upon her. Without a queen it would be impossible to produce a pound of comb honey; hence it becomes apparent that the better the queen is, the more honey we obtain. When we come to fully realize the great value of *really good queens*, we shall have less queens which cost the apiarist nothing. I wish to leave the impression that good queens cost something, and are valuable in proportion to the pains taken in rearing them.

I put the getting of the bees at the right time to receive the harvest second, for this is paramount to all else in the production of comb honey—except the queen. Unless we can have the bees in our colonies by the tens of thousands at the right time, the flowers will bloom in vain, as far as filling our sections with honey is concerned. When all realize the second proposition, and work for the same to its fullest extent, one-half of the colonies will gather as much surplus as the whole do under our present management.

I place a skillful apiarist third, as he is only second to the bees and queen, and unless he is skillful enough to do things at the right time and in the right place, both bees and flowers will be in vain, as far as getting a good yield of comb honey in sections is concerned. The apiarist must study hard, work early and late, and "leave no stone unturned" that will produce a pound more honey, if he is to be successful in producing comb honey at the present low prices.

I place the right kind of a hive fourth, for this comes last in the category of our subject. To be sure, bees will store honey in a nail-keg, but the day of putting honey upon the market in the shape it must present if taken from such a repository, has passed away, so that if we would realize the most from our bees and our labor, we must get our honey stored in neat and attractive receptacles. The hive that will admit of getting the largest number of bees in the right time for the honey harvest, and then get "all hands" to work in the surplus arrangement as soon as the harvest arrives, is the one to use. We could divide and sub-divide these four headings, especially the last three, yet the above four fundamental principles would not be changed. I therefore leave the subject for your decision.

G. M. DOOLITTLE.

E. W. Thompson—Is it profitable to fill sections full of foundation?

J. B. Hall—After many experiments I have decided that it is.

H. R. Boardman—During the past season I hived 100 swarms with no foundation in the brood-nest, excepting starters. I have no data to show whether or not it was a profitable experiment, but I was well pleased with the results. I cut out the new

comb from the brood-nest, leave it lying upon the grass until the eggs, if there are any in it, have lost their vitality, then I fasten this new comb in the sections instead of foundation. The honey is beautiful and tender, but will not bear shipment so well.

J. B. Hall—I have tried this plan of hiving swarms without foundation, but I get too much drone-comb.

W. Z. Hutchinson—Are your brood-nests large or small?

J. B. Hall—Large.

W. Z. Hutchinson—That explains it. I hive my swarms upon only 5 Langstroth frames, and not more than one comb in 25 is drone-comb, and this occurs only when the queen is an old one.

H. R. Boardman—I was surprised at the small amount of drone-comb built in my frames. My swarming and hiving were managed upon the Heddon plan.

G. M. Doolittle—Comb foundation gives honey greater strength, but this very strength impairs its eating qualities.

C. F. Muth—There is no necessity of using foundation heavy enough to detract from the palatableness of our comb honey.

The discussion on comb foundation took a general and rather desultory course. Mr. J. B. Hall was asked to state his method, and confined himself to his experience with comb foundation.

Rev. W. F. Clarke said that Mr. Doolittle's essay was professedly on the production of comb honey, but what he said was just as applicable to the production of extracted honey. A good queen, plenty of bees to gather in the honey harvest, a skillful apiarist, and a good hive—were not these just as needful for the production of extracted as comb honey? What we want is the points of a skillful apiarist required to get large crops of comb honey. We want to know how to do it. Our most successful producers of comb honey rather tell us "how not to do it." They appear not to like to explain things. They take Burns' advice to his friend Andrew:

"Still keep a secret in your breast
Ye never tell to any."

For several years at these conventions he had tried to get Mr. Hall to explain how he gets such large crops of splendid comb honey, but he had never done it.

Mr. Hall: "I should have to make the man."

Mr. Clarke: "Well, here he is; take the raw material and make the man. That's just what I want."

Much amusement and bantering of Messrs. Doolittle and Hall to explain the *how*, but the wily veterans did not come to the scratch.

Amid much laughter the subject was laid on the table, and the next order of the day taken up.

Mr. C. P. Dadant, of Hamilton, Ill., read the following, on

EXTRACTED HONEY.

Nothing is more appetizing than a pretty section of white comb honey. But comb honey will always be a fancy article, and will have to sell much higher than extracted honey, in order to pay the bee-keeper that produces it. The aim of bee-culture, in its progressive condition, is to produce honey for the masses—for the laborers—who cannot afford to pay for it any more than they can pay for the average grades of sugar.

Besides, comb honey, although it is a ready selling article, will not fill the place of liquid honey in a great many instances—to make pastry or cakes, or to use in teas, in case of sickness. It is therefore an evident fact that the sale of comb honey will always be limited, and that the sale of extracted honey will increase in proportion to its production, provided the bee-keeper will take pains to introduce the use of it among his neighbors. This we have ascertained personally by our own sales. In 1868 our sales of extracted honey of about 500 lbs., were difficult and slow; now, our crops of 10,000 to 35,000 lbs. are easily disposed of, and although the prices are lower than formerly, yet we find the producing of it to be a remunerative business. We sell more honey to-day in our town of 1,500 inhabitants than we could sell 20 years ago in the city of St. Louis.

We consider the production of extracted honey, exclusively, as of much advantage to bee-keepers, for a number of reasons, prominent among which are the following:

1. The apiarist who aims to produce honey only for his own use, can produce much more of this honey than of comb.

2. The outlay for combs, crates and boxes is not an oft-repeated expenditure, since when once supplied the stock remains.

3. The bees need much less watching. The almost total prevention of swarming by the production of extracted honey is no longer a matter of doubt. For this purpose, it is only necessary to provide the colonies with

a large quantity of empty combs ahead of their needs. These combs are not wasted, but are preserved from year to year.

4. By the production of extracted honey, exclusively, an apiarist can take care of more than four times as many colonies, as he can by the production of comb honey; thereby enlarging his profits greatly, even if he has to sell the extracted honey much cheaper than comb honey.

It would be a great mistake to imagine, as some have asserted, that there is already an over-production of honey. Honey of all grades is only getting to be a staple. We do not have to look back many years to the time when its sale was so insignificant that it was only *occasionally* quoted in the market reports of the large dailies. When honey is found as often as is sugar, molasses, or as butter, on the tables of the average farmer and of the average laborer; when it is found by the barrel or by the keg in our wholesale and retail groceries—then, and only then, can we say that we are producing as much honey as the country can use.

The "revolution in bee-keeping," of which Father Langstroth speaks, in his book, has taken place, but the bee-keeping fraternity is only beginning to find out all the advantages and all the growth which the bee-business must derive from this revolution.

C. P. DADANT.

Dr. Mason described his method of getting extracted honey, but complained that he could not get more than 65 pounds per colony. He was asked how many combs he used, and replied, "eight."

Dr. L. C. Whiting said, If you will "tier up" your hives, and use plenty of combs, you can get twice as much honey.

Mr. C. F. Muth could not comprehend how the Doctor could manage with so few frames. He wanted at least 10 frames for the brood-nest, and then another story for extracting. Even his bees, kept on the house-top in the city of Cincinnati, had given him averages double and even treble what Dr. Mason had obtained, and from hives in the country where they had not so far to fly, he got far more honey.

C. P. Dadant prefers large hives and gives to the bees a plenty of combs in advance of their needs. Honey should not be extracted until ripe. Many bee-keepers think that honey must be sealed before it is ripe. This is a mistake; honey may be ripe before it is sealed, and it may be sealed before it is ripe.

S. T. Pettit—If we leave enough honey in the hives, we do not have to feed sugar, which prevents that much honey being put upon the market, and relieves the market to that extent.

H. R. Boardman—I have given 8 empty frames to a colony of bees in the fall, fed them 50 lbs. of sugar syrup (two parts of sugar and one of water), and they built comb, stored the syrup and wintered well. I have done this with several colonies.

Mr. W. E. Clark said that the President had been the most successful producer of extracted honey in the East, and he would call on him to explain his methods.

Pres. Root, in response, said that it was perfectly true, as Mr. Clarke had said, that Mr. Doolittle's requisites for producing comb honey were just as applicable to the production of extracted honey. A good queen, for example, was just as necessary for the one as the other. In both cases wise manipulation was needed, and it took a large amount of study to know what is wise manipulation. Certainly we must have large colonies of bees to gather the honey, then we must extract it at the time when it could be done to the best advantage and with the least hindrance to the bees. It was hard to lay down specific rules—every bee-keeper must be a law to himself, and find out the methods best adapted to his own locality. Experience must be bought by practice, and at considerable expense; he only hoped that it would not cost others as much as it had cost him. The secret of success lies in having plenty of workers at the right time, and in order to do this we must have good queens. Then comes the question of manipulation, We have had good results from extracting unripe honey, thus saving the bees the labor of ripening it, but the question is, will it pay to do this? I think not. Then, again, there is spring manipulation; spreading the brood, and the like.—In my opinion, we have manipulated many a colony to death. I am getting to think less and less of manipulation. In feeding, we look, not at immediate results, but at the future. We have heard much about adulteration, and we must avoid the very semblance of it. Our product must be even above suspicion. Some of the lower grades of honey are selling so low that it will not pay to sell it and buy sugar.—Bees should never be allowed to "bang out" during a honey harvest; if they

do, something is wrong. Our hives have a ventilator, 6x12 inches, in the bottom, which can be opened or closed at pleasure.

Mr. S. T. Pettit gave his experience in producing extracted honey. He had missed it by not leaving the honey in the hive long enough to ripen. One season his honey was all of an inferior quality, owiug to this cause. He did not believe that we could ripen the honey as well as the bees themselves do it. He said that we should have at least one-third of the honey capped before extracting, and he believed it was better if all was capped over. He then asked: Do you think, Mr. President, that you can ripen honey artificially as well as the bees can do it?

President Root—I am not *sure*. I know we can ripen it more thoroughly, and I can discover no difference in the taste.

S. T. Pettit—Some have not as keen a sense of taste as have others. I have ripened honey artificially, but it never had the fine, rich, oily, aromatic flavor which honey ripened by the bees had. It is my opinion that bees add, in the ripening process, some animal product (formic acid, perhaps), which the honey can get in no other way.

Rev. L. L. Langstroth did not know that he could add much to the ocean of intelligence that was tiding all around, but he wished to say a word or two. He believed there were many things that the bees could do—certain things better than we can—and ripening honey was one of them. There was too much artificial work in bee-keeping. One bee-keeper had invented nippers to pull dead bees out of the cells, but live bees would do it better.

Dr. Mason said that the "big-bugs" of the Convention had been poking fun at him for getting only 65 pounds of honey per colony, but they would find it impossible to get an average of 300 pounds in his locality—a city on one side and a wilderness on the other. Small as his average yield was, it was larger than that of any of his neighbors. He wished that his critics would show him how to produce 300 pounds per colony, but the trouble was as Mr. Clarke said, they did not to disclose their secrets.

Rev. W. F. Clarke wished to ask if formic acid in honey was not the element which gave it its keeping qualities. He put the question to Prof. Cook. For his own part, he believed that the formic acid was added by the bees in the capping process, which was carried on mainly by the use of their tails—the sting—being the last polishing tool. It was because the formic acid was thus added that honey must be one-third capped to be good, and all capped to be first-rate.

Prof. Cook thought that no one knew how or when the formic acid was added. He was also of the opinion that too much stress was laid on the matter of taste. Few could discriminate as thoroughly as had been suggested.

The Convention then adjourned until 7:30 p.m.

EVENING SESSION.

The meeting was called to order at 8 p.m., by Pres. Root. An essay was read as follows, by Mr. R. F. Holtermann, of Fisherville, Ont., on the

CARE OF HONEY FOR MARKET.

I bring this subject before you, fully aware that it is not of as great importance as many others, being indirectly connected with the production of honey; but on that account it has perhaps not received that public attention which it merits. It is our duty when blessed with the means to procure a crop of honey, that we should acquaint not only ourselves but every bee-keeper with what will secure to us the article in the highest state of perfection, and place it thus in the consumers' hands. Have we, as a body, endeavored to do so? Looking at it from a business stand-point, past experience has taught us that in order to realize the best results financially, from any article extensively produced, it is necessary not only to better our own but we must better that of the entire land.

Let us imagine the land completely destitute of vegetation. Here is a heavy soil, in the distance is a sandy one, and between, all grades of soil. Here is a hill, there a swamp, and at other distances, intermediate elevations. Now, could our eye stretch from north to south within the honey-producing area, and were this area to be decked with our present vegetation, which of the aforenamed conditions would influence the quality of honey? The heavy soil would give us a richer honey then the lighter; the more extremes of cold climate would give a better quality than the more equable. Would the high and the low land influence it? We know that honey from every species of flower has its peculiar flavor, no matter how indistinct, and that the sea-

son, its winds, temperature, and degrees of moisture influence not only the quantity, but the quality of our honey.

The progress bee-keeping has made, and so many making a specialty of it, has enabled us in a measure to conduct ourselves accordingly; but to the ordinary bee-keeper most of the previously named conditions cannot be controlled. But, how much lies within our power!

One of the first questions would be, when shall we extract? Shall we extract before or after the honey is sealed? What are the advantages and disadvantages of the two systems? If entirely sealed, we require to uncap a large surface, the bees must with the ordinary appliances be cramped for store-room, the brood-nest becomes contracted, not alone meaning loss of time until extracted, but many think they do not regain their old energy for the remainder of the season. The advantages would be, honey called ripe, subject to the before-named conditions.

When is honey ripe? With the system of extracting when the honey is unsealed, there is no uncapping, and bees have plenty of store-room, but the quality is inferior; and right here a friend would step in with his ripening can. But we have made no light mistake; for in the past our honey has been handled too much, as if it could lose nothing by having it come in contact with the air. What imparts that peculiar aroma to honey, and gives each kind of honey a distinct flavor? Is it not largely a volatile oil? Do we not know it is being distilled from every flower, as we pass through a clover-field in blossom? and in evaporating and otherwise coming in contact with the air, we lose this.

Many find that to extract honey when one-third capped, answers well; the honey to be put into deep tanks or barrels holding about 600 pounds each, and left for a week. This causes the light, thin honey to rise to the top —generally it is not 10 per cent., and this can be disposed of a little cheaper —and the rich, ripe honey remains. One week more of exposure is ample for clover, and it becomes sweet without the flavor; basswood longer, according to the taste. Thistle honey has a very distinct odor and taste, but it is very volatile, and requires but little exposure. If we handled our extracted honey thus, would it not take the place of comb honey more?

What is meant when consumers say that they miss a peculiar richness in extracted honey, which the comb will give them? Is it all fancy? How many bee-keepers have greeted you with the remark, after tasting your basswood honey, "Ah, that is pure honey." How many have thought, after tasting the long-exposed clover honey, "That is sugar syrup." The former loses its flavor less readily; the latter more readily.

Has our comb honey been handled with proper care? Should it not always be kept not only dry, but at a temperature that the delicate scales of wax—cell caps—never crack from too low a temperature? Does honey ferment in the cells and crack the wax, or does the cell break, permit access to moisture and atmosphere, and that *cause* the honey to ferment?

R. F. HOLTERMANN.

Mr. Boardman considered this matter of great importance. That honey was often deteriorated by keeping was undeniable, and he would like to know how it happened so, that it might be guarded against.

D. A. Jones—I do not think the cappings of honey are impervious to the air. We sometimes have honey so thickened that it does not fill the cell more than one-half full. If the capping was air-tight, how could this evaporation take place?

H. R. Boardman—I think that honey thickens by "age."

Prof. Cook explained the difference between evaporation and crystallization. Honey can only thicken by evaporation, and to evaporate, it must have air; therefore the sealing is not air-tight. Crystallization is a different affair, and is akin to formation of ice, resulting from the cooling process.

Mr. Doolittle gave an instance in which honey was spoiled by moisture swelling the honey, so that the cells were broken, and the honey turned sour in the course of a few months.

James Heddon—If the honey is cooler than the surrounding atmosphere, the moisture will be condensed upon the honey, in the same manner as it is when a pitcher is filled with ice-water. If we wish to prevent granulation of the honey, it must be kept in a high temperature.

H. R. Boardman—I keep the temperature of my honey-house at a high point, give ventilation, except upon damp days, when I keep all openings closed, and even build a fire. I also keep lime upon the floor to absorb the moisture.

Mr. Thompson, of New York, said that he had been greatly troubled

with the moth getting into comb honey. He had tried sulphur fumigation with them, but had not succeeded as he could have wished.

C. F. Muth—The fumes of burning sulphur will settle, hence the honey should be at the bottom of the room.

H. R. Boardman—In fumigating honey with sulphur, nothing should be used to fire the sulphur that will give off any smoke.

S. F. Newman—I think much of this trouble arises from taking off the honey too soon. If left upon the hive it is safe from the attacks of moths and dampness, and will become thoroughly ripened. It might be left on for three weeks after it is finished without its being much dissolved.

Mr. J. B. Hall, of Ontario, on being called upon, gave his experience and practice. He said that the moth would give no trouble unless there was bee-bread in the sections. He said: I seldom fumigate my honey. When I do, I put some ashes into a kettle, put in the sulphur (one pound for a room 8x10 feet), and hang the kettle near the top of the room; then throw in a piece of iron heated to a white heat, and close the doors. I would keep the honey-room as near 90° as possible.

Mr. Heddon said that there was but little danger of deterioration, if honey was taken proper care of. It should be kept in a temperature higher than the common atmosphere, else it would attract and absorb moisture, and thus be injured. He had no trouble with the moth-worm, and did not believe that the moth would live on pure beeswax. There must be some pollen—some nitrogenous matter in order to form animal tissue.

Dr. L. C. Whiting—When I have some old honey that I wish to put upon the market, I place it over a strong colony of bees allowing them access to it. They soon put it in such a condition that it cannot be distinguished from new honey.

D. A. Jones—Would not simply heat answer the same purpose?

Dr. Whiting—I cannot say.

G. M. Doolittle—I know of a man who kept his honey in his sitting-room near the coal-stove all winter; it kept perfectly, and the next season it sold for as high a price as new honey.

C. P. Dadant—The bee-moth's larvæ will starve upon wax alone.

D. A. Jones—Have Messrs. Heddon and Dadant never seen the holes in beeswax made by the bee-moth's larvæ?

James Heddon — Yes, but some beeswax contains large quantities of pollen.

Prof. Cook said that there could not be animal life without nitrogen, and there could not be putrefaction without nitrogen.

Mr. Heddon said that we should take such precautions as would keep out flies, wasps and other insects. By this means the moth-worms would be effectually excluded. He had his honey-house protected with wire-screens, and the moth gave him no trouble.

The following essay by Mr. E. M. Hayhurst, of Kansas City, Mo., was read, on

SHIPPING BEES BY THE POUND.

The possibility of shipping bees without hives or combs, was first brought to the attention of the bee-keepers by an editorial in *Gleanings* for May, 1879. In this editorial, Mr. Root suggested the use, as a shipping-cage, of a common dish-screen, provided with a wooden bottom and supplied with candy and water. Soon after reading this, I prepared a half-pound of bees and a queen, as thus suggested, and sent them to Mr. Root as an experiment. They were received without the loss of a single bee. This settled the matter with me, that bees could be sent safely in this way, if all the conditions were right.

I sent a number of half and one-pound packages that season, with good success. The dish-screen was soon abandoned for the much more convenient section-box and wire-cloth cage, as advised by Mr. Root in *Gleanings* for June, 1879. Here I would like to call attention to the fact that our common friend, Bro. Root, is father of this business, and that nearly every advancing step made by his now healthy "youngster," has been made at his suggestion.

Without detailing to you the many heavy losses and great discouragements which I met with during the following three years, and owing to which I very nearly abandoned the business as ruinous, I will state that I now have the matter so well under control that it is as safe and profitable to me as any other department of bee-keeping.

I still use the well-known section-cages, each being crated so as to protect it somewhat from accidents. When a number of packages are to be sent to one address, several of them are placed in one crate; I have

sent as many as 25 one-pound packages in one crate, but generally I divide large shipments into crates containing 12 or 15 packages. These crates are so arranged as to admit of ample ventilation for each package of bees.

For feed, I use the "Good" candy, made of the best pulverized sugar and clover or basswood honey. This candy enables us to dispense with the water which was necessary with the candies formerly used. When the bees are not likely to be confined more than 24 hours, no feed is really necessary, although a little candy is put into all cages, to guard against possible delays. The proportion used for long distances is about 4 ounces of candy per day for each pound of bees.

I now think that most of my heavy losses in former years were due to over-feeding, or rather, to gorging the bees with honey. I used to be so afraid that they would starve in winter, that I would feed them all the honey that they would take, after they were caged; notwithstanding the well known fact that bees when gorged with sweets are much more likely to become panic-stricken when confined, and disgorging, smother themselves. On the other hand, I now use every precaution possible to prevent the bees from filling themselves while being caged. Bees caged without a queen have this same tendency to panics, and will often run themselves to death; hence I send no more bees without queens.

Next to over-feeding, perhaps the greatest cause of losses is the exposure of the bees to the hot sunshine by the carriers; on this account I place conspicuous cautionary cards on each crate, calling attention to this fact. I also send printed "Directions" attached to each crate, for the benefit of the purchasers, many of whom are quite inexperienced in handling bees; these are very necessary, but do not always save the bees. One friend wrote me this season that I had failed to put queens into 4 or 5 packages sent him; he said: "I know this to be so, because all of the bees clustered in one place." Further correspondence developed the fact that after preparing his five hives as directed, he turned all the bees loose at once by throwing them into the open air, expecting each nucleus with its appropriate queen to find the hive intended for it! Another friend lost 3 out of 5 nuclei by turning them into hives containing their full complement of combs, smeared and befouled by the bees that died during the winter, and without giving them any brood to care for. Only two of the lot had grit enough to stay in their new quarters and clean up.

In regard to the profits to be derived from the business: After an experience of seven years, I believe that when we can retail extracted honey at home for 8 or 10 cents per pound, we cannot afford to retail our bees for less than $3 per pound, in May, and assume all the risks now required of the shipper. Probably the persons most benefited by the business, are those who have trouble in introducing queens, and they are not few; to such it is certainly a very great advantage to buy a half-pound of bees with each queen, so as to enable them to obtain the improved kinds without the risk of introducing. These little nuclei can be made working colonies at once, by giving them 2 or 3 combs of brood and stores (without bees) from other hives. By adding other combs of brood as fast as the bees can care for them, they can be quickly built into full and profitable colonies; indeed 2 or 3 combs of brood and stores, is help enough in ordinary seasons, if the bees are purchased early, and in extra good seasons a half-pound of bees with a good queen will often grow into a fine colony for winter—a small beginning, but not quite so helpless as the one made by one of my neighbors. He sent to me for an untested queen; shortly afterwards he called at my yard and complained that the queen did not do very well—in fact, had deserted her hive. It seems that he had put her with the few bees sent with her in the mailing cage, into a large, cracked box into which he had fastened a one-pound section containing comb, but no honey. He said that there were just 9 bees with her, and that he thought 4 of these were a plenty to stay with the queen while the other 5 went out to gather honey and wax!

At the risk of incurring the charge of being "enthusiastic" in regard to the immense profits to be derived from purchasing bees by the pound, I will close by giving an extract from a letter received from an Iowa customer; it sounds a little extravagant, but it is by no means an uncommon report—he probably had an extra good run of honey. Here it is:

"I kept 11 of those one-pound nuclei, put each into a full-sized chaff hive with empty combs; this is all the help they had, except a little feed when they first came, and a little foundation. They filled up their

hives, increased to 20 good, strong colonies, and gave me about 400 pounds of nice comb honey. A swarm from one of them took the first premium ($10) at our District Fair."

Kansas City, Mo.

A. I. Root—I do not think the letter extravagant; such reports are quite frequent. The original half-pound of bees that Mr. Hayhurst sent me was put upon combs, and made so strong a colony that it was, I believe, divided in the fall. We must have young bees, and the bee-keeper must be an expert. Mr. Root then described what could be done in a single season with a half-pound of bees and a fertile queen in May.

There was general concurrence in the utility and convenience of selling bees by the pound.

REPORTS OF VICE-PRESIDENTS.

Mr. A. F. Manum, Vice-President for Vermont, reported the honey crop of that State, for the present season, to be 160 tons.

Mr. Wm. G. Gibbons, Vice-President for Delaware, in his report, says:

The year 1885 has been an exceedingly unpropitious one for bee-keepers in this part of the country. The warm weather which usually sets in by April 10, was procrastinated until near the beginning of May, and during both April and May cold rainstorms were frequent. The result was that the bees got to work 15 days later than usual. The white clover, which is in this section the best and almost only bee-pasturage, did not seem to be well supplied with nectar, and the season of its bloom was exceptionally short; consequently the colonies gathered a very small supply of surplus honey, and few swarms issued. Generally the colonies are in good condition for entering upon the coming winter, and seem to be healthy.

Mr. Arthur Todd, Vice-President for Pennsylvania, made the following report for the year 1885:

The winter of 1884-85 proved disastrous to many bee-keepers in the State of Pennsylvania, and as regards a honey harvest—practically there was none. The fall crop of honey has likewise been a complete failure, and bees go into winter quarters in bad condition, unless fed on sugar syrup. I have taken pains during my business journeys, and in my correspondence, to learn the actual results of bee-keeping this year in this State for many a mile distant from Philadelphia, and I think that the word "disastrous" will best express the general feeling as to the results.

I regret that I am unable to meet the brethren in convention assembled; it is a great disappointment to me.

Mr. H. F. Hunt, Vice-President for Quebec, Canada, reported as follows:

The knowledge of bee-culture, by the improved methods of manipulation, is still in its extreme infancy in Quebec, and has only within the past few years begun to be disseminated among the people, the southern and southwestern parts having more bee-keepers than the other parts. There are numerous box-hive bee-keepers throughout the country, who still take their honey by the old-fashioned method of "brimstoning"—a method which I hope is now on its "last legs." My report, therefore, will not bear comparison with that of our sister Province—Ontario—but I hope that in the not far distant future, we shall be able to make as good a showing. The success attending the labors of bee-keepers in Ontario, will act as a stimulus to those in Quebec.

In common with the rest of the North American Continent, the losses last winter were heavy, but bee-keepers, as a rule, have not been much discouraged, and are hoping for better success this winter. Our losses were not so heavy as those farther south, which I attribute to our being compelled to protect the bees well, on account of the severe cold which once or twice every winter touches 30° below zero, the average being 5° to 10° above.

I have not received as many responses as I could wish, to my request for reports, but I generalize from what I did receive. The past season has been a very poor one indeed, owing to the extraordinary cold season, which seriously curtailed brood-rearing and the secretion of nectar, in some parts of the Province, notably in the vicinity of Lake Megantic, and in the county of Beance. The spring was so dry that certain crops had to be replanted, and would, no doubt, have acted unfavorably to the secretion of nectar in the white clover. Some honey was gathered from basswood, which yields more freely to the

south than to the north of the St. Lawrence. Fall flowers also have not given much, and many colonies have had to be fed for winter.

Mr. O. O. Poppleton, Vice-President for Iowa, made the following report of the results of bee-keeping in Iowa during the past 12 months:

Bees were put into winter quarters last fall in very poor condition generally, as regards numbers of bees in each colony and amount of stores. The winter was a very hard one, followed by one of the worst—if not the worst—springs experienced during a long term of years. The result has been to entirely destroy nearly or quite ⅔ of the total number of colonies put into winter quarters last fall, and to leave many of the colonies that were saved in very poor condition at the commencement of the honey harvest.

The honey harvest itself was much below the average, and from the best information I can get, I estimate the total production of honey in Iowa, in 1885, at about ¼ the amount obtained last year.

Foul brood, which was reported last year as being present in our locality in this State, is not reported as being in existence anywhere in the State this year. What is known by some as the "trembling disease," by others as the "nameless disease," has been reported from several apiaries this year. As the causes and characteristics of this disease, as well as its prevention and cure, has never, so far as I know, been thoroughly investigated by any competent person, I would respectfully request that this Society either appoint a committee to make such an investigation, or formally request Prof. N. W. McLain, of the United States Entomological Station at Aurora, Ills., to make such investigation.

Mr. H. L. Jeffrey, Vice-President for Connecticut, gave the following report:

Connecticut has not produced over two-thirds as much honey this year as last (1884), and perhaps not over half the amount, last year being the best season for white clover and buckwheat that we have known for eleven years. It gave us two unusually good honey-flows, which made almost an incessant flow from May 8 to Sept. 27, or more than 140 days of average abundant honey-flow, against less than 50 days in 4 flows this season, with no white clover or buckwheat.

Though it has been common for well-cared-for colonies of bees of good blood to produce 100 pounds each, this year, it is also more common for the uncared-for "scrub" colonies to be deficient in winter stores, without yielding any surplus. Although Connecticut annually consumes from 100 to 125 tons of honey, and although bee-keeping is in a growing condition, yet it would be extremely difficult to collect 40 tons of surplus Connecticut honey. Judging the State by an effort to obtain a close canvass of 13 towns, it gives only a return of 12,400 pounds, which is far less than half what the grocers sell in some of the towns. Learning that the local producers have customers, and retail their product, and that the store supply is almost exclusively an import (the production being from 40 to perhaps 70 tons as a minimum and maximum amount), and that well-cared-for apiaries of selected colonies will give a surplus of 100 or more pounds per colony, it shows that Connecticut is a remunerative location for the skilled apiarist.

Connecticut possesses a few well-read apiarists, but not one specialist, that I know of, as a honey producer. In all cases it is only a "side-show," and yet not a few could cast a vote on either the reversible frame, 4¼ section-box, skeleton honey-board, or on any of the other modern fixtures, and all of them tried extensively enough to warrant an impartial decision. One apiarist has tried the 1⅜-inch-wide end-bar, with the reversible wire, to the extent of 25 hives, and they have been tried to stay: there are about 150 of such constructed hives put into winter quarters, and trying a few by the side of other hives for 8 years, the number has gradually grown until another season will see a few thousand of the ⅞-inch-wide end-bar combs for sale cheap, or some kindling wood and wax in the place of the frames and combs. Saw 1⅜-inch thick plank in ⅜-inch thick strips, and make the tops and bottoms 5-16x-⅞, let into the ends, and use reversible wires, the hives to be 12¼ inches wide, with 2 division-boards scant ½-inch thick, confining the heat between each two combs to its own space. The advantages are, the prevention of hoar-frost at each end of the combs, the prevention of each comb being built to the end of the hive at every sudden flow of honey, the possibility to take out any one comb without

being obliged to move each of the others separately, the convenience of moving a hive without every comb swinging against its neighbor, the ease with which a hive or nucleus can be set up in a hurry, as well as many other superior reasons.

This is the out-growth of some old cast-off Quinby standing-frames forced into use in 1877, by a sudden call for frames and hives, and from then until now they have been used as standing-frames at one time, and at another time as hanging-frames, by driving a nail in the end-bar; and sometimes one side being up, then the other side up, the twisting and turning for fun and for fact caused 5 complete hives after having wedge-sticks placed between the combs to be turned bottom-side up, in 1883, to get the crates of 18 prize-boxes each as the receptacles of about 3 inches deep of honey under the top-bars of all the combs, because the first crates of boxes were not taken off soon enough, and up went the honey. The same thing was tried in 1881, with 4 American hives whose combs were half full, and, lo, the honey was moved.

The objections to a stationary or single-position, spaced frame, are all converted into advantages by using it reversibly, and there will yet be living proof that the Quinby standing-frame, of the Langstroth size, and with reversible wires to combine the labors of Fathers Langstroth and Quinby in an established union of obliteration to the confused multitude, and give us all peace and sameness to perfection in frame and hive.

Mr. Wm. Muth-Rasmussen, of Independence, Calif., reports as follows for that State:

As far as I know, no vice-president has been appointed for California during the last two years. I can therefore only report for myself.

While the southern counties, according to all published reports, have had a very poor honey harvest, the season here has been about an average one. The reason is that while the southern counties depend almost altogether upon wild vegetation for bee-forage, our principal honey scource, here, is alfalfa, which is irrigated and never fails to yield *some* honey. Although alfalfa is grown to some extent in the southern counties, it is used there mostly as cattle-feed, and is cut as soon as the bloom appears, 4 to 6 times, according to the season. It is therefore of no avail to bee-keepers. Such hay is, however, not suitable for horses, being to "washy;" and as alfalfa is here used also for horse-feed, it is not cut until it has formed seed, or is nearly out of bloom. On a few farms alfalfa seed is raised for the market, and therefore our bees have the full benefit of the bloom while it lasts.

In "dry" seasons, when there is a scarcity of wild flowers, the alfalfa honey is stored in its purity, and equals any honey in color, flavor and body, being about as clear as white sage honey. In "wet" seasons it is, however, mixed with honey from other flowers, and is of an amber color. Our honey invariably granulates when frosty weather sets in, but until then it remains liquid, and will be so thick that a dish of it may be turned upside down, without its running out.

Alfalfa, if rightly treated, is, to my mind, equal, if not superior, to any other plant which can be cultivated for honey, hay and seed. The stubble also affords fine pasture for stock, but cattle are liable to become bloated, if allowed to graze on it while it is wet or frosted. This is the only danger that has to be guarded against. All grass-eating animals are exceedingly fond of it, whether it is green or cured. It also affords fine pasture for hogs and poultry. As the tap-root penetrates from 20 to 40 feet down into the soil, the plant is not affected by drouth, and, when intended for seed, is not irrigated. When it once has secured a "stand," it will hold its own forever after, reseeding itself, and choking out, by its dense growth, all other plants which may attempt to share the soil with it.

I hope that you may have a pleasant and profitable meeting.

The committee to whom was referred the address of Mr. T. G. Newman on the National Bee-keepers' Union, reported in favor of uniting the two societies. Mr. Heddon, president of the Union, remarked that he did not quite see how it could be done, and the resolution was tabled, after some discussion.

Some other observations were made on the subject, when the convention adjourned until 9 a.m. of the following day.

SECOND DAY—WEDNESDAY.

MORNING SESSION.

The Convention was called to order at 9:30 a.m., by Pres. L. C. Root, who announced the following as a committee to answer any questions that might be placed in the question-box: S. F. Newman, S. T. Pettit and H. R. Boardman. It was found to be impossible to get through with the regular programme, if the questions were brought up for discussion, and hence the appointment of the above-mentioned committee.

The Secretary read a letter from Mr. Turner Buswell, of Solon, Me., asking the Society to consider the advisability of publishing, in a pamphlet form, a report of its proceedings, and the matter was referred to the committee on questions.

Pres. Root—I have requested that samples of honey be sent to me, that I might send them to the government chemist, Prof. H. W. Wiley, at Washington, for analysis; but the report that the Professor has already made of samples of honey that he has analyzed, leads me to doubt the advisability of such a course. Too large a percentage of the samples were pronounced impure. I should not like to send my honey there and have it pronounced adulterated.

C. F. Muth—Myself and some friends sent some honey there that we *knew* to be pure, and it was pronounced *impure*. I do not think that we shall send any more.

Prof. A. J. Cook then read a portion of the published report of Prof. H. W. Wiley, of the Department of Agriculture at Washington, giving his analysis of different samples of honey furnished him by bee-keepers. In his annual report he put down many samples as "apparently pure," and many as "probably impure." The Professor said that it was the business of a chemist to *know*; and if he could not analyze such products to a certainty, he should say so in his report.

The friends of Mr. A. I. Root, having learned that his 46th birthday occurred on the second day of the Convention, had contributed ten cents each, to Mr. Muth, with which to purchase a suitable birthday-present for him. A copy of "Milton's Paradise Lost," beautifully printed, bound, and illustrated, was purchased, and the Rev. W. F. Clarke was selected to present it to Mr. A. I. Root during the morning session, which he did in a very pleasant way. Some other friends also presented him with a bouquet of flowers. Mr. Root replied briefly by thanking those who had been so thoughtful. He valued the kind thoughts much more than the gift, though that was beautiful. He felt that such kindness was undeserved.

Mr. C. F. Muth, of Cincinnati, Ohio, then read the following on

THE HONEY MARKET.

A friend asked me, a few days ago, as many had done before, what the reason was for the low prices of honey, whether, in my estimation, honey would remain cheap, whether I thought bee-keeping was overdone, etc. I admit that these are vital questions for us bee-keepers, and it is very proper that we should consult as to the best *modus operandi* as to the improvement of our condition and to elevate our business.

We know from experience that whenever prices are on a level with, or below, the cost of production—no difference whether this is in the line of produce or manufacture—margins are unsatisfactory for producers and manufacturers as well as for dealers. Wheat, corn, pork and barley were very low for a number of years; farming was very unprofitable, and the proportion of failures among grain-dealers and pork-packers was perhaps greater than ever. Bee-keeping was perhaps not more satisfactory than farming; yet, in proportion to its labor and investment, it was far more remunerative, even if the prices of extracted honey ranged between 3 cents and 8 cents per pound, and that of comb honey between 6 cents and 12 cents per pound.

It is bad policy to give up, because we find just as many malcontents in other branches, if we look around us, and it is folly to consider ourselves privileged characters. To indicate our true position, and how to govern ourselves accordingly, is the object of this essay.

It is not over-production which is troubling us, as there was never so much honey consumed as during the past year; but still, less was produced. Our crop was a short one in most parts of the country. Now, if values are governed by supply and demand, this question is proper, viz., "What causes the present low prices?"

The maxim that there is no rule without an exception, may be applied to our case under the rule of supply and demand. The low average value of all produce and manufactures, be-

sides the lack of all speculation in our markets, is, in my estimation, the first cause of the depression of the prices of honey. When times become better, *i. e.*, when a general advance in values takes place, prices of honey will advance with the rest.

The next factor in the depression of prices is adulteration. It is an established fact that extracted honey has become a staple article. A large number of manufacturers using sweets have found that pure honey is the best and cheapest sweet they can get.. New converts are made daily. For an illustration I will mention a late case of my own. I have sold, for years, an occasional barrel of honey to pork-packers, but only one would buy with something approaching a regularity. He found that his New Orleans molasses, at times, not sweet enough, while the same quantity of honey would always answer for the same cask of pickle. I sold him 50 barrels of honey for curing meats, a few weeks ago. Other packers having heard of the purchase, bought a few barrels for experiment, and one of them approached me with: "Why didn't you tell *me* about your honey?" "There will be a great deal more honey-cured hams and honey-cured breakfast bacon in our city next season than during the present one. There is no doubt about it; and my next experience will be that some drummer from Boston, New York, Philadelphia or Chicago, will be around and sell to my friends his glucosed honey ½ cent less per pound than they paid me for pure honey. They will buy, and the following season some one will say: "Honey is not much sweeter than New Orleans molasses after all." Such has been my experience before; it will repeat itself. We cannot avoid unfair competition, and there is no harm in telling it. Glucose is made to cheat, and there is money in adulteration. Glucose swells the so-called stock of honey on the market, damages the good opinion entertained of honey, in the estimation of consumers, and brings down the price as a natural consequence. There is no use for me to tell you how to meet adulteration, because every one of us is possessed of more or less of selfishness, and apt to pursue his own course under any circumstances.

There is, perhaps, a third cause for the low price of honey, which should also be mentioned. It is, that very many of our nearest neighbors are not yet aware of the fact that honey is a sugar, and can be substituted for cane-sugar in almost every instance. See that our friends are posted on the subject!

Having shown in the above that the production of and traffic in honey has its reverses, the same as any other branch of business, permit me now to give some points by which we may promote our interests.

Cleanliness around and about eatables makes a good impression upon consumers. We must exercise cleanliness about our apiaries, about our honey, about extractors and extracting. Every quality of honey should be kept by itself, as nearly so as is possible, because most of our manufacturers make a certain grade of goods with a certain flavor with which the taste of their customers has been cultivated; to lose this flavor means the loss of the custom. I have lost several hard-earned customers because I was unable to supply the same flavor, although with hundreds of barrels of honey on hand. They would resort again to cane-sugar as the only means by which to manufacture a regular grade of goods. My latest experience in this direction were my loss of custom for the mangrove honey of Florida. When my supply was exhausted, it was cane-sugar that took its place in the majority of cases, and it will be hard to regain that custom.

Honey should stand in open vessels for evaporation when it comes from the extractors, and be thoroughly skimmed before it is barreled or canned. No lumps of comb, wax, or specks of other impurities should remain in the honey, as nothing is more annoying to manufacturers. They make no allowance for want of cleanliness, but refuse the honey. A sale is often spoiled when the honey is put up in whisky barrels. The inside of the staves were charcoaled, and it is almost an impossibility to separate the specks of charcoal from the honey. Clean barrels for honey every time—or shippers must bear the consequences.

When putting up honey, bee-keepers should at once select packages to suit their trade. If their honey is calculated for the wholesale trade, good, strong cypress, oak or poplar barrels are their best and cheapest packages. I prefer barrels to all smaller packages. Other dealers may require half-barrels or kegs for their trade; but, as stated above, care should be taken by every bee-keeper to have his extracted honey graded, not only according to color, but also according to flavor. I prefer to put

up my own small packages to suit my jobbing and retail trade; these are tin pails of 50, 25, 10, 5 and 3 pounds, and square glass-jars holding 2, 1, ½ pound and 5 ounces, respectively. I have an excellent retail trade for square glass-jars, for which nothing but the best clover honey will answer the purpose.

In regard to comb honey, I should say that it must be white and well capped to find a ready sale; if the quality is clover, it is all the better. One-pound sections sell best, but half-pound sections, if well filled, find a ready sale, as do also two-pound sections. No sections should be glassed; but 20 to 30 pounds of honey in neat sections, placed in a neat case with glass on each side, meets with no objection whatever, while sections in the neatest paper-boxes or glassed, are unsalable by the side of it.

Purity, cleanliness and neatness are attractions which should be synonymous with the marketing of honey, and a strict adherence to this principle cannot fail to secure consumers.

C. F. MUTH.

After the reading of the essay, some one asked Mr. Muth what size of section was, with him, the most salable.

C. F. Muth—The one-pound section.

Geo. E. Hilton—I have used sections 5x6x1½ inches, and they weigh 1¼ pounds when filled. I find them very salable.

S. F. Newman—If Mr. Muth had only large packages, would he not sell just as many of them as of smaller ones?

C. F. Muth—One-pound sections sell the best. A great many want to buy a "pound" of honey.

James Heddon—I think it will be an injury to bee-keepers to lead them to use any other size of section than the 1¼x1¼. A pound is a good size. My fixtures are adapted to that size. Suppose some one should invent a new style of section, how much better it would be if we all used the same size; how much cheaper they could be furnished us. A comb with a large surface is more attractive, but it will not bear shipment so well; however, if we get the sections well filled and the combs attached all around, as can be done by reversing the sections, a thin comb will bear shipment very well.

C. R. Isham—Honey was much more salable when we were using large sections. Bee-keepers themselves are to blame for the necessity of using small packages. By using large packages more honey is sold at each sale.

T. G. Newman remarked that we needed various sizes to accommodate consumers—but he found the sections holding one-pound by far the most salable.

A. E. Manum—Two years ago I shipped 15 tons of one-pound sections, and 2 tons of two-pound sections. I received returns for the pound sections in a very short time; but it was several months before the two-pound sections were sold. If there was only one size of section used, people would be surprised at the price at which it could be furnished.

James Heddon—I do not know as I would have everybody use pound sections. I have used thousands of half-pound sections; I can secure just as much honey, and have sold it at an advance of 3 cents per pound. I prefer sections that are 7 to the foot, even when separators are used.

Pres. Root—I have found upon a careful examination of the markets, that we need sections of different sizes.

An address was then delivered by Thomas G. Newman, of Chicago, Ill., entitled

PASTURAGE FOR BEES.

Mr. President, Ladies and Gentlemen.

A carefully-prepared estimate reveals the fact that in North America (the territory covered by this Society) there are 300,000 persons who keep bees. The annual product of honey amounts to over one hundred millions of pounds, the value of which is about fifteen millions of dollars!

May not these figures give us a full comprehension of the dignity of our mission, the magnitude of the work before us, and the exalted possibilities which may inspire us to fresh zeal and grander achievements in our pursuit?

In passing—let us contemplate, for a moment, how invention, art and science, have followed every "progressive step" in apiculture! Just think of the crude methods of our fathers, and then contemplate the wonderful improvements of to-day! Instead of the tubs and pails of yore, containing broken combs of honey, bee-bread and dead bees, taken from the breeding apartment of the hives, the result of murdering the bees by fumes of sulphur, and then robbing their homes of the "stores" laid up for winter—see the beautiful little sectional-boxes in which we have educated the bees to build virgin

combs, and then to fill them with honey from Nature's laboratory—at man's behoof and for man's nourishment! This is but one item in the long catalogue of accomplishments, but it illustrates the apicultural development of the scientific progress and art of this ever-advancing age!

Surely, these *are* grand achievements! but shall we with them rest and be satisfied? No! says the impulsive and enthusiastic bee-keeper—show us the exalted *possibilities* of the future! Teach us how to obtain a crop of honey day after day, month after month, and year after year! Well, this is the duty imposed upon me by your committee—why, I know not; nor did I ask; but I will seek a solution of the problem by leading you into "green pastures," filled with myriads of "flowers," in which Nature distils the honey, drop by drop, and invites the bees, by their gorgeous hues, to come and dip into their tiny fountains, and feast and fly, and fly and feast continually. These fields of splendor will point you to success—to shining dollars, and affluence!

Ask the breeders of stock, the shepherds, and the dairymen, for the secret of their success, and they will point you to their well-tilled fields, green pastures and mountains of hay. They will tell you that they provide corn for their hogs, rich meadows, pastures and hay for their stock, and then naturally expect good results!

Ask bee-keepers upon what they depend for results, and they will have to confess that "luck" has a good deal to do with it; they depend upon natural forests, neighbors' clover fields, wild flowers in the fence corners, roadsides and wild lands; and if they are "lucky enough" to have these in due proportion to their bees, they will sing a song of gladness; but if not, their long visages will tell of hopes blasted and prospects blighted!

But alas, with advancing civilization comes the woodman's ax, cutting down the basswood, elm, oak and maple trees. The farmers' plow destroys the magnificent wild floral carpet supplied by nature, and the poor bees often find nothing to gather—the wild flora is destroyed—the honey all gone—and starvation stares them in the face! Nothing remains for them but to destroy their brood, kill their drones, and if possible to hold out on half-rations, until some stray wild flowers, unmolested by the plow, in fence corners or by the roadside, replenish their scanty stores; but if these are denied, they "succumb to the inevitable"—and their owner declares he "has no luck with bees!"

Now, what is the duty of the apiarist, in this state of affairs? The answer is plain, positive and unmistakable. Pasturage for the bees *must* be provided—it is an absolute necessity. He must study the honey seasons of his locality, and supply the deficiency by planting white, Alsike or sweet clover, mignonette, borage, motherwort, cleome, mustard, rape, etc., and thus provide the bees with honey-producing flora when the natural supply is insufficient or entirely destroyed.

Good judgment must, of course, be exercised in the selection of seeds for planting. If white clover is plentiful, and fall-flowers abundant, scatter mints "to fill the gap." If basswood is the main stay for honey, then sow sage, motherwort, and other early nectar-yielding plants or trees. The goldenrods, asters, buckwheat, sweet clover, etc., will always pay to cultivate for fall honey. The latter (sweet clover) with its white, modest bloom will gladden the eye in June, and the sweet fragrance of its flowers will linger till frost and snow comes and the bees are safely placed in "winter quarters."

We are well aware that many who keep bees have not enough land to spare to devote to bee-pasturage; but in the immediate vicinity of every apiary, and within easy flight of every colony of bees in America, there are waste lands enough, covered with unsightly brambles, burdocks, fennels, mulleins, rag-weeds, etc., which it would *pay* to seed with suitable plants for producing honey. Many of the best honey-plants require but little or no cultivation, after scattering the seeds; and even the poorest honey-producers would be more agreeable to the eye on such waste land than sand-burrs, brambles, fennels, and other weeds which grow spontaneously on roadsides and waste-places.

In view of the uncertainty of sufficient continuous bloom being provided by Nature, and the certainty of annually-recurring periods of cold weather, long and hazardous confinement—to insure success, the apiarist should as carefully and certainly provide pasturage for the bees as to furnish them with hives to shelter them from the cold and storms.

Do you ask, "Will it *pay* to plant for honey?" Let me reply by asking if it *does pay* to keep bees to gather honey at all? If you answer yes, then let me assert—the more bloom, the more honey for the bees to gather;

the more honey gathered, the more honey for the market; the more honey sold, the more money for the bee-keeper, and the better the business will pay!

To further illustrate this point: If a honey-flow of 30 days (which constitutes an average honey season, one year with another) will pay—will not 150 days pay *five times as much?* If by judicious planting, we can lengthen the honey season, do we not thereby correspondingly increase the honey crop? and does not this increase of the marketable honey-crop correspondingly increase the income of the apiarist, and add just that much to the material wealth of the Nation?

Rational replies to these queries, by progressive apiarists, ought to demonstrate that *it will pay to plant for honey;* and also that as the country grows older and the population increases, it becomes a *positive necessity.*

THOMAS G. NEWMAN.

Mr. S. F. Newman spoke of the great reduction in the number of basswood trees, owing to the demand for the timber by those who were manufacturing sections. Ten years ago there were 50 large basswood trees within sight of his apiary; now, all but 5 were gone. He had, however, succeeded in getting them more than replaced by giving away young basswood trees to all who would plant them and care for them. A number planted thus 10 years ago, this year yielded a magnificent crop of honey. The basswood was a fine shade tree, and if bee-keepers would encourage its multiplication, they would be consulting their own interests.

M. D. York—I have basswood trees that were transplanted a year ago last spring, that blossomed full this year. I have transplanted a tree 3 inches in diameter.

E. L. Hubbard—Will it pay to use land worth $50 an acre to raise honey-producing plants?

T. G. Newman—In my opinion, it would.

Rev. L. L. Langstroth mentioned the case of a bee-keeper who was thought by his neighbors demented, because he sowed the seeds of sweet clover in a sort of wilderness locality; but as the result he had now a splendid range of bee-pasturage.

M. D. York—I have raised Alsike clover upon land worth more than $50 per acre, and the seed alone paid me $25 per acre.

Mr. E. L. Hubbard mentioned a plant that grew a few miles south of Buffalo, N. Y., that was an excellent honey-plant.

Mr. Hiram Chapman described the plant as resembling plantain. A specimen of it was exhibited.

Dr. L. C. Whiting—It would be a most excellent and promising plan if some young men would go to work with our red clover, in the way pointed out by Mr. E. E. Hasty, and develop a strain with short tubes.

James Heddon—I do not think it will ever be profitable to raise honey-plants on land worth $50 per acre. Where there are waste-places it may pay to scatter the seeds of honey-plants. One plant that I would recommend is what is called "pleurisy root."

W. F. Clarke said that Alsike clover would grow and flourish in low, wet, undrained land, where red clover would not take. He also said that bee-keepers should use their influence to have stock prevented from running at large. It was a just and good law in other views of it, and its passage would double the value of bee-pasturage.

A member suggested that all who had tried the Alsike clover and found it valuable, should intimate the same by rising, when about one-third of the members present arose.

NEXT PLACE OF MEETING.

Indianapolis, Ind., was selected as the next place of meeting, and it was voted that St. Louis be in contemplation for the following year.

As the hour of adjournment had arrived, the election of officers was postponed until 2 p.m.

AFTERNOON SESSION.

The convention was called to order at 2 p.m., Pres. Root in the chair.

A letter read by Mrs. L. Harrison, from Mrs. Sarah J. Axtell, Roseville, Ills., conveying her salutations to the Society, and detailing her experience as a bee-keeper, was referred to the committee on resolutions.

The following resolutions were unanimously adopted:

Resolved, That we appreciate the presence of ladies in larger numbers than ever before, particularizing Mrs. L. Harrison, of the *Prairie Farmer*, and Miss Johnson, of the *Michigan Farmer*.

Resolved, That this Society has felt it an especial privilege and pleasure to have had the presence of the patriarch of American apiculture, in the person of Rev. L. L. Langstroth. It has gratefully appreciated the ac-

tive part that he has been enabled to take in the discussions at this meeting, and rejoices that still, in his old age, he is enabled to do something for his favorite pursuit. The warm affection and best wishes of all present will hover about him so long as he shall be spared in this life, and his memory will be held dear while honey distils and bees fly.

Officers were elected, as follows, for the ensuing year:

PRESIDENT—H. D. Cutting, Clinton, Mich.

RECORDING SECRETARY—Frank L. Dougherty, Indianapolis, Ind.

CORRESPONDING SECRETARY.—Mrs. Cass Robbins, Indianapolis, Ind.

TREASURER—C. F. Muth, Cincinnati, O.

VICE-PRESIDENTS:

Alabama—Nelson Perkins, Princeton.
Arkansas—Geo. B. Peters, Petera.
Arizona—Jas. H. Brown, Prescott.
British Columbia—U. Spears, New Westminster.
California—R. Wilkin, San Buenaventura.
Colorado—Philip Reardon, Jamestown.
Connecticut—H. L. Jeffrey, Washington Depot.
District of Columbia—Rev. J. A. Buck, Washington.
Dakota—J. H. Townley, Ashton.
Delaware—Geo. Remington, Wilmington.
Florida—W. S. Hart, Hawk's Park.
Georgia—Dr. J. P. H. Brown, Augusta.
Illinois—Mrs. L. Harrison, Peoria.
Indiana—J. Scholl, Indianapolis.
Iowa—J. M. Shuck, Des Moines.
Kansas—Chas. Smith, Marysville.
Kentucky—J. M. Egbert, Salvisa.
Louisiana—P. L. Viallon, Bayou Goula.
Maine—J. B. Mason, Mechanic Falls.
Manitoba—Hon. J. H. Wallbridge, Winnipeg.
Massachusetts—S. M. Locke, Wenham.
Michigan—Miss Lucy Wilkins, Farwell.
Missouri—E. M. Hayhurst, Kansas City.
Mississippi—Dr. O. M. Blanton, Greenville.
Minnesota—C. F. Greening, Grand Meadow.
Maryland—Dr. W. G. Phelps, Galena.
Montana—Chas. Bruce, Wickes.
Nebraska—T. L. VonDorn, Omaha.
Nevada—A. A. Leeper, Carson City.
New Jersey—E. Terryberry, Highbridge.
New York—Ira Barber, DeKalb Junction.
North Carolina—H. H. Watson, Sladesville.
Nova Scotia—C. T. Jones, Waterville,
New Hampshire—M. Harie, Keno.
Ohio—A. I. Root, Medina.
Ontario—J. B. Hall, Woodstock.
Pennsylvania—Arthur Todd, Germantown.
Prince Edw. Island—Jas. Gourlie, Summerside.
Quebec—H. F. Hunt, Quebec.
Rhode Island—Wm. J. Tracy, Burrillville.
South Carolina—S. C. Boylston, Charleston.
Tennessee—W. P. Henderson, Murfreesboro.
Texas—W. H. Andrews, McKinney.
Utah—John Morgan, Salt Lake City.
Virginia—J. W. Porter, Charlottesville.
Vermont—A. E. Manum, Bristol.
West Virginia—A. W. Cheney, Kanawha, Falls.
Wisconsin—Christopher Grimm, Jefferson.
Wyoming—James Fields, Fort Laramie.
Washington—H. A. Marsh, Fidalgo.

Mr. A. I. Root, of Medina, O., then read the followlng on

EXCELLENCE OR CHEAPNESS—WHICH?

I do not know but that this subject was given me because some of the brethren think I have been a little too eager to recommend cheap tools and appliances; and may be they thought I would defend my side of the subject while somebody else would take up excellence rather than cheapness. Now, it seems to me that wisdom and experience should guide us in this matter, and that we cannot very well lay down general rules for purchasing bee-supplies, or for purchasing anything else, in fact. Isaiah tells us, in his first chapter, to "learn to do well;" that is, doing well is progressive; and I should also say, learn to purchase wisely. If you have a little money that you want to invest in bee-supplies, do not be in a hurry to get rid of it all. It is said that "through wisdom is a house builded;" and I should say, "through wisdom" we make prudent purchases.

Suppose a boy is large enough to need a knife. What kind of a knife should he purchase—a five-cent knife or a two-dollar knife? Why, I should say it depends upon who the boy is, his age, and what he wants to do with the knife. But with the average boy, I think it would be a pretty good idea to try the cheap knife first. Even if he has laid up a couple of dollars to buy a pocket-knife, I think he will get more satisfaction by trying a cheap one first than by trying the two-dollar one first. If the cheap one does not please him, nor answer his requirements, it would not be very much expense to give it to some other boy, and try a little better one. Let him carefully examine and test each knife he buys, until he becomes a tolerably good judge of knives, and is able to purchase understandingly.

There are a great many people—and good people too—who have a way of saying, in regard to every purchase that comes up, "The best is the cheapest." A good deal depends upon what you mean by *best*. Suppose you want a hammer. There are hammers in the market for only five cents. They are not loose nor rickety either, for they are made all of one piece of iron; and although they may be awkward and cheap-looking, they will do a vast amount of service for many kinds of work. They cost so little that if somebody borrows one, or loses it, it does not matter much; and I have found it quite convenient to have these cheap hammers scattered

all around the premises. We have one down in the barn, and one in the stable out in the lots. The children have them to crack nuts; and, in fact, their are so many of them on the premises that whenever you want some sort of hammer for just a minute, you can almost always get hold of one of these, without going a great way or hunting very long.

But, do you think I would give a good mechanic such a hammer to put up hives with? By no means. In putting up hives he uses a hammer almost constantly; and if I could find a hammer *worth* five dollars, I would give it to him without hesitation; for if it were worth only a cent a day to him more than a cheap hammer, it would soon pay for itself. For this same reason a good mechanic ought to have at least three hammers, and three good ones. Now, when I say I would give a hammer worth five dollars if I could find it, I do not mean that I would buy one that is silver-plated, or has inlaid work in the handle, and things of that sort; neither would I give him a hammer that had a great amount of unimportant work put on it. One of our large railroad companies paid $60 (I think it was) for a dozen hammers to be used by some of their expensive men. These hammers were all worked out by hand, and were very handsomely made. I do not believe it will pay many bee-keepers to use tools or appliances made in this way. When he becomes so well off in producing honey and bees that he has some money he really does not know what to do with (I wonder if there are any such here to-day), it may be just the thing for him to do, to buy a six-dollar hammer to make hives with, because, you know, "the best is always the cheapest."

Suppose somebody of limited means wants to try bee-keeping. What kind of a colony of bees should he buy? Without knowing anything about the general habits of the man or woman, I would say, let them get the cheapest colony of bees that could be found in the neighborhood, thus saving expensive transportation charges, and also making their purchases of friends and neighbors. Then I would advise getting an Italian queen; but as I have said before, if one is new at the business, and, may be, likely to make blunders at first, I would tell him to get an untested queen. After he introduces her all right, and she begins to lay, if she does not turn out well in every way, let him try a higher-priced one next time, working progressively; and my experience convinces me that the best way in the world to get anything of this kind is to get it progressively. *Learn* to do well, not undertake to come up to the highest standard all at once. There is far more enjoyment in making a little more improvement every day, than in stepping into great things, even if it could be done. The same with hives, I would first get a cheap hive. When winter comes, get a hive suitable for winter, even if it does cost a little more; but save the old hive for the increase when spring comes again.

If you are going to make hives, start out with few tools and purchase judiciously each season, as you find you really need to. Do not get anything to be put away on the shelves until you may need it. Purchase what you need, and no more, until you have pretty surely demonstrated that it would be prudence to purchase larger lots for the sake of getting better prices. If you have worked with comb foundation enough to know that you want to use it largely, you can, from past experience, usually figure out how many colonies you will need to have, to think of buying a foundation machine.

There is another point to be considered right here. Sometimes cheap tools and cheap machinery make us so much bother and worry that they spoil all the pleasure of trying to keep bees; whereas a high-priced tool or a high-priced machine would go right along, without any hitch or accident, in such a way that the work would be only pastime or "fun." Where one's time is valuable, or where he already has many cares and responsibilities, nice tools or nice machinery, all in perfect working order, is by all means the most satisfactory, and, I believe, the most profitable. This latter point comes in more with tools or machinery that is necessarily somewhat complicated. We had some experience in this line in making and sending out rubber plates for making foundation. While we made the machines work nicely in the factory, and while a few of our customers were pleased with them, the majority found there were so many conditions to be observed, and the whole arrangement was so uncertain in its results, that I have always regretted that I advised anything of the sort. The same remarks will apply with force to home-made honey-extractors. We have for years sold the inside work, so that the friends who wanted to economize could save something by attaching them to an ordinary tin-can or barrel;

but as a rule, I believe they found it more vexation of spirit, and perhaps more expense in the end, than to have purchased an extractor all ready for use. Where one has a great many bees, and a good market for extracted honey, perhaps an automatic extractor will be found to be cheaper than any other.

In regard to bee-feeders: My experience has been in favor of something very plain and simple. One of our bee-friends once made a remark in jest in one of the bee-papers, that every bee-feeder and bee-hive, according to his notion, ought to have "cog-wheels," slides, and levers, somewhere about them. Now, "cog-wheels" work very nicely in a warm room on a winter's day; but when you get out in the apiary, among the bees, about harvest time, when everything is crowding, these cog-wheels seem to be somehow out of place. Let us have our implements plain, simple, and substantial; let us pay enough for them to have everything exactly as it should be—hives and frames interchangeable—everything so that it will work easily and surely; no sticking, nor jamming, nor pounding, to get things in place.

In regard to utensils for honey: I believe the demand seems to be in favor of cheapness—tin pails that are to be given away, as well as crates to hold comb honey. Sell the honey for so much, package and all. But even though we give them away, let us have them well enough made to be sure there will be no leaking nor daubing.

In regard to honey-knives: I would advise, as I advised the boy with his first pocket-knife. If you have few bees, and do not expect to go into the business largely, you can make a 10-cent garden-trowel do your uncapping very well for quite a while. When you need a better uncapping-knife, get it.

In regard to perforated zinc and things of this sort, do not include any in your first purchase. Wait until you feel the need of such new implements. May be you will never need them at all.

Even though I advise economy in purchases, I would have everything painted that stands out in the weather. If you say you cannot afford it, I would have half the number of hives, and have them protected from the weather by paint, rather than increase so fast, and have the weather constantly spoiling my implements. Besides, I would pay something for the sake of having things look decent and in order. A great many times, nice-looking implements encourage us to renewed energy; and sometimes just a little extra energy makes all the difference between success and failure, or profit and loss.

Every man who has honey to sell ought to have some sort of scales to weigh it on. The family steelyards will do to start with; but whenever you begin to take time enough in the course of a year, in using steelyards, to pay for a pair of scales, get the scales, but do not get them sooner, if you are cramped for means. When your business increases so that it will pay to have still better scales, get them. Do not waste the price of a good article in bothering with a poor, cheap one.

In regard to seeds for honey-plants: Go slow, unless, indeed, you are a farmer, and can raise Alsike, buckwheat, rape, or raspberries, so as to make it a paying investment aside from the honey. If you can do that, by all means raise honey-plants. I am led to make these remarks, because some of the new bee-friends seem to think that the first thing to be done in starting in bee-culture is to get a pound of figwort seed, and 4 or 5 pounds of the spider-plant, just because these plants yield honey in such quantities as to be visible to the naked eye. Buy a five-cent package of these seeds first; and if they please you, plant more the next year, by which time you should have seed of your own raising.

In regard to sections for comb honey: As the appearance of this product has a great deal to do with the price obtained, I think it very likely that the best is the cheapest every time.

When you find that you need a smoker (and you may need it the first day you can call yourself the owner of a small colony of bees), I should say, try a cheap one to start with. But perhaps you can decide what you want before you buy, by examining them at conventions, or testing those used by your neighbors. I say this, taking it for granted that bee-keepers are always neighborly. Is it not so?

In regard to hiving-boxes: I have sometime thought I would about as soon have a half-bushel or peck basket fixed to a pole, as to have any of those in the market. May be, after having tried them, though, you will think differently.

When your business arrives to the dignity of requiring a steam-engine, it will pay you to look into the matter very carefully. If you can, go and

see the engines made near you. But as I said before, be sure you need one before you get it. If you are doing your own work, decide how cheaply you can afford to furnish power by treading a foot-power machine. Whenever an engine would save you $25 a year for power, if you can raise the money to buy it, without cramping yourself, buy one of 1 or 2 horse-power. When you need a larger one, you can, as a general thing, dispose of the smaller one, or turn it toward another one as part payment.

While some folks get along nicely without any bee-veil at all, others save time and save their nerves, by using veils. The same may be said in regard to gloves, although for myself I should certainly never use the latter among bees; and if I had the entire management of an apiary, I do not think I should ever need a veil. Cheap, home-made veils will answer a very good purpose; but there are no gloves that will do, except the regular rubber gloves made for the purpose.

Prudence and economy would dictate some sort of wax-extractor. But do not buy one until you have discovered you need one. If you commence on a small scale, as you by all means should do, I would get a cheap one first.

Now I am going to talk a little on the subject of taking care of tools, even if that subject was not assigned me.

A cheap, low-priced tool may be so well cared for that it will always give excellent results; whereas, the most expensive tool may be so badly used that it will very soon give poor results. Have for your tools regularly assigned places. Where any tool is wanted in different places, I would have duplicates. For instance, cheap brushes for brushing off bees should be in handy places in the honey-house, and in several places about the apiary, at least during the summer time. The same may be said of hammers. Do not leave any kind of tool out in the rain. Keep every kind of tool not only well oiled on the moving parts, but oil it to prevent rust. Oil the hinges to the door of your honey-house. Rub tallow on the windows so they will slide easily up and down. Keep your lawn-mower nicely oiled, and out of the rain. Have your brooms hung up in broom-holders so the ends will not get rolled up and made useless; and keep the brooms out of the rain also. If you use a wrench, keep it nicely oiled and in place. And this matter of oil is of so much importance that I would have cheap oil-cans filled with oil, on nice little bracket shelves in the barn and in the stables. A little box should also be there, filled with tallow, where it can be had in a moment. A great many times the oil-can or the tallow will enable you to use a hand-saw so as to do the work in half the time it would if you had not used it. With steam-engines, and machinery for hive-making, oil is a necessity; and those who neglect to have it handy, will sooner or later have to pay heavy bills for repairs that a few drops of oil might have saved.

Nails and screws of different sizes should also be kept where you can put your hand on them quickly. Whether you are a bee-keeper or not, you need screw-drivers and adjustable wrenches where any of the children can get them in an instant, if you tell them the tools are wanted in a hurry. And, my friends, as you value the future happiness and comfort of those children, teach them to be sure these things are put back in their places as soon as you are done using them, if you should forget it yourself. A girl five years old can easily save the time of a man and a team, may be, by knowing where to find a wrench or an oil-can; and the little girl will get it, and put it back, quicker than a big man could. That is one reason why I like little girls, and little boys too, because they can help such a "big lot," when they get into the way of helping, and when their papas make friends with them. I wonder how many of the papas to whom I am talking to-day are in the habit of making friends with the "little chicks" at home. Why, if you do not, you lose half the pleasure of success in business. When a big crop of honey comes, and the prospect is before you of being able to pay off debts that have worried you, what a rare pleasure it is to be able to tell the children about it when you tell mamma, and have them rejoice and clap their hands too!

Mrs. Harrison referred to a remark made in Mr. Root's essay, on wearing gloves when handling bees. She found that gloves were necessary, but rubber ones did not work well, they were too close, and caused inconvenient sweating. She used a species of fine cloth. She cuts the tips of the fingers off, which allows the perspiration to escape, and makes them more comfortable and durable.

Rev. W. F. Clarke said that rubber gloves did not last long, the honey and propolis soon rot the material.

He had experimented largely with gloves, and preferred two kinds, the one a harvest glove, largely used in Canada, and made of sheep-skin; these were very cheap, costing from 30 to 40 cents. But he preferred a glove, or rather a gauntlet, made of two separate materials—the inside a species of Canton flannel, a fluffy material, and the outside, a species of fine linen, very glossy. Such a glove is thick enough to prevent the point of the sting reaching the flesh, and the beauty of it is that when these gloves are on you can dip your hands in water which keeps you cool, and causes the bees to fly as soon as they alight on the glove, for they are dainty and do not like to wet their feet.

Mrs. Harrison—I do not think that the lining is needed.

J. B. Hall—Wear smooth clothing, singe the hairs from the hands and wrists, and but few stings will be received.

Rev. L. L. Langstroth—Bees dislike to alight upon a cold surface; have dishes of ice water in the yard, and occasionally plunge the hands into the water when the bees are cross.

Prof. Cook—I think that a nervous, irritable person may be more likely to be stung; aside from this, I do not think that bees are any "respecters of persons." I question if sweat of horses is objectionable to bees. If a horse is severely stung, cover it with blankets wet with cold water.

Mrs. Temple, of Michigan, said that she could handle bees any way she wished, and they scarcely ever stung her. When they did, she suffered no particular inconvenience. She did not mind a bee-sting more than a mosquito-sting.

Mr. Heddon was in favor of wearing veils, but would not recommend gloves. They were very much in the way. He did not think there was the difference in people that Mr. Clarke would make out, some being bee-loved and others bee-hated. He thought that the difference was only in the actions and behavior of people when among bees.

G. M. Doolittle was satisfied that there was a real difference in different persons as to liability to being stung. He had a visit from a gentleman who said that bees never stung him, and Mr. D. acted so as to irritate the bees. They stung him (Mr. D.) very freely, but never touched the visitor.

James Heddon—I have seen nothing to indicate that bees are more likely to sting one person than another.

Rev. L. L. Langstroth said that the poison of a bee-sting was very virulent in the case of some, while others did not mind it at all. At one time of his life he was very susceptible to bee-virus, and dreaded being stung; but, after having been laid aside from bee-keeping for some time, and cautiously resuming, he found to his great surprise and pleasure that he had become so inoculated with the poison that he scarcely felt any pain whatever.

Mr. Boardman brought up another point in the essay—"Excellence or Cheapness"—as it respects section-boxes. He said that much might be done to preserve our honey-flora, by using something else than basswood for sections. He never uses basswood; honey stains it, so does water.

J. B. Hall—I use and prefer white spruce. It is hard, and the honey does not soak into it.

James Heddon—I do not use basswood.

Rev. L. L. Langstroth—Upon the subject of the essay read, I would say that excellency *is* cheapness.

Mr. John Vandervort, of Laceyville, Pa., then read the following on

COMB FOUNDATION.

To go back to the origin of comb foundation and trace its history would be a waste of time in repeating what is familiar to all practical bee-keepers. The best and most practical use of foundation is what we need to know. By the use of wired frames for the brood-chamber, I have obtained better results from foundation 6 square feet per pound than I formerly did with 3 square feet to the pound.

There has been a great deal said and written on the different kinds of foundation, and many tests have been made that, in my opinion, proved nothing. I have made mills of every style in the market (except the Pelham); I have made foundation on them; and I have tested all the different styles of foundation in the hives, and even my bees would not give my pet theories any preference, so far as acceptance was concerned. When it was all made at one time, from the same lot of wax, and used at the same time, it would all be accepted alike; but if made of different lots of wax, and at different times, they would show a decided preference for the purest and softest wax, and the newest made.

My experience in the use of comb foundation for surplus differs from many, in the amount of wax that should be used. Many claim that 8

to 10 square feet to the pound is light enough; but I contend that it should not be heavier than 12 square feet per pound. Comb drawn from foundation is much tougher than the natural comb, and for this reason we should use as little wax as possible in the surplus honey. I find by repeated experiments that I can get as much honey from the light as from the heavy foundation, and I receive no complaints from my customers about "fish-bone." J. VANDERVORT.

D. A. Jones—I have had "fish-bone" in one part of a case and not in another. One trouble is, the sections are put on too soon, and the bees run over the foundation, and "fool" with it, and it becomes hard before they attempt to draw it out.

Thos. Pierce—I agree with Mr. Jones.

Geo. E. Hilton—I also agree, and would further say that when only a "starter" is used, I am more apt to find "fish-bone" in the upper part of the section, which does not occur when the section is filled full of foundation.

N. W. McLain—What shall we do with old foundation?

J. C. Van Deusen—Melt it up and make it over; or if you do not wish to do this, soak it in warm water before using it.

C. P. Dadant—I have used foundation 3 years old in the brood-nest, and could see no difference between it and new foundation. If placed outside the brood-nest, or where the bees do not cluster upon it readily, it will probably not be used so soon as would new.

Dr. A. B. Mason—I agree with Mr. Dadant.

A. E. Manum—I have tried foundation of different ages, from one year to five years old, and could see no difference.

C. P. Dadant—When we first give foundation to the bees, the new may be used first a short time, but as soon as the foundation is warmed up there will be no difference.

D. A. Jones—If foundation is kept for several years it will acquire a bluish color; if it is put into warm water (say 120°), it will lose this bluish cast and become soft and pliable like new foundation.

W. E. Clark—I have kept foundation in a hive for 5 years, then hived a swarm upon it, putting in some sheets of new foundation, and both old and new were worked alike.

J. Vandervort—Thin foundation *can* be made upon a mill for making heavy foundation, but I find it better to sheet the wax thin. My objection to a press is that it cannot make thin foundation unless it is sheeted thin.

James Heddon—I think there is quite a point in regard to whether foundation is exposed to the air, or kept closely boxed, as regards its being soft and pliable when old. Everything considered, I prefer new foundation. Bee-keepers themselves are to blame for all this talk about "fish-bone." I used foundation for 3 years before my honey-customers knew it, and only one ever noticed it. Foundation was then much heavier than now.

The convention then adjourned until 7:30 p.m.

EVENING SESSION.

The meeting was called to order at 7:30 p.m., President Cutting in the chair. Dr. C. C. Miller's essay was read by the Secretary, entitled

BEE-KEEPING AS A BUSINESS.

In the *Canadian Bee Journal* for November, 1885, the question is asked, "Charging for salaries for work done, for necessary expenses, and for depreciation in the value of accessories, does bee-keeping pay?" Replies are given by 19 bee-keepers. Of these, 3 are non-committal; 8 say "yes, if the business is rightly managed;" 1 thinks it will pay if the person is adapted to the business, if compared with other rural pursuits; 4 give a more or less decided "no;" and 3 give just as decided a "yes." This leaves the question about as unsettled as ever, and it is evident from a close scrutiny of the answers, that in the minds of some of the respondents at least, that the question was looked upon in rather a loose way without considering the limitations put upon it by the querist.

As I have been asked to open the discussion of this subject before the North American Bee-Keepers' Society, it may be well to try to get at the exact matter to be discussed; and in order to do this, it may be necessary to ask, what is the object of the discussion? that is, what good is to come of it? I am not sure that I know, unless it be to answer the question for that class of persons who are trying to decide whether to adopt bee-keeping as a means of livelihood. In that view of the case the question might be someting like this: Can I make as much money in a series of years, at bee-keeping, as I can at any other business? The more I think about it, the more difficult it seems

to me to give an answer that will meet all cases, and perhaps the only safe one is this: "I can't tell. You must try it and find out." But as the question is asked in good faith, some discussion may help.

It will hardly do to attempt a general answer, as too many do, by quoting the results of a successful year by a skillful man, saying "Mr. A. made $3,000 clear, such a year." If Mr. A. had business ability by which he could make $4,000 a year at some other business, then for him bee-keeping did not pay. If Mr. B. can average $500 a year keeping bees, and there is no other business at which he can make more than $400 a year, then for him bee-keeping pays well.

Perhaps one of the best ways to get the desired information, is to ask those who have had experience in the matter. We will interview Mr. C., a bee-keeper of some note. In reply to our query, Mr. C. says:

"Oh yes, bee-keeping pays well. Adam Grimm made a fortune at it."

"What has been you own experience in the matter, Mr. C.?"

"Oh, I only keep bees as a matter of recreation. I had, one year, over 40 colonies, but my time is so much taken up with professional duties that I only keep about a dozen. I have kept a cash account with them, and find they pay me well."

"Why don't you keep a larger number, or devote your entire time to it?"

"Oh, I couldn't afford that. You see I can make so much more as a lawyer. But then there are thousands of men who only earn say $400 a year, who would be greatly bettered by taking up bee-keeping as an occupation. I can easily clear annually $5 per colony. Now one of the men I have spoken of, with 100 colonies could make at that rate $500 per year, so, you see, he would have his condition bettered $100 per annum."

"But, Mr. C., have those men the ability to do as well as you?"

"Well, I don't know. It's hard to tell."

But I was only to open this discussion, and I suppose it may now be considered open. I may just add a word from my own experience. I have been in the business some 24 years, making it my sole business for the last 7 years. I have no patent hive to sell, do not sell bees or queens—simply produce honey to sell, and I am obliged to confess that I could make more money to give up bees entirely. If asked why I continue at the business, I answer: I like it. It keeps me out-doors, and is good for health. It allows me to be with my family more than any other calling at which I could make as much, and for the privilege of these enjoyments I am willing to pay the price of the additional money I would make at a more lucrative calling. Whether the price may not become too large for me to afford to pay, is an open question. C. C. MILLER.

A. I. Root—I think that none of our bee-periodicals now advise everybody to keep bees. Dr. Miller should have mentioned that he was receiving a large salary when he embarked in bee-keeping. He has frequently told me how he enjoyed bee-keeping. If it brought him health, what more could he ask?

S. T. Pettit—Mr. Root's speech is a sample of showing the bright side, and leads us to think that there is nothing like bee-keeping for health.

J. B. Hall—Editors like to tell good news; if I tell how much honey I produce, the bee-papers publish it, the newspapers take it up and spread the story all over the world, and everybody thinks that "if he can make money in producing honey, I know *I* can." I know of many people who have engaged in the business and lost money at it.

Thos. G. Newman—Editors publish just what bee-keepers write them for publication, and try to fairly represent the pursuit. At least, I know that is the case with the AMERICAN BEE JOURNAL.

Martin Emigh, of Holbrook, Ont., was called upon and asked if he had made bee-keeping pay. In reply he said that he had paid for his farm out of the proceeds of his bees. Last year he put 180 colonies in cellars and took out 178 alive; sold 71 colonies; and now has 177 colonies, and they produced 6,000 lbs. of comb honey and 5,000 lbs. of extracted honey.

H. R. Boardman asked all those who made an exclusive business of bee-keeping to raise their hands. A very animated discussion arose as to who *did* make bee-keeping an exclusive business, and some exceedingly fine points were raised, when further discussion was stopped by a motion to lay the subject on the table, which was carried.

Mr. Nelson W. McLain, manager of the Experimental Station of the U. S. Agricultural Department, at Aurora, Ills., read from the advance sheets of his forthcoming report to Prof. C. V. Riley, U. S. Entomologist; but he requested that what he read should not

be reported, because it had not yet been published by the Department, and it was only by the courtesy of the Agricultural Department that he had been permitted to present it to this Continental Society of Bee-Keepers. He assured them that each one of the bee-periodicals would be furnished with proof-sheets in time so that they could publish the matter simultaneously with Prof. Riley's forthcoming report. The subjects treated upon were, "Bees and Fruit" and "Artificial Fecundation of Queens." The report detailed the results of investigations and experiments carried on by him at the Government's Experimental Station. It demonstrated that the bees cannot injure fruit; and gave the account of several experiments in fecundating queens artificially.

At the close of Mr. McLain's remarks, the Rev. L. L. Langstroth offered the following resolution which was unanimously carried:

Resolved, That this Society highly appreciates the movement now at length made by the United States Department of Agriculture, in the promotion of bee-culture, and welcomes its representative, Mr. Nelson W. McLain, to whose explanatory address and the extracts from his forthcoming report the Society has listened with much interest, especially concurring in the suggestion that statistics of the honey crop be included in the report of the Department.

A. J. Cook—People have several times told me that their grapes had been destroyed by bees, and I have offered to come and see the destruction, if they would let me know when it was going on, but I cautioned them to first be *sure* that they had a case. I have never yet been called. Bees do sometimes attack grapes, however, but it is when the weather has first caused them to crack, or something else attacked and opened the skins. I cannot believe that queens can be fecundated while in the larval state.

N. W. McLain—When I gave to Prof. Riley an account of my experiments in fertilizing queens in the larval state, he said that it was nothing strange; it had been frequently done with other insects. By exercising the laws of breeding, different varieties of bees can be crossed, the undesirable qualities eliminated, the good qualities preserved and so intensified that we really have a new strain of bees that will transmit their characteristics.

James Heddon — Have you the temerity to tell me that I can cross the Italian and German bees, and secure a cross possessing the good qualities of both varieties?

N. W. McLain.—Most assuredly.

Mr. Heddon then gave a history of how his strain of bees were originated. In regard to bees being trespassers, he said that people do not look at the matter in its true light. In some localities cows are allowed to run at large; what would be said of the land owner who would put poison into a pumpkin, saying, "It is my poison, my pumpkin, and my land, I can do with them as I please, let people take care of their cows if they don't want them poisoned?" There is as much sense in saying that bees must be kept at home. All bee-keepers should join the Union, and thus help to have bee-keeping recognized as a legitimate industry.

N. W. McLain detailed in graphic language the treatment to which honey was subjected at the hands of commission men. The remedy is to let people know that you have pure honey for sale. If bee-keepers would take one-fourth the pains that patent medicine men do to advertise, there would now be no complaint of a poor honey market.

The convention adjourned until 9 a.m. of the next day.

THIRD DAY—THURSDAY.

MORNING SESSION.

The meeting was called to order at 9 a.m., Pres. Cutting in the chair.

It was moved and carried that the Secretary be paid $50 to pay for his expenses and services.

The President called on Mr. T. G. Newman for a report on

APICULTURAL NECROLOGY.

Mr. President, Ladies and Gentlemen:

Since last I had the pleasure of meeting with this Continental Society of Apiculturists, many of those who have been our companions in these assemblies have passed from the present state of being, and we are now deprived of their gladsome greeting and hearty welcome. Much as I would like to mention *all* their names in tender remembrance, I find it impossible, because in many cases the surviving friends have not communicated the facts to the apicultural public. Allow me, with affectionate regard, to mention a few of the most prominent of our brothers of America and Europe, who, during the past four years, have been added to that vast army now numbered with the dead!

Of these, four were editors of our bee-periodicals, who had, during their lives, done much to raise apiculture up to its present "standard of excellence," devoting the best energies of their lives to its development and advancement, often sacrificing their ease, comfort, physical strength and wealth to their favorite pursuit. It is true that each one fought a "hard battle"; they were often severely criticised, and sometimes strongly comdemned by those who should have been their constant friends and co-laborers. While admitting that they often erred (for "to err is human") let us cast "the mantle of charity" over "their short-comings," and think only of their good deeds, energetic work, unselfish lives, and the general nobility of their characters!

I will now "call the roll" of those over whom death has triumphed:

A. F. Moon, of Rome, Ga., was one of the founders of this Society, and in the absence of the Rev. L. L. Langstroth, its first President, Mr. Moon presided over the Convention. He was the editor of the *Bee World*, and died on Aug. 2, 1882; aged 58 years. He commenced to keep bees when 11 years of age, and ever after gave the fullest energies of his mind to the advancement of practical bee-culture.

Rev. Jasper Hazen, Woodstock, Vt., after 25 years of progressive bee-culture, died on April 13, 1882, aged 92. He strenuously advocated the use of surplus honey-boxes, invented a hive, and welcomed the introduction of the Italian bees. He was also a vigorous apicultural writer 20 years ago.

Edward Townley, of Cincinnati, O., died in the 80th year of his age, in July, 1882. He commenced to keep bees in 1850, and built up a large apiary at Mt. Auburn. He was the author of a book on bee-culture, and devoted his energies to apiculture.

Jesse C. Estlack, of Littleton, Colo., died on Aug. 5, 1885, at the age of 64. He went from New Jersey to Colorado in 1859, and there established an apiary in which he took much delight.

Theodore Houck, of Canajoharie, N. Y., died on June 16, 1883, at Denver, Colo., whither he went on account of failing health. He was one of the editors of the Bee-Keepers' *Exchange*, and was never happier than when among his bees. The last Convention he attended was at Albany, N. Y., in January, 1883, and was one of its most energetic members. His age was 26.

E. F. Cassell, of Illinois City, Ills., was killed on Oct. 6, 1883, while attempting to board a moving train. He had been a prominent and enthusiastic bee-keeper for 15 or 20 years.

William Howlett, of Beaver Lick, Ky., was killed by lightning on May 19, 1884, while at work on his farm. His apiary contained 125 colonies of bees. He attended the Cincinnati meeting of this Society, and took part in the deliberations.

D. S. Given, of Hoopeston, Ills., the inventor of the Foundation Press, died at the age of 40, on July 10, 1884, at Los Angeles, Calif., whither he had gone for his health. His kind disposition endeared him to all who knew him, and his name will go down to posterity as one who did his part to make apiculture practical.

John Madden, of Davenport, Iowa, was thrown from his wagon and killed on Sept. 19, 1884. He was one of the organizers of the Eastern Iowa and Western Illinois Bee-Keepers' Association, and was filled with energy and enthusiasm. There were 225 carriages in his funeral procession (10 being filled with apiarists); this proves how much he was beloved by those who knew him.

William W. Cary, of Colerain, Mass., died on Dec. 9, 1884, in the 70th year of his age—full of years, ripe in experience, and faithful in friendship. At the time of his death he had some 300 colonies of bees. He was intimately connected with the first importations of Italian bees into America, and was the faithful co-worker with Father Langstroth, in all his efforts to revolutionize bee-keeping in America.

R. M. Argo, of Garrard Co., Ky., died of congestive chills, on Feb. 13, 1885. As one of the pioneers of modern apiculture, he wrote extensively some 20 years ago. He was a well-posted and practical bee-keeper, and reared many very fine queens.

William Williamson, of Lexington, Ky., died on Feb. 13, 1885, at the age of 40. Those who attended the meeting of this Society at Lexington, in 1881, will witness to his zeal and enthusiasm, as well as his whole-souled disposition. He was one of the projectors of the International Congress at New Orleans, but died just before it convened.

Rev. Herbert R. Peel died in England, on June 2, 1885. He was the editor of the *British Bee Journal*, and Secretary of the British Bee-Keepers'

Association. In his death our English brethren have sustained an irreparable loss. He was a firm friend, an indefatigable worker and a progressive apiarist.

Prof. Von Siebold died in Germany on April 7, 1885. He was the faithful friend of Father Dzierzon, and was one of the first to accept the theory of parthenogenesis. He was a prominent scientist, and rendered much assistance to the development of rational bee-culture.

Prof. Andreas Schmidt, for 20 years editor of the *Bienen-Zeitung,* the leading apicultural publication of Germany, is also numbered with the dead. He was a co-worker and an ardent admirer of Father Dzierzon, whose Golden Jubilee was celebrated in Germany last September with great enthusiasm. In his death our German brethren have lost a master mind, a thorough scholar, an energetic worker, and a faithful friend.

There are many, many others—but time would fail me to speak of all those who through faith in scientific research, and devotion to experiments and manipulations, have helped to dispel the darkness and scatter the light,—as if by "magic wand" commanding modern apiculture to "arise and shine"—pulsating and luminating every zone!

Men pass away! Monuments crumble into dust! and all that remain of human greatness, are thoughts and deeds. By these we may "lay up treasures where moth and rust *cannot* corrupt." In death we take nothing with us but that which we really are! Shrouds have no pockets! Coffins no coupon-drawers! Crowns fall off at the touch of death! Stripped of our robes of state, insignia, uniforms and decorations, we then shall stand for just what *we are!*

Our best thoughts and noble deeds, given to the world by the aid of the printed page, may live on and energize a world after we are crumbled to dust. True men *live*, long after they have passed from this stage of action. The ponderous steam-engines which brought this Convention together, are but the spirit of James Watt living again in our very midst! Modern apiculture is but the embodiment of the thoughts and lives of those who have gone before us; and our thoughts and work, which may add to its practicability, may live on after we are gone!

The second President of this Society—the lamented Moses Quinby (than whom apiculture never had a truer and more unselfish friend), now, in this very assembly, *lives again* in those who are practicing his thoughts, theories and progressive methods of bee-culture; as well as in those who love him for his scientific research, grand character, and noble life!

That band of brothers whose names we have to-day inscribed on our "Roll of the Honored Dead," *live again* in our tender remembrance, and we may almost seem to catch a glimpse of "the Angel of Life," with open scroll, recording their names with the plaudit—"Blessed are the dead;"—"they rest from their labors and their works do follow them."

"Breathe soft and low, O whispering wind,
Above the tangled grasses deep,
Where those who loved me long ago
Forgot the world and fell asleep.
So many voices have been hushed,
So many songs have ceased for aye,
So many hands I used to touch
Are folded over hearts of clay.

"I only know that, calm and still,
They sleep beyond life's woe and wail,
Beyond the fleet of sailing clouds,
Beyond the shadow of the vale.
I only feel that, tired and worn,
I halt upon the highway bare,
And gaze with yearning eyes beyond—
On fields that shine supremely fair."

THOMAS G. NEWMAN.

Prof. Cook remarked that he was very much interested in the subject, and remembered with pleasure many meetings when those mentioned by Mr. Newman had been present. He spoke particularly of Mr. Moon, the original projector of the National Society, and Mr. Williamson, who so nobly managed the entertainment of the Society at Lexington, Ky. He moved a vote of thanks to Mr. Newman for placing their names and history before the Society, and also that it be spread upon the minutes. Carried unanimously.

Mr. James Heddon, of Dowagiac, Mich., then read the following on

REVERSING COMBS.

My experience with reversing brood and surplus combs is nearly all confined to two seasons; but as I have had in use 4,000 to 6,000 reversible brood-frames, as well as quite a number of reversible comb-honey-cases, that experience has been somewhat comprehensive. I try to be practical in all my work, never jumping hastily at conclusions, nor adopting methods and fixtures which, although of some little advantage, still are not enough to over-balance the extra cost of construction and manipulation. Despite

such endeavors I realize that it is by no means impossible for me to make mistakes, yet I feel quite positive that implements arranged for reversing brood and surplus combs at will, have come to me to stay.

During the past year I have been using a hive which I devised for the purpose, with which I can reverse, or more properly, invert a whole case of brood or surplus combs at will. While we all, here, consider this a great improvement over reversing combs singly, yet were I to continue the use of such hives as necessitated reversing each brood-comb separately, I feel positive that I never should again use a frame that would not admit of reversing.

Some of our bee-keepers have paused to ask if there was not some serious objection to inverting combs. They had noticed that the cells were slightly inclined; that the workers nearly always built them in this way; and they believed that behind this almost universal method of comb-construction, was a design for a purpose. Even if this be true (which I doubt), is it not quite evident that the designers are not aiming at our desired end; that they do not purpose "lots of surplus honey to sell."

Let us not forget that our bees always and invariably construct their combs so that the cells are in rows horizontally—not vertically. This is an unvarying rule, while the incline of the cell is not. Now, I found that by the use of comb foundation, I could make them construct their combs with the cells running in rows vertically. Much of Dadant's excellent brood foundation is stamped in this way. Many believe that it is less inclined to sag, when so placed in frames. I have found by practical use of thousands of pounds of it, that the little worker, in so rigidly following her instinct in rowing the cells horizontally, was only "just trying to fool somebody." By the inversion of thousands of combs, I have proven that her less determination to incline her cells, belongs in the same catalogue with placing the same in horizontal rows. I think that the scientist has long since learned that Nature, when forming instinct in animals, is no more working for our interests than when she pours her rain-water back into the sea, while our crops are blasting and withering; or when she visits us with cyclones.

I know it is true that we cannot with impunity violate some of the instincts of our bees; that some of them run directly parallel with the ends we desire; but which are for and which against us, we must determine by experiment. I have satisfied myself that in the inversion of combs we violate no instinct which is favorable to our success. We do, however, encourage certain actions on the part of our bees, that greatly favor the desired result.

By virtue of this reversing we get our frames completely and solidly filled with comb, which metes out to us no less than six points of advantage which I will not consume space to detail. It also tends to keep the brood-combs the more completely filled with brood, the honey going into the surplus combs. When reversing is practiced, as we can well afford to do when we can reverse a whole set of combs with a single motion, it gives us great control over swarming. I find that the reversing of the surplus combs after I have learned the proper time to do it, is conducive of most favorable results. It causes the bees to more completely fill the sections, which is not only an economy, besides presenting a more attractive package, but adds greatly to the shipping-qualities of our surplus comb honey. It also stimulates hasty and complete capping of the combs.

During my experience in reversing combs, I have never yet discovered any ill-effects resulting therefrom; but besides the advantages above enumerated, I am always meeting with unexpected minor benefits resulting from the practice.

JAMES HEDDON.

Dr. A. B. Mason—When is the proper time to reverse the combs?

James Heddon—The proper time to reverse brood-combs is when the bees are rearing large quantities of brood, and desire to increase the size of the brood-nest. To reverse the brood-combs late in the season, when they are contracting the brood-nest, will cause the brood-nest to be filled with honey all the faster. Sections should be reversed when the bees are inclined to store honey in them; if done after the bees cease storing honey in them, it will hasten the removal of the honey to the brood-nest. As soon as the outside sections are far enough advanced to bear inversion, change them to the centre of the case, then invert the whole case, and all the sections will be finished at nearly the same time. Inversion causes the bees to attach the combs to the sections all around, and thus

makes them bear shipment much better. Swarming is also lessened by reversing the combs, as the removal of the honey gives more room for brood, and thus helps to destroy the desire for swarming. It also has a tendency to the destruction of queen-cells.

C. P. Dadant — How about contraction?

James Heddon — My objection to the Langstroth hive is its depth; with that I contracted by removing some of the combs and putting in "dummies." With my new hive I contract by simply taking away one section of brood-frames.

Mr. Thompson, of New York—How shall those manage your new hive that do not wish to feed sugar for winter stores?

James Heddon—During basswood the bees can gather honey faster than they can store it in the sections, and we have only to place a section of brood-combs over the sections, and in this catch the "overflow." When the harvest is over, remove this and keep it until fall, then shake the bees down in front of this case of honey, or else set it over the case containing the bees, and it is done.

Geo. E. Hilton—In practicing the contraction method, how can we remove a section of the brood-nest after swarming without removing some of the brood?

W. Z. Hutchinson—After a swarm has issued, the young queen does not commence laying until about the 19th day, two or three days later all the brood will have hatched, and we can remove one section without taking any brood; we may get a few eggs, but this is immaterial.

L. C. Root—Are we to understand that you prefer brood-combs only 5 inches deep?

Mr. Hutchinson—Most emphatically.

C. P. Dadant—We object to a shallow comb, and to two sets of combs, because the queen cannot lay in a circle; it consumes time for her to pass from comb to comb, or from one end of a shallow frame to the other.

W. Z. Hutchinson—We do not care how the queen travels, whether in a circle or crosslots, if she only keeps the combs full of brood, and if we do not give her too many combs to fill, she will do this.

Prof. A. J. Cook then read the following, on

THE POLLEN THEORY.

The pollen theory as I understand it, is simply this: Under certain circumstances bees may winter with less liability to diarrhœa, disease and death, in case there is no pollen or bee-bread in the hive to serve as winter food.

There are reasons drawn from experiment, I think, for the belief that facts sustain the theory. For several years we have tried to arrange our bees so that some should have abundance of pollen in their hives, while others should be destitute of the same, making a careful record in each case. While we have never lost a colony by diarrhœa during these experiments, we have had several cases of such disease, but never in colonies where the pollen was all excluded. In truth, the main portion of the diarrhetic excreta is almost always—if not always—composed of pollen grains, thus showing that pollen was present, if not the cause of the trouble. Careful examination of bees from colonies with no pollen—some dead, others alive and lively, show little and frequently no pollen in their intestines.

Now with the theory and these facts in mind, let us study briefly the nature of food, and see whether or not physiological science has any facts or suggestions to offer us regarding this question.

There are four kinds of food, each of which probably enters more or less largely into the food regimen of all animals. Of these the inorganic, such as water, lime, chloride of sodium, or common salt, etc., are important as entering into the structure of organs, preserving the requisite consistency of tissues, and in aiding the vital processes. Thus it is necessary that blood, or the nutritive substance of the animal body, should be liquid. A large proportion of water keeps it so; hence, what wonder that water is so essential to life, and so craved and sought after by most animals. In all vital activity, osmosis—or the passing of liquids through animal membranes, is all important; common salt promotes this osmosis, and thus it is that salt has such saving properties. Hence those of you who believe so heartily in giving water to bees may still rejoice in that you are improving the blood of your pets, while those who take pleasure in adding salt, may exult as you affirm, "here goes for osmosis!" These inorganic elements are usually obtained in sufficient quantities in the general food, though water is generally required in larger quanti-

ties and must be had in addition, separately, to secure the best health and greatest strength. We have all seen bees sipping water, and often in such places as to suggest that the addition of salt is very welcome to them. All kinds of food are required in greater quantity when the vital activity is increased, hence our bees will need more water as breeding, storing, or other work is increased in the hive.

The second kind of food is known under the term carbo-hydrates. It includes all the sugars and starch. As starch, when eaten, is changed under the influence of a ferment, into sugar, we may well consider it with the sugars. The carbo-hydrates consist of oxygen, hydrogen, and carbon —the two former in proportion to form water. It is a matter of common observation that when the carbo-hydrates enter largely into the food, the animal is apt to gain rapidly in fat. We are not sure that the sugars are changed directly into animal fat, possibly they serve so admirably as food, that they produce such an excellent condition of the animal system, that all the food is utilized, and a surplus is at hand which is stored up as fat. May be the nitrogenous food as well as the sugars aid in forming the fat of the body; in either case the food must be chemically changed in that wonderful laboratory, the animal organism. The fact remains that much sugar in the food promotes the deposits of fat. We all know how the feeding of corn increases the fat, and does not the fact that corn contains over 67 per cent. of starch, which when eaten and digested is all changed to sugar, enforce the position here taken? Again, when animals hibernate, or when they are long sick and take no food, the stored fat is used up. Thus, if this stored fat can for a time serve the purpose of all food, it is not unreasonable to conclude that all organic food may under the best conditions be converted into fat. We positively know that animals may eat all muscle—as beef's heart—and yet the liver will form glycogen, which in turn becomes liver sugar, and, as we have seen in the marvelous economy of the body, sugar promotes the formatiou of fat, it may be that all food under the best conditions conduces to the storing up of fat, and that sugar powerfully aids to bring about just this most favorable condition. These carbo-hydrates are often styled the heat-producing foods. I think this term false and misleading. It is probable that all food, of which these sugars are an important part, are to nourish or to build up tissues and carry on the organic processes. This vital work generates heat. Heat is incidental. Nutrition is to build up and keep the body in working condition; in doing this the body is kept warm.

We have seen that stored fat in animals that hibernate, and in case of disease, will alone serve to keep up the nutrition. We have also seen that these carbo-hydrates conduce more than other food to the formation of this fat. Is it not scientific then to urge that the pure carbo-hydrates are the best food on which to winter our bees? And this is enforced, I believe, by experience and by nature as well, for I doubt not but that in most cases in nature, almost the entire food of bees while they are quiescent in winter, is honey.

Let me state further that cane sugar which composes from one to eight per cent. of honey, when eaten by any animal, man included, is changed in the stomach to a sugar much like, if not identical, with honey. The bees do the same with nearly all the cane sugar or nectar, or with most of the cane sugar when they feed upon it. Hence it is more than likely that honey is one of the most healthy and nutritious of all our sugars; that the bees have done for us what we would have to do for ourselves had we eaten the cane sugar. Who has not found that honey seems to go further, and satisfy more quickly, even than cane sugar when eaten on our tables? One more point, common glucose, or grape sugar,—I now mean the artificial product produced by the action of sulphuric acid on corn starch—honey, and liver sugar are usually all called glucose or grape sugar by chemists. They are chemically identical, and give the same reactions with the copper salts which they all reduce, which fact furnishes one of the best tests for these sugars. Yet I do not believe they are the same. Physiologically they seem quite different. Why, when we eat glucose, is it changed to glycogen in the liver and then to liver sugar, unless the latter is more easily assimilated? Why do bees thrive on honey, and die when fed the artificial glucose? Why do bees refuse to eat artificial grape sugar when honey or nectar is to be had? All these facts seem to indicate what I believe to be true, that physiologically honey, starch, glucose and liver glucose are really different. Taste and vital action are nicer chemists than our scientists, and detect differences which the latter as yet fail to recognize. It is possible that honey and liver glucose are identical. The

fact that both arise in the animal body under the influence of the digestive ferments would make this view plausible.

The third group of food elements consists of the fats. The higher animals obtain these largely in all vegetable and animal food. While the fats, also called by some the hydrocarbons, consist of the same chemical elements as do the carbo-hydrates, the oxygen is far less in amount. Actual experiment has shown that higher animals thrive poorly without some of this kind of food. Its value is farther attested by the appetite which craves fat, especially if the weather is cold. Bees get some of this kind of food in their pollen. It seems quite likely that the stored fat of the body may come in part from the fat eaten, though this is not certain. It is certainly true that all does not, as animals are often known to store much more fat thau is taken with their food. It is quite likely that most fat eaten goes to serve the current needs, while some of the carbo-hydrates and the nitrogenous food, and quite likely some fat is, through the wonderous economy of the vital organism, changed into and stored up as fat. That nitrogenous tissues may be robbed of their nitrogen and further changed into fat, is proved by disease where fatty degeneration is noticed. This may occur in all organs. In some cases, as in fatty degeneration of the heart, almost pure muscle is transformed into fat. Bees get but little fat in their food, and so this group of food elements interests us less than do the others.

The albuminoids or nitrogenous food elements make up our last group. These have, in addition to the oxygen, hydrogen and carbon—nitrogen. All protoplasm or active vital tissue, whether animal or vegetable, consists largely of this nitrogenous material. But as all organs get their substance from the food, it becomes evident that the albuminoids are absolutely essential in food. Higher animals get this albuminous food in all vegetables, in muscle, eggs, cheese, etc. Bees also get it from vegetables, usually from honey which contains from .2 to .6 per cent. albuminoids and from pollen, often from fungoid spores, and occasionally from various kinds of flour or meal. This kind of food *must* furnish the elements for building up all the protoplasms of the body which form a large proportion of all the vital organs and tissues. We have already seen that some of this nitrogenous food may be transformed into fat.

As no animal can possibly be developed from the egg to adult life without this albuminous food, and, as in all vital action, some of this material in the body is used up and must be restored, it follows that brood-rearing in the hive and activity of the bees necessitates the presence of these albuminoids in the food.

As honey contain no albuminous food, except the pollen in it, it follows that bees must have bee-bread to rear brood, and also to preserve their organisms intact during the busy part of their existence. To say that bees may breed with no bee-bread, or that the active workers need none, is to say that you can have an ocean without water, a desert without sand, or bricks without clay.

We know that hibernating animals, and animals long sick, often fast for months. Yet here the vital forces must be kept up and must have nourishment. We have seen that in such cases the fat is used up, and without doubt the protoplasm in muscle and other inactive tissues yield up of their substance to furnish the small amount of albuminous nutriment needed. If we could keep our minds and bodies wholly inactive, we should need but little nitrogenous food.

We may conclude then, reasoning from real hibernation, where animals are wholly inactive, from cases of long sickness, and from higher animals in a state of quiescence, that our bees during their winter quiet in cellar or clamp, when the vital activities are at a minimum, have enough of the albuminoid elements in blood and tissues and may thrive on a pure carbonaceous diet. Analogies, as pointed out, make the hypothesis tenable.

Again, bees are naturally very neat and do not void their excreta in the hive except under the severest stress of circumstances. I have more than once gathered all the refuse under a full colony of bees at the close of the of a long winter's sojourn in the cellar, and found almost no nitrogenous matter. If, then, bees are to be forced to long confinement, we should spare no pains to secure the greatest possible quietude. Just the proper temperature, I think, will, under favorable circumstances of food and air, secure this quiescence. But in case the temperature or ought else should irritate, then it were better that no pollen should be eaten, for without it breeding, which demands great activity, would be impossible, and in its absence the active digestion nec-

essary to liquify albuminous food would be avoided. It is a generally recognized fact that an inactive life needs little, and is better with little albuminous food. Indeed, albuminous food, as we have seen, subserves the vital activities; of course, then as we reduce these, we reduce the required amount of nitrogenous aliment.

Again, the indigestible portion of the carbonaceous food, especially the carbo-hydrates, is very slight. Not so with pollen. We can readily see then that where the feces are to be retained in the intestines as long the pollenaceous food would be or might be irritating, and were better withheld.

We thus see that from experience, from analogy, and from what we know of foods and the vital activities, we may well believe that our bees were better off in many cases were pollen absent from their winter aliment.

Agricultural College, Mich.

C. P. Dadant—We once imported bees largely, and by long experience learned that the food must contain no pollen; if it did, the bees died.

James Heddon—I have found bees frozen upon combs of honey—frozen before they had consumed enough pollen or bee-bread to produce diarrhea. I have used the term "heat-producing food" in the sense in which it is generally used. I know that a stage driver in cold weather needs food of a different character than does a wood-chopper.

Prof. Cook—The chemist speaks of heat-producing food; the physiologist does not. I think it an improper term.

Mr. Ira Barber's essay was read by the Secretary, on

WINTERING BEES IN CELLARS.

Another year has passed since we met together in council, and thousands of colonies of bees have been lost for want of proper protection in winter. It is quite often said that no one has learned the secret of wintering bees, so that they can be wintered safely every time; but I deny the assertion, and ask this association of bee-keepers if a quarter of a century of successful wintering of hundreds of colonies of bees without loss, except where an occasional one starves, is not long enough to establish the fact that bees can be wintered as safely as any other stock?

In my early experience I had all the troubles in wintering that many are experiencing now, and I tried every place and manner of wintering that looked reasonable, to add to their comfort, and, as a rule, when they came out of winter quarters the loss would be from 30 to 75 per cent. For a long term of years I have wintered bees without loss, and fully 80 per cent. came out as good as when they were placed in winter quarters. If you ask where I winter my bees, my answer would be, in a warm, damp cellar. Why I prefer a warm cellar is because a warm atmosphere is a natural element of the honey-bee; and why I prefer a damp atmosphere is because bees are more quiet and healthier than in a warm, dry atmosphere for so long a time as 170 days without water.

In a warm cellar, where the temperature is from 60° to 90°, there is no discharge from the bees while in the cellar, unless it be in a dry state; and if bees have to be fed for winter, it can be done the last thing before placing them in, and then the bee-keeper knows just what the bees have, and no harm will be done because their feed is not sealed. The hives should be packed in a solid body when kept in a high temperature, and piled one on top of the other, three or four deep, with no upward ventilation. In this way of packing if some of the bees get uneasy and leave their hive, they are quite sure to enter some other hive, and no harm is done.

In wintering in a warm cellar, bees require all the combs that they occupy in the summer, and they will be all over the combs and do not cluster. The cellar must be closed, with no currents of air either hot or cold passing through it to arouse the bees. It is necessary to have a small ventilator from the top of the room for constant draft; a 3-inch pipe is sufficient for 200 colonies. A fire should be kept in the room above the bees whenever the mercury goes below zero.

Much is said about moisture in hives, and all manner of ways are tried to get rid of it. A warm atmosphere disposes of all moisture that arises from the bees, without any absorbents. Every colony should have plenty of feed to carry them through our longest winters, before they are placed in, so that their owner will have no excuse to go near them until spring. They will use more feed in a warm room than in a cool one.

The time to place bees in the cellar is before cold weather arrives—about

the middle of November, as a rule. I use caps taken from the hives for stands to set the brood-chambers on, so that each tier of three or four hives rests on the one cap. The caps should be placed close together, and when all are in they form a floor to the cellar, and yet each stand is separate so that there is no jarring when handling in taking them out. The bottom tier of hives should be raised off the bottom-boards about half an inch at one end of the hive, while all the rest should be left just as they come from the yard, with a good cloth and sound top-board well glued on every hive. When all are in, close the cellar and let them entirely alone until there is something for them to do in the spring. About the time that willow begins to bloom is early enough in my locality.

The above plan of wintering bees is no theory, but is one that is practiced by scores of bee-keepers in Northern New York, and invariably without loss in winter.

I have been as brief as possible in giving my mode of wintering, and will only add further that this plan is given for wintering large lots of bees. Where but few bees are kept where I live, they have no trouble in wintering them in any cellar where vegetables will keep without freezing.

What I claim for this plan of wintering is this: 1. It is the safest plan. 2. It is the cheapest. 3. It requires far less labor than any plan yet recommended.

Mr. C. R. Isham asked if Mr. Barber wintered his bees upon natural stores.

Ira Barber—Yes.

C. R. Isham—Do you leave the pollen in?

Ira Barber—Yes.

J. B. Hall endorsed the views and practices of Mr. Barber from his own experience. He accidentally discovered that bees will winter well in a high temperature. He had 48 colonies in a small bed-room off the kitchen. While he was absent a warm spell came in winter. He feared the loss of his bees. When he came home they were roaring loudly. He gave them up for lost, in his own mind. But they wintered safely, and came out strong in the spring with plenty of brood in the hives.

Martin Emigh—I endorse Mr. Barber's essay, except the dampness.

C. P. Dadant—We have wintered bees in two cellars—one wet, the other dry, and the bees wintered better in the dry one.

Ira Barber—In a damp cellar the temperature must be higher than in a dry cellar. I have wintered bees successfully in a temperature of from 60° to 90°.

Dr. A. B. Mason—I agree with Mr. Barber, except that I would take away the pollen. I do not say that the bees *cannot* be wintered well with pollen in the hives, but if they have no pollen they can have no diarrhea.

C. F. Muth asked if he understood Mr. Hall correctly yesterday, that his honey harvest closed about July 20, and that last year he did not put his bees out until May 2. If so, how did he obtain a sufficient force of bees to get in the honey during so short a harvest?

Mr. Hall replied that the secret lay in the bees being kept so warm that they bred early. He expected his hives to have several combs with brood in them by the time he put them out in the spring. By May 20, there would be not only brood in 6 or 7 combs, but that number full of brood. He could not winter without pollen, because if he did, he would not have his bees bred early enough in the spring to gather in the honey. If they started without brood they would not build up to strong colonies until near winter. He did not agree with Mr. Heddon upon the pollen theory, but must thank him for his surplus case.

James Heddon—I expect to be as successful as Mr. Barber. I think that nothing has been said that disproves the pollen theory. Pollen does not injure bees unless they consume it. Prof. Cook has explained that bees may breed without taking pollen into their intestines. In some instances honey may be free from pollen; in others it is not, and the bees cannot avoid its consumption. I kept bees in a cellar in which the temperature often fell to 20°. Those having natural stores suffered from diarrhea, some perished with it; those having sugar stores were free from it. I will furnish the facts that in many instances one colony has survived and another perished under exactly the same conditions except food. Who will furnish the explanation?

Ira Barber—The higher the temperature, the better my bees have wintered. There is sometimes water in the cellar, and the combs are slightly mouldy.

Mr. Heddon did not consider that the experience of Mr. Barber and Mr. Hall conflicted with the pollen theory, because bees did not necessarily eat pollen when they fed it to larvæ. Pollen would not hurt bees in winter, unless they ate it, and if the temperature was right they would not consume pollen.

Adjourned till 2 p.m.

AFTERNOON SESSION.

Ex-President Root called the meeting to order at 2 p.m.

Prof. Cook offered a resolution of respect to the memory of the late Moses Quinby, of St. Johnsville, N. Y., and announced the contribution of a handsome purse with which to purchase a portrait of the deceased to be presented to his widow. Mr. Quinby was one of the originators of this Society and its second president. This compliment to his memory was exceedingly appropriate and its announcement was enthusiastically received by the convention.

A. I. Root—I must go away in a few minutes, and before I go I desire to say that I have enjoyed this meeting very much. We may not have become rich by producing honey, but this meeting has certainly done much good in uniting the bee-keepers of this country into one band. This convention has "taken the conceit out of me" and has given me a better opinion of my fellow men.

WINTERING BEES.

The discussion on wintering bees was resumed by Mr. S. F. Newman, who said—If such gentlemen as Mr. Barber and Mr. Hall meet with no winter losses, I should like to know what becomes of their bees.

Ira Barber—I work against increase and when I get more than I can use, I sell them.

T. Pierce—I have wintered bees for 3 or 4 years, the same as Mr. Barber does, and have been successful. I keep the temperature at from 44° to 50°.

L. C. Root—Do we understand Mr. Barber to say that he has no objection to feeding bees just before putting them into the cellar?

Ira Barber—I do not approve of it, but if I find any that need feeding when putting them in, I feed them. I think that fall honey is just as good for winter stores, provided the temperature is kept high enough. Old bees are just as good as any for wintering.

Jas. Heddon—"Spring dwindling". I call bee-diarrhea in disguise. The bees have had their vitality taxed to the utmost in retaining their feces, and when they begin brood-rearing the strain is too great, and they perish faster than young bees can be reared to replace the dying. When my bees winter well they are not troubled with "spring dwindling." I am not yet certain how much there may be in this pollen theory, and I am yet experimenting.

Rev. W. F. Clarke said there were three matters of great importance to him which had transpired to-day. First, Mr. Hall had explained his method of bee-keeping, and he was much obliged to him for it. Second, Mr. Barber and Mr. Hall had supplied confirmation of the hibernation theory. A year a ago he did not understand Mr. Barber's method. Mr. B. said at the Rochester convention that he (Mr. C's) method was a cold system of wintering, and his (Mr. B's) a warm one. This was a mistake. Our systems are alike, only Mr. Barber secured the right temperature in the whole cellar, and I secured it in the single hive. But Mr. Barber's bees quiesce in the fall; if the hive is too full of bees, a cluster will hang outside; they remain in torpor until the breeding instinct awakes, and then they arouse to activity. Third, the pollen theory has got its quietus from Prof. Cook. He has told us in scientific terms the nature of bee-food, and the process of assimilation. He has maintained that bees cannnot breed without pollen, and that they cannot stand work without taking nitrogenous food. If they take that food it must be digested and the feces excreted. Well, Mr. Barber and Mr. Hall have proved that bees breed largely, *i. e.*, work hard, and therefore must eat and digest strong food. The inferences are plain. The bees, if they excrete, do it in dry feces. They must excrete, that is clear. Therefore, there is no danger in having pollen in the hive. On the contrary, it is necessary.

Thomas G. Newman, chairman of the committee on statistics, reported as follows: There were 103 members present, but quite a number had given no report of the past season's operations. Those reported summed up as follows:

Bees.—Colonies last May....	4,283
Increase.....	3,196
Total now.....	7,479

Honey.—In comb..... lbs, 155,354
Extracted.... " 86,928

Total honey produced. lbs, 242,282

Beeswax produced.....lbs, 2,233

Honey Unsold.—Comb..lbs, 43,275
Extracted.... " 33,425

Total honey unsold, lbs, 76,700

Only about one-third present at the meeting had become members of the Society, and only about one-quarter of those present were included in the statistical report.

The smallest report was: 1 colony last spring, increased to 5, giving 43 pounds of extracted honey.

The largest report was: 470 colonies in May, 740 in the fall. Honey obtained from them 38,000 pounds in comb, and 6,000 pounds of extracted; 125 pounds of beeswax—all having been sold except 2,000 pounds of extracted honey.

All other reports of bees and honey varied between these. It was requested that no statistical table be published — the aggregate amounts being all that will serve the interests of bee-keepers in general.

The report was received and adopted, and the committee discharged.

Mr. D. A. Jones read the following on

DIFFERENT RACES OF BEES.

It is not my purpose to occupy the valuable time of this Convention with a long essay on what has been done in the past in reference to this subject, nor shall I trouble you with a history of the efforts put forth, the trials and hardships endured, and the successes, failures and disappointments connected with the importation of the different races of bees in which I have participated. The object of the majority of the bee-keepers of to-day is to have their capital and labor yield them as good a return as possible, and the desire is to obtain such a race or strain of bees as will be conducive to that end.

With the above object in view, I shall therefore tell what I have now and what I prefer. I have as yet found none having all the good qualities and being possessed of none of the bad; and none therefore that suit me in every particular. I am not now breeding either Cyprians or Syrians in their purity for my own use, but for experimental purposes and to supply the demand for pure stock. It must not, however, be supposed because of this that they are not without many good qualities; such is not the case.

Different climates have different requirements, as evidenced by the success of Mr. B. F. Carroll, of Texas, with pure Cyprians, and of Mr. A. W. Osburn, in Cuba, with Holy-Land bees or Syrians. I simply assert that they are not so suitable for our climate as are others. After the experience of years I find that for this particular climate, several crosses give far better results than do the races in their purity. This experience is the outcome of experiments conducted on an extensive scale, and with all possible care as to selection and breeding—the latter on isolated islands in the Georgian Bay. Crosses between Italians and Cyprians or Syrians, and between Carniolans and Cyprians or Syrians, seem to give the best results. One-third Cyprian or Syrian is sufficient with two-thirds Italian, or half Carniolan and half Cyprian or Syrian, work well together.

While bees are all crossed the same, the results vary for a time till the strains become more fixed. It is not well to decide because the first cross is of extraordinary value, that you have found just what you are seeking for; in after experience you will find that they seldom duplicate themselves in this respect. These first crosses are too often adopted as the standard, with the impression that breeding from them will always give equally good results. Who knows, unless with proper facilities for breeding, what these crosses are? On the islands of which I have spoken, I have found that at all times I cannot be successful, especially in those particular points that I most desire. Unless the mating of the queen can be better controlled than now, perfection cannot be reached, and the best races or strains of bees produced.

The breeds of horses and other animals over which we have perfect control, are being constantly improved, through persistent efforts which have been going on for hundreds of years; it is not a mere assumption, then, to assert that by crossing, re-crossing, selecting and re-selecting, we certainly make much progress; but these operations will need to be much more carefully conducted than is generally the case, as few, from their surroundings, are enabled to properly prosecute the work. Where pure races best meet the requirements of the climate, it is

well to have them in all their purity. Mr. Benton is still engaged in the East in the exportation of queens of the different races, and his efforts are worthy of proper recognition, and should receive such.

In reply to inquiries, Mr. Jones said—I do not believe that any one living in a Northern climate can profitably produce honey with pure Syrian or Cyprian bees. I prefer Syrians crossed with Italians. The Carniolans do not swarm with us any more than do the Syrians or Cyprians. My advice is, if you have good bees keep them; don't fool away money by sending for new kinds of bees, and paying big prices. We cannot keep queens long enough to test them, and then sell them at a low price. Buy them and test them yourself. In buying queens, buy of a reliable breeder. Carniolans crossed with Italians cannot be distinguished from Italians crossed with blacks. I prefer crosses to pure races.

James Heddon—I must say a word in favor of the blacks; I want their excellent comb-building qualities, and their disposition to keep the honey out of the brood-nest. I have crossed them with the Italians for perhaps 20 generations.

The committee on resolutions reported the following, which were unanimously adopted:

Resolved, That the thanks of this Society be, and are hereby presented to the retiring President, Secretary, and Committee of Arrangements, for their energetic and efficient services in connection with this meeting.

To the railroads by which reduced fares were given to members attending this meeting.

To the proprietors of the Antisdel House for reduced rates, excellent fare, and polite attentions.

To the editors of the various bee-periodicals, also the publishers of the *Prairie Farmer*, for the publication of early and full notices of this meeting.

The committee also recommended the adoption of the following:

Resolved, That a committee of one be appointed to present to the Commissioner of Agriculture our appreciation of his valuable efforts to aid our business in urging the importance of apiarian statistics, and suggest our desires in respect to the chemical examinations which we deem very important to our pursuit.

Resolved, That the thanks of the North American Bee-Keepers' Society are due to Prof. C. V. Riley and to the United States government for its action in forming an experimental station for the promotion of apiculture.

Resolved, That we tender the thanks of this Society to the Department of Agriculture in sending to our meeting in Detroit, Prof. McLain, and for the able paper he has presented to us.

Resolved, That we recognize this step of the Department of Agriculture as in the right direction, and bespeak for it your continued support.

Resolved, That we recommend to the Department the making of accurate reports of all data concerning the production of honey, and have them embodied in the usual agricultural reports.

Resolved, That the Secretary of this Society present a copy of these resolutions to Prof. McLain for transmission to the Department of Agriculture.

The above were also adopted.

Prof. Cook, who was about to leave, expressed the great pleasure he had experienced in meeting so many bee-keepers, especially the Eastern friends. Mr. L. C. Root responded, saying that he had hoped great things for this meeting, and he now felt certain that the Society had done wisely in coming to Detroit.

It was voted to hold an evening session, and the meeting adjourned until 7:30 p.m.

EVENING SESSION.

The meeting was called to order at 7:30 p.m., Ex-President Root in the chair.

Mr. Dadant introduced the subject of beeswax, and urged the desirableness of inducing the United States Government to take off the protective duty in order that a supply might be obtained from other countries.

C. F. Muth remarked that much of the beeswax offered in this country was very inferior, and went on to speak of several adulterations, some of which were such close imitations of the genuine article as to deceive experienced dealers. The greatest care should be taken to get pure beeswax.

Prof. Cook was appointed "the committee of one" voted in the afternoon to communicate with the Department of Agriculture in regard to obtaining a scientifically-accurate analysis of honey.

D. A. Jones gave his method of queen-rearing as follows: Get a colony very strong, either by adding brood or young bees, then remove the queen and brood, and give the bees eggs from a choice queen. A large number of excellent queens will be the result. Such a colony can build at least 3 lots of cells. Italians are poor cell-builders. Queens reared in this manner lay sooner, and are better developed.

James Heddon — These excellent results may be the result of "contraction," *i. e.*, the bees should be many in proportion to the space.

N. W. McLain—It is amazing to me why breeders pay so much attention to the rearing of queens and so little to the rearing of drones. If such wonderful results have been secured in rearing queens, the same treatment in rearing drones will improve them in the same manner, and it should not be forgotten that prepotency is on the male side. Both the "Pollen Theorists" and Mr. Barber are correct. If the environments are right, the pollen does no harm; if the pollen is not there, no harm will come if the environments are not right.

D. A. Jones—There is a way of "squeezing" bees into the sections by putting the brood-combs close together, and more surplus will thus be secured. I am so thoroughly convinced of the advantage of this that I make all my hives so that the combs are 1⅜ inches from centre to centre.

T. L. VonDorn—I have used combs only 1¼ inches ftom center to center, and was surprised at the good results.

D. A. Jones—When the honey harvest is coming to a close, I remove ⅓ of the combs, and the bees build out the upper part of the combs and fill them with honey; the wide spaces below the honey are excellent places for the bees to cluster.

James Heddon—By using combs far apart, the inducement to building drone-comb is increased.

D. A. Jones—In introducing virgin queens I let them run in at the entrance. Do not disturb the bees. I can introduce laying queens by putting them into a top-feeder and letting them work their way down through the feeder into the hive. In using chloroform for introducing queens it is better to use it at evening or in the morning, when the bees are not flying, as those that came in might kill the queen. If done in the middle of the day, give them another puff or two a few minutes after the queen has run in.

L. C. Root—One of the greatest stumbling-blocks in the way of advancement is the oft-repeated cry, "It is not according to nature!" It is not a question of "naturalness," but it is, "All things considered, is it best?"

Mr. Manum stated that he had been very successful in getting colonies with laying workers to accept a queen, by introducing her with a couple of frames of brood in all stages. This restored the colony to a normal condition.

D. A. Jones said this plan would work with all but pure Cyprians or Syrians, which were incorrigible.

REPORT OF VICE-PRESIDENT.

Mr. S. T. Pettit, Vice-President for Ontario, Canada, made the following report:

Bee-keeping in Ontario, for the last year, has not been of the most flattering kind. During the last winter and spring about 75 per cent. of our bees perished. This great loss was brought about by three principal factors, viz: poor stores, long-continued cold in both winter and spring, and inexperience.

Generally speaking, those of long experience in apiculture, who have given much time, study, painstaking, and exacting care—in a word, those who make bee-keeping a specialty, and who are adapted to the business, sustained comparatively little loss; hence it is plain that this great loss fell principally upon those who, as a rule, neglected some other business to enjoy an immense amount of pleasure and grow suddenly rich by "keeping bees." The large amount of dead, filthy honey thrown upon the market the past spring, has done no little harm to the pursuit. Interested parties are constantly promulgating the idea that everybody should keep bees, which results in no inconsiderable loss to the country.

Beside the indirect loss by diverting the minds of many from their legitimate calling, I believe a fair calculation would show the startling fact that every pound of honey produced in Ontario, for the last 6 years, has

cost the producers, on an average, not less than 25 cents per pound.

The teaching that everybody should do everything for himself, is a retrograde movement, undermining the best manufacturing, producing, carrying and commercial interests, and tends to semi-barbarism; no matter how persistently or plausibly put, "the trail of the serpent is over it all;" "every man to his trade" is a noble motto, and brings "the greatest possible good to the greatest possible number."

The season was a poor one; the amount of honey taken being about 50 per cent. below the average. The weather was too cold and wet with occasional hot spells. The principal honey-producing flowers were abundant, but the elements failed to get into the proper humor to inspire them with their natural love for the secretion of the delicate, sparkling sweets, and the friendly visits of the honey-bee. In spite of all this, some of the short crop of 1884 is yet on the markets; but we will have a clean market for 1886.

There are several practices that militate against the true progress of apiculture in Ontario, besides those already referred to:

1. Extracting green or unripe honey. It is impossible by human art or skill to impart that exquisitely fine, finished flavor that the bees give it when left with them until it is capped.

2. The practice of feeding sugar either for stimulating or wintering purposes. It is very difficult to disabuse the public mind. They know that we feed sugar, and they seem determined to cherish the belief that in some way or other it gets into the honey. If we all fed honey instead of sugar, a less quantity would be thrown upon the markets, and a correspondingly higher price would be obtained, besides inspiring confidence in the purity of our honey.

3. Small bee-keepers demoralize our markets sadly, and give a good deal of trouble by allowing their bees to be robbed.

4. And last but not least, I fear the most of us will have to plead guilty to the charge of painting the bright side of bee-keeping too bright, while we keep the dark side obscurely in the dark; in fact it is much easier to show up the bright side than the dark side—it seems to loom up so easily.

In conclusion, I desire to say, that the practice of exhibiting granulated honey in glass, at our Expositions, is doing good service by way of an educator; both dealers and consumers begin now to regard granulation as a proof of purity.

QUESTION BOX.

The committee on questions reported as follows:

Will it pay to raise red raspberries for pasturage on land worth from $100 to $150 per acre? Yes, if the crop of berries also paid.

What is the smallest amount of honey needed for winter stores for a strong colony, and what is the best kind of honey to use? Fifteen to 40 pounds of well-ripened honey.

What per cent. of those entering bee-keeping succeed? Two per cent.

Will thin combs, in sections, sell as well as thick ones? Yes.

Shall we use separators? Yes, if you cannot get straight combs without them.

How shall bees by the pound be placed upon combs? Place the queen on the combs, then shake the bees on the combs.

What shall be done with honey-dew? Sell it, or feed it sparingly to the bees in the spring.

Is a coal-furnace objectionable in a cellar where bees are wintered? We do not think favorably of it.

What width of sections is best? One and one-half to 1⅝ inches without separators; 1⅞ to 2 inches with separators.

Has the queen been seen depositing drone-eggs? This committee has not seen her doing so.

Are queens reared from transferred larvæ as good as any? Yes.

How are the Carniolans regarded? Favorably, except excessive swarming.

Will reversing combs secure the destruction of queen-cells. Report says yes.

H. R. Boardman, S. T. Pettit, S. F. Newman.

Committee on Questions.

The committee on exhibits reported the following articles on exhibition:

M. H. Hunt, Bell Branch, Mich.—A chaff hive, one-piece V-grooved sections, and extracted honey in glass cans and jars.

Will Ellis, St. Davids, Ont.—Thick and thin comb foundation, and sections.

Reynolds Bros., Williamsburg, Ind.—Sample of fine flavored and light colored fruit-bloom honey.

Berlin Fruit Box Co., Berlin Heights, O.—A crate of 500 one-piece, sliced, V-grooved sections; section-case to be used with or without separators; veneer separators, top feeder and strawberry baskets.

G. W. Stanley & Bro., Wyoming, N. Y.—An automatic, vertical-geared honey-extractor; much improved on those formerly made.

Dr. A. B. Mason, Wagon Works, O.—Blocks of candied honey on plates, sweet clover, form for nailing frames, wiring-board, reversible frame, and a machine for making holes in frames for wiring.

Chas. F. Muth, Cincinnati, O.—A variety of his improved, all-metal smokers.

J. Van Deusen & Sons, Sprout Brook, N. Y.—A large quantity of thick and thin foundation, both wired and unwired.

Frank A. Eaton, Bluffton, O.—A section-case for use without separators, and a case of 56 one-pound sections of white clover honey.

Chas. Dadant & Son, Hamilton, Ills.—Samples of heavy and thin foundation varying in weight from 5 to 11 square feet to the pound.

Amos A. Ressler, Sandersburg, Pa.—Extracted locust honey.

Prof. A. J. Cook, Lansing, Mich.—Extracted white clover honey, and a sample of plant-lice honey from northern Michigan.

E. J. Cook, Owosso, Mich. — Extracted basswood honey.

Hiram Chapman, Versailles, N. Y.—Some heads and seeds of a new honey-plant (name unknown), and honey from the same.

J. J. Bradner, Findlay, O.—One-piece V-grooved sections.

John Rey, East Saginaw, Mich.—Extracted honey in glass jelly-pails.

Newman Bros., Norwalk, O.—Several cans of extracted honey.

W. E. Clark, Oriskany, N. Y.—Dovetailed white poplar, and nailed spruce sections; frame-spacers, Quinby hive-clasps, Van Deusen feeders with brackets, Quinby's new bee-keeping revised by L. C. Root, and a quantity of Quinby smokers from 2 to 3½ inches.

Geo. E. Hilton, Fremont, Mich.—White comb honey, gathered from a plant on the Michigan river, known there as "cleaver;" extracted basswood honey, and large photographs of residence and apiary.

D. A. Jones, Beeton, Ont.—Large variety of labels for both comb and extracted honey; very smooth one-piece sections as they came from the saw; nine different widths of one-piece sections, a reversible honey-crate for use on the hive, and for shipping any sized sections; sections slotted on four sides, section-case for any width sections, slotted queen-excluding honey-board, new gearing for honey-extractor to permit the instant removal of comb-basket; a double and a single Benton shipping queen-cage, Canadian bee-feeder, winter feeder for "Good" candy, zinc honey-board and queen-excluder.

Jas. Wales, Belleville, Ont.—Fine specimen of honey-cake.

E. Nutting, Kent, O.—Drone-trap.

H. D. Davis, Bradford, Vt.—Surplus and section shipping-case, and four-piece dovetailed sections.

Rev. W. F. Clarke, Guelph, Ont.—His renowned hibernating hive stand.

Bingham & Hetherington, Abronia, Mich.—Honey-knife.

E. S. Miller, Dryden, Mich.—A Falkner chaff-hive with wintering and surplus arrangement, and a perforated-zinc queen-excluder.

P. L. Viallon, Bayou Goula, La.—Comb built by Mexican honey-wasps.

Joshua Bull, Seymour, Wis.—Extracted honey.

There was also on exhibition some 2-ounce sections of comb honey from W. Harmer, of Manistee, Mich.

A. B. Mason, G. B. Hall, G. M. Doolittle,
Committee on Exhibits.

Ex-President Root then addressed the meeting, summing up some of the interesting features of the present gathering, expressing his satisfaction at the success which had attended the convention, and said that the hour had now come when we must part.

Adjourned *sine die*.

W. Z. HUTCHINSON, *Sec.*

ERRATA.

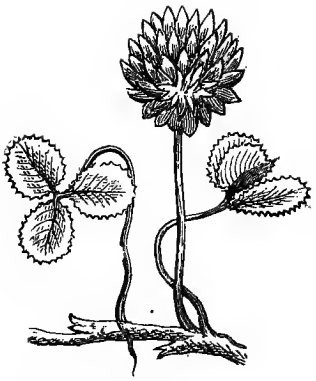
The following corrections were not received in time to prevent their appearing in this pamphlet:

On page 33—top of second column—for *other friends*, read "Otto Kleinow."

On page 38—The Vice-President for Michigan, is Prof. A. J. Cook. The Professor was nominated, and he then suggested the name of Miss Wilkins, but as the lady refused the office, it naturally reverts to the first nominee.

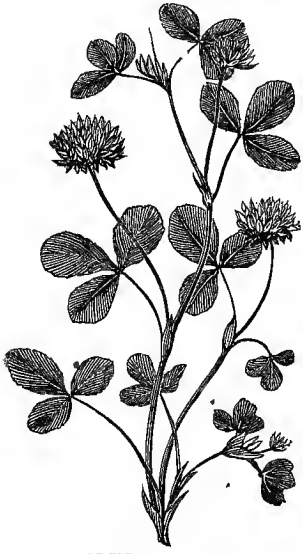
On page 42—second column, first paragraph—Instead of the last sentence, which reads thus: "He never uses basswood; honey stains it, so does water;" read "I use basswood for sections, but in view of its becoming scarce, and to save it for bee-forage, can we not find some other timber to take its place?"

BASSWOOD.



WHITE CLOVER.

SWEET CLOVER.



ALSIKE CLOVER.

ROCKY-MOUNTAIN BEE PLANT.