# **Albert John Cook** Manual of the apiary

#### **Albert John Cook**

## Manual of the apiary



Published by Good Press, 2022

goodpress@okpublishing.info

EAN 4064066429805

#### TABLE OF CONTENTS

	10-	rn,	١ті		
		ľ	<b>\                                    </b>		<b>\</b>   •
ILLU	1.1	1 1 <i>\</i> /-	<b>~ 1 1</b>	L J I	N.J.

INTRODUCTION. WHO MAY KEEP BEES.

WHO ARE SPECIALLY INTERDICTED.

**INDUCEMENTS TO BEE-KEEPING.** 

WHAT SUCCESSFUL BEE-KEEPING REQUIRES.

PART FIRST.

NATURAL HISTORY OF THE HONEY BEE.

CHAPTER I. THE BEE'S PLACE IN THE ANIMAL KINGDOM.

BRANCH OF THE HONEY-BEE.

THE CLASS OF THE HONEY-BEE.

ORDER OF THE HONEY-BEE.

SUB-ORDER OF THE HONEY BEE.

FAMILY OF THE HONEY-BEE.

THE GENUS OF THE HONEY-BEE.

SPECIES OF OUR HONEY-BEES.

VARIETIES or THE HONEY-BEE.

THE FASCIATA OR EGYPTIAN RACE.

OTHER VARIETIES.

**BIBLIOGRAPHY.** 

VALUABLE BOOKS FOR THE STUDENT OF ENTOMOLOGY.

CHAPTER II. ANATOMY AND PHYSIOLOGY.

ANATOMY OF INSECTS.

ANATOMY AND PHYSIOLOGY OF THE HONEY-BEE.

CHAPTER III. SWARMING OR NATURAL METHOD OF INCREASE.

CHAPTER IV.

PRODUCTS OF BEES; THEIR ORIGIN AND FUNCTION.

**BIBLIOGRAPHY.** 

PART SECOND.

THE APIARY;

INTRODUCTION TO PART II. STARTING AN APIARY.

PREPARATION.

HOW TO PROCURE OUR FIRST COLONIES.

KIND OF BEES TO PURCHASE.

IN WHAT KIND OF HIVES.

WHEN TO PURCHASE.

HOW MUCH TO PAY.

WHERE TO LOCATE.

**CHAPTER V. HIVES AND BOXES** 

**BOX-HIVES.** 

**MOVABLE-COMB HIVES.** 

APPARATUS FOR PROCURING COMB-HONEY.

CHAPTER VI. POSITION AND ARRANGEMENT OF APIARY.

**POSITION.** 

ARRANGEMENT OF GROUNDS.

PREPARATION FOR EACH COLONY.

**CHAPTER VII. TO TRANSFER BEES.** 

CHAPTER VIII. FEEDING AND FEEDERS.

**HOW MUCH TO FEED.** 

WHAT TO FEED.

**HOW TO FEED.** 

CHAPTER IX. QUEEN REARING.

**HOW TO REAR QUEENS.** 

**NUCLEI.** 

SHALL WE CLIP THE QUEEN'S WING?

**CHAPTER X. INCREASE OF COLONIES.** 

**SWARMING.** 

TO PREVENT SECOND SWARMS.

TO PREVENT SWARMING.

**HOW TO MULTIPLY COLONIES WITH THE BEST RESULTS.** 

**DIVIDE.** 

CHAPTER XI. ITALIANS AND ITALIANIZING.

ALL SHOULD KEEP ONLY ITALIANS.

**HOW TO ITALIANIZE.** 

**HOW TO INTRODUCE A QUEEN.** 

TO GET OUR ITALIAN QUEEN.

**REARING AND SHIPPING QUEENS.** 

CHAPTER XII. EXTRACTING, AND THE EXTRACTOR.

HONEY EXTRACTOR.

**USE OF THE EXTRACTOR.** 

WHEN TO USE THE EXTRACTOR.

**HOW TO EXTRACT.** 

**CHAPTER XIII. HANDLING BEES.** 

THE BEST BEE-VEIL.

TO QUIET BEES.

**BELLOWS-SMOKER.** 

TO SMOKE BEES.

TO CURE STINGS.

THE SWEAT THEORY.

**CHAPTER XIV. COMB FOUNDATION.** 

**HISTORY.** 

**AMERICAN FOUNDATION.** 

**HOW FOUNDATION IS MADE.** 

TO SECURE THE WAX SHEETS.

USE OF FOUNDATION.

TO FASTEN THE FOUNDATION.

**SAVE THE WAX.** 

**CHAPTER XV. MARKETING HONEY.** 

**HOW TO INVIGORATE THE MARKETS.** 

EXTRACTED HONEY.

HOW TO TEMPT THE CONSUMER.

**COMB-HONEY.** 

CHAPTER XVI. HONEY PLANTS.

WHAT ARE THE VALUABLE HONEY PLANTS?

**CHAPTER XVII. WINTERING BEES.** 

THE CAUSE OF DISASTROUS WINTERING.

THE REQUISITE TO SAFE WINTERING—GOOD FOOD.

**BOX FOR PACKING.** 

**CHAFF HIVES.** 

WINTERING IN CELLAR OR HOUSE.

**BURYING BEES.** 

**SPRING DWINDLING.** 

**CHAPTER XVIII. THE HOUSE APIARY.** 

**DESCRIPTION.** 

ARE THEY DESIRABLE?

THE CASE AS IT NOW STANDS.

**CHAPTER XIX. EVILS THAT CONFRONT THE APIARIST.** 

ROBBING.

**DISEASE.** 

**FOUL BROOD.** 

**ENEMIES OF BEES.** 

TACHINA FLY.

SPIDERS.

ANTS.

WASPS.

THE KING BIRD— Tyrannus Carolinensis.

THE TOADS.

MICE.

CHAPTER XX. CALENDAR AND AXIOMS.

**WORK FOR DIFFERENT MONTHS.** 

**AXIOMS.** 

APPENDIX. HISTORY OF MOVABLE FRAMES.

LECANIUM TULIPIFERÆ— Cook .

NATURAL HISTORY OF THE LECANIUM TULIPIFERÆ.

**REMEDIES.** 

**MOTHERWORT AS A HONEY PLANT.** 

**DESCRIPTION OF THE PLANT.** 

THE SOUR-WOOD TREE.

THE JAPAN MEDLAR.

THE STINGING-BUG.— Phymata Erosa, Fabr.

THE SOUTHERN BEE-KILLERS.

**HONEY-COMB CORAL.** 

**GENERAL INDEX.** 

**INDEX TO APPENDIX.** 

### **ILLUSTRATIONS.**

#### Table of Contents

1.	Trachea	28
2.	Respiratory Apparatus of a Bee	29
3.	Bee's Wings	38
4.	Head of Drone	39
5.	Head of Worker	39
6.	Head of Bee	49
7.	Thorax of Bee	55
8.	Nervous System of Drone	58
9.	Alimentary Canal	60
10.	Male Organs of Bee	63
11.	Queen Organs	64
12.	Larva of Bee	68
13.	Pupa of Bee	69
14.	Queen Bee	72
15.	Labium of Queen	73
16.	Part of Queen's Leg	74
17.	Drone	86

18.	Part of Drone's Leg	87
19.	Worker Bee	90
20.	Tongue of Worker Bee	91
21.	Jaw of Queen, Drone and Worker	92
22.	Part of Posterior Leg of Worker— outside	93
23.	Part of Posterior Leg of Worker—inside	94
24.	Anterior Leg of Worker	94
25.	Sting of Worker	95
26.	Egg and Brood	97
27.	Wax Scales	106
28.	Honey-Comb	109
29.	Langstroth Hive	124
30.	Body of Hive	125
31.	Bevel Gauge	126
32.	Bottom-Board	128
33.	Two-Story Hive	130
34.	Cover to Hive	131
35.	Frame	133
36.	Frame, with Cross-Section of Top-	134

#### Bar

37.	Block for making Frames	135
38.	Division-Board	137
39.	Part of Quinby Hive	139
40.	Part of Bingham Hive	140
41.	Glass Honey Box	142
42.	Isham Honey Box	143
43.	Harbison Section Frame	143
44.	Chisel	144
45.	Block for Section Making	145
46.	Hetherington Separator	146
47.	Dove-tailed Section	146
48.	Phelps Section	147
49.	Section Frame	148
50.	Sections in Frame	149
51.	Southard's Section Back	150
52.	Wheeler's Section Back	150
53.	Hive in Shade of Ever-green	155
54.	Feeder	160
55.	Simplicity Feeder	161

56.	Queen-cell Inserted in Comb	167
57.	Shipping Queen Cage	187
58.	Everett's Extractor	189
59.	Comb Basket for Extractor	190
60.	Knife for Uncapping	191
61.	Knife with Curved Point	191
62.	Bee-Veil	196
63.	Quinby Smokers	199
64.	Bingham Smoker	199
65.	Comb Foundation	203
66.	Comb Foundation Machine	205
67.	Comb Foundation Cutter	206
68.	Block for Fastening Foundation	210
69.	Presser for Block	211
70.	Wax Extractor	212
71.	Prize Crate	216
72.	Heddon Crate	217
73.	Maple	222
74.	Willow	223

75.	Judas Tree	224
76.	American Wistaria	225
77.	Chinese Wistaria	226
78.	Barberry	226
79.	White Sage	227
80.	White or Dutch Clover	228
81.	Alsike Clover	229
82.	Melilot Clover	230
83.	Borage	230
84.	Mignonette	231
85.	Okra	231
86.	Mint	232
87.	Pollen of Milk-Weed	233
88.	Black Mustard	233
89.	Rape	234
90.	Tulip	235
91.	Teasel	236
92.	Cotton	236
93.	Basswood	237
94.	Figwort	238

95.	Button-Bush	240
96.	Rocky Mountain Bee Plant	239
97.	Boneset	241
98.	Buckwheat	242
99.	Golden Rod	243
100.	Sun Flower	243
101.	Packing-Box for Winter	250
102.	Gallery of Moth Larva	262
103.	Moth Larva in Comb	263
104.	Moth Larvæ	264
105.	Moth Cocoons	264
106.	Moth with Wings Spread	264
107.	Male and Female Moths	265
108.	Bee-Killer	268
109.	Bee Louse	268
110.	Tachina Fly	270
111.	Munn's Hive	270
112.	Munn's Triangular Hive	280
113.	Lecanium Tulipiferas	288

114.	Stem of Motherwort	289
115.	Fruit and Leaf of Motherwort	290
116.	Motherwort Bloom	291
117.	Sour-Wood	292
118.	Stinging-Bugnatural size	294
119.	Magnified twice	294
120.	Beak, magnified	294
121.	Antenna, magnified	295
122.	Anterior leg, exterior view	295
123.	""interior view	295
124.	Claw, extended	296
125.	Middle leg, magnified	296
126.	Southern Bee-Killer	297
127.	Wings extended	297
128.	Head of	298
131.	Foot of	298
129.	Wing of	299
130.	Wing of Asilus Missouriensis	300
132.	Honey-Comb Coral	301
133.	Wasp-stone Coral	302

# INTRODUCTION. WHO MAY KEEP BEES.

#### **Table of Contents**

#### SPECIALISTS.

Any person who is cautious, observing, and prompt to do whatever the needs of his business require, with no thought of delay, may make apiculture a specialty, with almost certain prospects of success. He must also be willing to work with Spartan energy during the busy season, and must persist, though sore discouragement, and even dire misfortune, essay to thwart his plans and rob him of his coveted gains. As in all other vocations, such are the men who succeed in apiculture. I make no mention of capital to begin with, or territory on which to locate; for men of true metal—men whose energy of mind and body bespeak success in advance—will solve these questions long before their experience and knowledge warrant their assuming the charge of large apiaries.

#### **AMATEURS.**

Apiculture, as an avocation, may be safely recommended to those of any business or profession, who possess the above named qualities, and control a little space for their bees, a few rods from street and neighbor, or a flat roof whereupon hives may securely rest (C. F. Muth, of Cincinnati, keeps his bees very successfully on the top of his store, in the very heart of a large city), and who are able to

devote a little time, when required, to care for their bees. The amount of time will of course vary with the number of colonies kept, but with proper management this time may be granted at any period of the day or week, and thus not interfere with the regular business. Thus residents of country, village, or city, male or female, who may wish to be associated with and study natural objects, and add to their income and pleasure, will find here, an ever-waiting opportunity. To the ladies, shut out from fresh air and sunshine, till pallor and languor point sadly to departing health, and vigor, and to men the nature of whose business precludes air and exercise, apiculture cannot be too highly recommended as an avocation.

#### WHO ARE SPECIALLY INTERDICTED.

Table of Contents

There are a few people, whose systems seem to be specially susceptible to the poison intruded with the bee's sting. Sometimes such persons, if even stung on the foot, will be so thoroughly poisoned that their eyes will swell so they cannot see, and will suffer with fever for days, and, very rarely, individuals are so sensitive to this poison that a bee-sting proves fatal. I hardly need say, that such people should never keep bees. Many persons, among whom were the noted Kleine and Gunther, are at first very susceptible to the poison, but spurred on by their enthusiasm, they persist, and soon become inoculated that SO experience no serious injury from the stings. It is a wellrecognized fact, that each successive sting is less powerful to work harm. Every bee-keeper is almost sure to receive an occasional sting, though with the experienced these are very rare, and the occasion neither of fear nor anxiety.

#### INDUCEMENTS TO BEE-KEEPING.

**Table of Contents** 

#### RECREATION.

Among the attractive features of apiculture, I mention the pleasure which it offers its votaries. There is a fascination about the apiary which is indescribable. Nature is always presenting the most pleasurable surprises to those on the alert to receive them. And among the insect hosts, especially bees, the instincts and habits are so inexplicable and marvelous, that the student of this department of nature never ceases to meet with exhibitions that move him, no less with wonder than with admiration. Thus, beekeeping affords most wholesome recreation, especially to any who love to look in upon the book of nature, and study the marvelous pages she is ever waiting to present. To such, the very fascination of their pursuit is of itself a rich reward for the time and labor expended. I doubt if there is any other class of manual laborers who engage in their business, and dwell upon it, with the same fondness as do beekeepers. Indeed, to meet a scientific bee-keeper is to meet an enthusiast. A thorough study of the wonderful economy of the hive must, from its very nature, go hand-in-hand with delight and admiration. I once asked an extensive apiarist, who was also a farmer, why he kept bees. The answer was characteristic: "Even if I could not make a good deal the most money with my bees, I should still keep them for the

real pleasure they bring me." But yesterday I asked the same question of Prof. Daniels, President of the Grand Rapids schools, whose official duties are very severe. Said he: "For the restful pleasure which I receive in their management." I am very sure, that were there no other inducement than that of pleasure, I should be slow to part with these models of industry, whose marvelous instincts and wondrous life-habits are ever ministering to my delight and astonishment.

A year ago, I received a visit from my old friend and College classmate, O. Clute, of Keokuk, Iowa. Of course I took him to see our apiary, and as we looked at the bees and their handiwork, just as the nectar from golden-rod and asters was flooding the honey-cells; he became enraptured, took my little "Manual of the Apiary" home with him, and at once subscribed for the old *American Bee Journal*. He very soon purchased several colonies of bees, and has found so much of pleasure and recreation in the duties imposed by his new charge, that he has written me several times, expressing gratitude that I had led him into such a work of love and pleasure.

#### PROFITS.

The profits, too, of apiculture, urge its adoption as a pursuit. When we consider the comparatively small amount of capital invested, the relatively small amount of labor and expense attending its operations, we are surprised at the abundant reward that is sure to wait upon its intelligent practice. I do not wish to be understood here as claiming that labor—yes, real hard, back-aching labor—is not

required in the apiary. The specialist, with his hundred or more colonies, will have, at certain seasons, right hard and vigorous work. Yet this will be both pleasant and Healthful, and will go hand-in-hand with thought, so that brain and muscle will work together. Yet this time of hard, physical labor will only continue for five or six months, and for the balance of the year the apiarist has or may have comparative leisure. Nor do I think that all will succeed. The fickle, careless, indolent, heedless man, will as surely fail in apiculture, as in any other calling. But I repeat, in the light of many years of experience, where accurate weight, measure, and counting of change has given no heed to conjecture, that there is no manual labor pursuit, where the returns are so large, when compared with the labor and expense.

An intelligent apiarist may invest in bees any spring in Michigan, with the absolute certainty of more than doubling his investment the first season; while a net gain of 400 per cent, brings no surprise to the experienced apiarists of our State. This of course applies only to a limited number of colonies. Nor is Michigan superior to other States as a location for the apiarist. During the past season, the poorest I ever knew, our fifteen colonies of bees in the College apiary, have netted us over \$200. In 1876, each colony gave a net return of \$24.04, while in 1875, our bees gave a profit, above all expense, of over 400 per cent, of their entire value in the spring. Mr. Fisk Bangs, who graduated at our College one year since, purchased last spring seven colonies of bees. The proceeds of these seven colonies have more than paid all expenses, including first cost of bees, in

honey sold, while there are now sixteen colonies, as clear gain, if we do not count the labor, and we hardly need do so, as it has in no wise interfered with the regular duties of the owner. Several farmers of our State who possess good apiaries and good improved farms, have told me that their apiaries were more profitable than all the remainder of their farms. Who will doubt the profits of apiculture in the face of friend Doolittle's experience? He has realized \$6,000, in five years, simply from the honey taken from fifty colonies. This \$6,000 is in excess of all expenses except his own time. Add to this the increase of stocks, and then remember that one man can easily care for 100 colonies, and we have a graphic picture of apiarian profits. Bee-keeping made Adam Grimm a wealthy man. It brought to Capt. Hetherington over \$10,000 as the cash receipts of a single year's honey-crop. It enabled Mr. Harbison, so it is reported, to ship from his own apiary, eleven car-loads of comb-honey as the product of a single season. What greater recommendation has any Opportunity for money-making, pursuit? with even and privations, is attractive hardships and seldom disregarded; such opportunity with labor that brings, in itself, constant delight, is surely worthy of attention.

#### **EXCELLENCE AS AN AMATEUR PURSUIT.**

Again, there is no business, and I speak from experience, that serves so well as an avocation. It offers additional funds to the poorly paid, out-door air to the clerk and office-hand, healthful exercise to the person of sedentary habits, and superb recreation to the student or professional man, and especially to him whose life-work is of that dull, hum-drum,

routine order that seems to rob life of all zest. The labor, too, required in keeping bees, can, with a little thought and management, be so planned, if but few colonies are kept, as not to infringe upon the time demanded by the regular occupation. Indeed, I have never been more heartily thanked, than by such parsons as named above, and that, too, because I called them to consider—which usually means to adopt—the pleasing duties of the apiary.

#### ADAPTATION TO WOMEN.

Apiculture may also bring succor to those whom society has not been over-ready to favor—our women. Widowed mothers, dependent girls, the weak and the feeble, all may find a blessing in the easy, pleasant, and profitable labors of the apiary. Of course, women who lack vigor and health, can care for but very few colonies, and must have sufficient strength to bend over and lift the small-sized frames of comb when loaded with honey, and to carry empty hives. With the proper thought and management, full colonies need never be lifted, nor work done in the hot sunshine. Yet right here let me add, and emphasize the truth, that only those who will let energetic thought and skillful plan, and above all promptitude and persistence, make up for physical weakness, should enlist as apiarists. Usually a stronger body, and improved health, the results of pure air, sunshine, and exercise, will make each successive day's labor more easy, and will permit a corresponding growth in the size of the apiary for each successive season. One of the most noted apiarists, not only in America but in the world, sought in bee-keeping her lost health, and found not only health,

but reputation and influence. Some of the most successful apiarists in our country are women. Of these, many were led to adopt the pursuit because of waning health, grasping at this as the last and successful weapon with which to vanquish the grim monster. Said "Cyula Linswik"—whose excellent and beautifully written articles have so often charmed the readers of the bee publications, and who has had five years of successful experience as an apiarist—in a paper read before our Michigan Convention of March, 1877: "I would gladly purchase exemption from in-door work, on washing-day, by two days' labor among the bees, and I find two hours' labor at the ironing-table more fatiguing than two hours of the severest toil the apiary can exact. \* \* \* I repeat, that apiculture offers to many women not only pleasure but profit. \* \* \* Though the care of a few colonies means only recreation, the woman who experiments in bee-keeping somewhat extensively, will find that it means, at some seasons, genuine hard work. \* \* \* There is risk in the business, I would not have you ignore this fact, but an experience of five years has led me to believe that the risk is less than is generally supposed." Mrs. L. B. Baker, of Lansing, Michigan, who has kept bees very successfully for four years, read an admirable paper before the same Convention, in which she said: "But I can say, having tried both," (keeping boarding-house and apiculture,) "I give beekeeping the preference, as more profitable, healthful, independent and enjoyable. \* \* \* I find the labors of the apiary more endurable than working over a cook-stove indoors, and more pleasant and conducive to health. \* \* \* I believe that many of our delicate and invalid ladies would

find renewed vigor of body and mind in the labors and recreations of the apiary. \* \* \* By beginning in the early spring, when the weather was cool and the work light, I became gradually accustomed to out-door labor, and by mid-summer found myself as well able to endure the heat of the sun as my husband, who has been accustomed to it all his life. Previously, to attend an open-air picnic was to return with a head-ache. \* \* \* My own experience in the apiary has been a source of interest and enjoyment far exceeding my anticipations." Although Mrs. Baker commenced with but two colonies of bees, her net profits the first season were over \$100; the second year but a few cents less than \$300; and the third year about \$250. "The proof of the pudding is in the eating;" so, too, such words as given above, show that apiculture offers special inducements to our sisters to become either amateur or professional apiarists.

#### IMPROVES THE MIND AND THE OBSERVATION.

Successful apiculture demands close and accurate observation, and hard, continuous thought and study, and this, too, in the wondrous realm of nature. In all this, the apiarist receives manifold and substantial advantages. In the cultivation of the habit of observation, a person becomes constantly more able, useful and susceptible to pleasure, results which also follow as surely on the habit of thought and study. It is hardly conceivable that the wideawake apiarist, who is so frequently busy with his wonderworking comrades of the hive, can ever be lonely, or feel time hanging heavily on his hands. The mind is occupied, and there is no chance for *ennui*. The whole tendency, too,

of such thought and study, where nature is the subject, is to refine the taste, elevate the desires, and ennoble manhood. Once get our youth, with their susceptible natures, engaged in such wholesome study, and we shall have less reason to fear the vicious tendencies of the street, or the luring vices and damning influences of the saloon. Thus apiculture spreads an intellectual feast, that even the old philosophers would have coveted; furnishes the rarest food for the observing faculties, and, best of all, by keeping its votaries face to face with the matchless creations of the *All Father*, must draw them toward Him "who went about doing good," and in "whom there was no guile."

#### YIELDS DELICIOUS FOOD.

A last inducement to apiculture, certainly not unworthy of mention, is the offerings it brings to our tables. Health, yea, our very lives, demand that we should eat sweets. It is a truth that our sugars, and especially our commercial syrups, are so adulterated as to be often poisonous. The apiary, in lieu of these, gives us one of the most delicious and wholesome of sweets, which has received merited praise, as food fit for the gods, from the most ancient time till the present day. To ever have within reach the beautiful, immaculate comb, or the equally grateful nectar, right from the extractor, is certainly a blessing of no mean order. We may thus supply our families and friends with a most necessary and desirable food element, and this with no cloud of fear from vile, poisonous adulterations.

## WHAT SUCCESSFUL BEE-KEEPING REQUIRES.

Table of Contents

#### MENTAL EFFORT.

No one should commence this business who is not willing to read, think and study. To be sure, the ignorant and unthinking may stumble on success for a time, but sooner or later, failure will set her seal upon their efforts. Those of our apiarists who have studied the hardest, observed the closest, and thought the deepest, have even passed the late terrible winters with but slight loss.

Of course the novice will ask. How and what shall I study?

#### **EXPERIENCE NECESSARY.**

Nothing will take the place of real experience. Commence with a few colonies, even one or two is best, and make the bees your companions at every possible opportunity. Note every change, whether of the bees, their development, or work, and then by earnest thought strive to divine the cause.

#### LEARN FROM OTHERS.

Great good will also come from visiting other apiarists. Note their methods and apiarian apparatus. Strive by conversation to gain new and valuable ideas, and gratefully adopt whatever is found, by comparison, to be an improvement upon your own past system and practice.

#### AID FROM CONVENTIONS.

Attend conventions whenever distance and means render this possible. Here you will not only be made better by social intercourse with those whose occupation and study make them sympathetic and congenial, but you will find a real conservatory of scientific truths, valuable hints, and improved instruments and methods. And the apt attention rendered possible by your own experience—which you will give to essays, discussions and private conversations, will so enrich your mind, that you will return to your home encouraged, and able to do better work, and to achieve higher success. I have attended nearly all the meetings of the Michigan Convention, and never yet when I was not well paid for all trouble and expense by the many, often very valuable, suggestions which I received. These I would carry home, and test as commanded by the Apostle: "Prove all things and hold fast that which is good."

#### AID FROM BEE PUBLICATIONS.

Every apiarist, too, should take and read at least one of the three excellent bee publications that are issued in our country. It has been suggested that Francis Huber's blindness was an advantage to him, as he thus had the assistance of two pairs of eyes, his wife's and servant's, instead of one. So, too, of the apiarist who reads the bee publications. He has the aid of the eyes, and the brains, too, of hundreds of intelligent and observing bee-keepers. Who is it that squanders his money on worse than useless patents and fixtures? He who "cannot afford" to take a beeiournal.

It would be invidious and uncalled for to recommend any one of these valuable papers to the exclusion of the others. Each has its peculiar excellences, and all who can, may well secure all of them to aid and direct their ways.

#### AMERICAN BEE JOURNAL.

This, the oldest bee publication, is not only peculiar for its age, but for the ability with which it has been managed, with scarce any exception, even from its first appearance. Samuel Wagner, its founder and long its editor, had few superiors in breadth of culture, strength of judgment, and practical and historic knowledge of apiculture. With what pleasure we remember the elegant, really classic, diction of the editorials, the dignified bearing, and freedom from asperities which marked the old American Bee Journal as it made its monthly visits fresh from the editorial supervision of Mr. Samuel Wagner. Some one has said that there is something in the very atmosphere of a scholarly gentleman, that impresses all who approach him. I have often thought, as memory reverted to the old American Bee Journal, or as I have re-read the numbers which bear the impress of Mr. Wagner's superior learning, that, though the man is gone, the stamp of his noble character and classical culture is still on these pages, aiding, instructing, elevating, all who are so fortunate as to possess the early volumes of this periodical. I am also happy to state that the American Bee Journal is again in good hands, and that its old prestige is fully restored. Mr. Newman is an experienced editor, a man of excellent judgment and admirable balance, a man who demonstrates his dislike of criminations and recriminations by avoiding them; who has no special inventions or pet theories to push, and is thus almost sure to be disinterested and unbiased in the advice he offers who lends his aid and favor to our Conventions, which do so much to spread apiarian knowledge. And when I add, that he brings to his editorial aid the most able, experienced and educated apiarists of the world, I surely have spoken high but *just* praise, of the American Bee Journal, whose enviable reputation extends even to distant lands. It is edited by Thomas G. Newman, at Chicago. Price, \$2.00 a year.

#### **GLEANINGS IN BEE CULTURE.**

This periodical makes up for its brief history of only five years, by the vigor and energy which has characterized it from the first. Its editor is an active apiarist, who is constantly experimenting; a terse, able writer, and brimming-full of good nature and enthusiasm. I am free to say, that in practical apiculture I am more indebted to Mr. Root than to any other one person, except Rev. L. L. Langstroth. I also think that, with few exceptions, he has done more for the recent advancement of practical apiculture than any other person in our country. Yet I have often regretted that Mr. Root is so inimical to conventions, and that he often so stoutly praises that with which he has had so brief an experience, and must consequently know so little. This trait makes it imperative that the apiarist read discriminately, and then decide for himself. In case of an innovation, wait for Mr. Root's continued approval, else prove its value before general adoption. This sprightly little journal is edited by A. I. Root, Medina, Ohio. Price, \$1.00 a year.

#### BEE-KEEPER'S MAGAZINE.

I have read this periodical less, and, of course know less of it than of the others. It is well edited, and certainly has many very able contributors. Both Mr. King and Mr. Root deal largely in their own wares, and, of course, give space to their advertisement, yet, in all my dealings with them, and I have dealt largely with Mr. Root, I have ever found them prompt and reliable. The Magazine is edited by A. J. King, New York. Price, \$1.50 a year.

#### **BOOKS FOR THE APIARIST.**

Having read very many of the books treating of apiculture, both American and foreign, I can freely recommend such a course to others. Each book has peculiar excellences, and each one may be read with interest and profit.

#### LANGSTROTH ON THE HONEY BEE.

Of course, this treatise will ever remain a classic in beeliterature. I cannot over-estimate the benefits which I have received from the study of its pages. It was a high, but deserved encomium, which J. Hunter, of England, in his "Manual of Bee-Keeping," paid to this work: "It is unquestionably the best bee-book in the English language."

The style of this work is so admirable, the subject matter so replete with interest, and the entire book so entertaining,