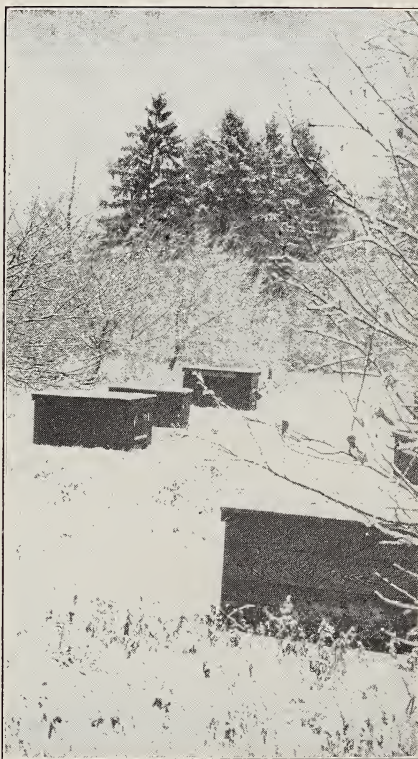


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Gleanings in Bee Culture



Merry Christmas!

VOL. XLVIII

December 1920

NUMBER 12

Better get your list of requirements for next year ready and send it in at once. Prices will be quoted by return mail.

Remember the early orders are shipped without delay. New Catalog ready for mailing about January first, 1921.

MILLER BOX MFG. CO.

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LOS ANGELES, - - CAL.

“Griggs Saves You Freight”

TOLEDO

**NOW FOR THE 1920
HONEY CROP**

We will buy it, both Comb and Ex-tracted

We want especially White Orange, White Sage, White Clover, Basswood, Raspberry

Write us what you have, sending samples and prices asked in first letter.

SECOND-HAND 60-LB. CANS

These cans used only once, packed in good cases; 10 cases, 70c; 50 to 100 cases, 65c; 100 to 500, 60c.

BEESWAX WANTED

GRIGGS BROTHERS CO.

Dept. No. 25 Toledo, Ohio
“Griggs Saves You Freight”

**SEND TO INDIANAPOLIS
FOR YOUR BEEKEEPER'S SUPPLIES**

Our stock is new and complete and we are prepared to give the best of service. Send for 1921 catalog. They will be out soon after the first of the year. Gleanings subscriptions also taken.

THE A. I. ROOT COMPANY, 873 MASS. AVE., INDIANAPOLIS, IND.

Season's Greetings and Best Wishes

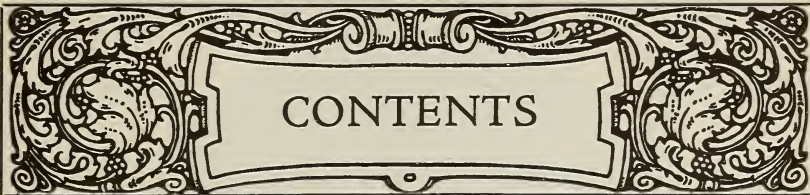
We sincerely hope that the New Year may be a prosperous one for our friends and customers. Good luck and good cheer.

Being successful is partly a matter of equipment. You can not afford to have any but the best supplies. We have them—have had them for fifty years. We can serve you. Come to us.

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San Francisco, Cal.

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Los Angeles, Cal.



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THE A. I. ROOT COMPANY, Publishers, Medina, Ohio

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M'n'g Editor

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You'll Need an "Ideal Bee Veil"--True to its name.
\$1.95 postpaid in U. S. A.

HONEY.

Send us a sample of your extracted honey. We also buy comb honey. Tell us how much you have and what you want for it. We pay the day shipment is received.

WAX--OLD COMB.

We pay you the highest market price for rendered wax, less 5 cts. per pound for rendering charges. Our rendering process saves the last drop of wax for you. "Put your name on all packages."

THE FRED W. MUTH CO.,
"The Busy Beemen"
CINCINNATI, - OHIO.

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Practical Beekeepers stock supplies now. This saves expense and insures against delay in the rush season.

A plentiful supply of 18-oz glass Honey Containers now on hand. Wax and comb taken for cash or trade.

Write Department C.

Western Honey Producers, Sioux City, Iowa.

The enormous demand for
"SUPERIOR" FOUNDATION
signifies highest quality.

Our 1920 output over 150,000 pounds.

Beeswax wanted; For cash, or in exchange for foundation or bee supplies. Prices on request.

Superior Honey Company -:- Ogden, Utah
(MANUFACTURERS OF WEED PROCESS FOUNDATION)



WE will be in our new home January 1st, 1921, and will be able to take care of all our good customers better than ever before. If in the city please call and visit us.

C. H. W. WEBER COMPANY
CINCINNATI, OHIO. 2163-65-67 Central Ave.



THE OLD RELIABLE THREE-BANDED ITALIANS



Booking orders now for 1921. Queens ready April 1st. My Italians are of an exceptionally vigorous and long-lived stock strain of bees. They are gentle, prolific, very resistant to foul brood, and the best of honey-gatherers. I have sold a good many queens to parties who are using them in stamping out foul brood. Orders booked for one-fourth cash, balance before delivery. Will guarantee safe arrival in the United States and Canada. Descriptive circular and price list free.

	Prices April, May, and June			July to November		
	1	6	12	1	6	12
Untested	\$1.50	\$8.00	\$15.00	\$1.25	\$6.50	\$12.50
Select Untested	1.75	9.00	16.00	1.50	8.00	15.00
Tested	2.50	12.50	24.00	2.25	12.00	22.00
Select Tested	3.00 each			3.00 each		

No nuclei or pound packages of bees for sale. **John G. Miller, 723 C St., Corpus Christi, Tex.**

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AT 4%**

THIS strong, progressive bank, which is under strict State supervision, invites deposits BY MAIL and pays 4 per cent compound interest thereon.

Write for detailed information.

THE SAVINGS DEPOSIT BANK CO.
A.T. SPITZER, Pres. MEDINA, OHIO
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HONEY MARKETS

There has been little change in the honey market during the last month. It is not a good market, but it is not worse than a month ago. One good feature is that honey is not being "dumped" in such large quantities on the market as to "break it." The quotations below tell their own story:

U. S. Government Market Reports.

HONEY ARRIVALS, NOVEMBER 1-15.

MEDINA, O.: Extracted, 70,000 lbs. from Ohio, 40,000 lbs from Idaho, and 30,000 lbs. from Wyoming. Comb, 1 car from Colorado.

SHIPPING POINT INFORMATION, NOV. 15. . .

LOS ANGELES, CALIF.—Light wire inquiry, movement slow. Carloads f. o. b. usual terms, per lb., 5-gallon cans white orange and white sage 16½-20c; extra-light amber orange and sage 19c, light amber orange 18½c, light amber sage 12-13½c, light amber alfalfa 11-17c. Beeswax: Sacked in less than carlots, 40-42c per lb. Prices given represent quotations, practically no sales being made. Wide range due to extremely unsettled market conditions; lower prices are considered possible in near future.

TELEGRAPHIC REPORTS FROM IMPORTANT MARKETS.

BOSTON.—Approximately 100 cases from New York arrived since last report. Supplies of old stock light, and receipts of new stock also light. Demand and movement are moderate and market steady. Dealers are generally optimistic, not anticipating heavy receipts. Extracted: Sales to confectioners and bottlers, per lb., old crop California white sage 22-22½c; New York, white clover, mostly 20c. Imported, Porto Rican, amber quoted at \$1.10 per gallon. Comb: Sales to retailers, new crop, New York, 24-section cases white clover No. 1, \$8.75; No. 2, \$7.50 per case; Vermont, 20-section cases white clover No. 1, \$8.00 per case. Beeswax: Demand and movement very light, market dull. Quotations to candle, shoe-polish, and floor-wax manufacturers: Domestic, light 35-40c per lb.

CHICAGO.—1 Colorado, 1 Montana, approximately 200 packages by freight from Minnesota and 100 packages freight from California arrived. Demand and movement moderate, market steady. Sales to jobbers: Extracted, per lb, Colorado and Montana, white clover and white alfalfa, 18c; light amber clover and light amber alfalfa, mostly 17c; Minnesota white clover, 18-19c. Comb: Colorado and Montana, 24-section cases alfalfa and clover, No. 1, heavy, \$7.00-7.50. Beeswax: Supplies moderate, demand and movement moderate, market steady. Montana and Oklahoma, light 40-43c, dark 38-40c per lb.

CINCINNATI.—Since last report, 1 car Wyoming arrived. Supplies liberal. Most dealers are holding fairly large stock bought at higher prices. Honey price trend is considered downward, resulting in very little demand or movement at present. Prices unreported. Beeswax: Supplies moderate, demand and movement moderate, market steady. Sales to candle manufacturers, average yellow 42-44c per lb.

CLEVELAND.—No carlot arrivals since Nov. 1. Supplies moderate, demand and movement limited, the trade buying only for immediate needs. Extracted, per lb.: Sales to bakers and other large users of honey, 60-pound tins white clover 18-20c; sales in small lots to retailers white clover 23-24c, light amber alfalfa 22-22½c.

KANSAS CITY.—2 car California arrived since last report. Supplies moderate, most dealers having sufficient stocks for present needs. Demand and movement slow, market dull and rather unsettled, with weaker tendency. Sales in small lots to jobbers, comb, California and Colorado alfalfa, No. 1, light \$7.00-7.50 per 24-section case. Extracted: Per lb., California light amber alfalfa 18-20c; New Mexico, light amber alfalfa 15-18c.

MINNEAPOLIS.—No carlot arrivals since last report. Supplies light, market dull, dealers buying only for immediate needs because of uncertain market condition. General feeling is that local market will continue to ease off, and retailers are buying

in very small quantity. Sales direct to retailers. Comb, Western No. 1, white alfalfa and sweet clover, 24-section cases \$7.50-8.00, mostly \$8.00. Extracted: Western, 60-lb. cans light amber alfalfa and sweet clover 20c per lb.; some white stock sold at same price. Lots of 10 cans or more offered at ½c less.

PHILADELPHIA.—Arrivals since last report, 1 car western, 3800 lbs. from Florida, 3200 pounds from New York. Winter supplies largely laid in. Demand and movement very slow, market weak, lower tendency. Practically no sales, majority of receipts being bottled.

NEW YORK.—Approximately 8600 lbs. from New York arrived since last report. Supplies moderate, demand and movement very light. Dealers assert that buying at present is being done on hand-to-mouth basis with very few laying in winter supply. Market is very dull and weak at present time and belief is prevalent that it will not improve but rather have a tendency to decline a trifle more. Sales to jobbers, large wholesale grocers and confectioners: Extracted, domestic, per pound, Californias, light amber alfalfa, 13-14c; white alfalfa 17c, light amber sage 15-16c; white orange blossom and white sage mostly 17½c. Imported—West Indian and South American refined, mostly 70-75c; few, 80c per gallon. Comb: Very light supplies; New York, 24-section cases white clover No. 1, \$8.00; buckwheat \$7.00. Beeswax: No arrivals reported since last report. Demand and movement very slow, market weak. Sales to jobbers and large wholesalers, South American and West Indian light, mostly 23-25c, dark 20-22c per lb.

ST. LOUIS.—Arrivals since last report include 2 cars Colorado. Supplies are liberal. Demand is generally reported slow. The recent drop in the price of sugar and curtailment in the use of honey by confectioners are held by dealers to be partly responsible for the slow movement in large quantities. The movement in small quantities is moderate. Sales to wholesale grocers: Extracted, per lb., Mississippi and Arkansas, light amber mixed peach, clover and various flavors 15-16c; Californias, light amber sage and alfalfa 16-18½c; dark amber alfalfa 13-14c. Southern, barrels, too few sales to establish a market. Comb, Colorado, white alfalfa and clover No. 1, 24-section cases, mostly \$7.00-8.00. Beeswax: Supplies light, demand and movement slow, market dull, few sales to manufacturers of floor wax and comb foundations; prime yellow 31-32c per lb.

GEORGE LIVINGSTON,
Chief of Bureau of Markets.

Opinions of Producers.

BRITISH COLUMBIA.—Honey is in great demand, but owing to the short crop the supply is limited. At wholesale, the price for extracted honey is 30c per lb., comb 40c per section. At retail, the price for extracted honey is 50c for a one-pound jar, and \$1.75 for a four-pound can; comb, 50c per section. Bees have gone into winter quarters in good condition. The majority of beekeepers here are now using packed outer cases in which the bees remain summer and winter, and the result is excellent.—W. J. Sheppard.

CALIFORNIA.—No wholesale demand for honey, but retail is fair. Since election I think conditions will improve. Price of sugar has advanced and honey will be in demand. Many have decided to use honey instead of putting up jams and jellies. This information I have received from consumers. Retail price of extracted honey in small quantities is 25-30c, no comb in market. Condition of bees good, rich in stores, but they quit brood-rearing the first of October—unusually early.—M. H. Mendison.

CALIFORNIA.—Shot to pieces is as good a term as any to apply to market conditions. In fact, buyers hardly care to make offers. While a few are very anxious to sell, some are holding back, feeling sure things will improve. There is very little demand. At wholesale, the price for comb honey is \$7.00 per case. At retail, the price of comb honey is 35-45c per section, extracted 20-25c per pound. Bees have gone into winter in fair to good condition. Most beekeepers report plenty of stores.—L. L. Andrews.

COLORADO.—Comb honey has been in good demand in carlots, and nearly all has been sold and shipped. There will not be enough left to supply the local market. Extracted honey does not move well

in carlots, tho local demand is good. About 25 per cent has been sold. At wholesale, the price is 16-19c in small lots; carlot buyers are offering 12-13c. For comb honey I have heard no late reports. At retail the price for extracted honey is 20-25c; comb, 25-30c per section. Bees have gone into winter quarters in very good condition.—J. A. Green.

FLORIDA.—The early honey crop was so small that there was not much trouble in disposing of it. Now we have a crop of palmetto honey (in the hives) and very little demand. At wholesale 15c is asked for extracted; at retail, \$1.30 per gallon, \$1.10 for five-pound pails. Bees have plenty of honey for winter.—Ward Lamkin.

FLORIDA.—The demand is fairly good. The wholesale price for extracted honey is 20-35c; at retail, 75c to \$1.50 per quart. Bees will go into winter in fine condition as to stores.—C. H. Clute.

ILLINOIS.—Demand is quiet. The wholesale price for extracted honey is 20c, for comb 30c. Retail price is 35-40c, for comb 40c. Condition of bees for winter good. Prospect for clover next season is very poor.—A. L. Kildow.

INDIANA.—All honey sold to consumers or to retail grocers. Demand is slower than usual. The wholesale price for extracted honey is 30c in pails to retail dealers; comb, \$8.40 per case for No. 1. Extracted honey retails at 35c in pails, comb at 45c. Bees are in excellent condition for winter.—E. S. Miller.

IOWA.—Honey is nearly all cleaned up from the producers, only a dab here and there left. Demand is just normal. The wholesale price for extracted honey is 19c, for comb \$7.00 to \$7.50 per case of 24 sections. The retail price for extracted honey is 30c, for comb 30-35c per section. Bees have gone into winter in condition fully up to normal.—Frank Coverdale.

MARYLAND.—Demand for honey not so good—moving slow. The wholesale price for extracted honey is 22-24c, comb 27-29c. The retail price for extracted is 35-40c, comb 40c. Late warm fall made colonies light from late breeding.—S. J. Crocker.

MASSACHUSETTS.—Market is quiet, the demand being mighty slow. At wholesale I have heard of no figures, as there is no demand. At retail, the price for extracted honey is 35c a lb. in bulk, 50c in glass; for comb there is no demand, tho it is offered at 50c. The condition of the bees for winter is fully as good as usual.—O. M. Smith.

MICHIGAN.—Honey moving slow in jobbing quantities, but very well at retail. Wholesale price for extracted honey is 18-25c, for comb 35-40c. Extracted retails at 30-35c, comb 40-50c. Bees have gone into winter in first-class condition.—B. F. King.

NEW YORK.—Demand for honey is good from consumers. Some inquiry from bottlers. Wholesale price of extracted honey is 16-20c, comb \$6 to \$8 per case. Extracted retails at \$1.00 per quart can; comb, 30-40c. Colonies are very heavy with honey; some not as strong as usual in bees.—F. W. Lesser.

NEW YORK.—Demand for honey slow. Market conditions poor. Wholesale price of extracted honey is 15c for buckwheat, white 20c; comb \$7 to \$8. Retail price for extracted 25-30c, for comb 35-40c. Bees have gone into winter in as fine condition as I have ever known, both as to quantity and quality of stores and young bees.—Geo. H. Rea.

NEW YORK.—Demand good for white honey, rather dull for dark honey. Wholesale price of extracted honey is 20-25c, for comb \$7.20-\$8.50 per case. Retail price for extracted is 30-35c, for comb 40-60c. Bees are in fairly good condition for winter.—Adams & Myers.

OHIO.—Demand for honey has somewhat increased since price is near normal. The wholesale price for extracted honey is 15c, for comb 30c. Retail price for extracted is 20c, for comb 35c. Bees have gone into winter in very good condition, and clover looks good.—Fred Leininger.

TEXAS.—Market conditions are good. Demand is strong. The wholesale price for extracted honey is 18c, for comb 22c. The retail price is 20c for extracted and 24c for comb. Bees are still working on white brush and will go into winter in fine shape.—J. N. Mayes.

TEXAS.—Demand for honey very little. The wholesale price for extracted honey is 18c, for comb 22c. The retail price is 25c for extracted and 30c for comb honey. Bees will go into winter in fine shape.—H. B. Parks.

TEXAS, EAST.—Demand is fairly good. The wholesale price for extracted honey is 16-20c; at

retail, 20-30c. Condition for winter is fairly good.—T. A. Bowden.

UTAH.—No inquiry for extracted honey. The wholesale price of comb is \$6.00 per case. The retail price of extracted is 20-30c, comb 25-35c. Bees have gone into winter in 100 per cent condition.—M. A. Gill.

WASHINGTON.—Demand in a retail way is fair. The association price at wholesale is 20c, and most of the large producers are holding for this, but the wholesale buyers are offering only 17-18c. At retail, the price is around 25c. Here in the Yakima Valley the bees have gone into winter in good shape.—Geo. W. B. Saxton.

WASHINGTON.—Market conditions appear to be normal at this time. Demand is fair to good. For extracted honey a few beekeepers have offered at 20c for entire crop. Only one beekeeper has offered any large quantity of comb honey, and he asks 32c. For extracted honey at retail, local beekeepers have established definite prices as follows; 35c for less than 10 pounds, \$2.40 for 10-pound pails; for comb honey, 45 and 50c. Bees have gathered large amounts of dark fall honey, probably from aster. Only a few beekeepers have fed sugar. Winter losses may be very heavy.—H. F. Wilson.

Too Late for Classification.

WANTED—Extractor immediately. Tim O'Donnell, Jr., 1147 So. Springfield Ave., Chicago, Ills.

Orders booked now for 1921 shipments of bees and queens. Send for descriptive circular and price list. R. V. Stearns, Brady, Texas.

FOR SALE—Honey of a clover-basswood grade, put up in 60-lb. cans, two cans to case, 18c per lb., f. o. b. my station. Cash with order. Sample 20c. W. M. Peacock, Mapleton, Iowa.

Factory agents sale of 5 and 10 lb. pails, also 5-gal. cans in cleated cases. Get your next season's supply before too late. Edw. A. Winkler, Joliet, R. D. No. 1, Ills.

Good-flavored light amber honey, two 60-lb. cans to case. Sample 25c. Adam Kalb, Brooksville, Ky.

FOR SALE—Carload or less Nevada's choice alfalfa and sweet clover extracted honey. Price 17 cents. Nevada Honey Co., Yerington, Nev.

Beeswax wanted. Old combs (dry) and cappings for rendering. Also wax accepted in trade. Top market prices offered. A. I. Root Co. of Iowa, Council Bluffs, Iowa.

WANTED—To handle bees on share or work for some reliable beeman by the year. Can give good reference. Have had five years' experience. Emil Vitt, 1945 Grove St., Boulder, Colo.

A Photograph of Dr. Miller.

We feel that many of the friends of the late Dr. Miller would be pleased to have a characteristic photograph of him taken in his late days. We have such a photographic negative of him, with the happiest expression on his face. We would like to present such a photo to every friend and admirer of Dr. Miller, thus establishing a memorial to him in their home. Yet the expense for a single such photo is not inconsiderable at this time, and would be very large in the aggregate if all his friends were to be supplied gratis. But this we can afford to do and will do: send one of these handsome, unmounted photographs of Dr. Miller to all friends of his who care to send us a year's subscription to Gleanings for some beekeeping acquaintance of theirs.

Gleanings in Bee Culture,

ITALIAN BEES AND QUEENS

SATISFACTION GUARANTEED

We solicit your orders for queens and bees for the season of 1921. Prices as follows:

Untested, \$1.25; \$12.00 per dozen
Dr. Miller's, \$1.50; \$15.00 per dozen

JOBBER'S OF ROOT'S BEE SUPPLIES

A full line carried at all times. Let us quote you on your requirements. Send us estimate of your 1921 needs, we can save you money. Liberal early order discounts. Special attention to Association orders.

MANUFACTURERS OF CYPRESS BEE SUPPLIES

Well made of the best, soft, light cypress which defies decay. Bottoms, covers, hive bodies, hive stands, supers, frames, and foundation. Special discounts on large orders for bottoms, covers, hive bodies and foundation.

Should you desire your outfit cut according to your specifications, write us. Parties desiring large quantities of goods should send for sample of items wanted which will be furnished at moderate price.

Everything we sell guaranteed to give satisfaction.



THE STOVER APIARIES
MAYHEW, MISSISSIPPI

SPECIAL PRICES

—ON—

FRICTION-TOP PAILS

	50	100	200
5-Pound Pails	\$5.25	\$10.00	\$19.00
10-Pound Pails	8.00	15.50	
10-Pound Pails in boxes of six,			
		per box,	\$1.40
5-Pound Pails in boxes of twelve,			
		per box,	\$1.75

F. O. B. cars Lansing. No early order discounts allowed at above prices. Can make immediate shipment till present stock is exhausted.

Special prices on application on 12-pound and 16-pound comb honey cases.

Five per cent early order discount for December cash orders except as noted on friction-top pails listed above.



M. H. Hunt & Son

510 North Cedar Street
Lansing, Michigan

WHY THOUSANDS BUY "BEEWARE"

Because the prices are moderate for the workmanship.

Because the materials are the very best obtainable.

Because you are assured of good service---guaranteed.

These goods marked with the "Beeware" brand, are famous for giving the utmost return over a period of years at prices which are never extreme.

Conditions this year are causing many men to change their previous buying methods. Buy cautiously, but be sure you get real quality for your money, the kind you get in "Beeware" only.

It will pay you to write or visit your "Beeware" distributor. His name is on the catalog we will send if you ask for it.



SERVICE DEPARTMENT

To give users of Lewis "Beeware" better service and information, we announce the employment of E. W. Atkins, who began work at Watertown, November 1. Mr. Atkins is well known to many American and Canadian beekeepers, has worked in large commercial apiaries, and for the past four years has been operating his own apiaries. After taking a degree at the Ontario, Canada, Agricultural College, Mr. Atkins served with the provincial and dominion apiarists of Canada. During the war he was in charge of bee culture extension work for the U. S. Government in Iowa, Missouri, Kansas, and Nebraska. Later he has worked out of the Iowa Agricultural College at Ames for the U. S. Bee Culture Laboratory and is well acquainted with the needs of beginners and commercial beekeepers alike. Address all communications regarding beekeeping to our Service Department, Watertown.

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For



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Mark

G. B. LEWIS COMPANY,

Makers of Lewis "Beeware."
Nationally Distributed.

Factory and
Home Offices:

Watertown
Wisconsin

GLEANINGS IN BEE CULTURE

DECEMBER, 1920



IN MAKING my bow as the latest addition to the editorial staff of Gleanings in Bee



The New Editor Makes His Bow.

Culture, I am doing so with the best grace I am able to command under the circumstances. A

keen appreciation of the magnitude of the task I am undertaking and of the responsibilities which will rest upon me in this new work is sufficient to prevent perfect composure just now, as I step out before the multitude of readers of this journal.

My own contribution to this issue consists almost entirely of looking on to see how Gleanings is made. Those who have never seen this done can have no adequate appreciation of my effort thus far. I expect to work into the harness cautiously and gradually until I can carry my share of the load; but a little later, no doubt, the readers will hold me responsible to a considerable extent for the contents of Gleanings. While this thought is somewhat disturbing, it is at the same time the very thing which I hope will sustain my effort and help me over the hard places.

I have had before me for some time the vision of retiring to a quiet life, taking care of a few hundred colonies of bees and having lots of time to play; but just when this seemed to be within reach I find myself giving up congenial work in the Division of Bee Culture of the Bureau of Entomology at Washington, D. C., to take up new duties here. The thing that has finally pushed me into this work is largely that of the possibilities of greater service to the beekeepers of the country. If I am able to render this service to the degree hoped for, I shall feel amply repaid even tho I may never be able to stop and play awhile.

Geo. S. Demuth.

BEEKEEPERS who have decided upon a certain fixed temperature for their bee-cel-



Cellar Temperatures.

lars thruout the winter and have chosen for this the temperature at which the bees are most nearly quiet in February and March may be running the cellar temperature too low during December and January. As the winter progresses the bees, of course, become more and more restless, especially if the stores are not of the best quality so that

higher temperatures can not be maintained during February and March, without many bees leaving the hives. During the earlier part of the winter, however, a temperature several degrees higher than that needed to keep the bees quiet in March may result in greater quiescence and so postpone the time when a lower temperature is needed.

IT IS NOT too late to provide some sort of wind screen to further protect bees that are wintered out of doors.



Shelter From Cold Winds.

North who winter outside have learned the value of protection from cold winds even when the hives are adequately packed. Further south where bees usually are not packed for winter the wind screen may be even more important. Where the apiary is not already in a sheltered spot the type of wind screen described by Morley Pettit in our September issue is excellent. This is a portable screen made of ordinary lath nailed to a framework. It can be put in place for winter and taken down to be stored during the summer.

JUST WHAT is the best size for the hive entrance during the winter depends upon so many things that there



Size of Winter Entrance.

is no wonder beekeepers do not agree on this subject. Some claim that a generous-sized entrance is necessary because small entrances are often closed by an accumulation of dead bees, while others prefer a large entrance to permit a better circulation of air thruout the hive to keep the combs dry. But when the entrance can safely be reduced in size the added protection thus brought about should result in fewer dead bees to obstruct the entrance, and at the same time should result in a smaller amount of moisture given off by the bees, for the amount of moisture given off by the bees in winter depends upon the amount of their activity in generating heat. Many beekeepers who provide ample packing for winter have discovered that a smaller entrance can be used when bees are well protected than when they are not well protected. The danger of the entrance being closed by dead bees and the condensation of moisture within the hive are both greatly

reduced by winter protection. In well-protected hives the entrance can usually be reduced to $\frac{3}{4}$ inch or even less in width during the coldest part of winter, but in poorly protected hives very small entrances may be dangerous. In any case, the entrance should be narrow enough to exclude mice.



THE CONDITION of the honey market continues to be puzzling. As must be expected



The Present Honey Market.

under present conditions buyers are taking honey only as they need it instead of stocking up for future needs. This puts the burden of holding upon the producer instead of upon the buyer. In many cases the producers' warehouses are still well filled with honey, while the warerooms of the dealers are nearly empty, this being quite the opposite of the conditions prevailing during the past two years.

The greatest danger of the present situation lies in the fact that producers in their anxiety to realize on their crop may dump the honey upon the market faster than it can be absorbed instead of distributing it thruout the season. There seems to be no doubt about the market's being able to take the entire crop of honey now on hand before the next year's crop is ready for market, but this season's entire crop can not be dumped at once without serious results. Somebody must bear the burden of holding the stock to supply the needs of the market thruout the season, and, at present, dealers are not willing to bear this burden, and, owing to the money stringency, are unable to do so.

The retail price of honey is still holding its own very well, and the advice given in these columns last month in regard to beekeepers' selling more of their honey locally, where this is possible, will bear repeating here. Local advertising should help greatly in disposing of honey in this way; but the beekeeper, in selling his honey locally at retail, should be sure that he is asking retail prices, for he should receive enough more for his honey when sold in this way to pay for all his time and expenses of selling.

Reports coming to this office indicate that much of the honey produced by small producers in the East has already been cleaned up, and is now out of the way.



THIS IS the season of the greatest quiescence on the part of the bees. (The old term in beekeeping,



The Quiescence of Autumn.

"quiescence," means simply quietness and rest.) The actual wear and tear of bee life is now reduced to its lowest ebb. At no other time during the year are the bees willing to ignore slight disturbances and remain as quiet as they do during November and early De-

cember. Their summer's work is done, brood-rearing has been discontinued, the winter's supply of food is conveniently arranged just above and around the clustering space, provided the beekeeper has not taken too much away or disturbed the arrangement, and the bees have nothing to do now but save their energy in order that the colony may live until spring without rearing brood. A strong colony under conditions favorable for quiescence consumes a surprisingly small amount of honey at this season, since honey is the fuel which furnishes the energy, and when energy is not being expended honey need not be consumed.

If the quiescence of late autumn could be kept up during the winter, the bees would not age materially until the beginning of active work in the spring; but the trouble is, the remarkable quiescence, so characteristic of this season, can not be maintained in the same degree for long except under the most favorable conditions of temperature and character of winter stores. From now on many things may happen which tend to disturb this highly desirable condition, and finally by long-continued disturbance it may be upset entirely. In its final analysis, good wintering is simply the maintenance of the greatest possible degree of quiescence until the beginning of spring brood-rearing.



TO RENDER old combs, especially those containing disease, and get all the wax, or within one or two per cent of it, without spreading disease, is not an easy task. The rendering of old combs is



The Danger in Diseased Combs.

almost a trade in itself; and, when a beekeeper undertakes it, he should have the right kind of apparatus and follow the directions given in our A B C and X Y Z of Bee Culture, under the head of Wax, sub-head Wax-rendering. If one will follow these directions, and do the work either on a cold day outdoors when the bees can not fly, or in a room well screened so that no robbers can get in, he will get along nicely.

But a large number have neither the inclination nor the ability to do a piece of work of this kind, even when the directions are plain; and, even when they know how, over half of them leave honey smeared over everything where bees can get a taste. Combs are seldom rendered nowadays unless bee disease is either present or suspected. It follows, therefore, that when a beekeeper is careless he defeats the very object of melting up. Thru robbing he spreads disease rather than prevents it.

On account of the messiness of the job, or on account of inadequate apparatus or lack of knowledge, many beekeepers are today pursuing a policy of shipping their diseased or suspected combs to their nearest foundation-maker or dealer; and these

combs, often dripping with honey, are placed in boxes or barrels that leak like a sieve, with the result that the railroad cars are smeared up with loose honey. When these cars stop on a siding they are quite likely to be visited by bees. If the shipment gets lost or is delayed in transit at some junction where there is a large number of bees, the inevitable result in either case is the spread of foul brood. If the dealer or foundation-maker has bees, they are quite liable to help themselves to the infected honey when the shipment arrives at his platform, and disease will be spread again.

Too many beekeepers do not fully realize the importance of extreme care in the disposition of the combs when treating diseased colonies. The moment such combs are taken from the bees they become more dangerous than they were while still in possession of the bees, unless proper care is used in their disposition.

Even some of the most careful beekeepers have found to their sorrow that it is not safe to store such combs in rooms or containers which are supposed to be bee-tight; for robber bees usually find a way to break in, even if the combs are not exposed by some accident.

If the beekeepers in all cases would melt down all combs containing disease as soon as they are taken from the bees, the problem of their further disposition would be greatly simplified.

Put all such combs into boiling water; skim off the free wax, which will be considerable, and then ship the residue to the foundation-maker to be further treated. This residue, or slungum, will be perfectly safe to send anywhere, as it will have been sterilized. The free honey will flow away with the wax or mingle with the hot water. This plan involves no apparatus beyond a common iron kettle or wash-boiler. If one has access to a jet of steam, a common barrel will be better yet.

When the combs have been sterilized in this way, and some of the wax removed, the express or freight on the residue, or slungum, will be much less, and always safe to ship at any time. The hot water will kill all possible moth worms and eggs, remove the diseased honey, and sterilize the wax.

Such a treatment of combs, whether diseased or not, is a convenient method of taking care of them during the busy season, for it renders the material safe to store until it can be run thru the wax press by the beekeeper, or sent away to a wax-rendering plant.

We wish to urge with all the emphasis that we can command the use of this treatment of all combs from colonies treated for American foul brood. Unless the beekeepers and the dealers combine on some plan of this kind we shall be continually handicapping the industry by scattering bee disease along the railways and general highways,

and placing unnecessary burdens of expense on the industry as a whole. The spread of bee disease in the United States is getting to be almost appalling; and we are convinced that a large part of it is due to the careless handling and shipping of combs.

Let us take a case in point. Two years ago we visited a beekeeper in California who showed us a very pretty apiary of newly made factory hives, and the general surroundings looked good. He explained that the inspector had ordered him to burn up his old hives and render his combs, and shake into clean hives. This inspector, instead of giving him the proper instructions, or, better yet, staying there on the job, merely told him to clean up. He certainly did "clean up" every beekeeper within range of his bees. Not knowing how foul brood is carried by robbing he melted his combs outdoors. He showed us a big pile of frames out of which he had cut the combs. We asked him if he did not have a lot of robbers.

"Yes," he said. "They came in very handy because they licked up all the old honey."

He really thought he had done a good job. His bees had all been shaken into new hives on clean frames of foundation; and the pity of it was that every comb in the whole yard at the time of our visit had infection, and he wondered why.

We learned of a case recently where an inspector shipped a barrel of combs, infected with American foul brood, to be rendered in late summer. Mind you, this man was inspector and ought to have known better. The dealer complained that the barrel was dripping with honey. The result can be imagined, because there was a large number of bees in the vicinity. Better, by far, to fire such inspectors and send to each man who has disease some printed instructions as to how to melt combs.

A number of dealers and foundation-makers are willing to receive combs to be rendered into wax. We wonder if those dealers have realized that such a policy will in the end react on themselves. Gleanings desires not only the co-operation of these dealers, but of every beekeeper in the United States, to the end that we discourage the shipping of brood-combs at any time anywhere, whether diseased or not. Bee disease is spreading fast enough without hastening it on in this way.

It should be remembered, perhaps, that in a large number of States there are laws against shipping infected material from one place to another without the consent of the bee inspector. Perhaps the day will come when there will be a federal law against the shipping of such combs to be rendered, or, rather, a law against shipping any combs that do not bear the inspector's certificate; but, unfortunately, that time has not yet arrived.

IN the early days of the movable-frame hive, honey was produced for market in boxes which, when filled, held about 10 pounds of honey. These boxes, containing combs of honey just as the bees had built them, were sold in the markets, box and all, this being the comb honey of the period.

The announcement of the invention of the honey-extractor in 1867 soon brought about a change in the type of honey produced to that of extracted honey. This, the first era of extracted-honey production, however, proved to be of short duration because another great invention, that of comb foundation, together with the section box, in 1876, ushered in the great comb-honey era which has had its rise and decline within the memory of some of the older beekeepers of the present day, and which now threatens to become a matter of history, unless something happens to check the present tendency toward extracted-honey production.

It has not been many years since our bee journals were largely filled with articles on apparatus, kinks, and methods for comb-honey production, while but little was said about extracted-honey production. Beekeepers then thought and wrote in terms of comb-honey production as they now think and write in terms of extracted-honey production. Many extensive producers of extracted honey of today were producing comb honey exclusively 15 years ago; and those who have engaged in commercial honey production during recent years have, almost without exception, taken up the production of extracted honey, leaving beginners, amateurs, and only a few professionals in the ranks of comb-honey producers.

This change in the type of honey which is produced for market is not being brought about this time by a great invention, as in the two previous changes, but is being brought about by the enactment and enforcement of a great law. The Federal Food and Drugs Act became a law on June 30, 1906, since which time adulterated honey has practically been driven out of the markets, and the way has thus been opened for the development of a market for large quantities of extracted honey.

This, the second era of extracted-honey production, therefore, may be said to have had its beginning in 1906. The change to extracted-honey production was greatly hastened by the relatively higher price for extracted honey during the past few years; but the movement was well under way long before the disturbance of war-time prices brought the price of extracted honey for a short time practically up to that of comb

COMB-HONEY PRODUCTION

The Passing of a Great Era in Beekeeping. Is Comb-Honey Production to Become a Lost Art?

By Geo. S. Demuth

finally resulted in a scarcity of comb honey and a return of something like the former ratio of prices for the two types of honey.

Will Beekeepers Return to Comb-honey?

It is well to note that when beekeepers turned their attention from comb-honey production to extracted-honey production they also rapidly expanded their business far beyond that which they thought possible when producing comb honey. Comb honey did not at that time lend itself so well to extensive production as extracted honey. The beekeeper who formerly operated one or two apiaries for comb honey, and is now operating half a dozen or more apiaries for extracted honey, does not find himself in the mental attitude to change back to comb honey as long as he can sell extracted honey at one-half the price of comb honey, or even less, because he would expect not only greatly reduced production per colony, but would also expect to be compelled to reduce the number of his colonies if comb honey were being produced. The change to extracted-honey production came just at a time when swarm-control measures for comb-honey production on a large scale were being perfected by a few extensive comb-honey producers, but before these methods were successfully applied on an extensive scale by beekeepers generally. Having solved the problem of swarm control in extracted-honey production, the extensive producer sees in the swarming problem a formidable barrier to comb-honey production. In addition to this, the relief from the more exacting requirements of comb-honey production is sufficient to cause many to continue producing extracted honey regardless of a relatively higher price for comb honey. Comb-honey producers, therefore, need not fear much competition from the well-established producers of extracted honey.

Locations and Comb Honey.

Many locations are not suitable for comb-honey production. To produce comb honey advantageously for the general market the honey must be white, and must not be inclined to granulate quickly while in the comb. The honey flow must be fairly rapid and continuous in order that the combs shall be well finished. To attempt to produce comb honey in large quantities for the general market where the honey is mixed or dark, or where the honey flow is slow or intermittent, is not at all advisable. There may be exceptional cases where limited

honey. The tremendous increase in extracted-honey production during recent years, together with the decrease in comb-honey production, has

amounts of dark comb honey may be sold locally, or where the comb honey that is poorly finished and travel-stained because of a slow and intermittent honey flow may be sold to better advantage locally than the same honey in the extracted form; but for the general market only the finest grades of comb honey find a ready sale.

Comb-honey Production Limited.

Successful comb-honey production on a commercial scale being thus limited to rather restricted areas, and restricted to beekeepers of peculiar training and temperament, makes of this a somewhat exclusive phase of honey production; and if the old ratio of prices between the two types of honey is restored, the beekeeper who is able to produce comb honey successfully will have a great advantage, not only in the price he receives for his crop, but also in the quicker sale of the comb honey. The condition of the honey market at the present time illustrates well the difference in readiness of sale of the two types of honey which will probably prevail for some time, unless comb honey should so completely disappear from the markets that the demand for it would cease because people have forgotten that there is such a thing. The beekeeper who is located in a region suitable for comb honey

and who knows how to produce it to advantage certainly will do well to produce comb honey next year.

Will Comb-honey Production Become a Lost Art?

It would be unfortunate indeed if the art of comb-honey production should be lost because of a lack of masters in this art. Not only will there, in all probability, always be a demand for a limited quantity of comb honey which should by all means be supplied, but beekeeping will suffer a permanent loss if comb-honey production should be entirely discontinued. Much of the information in beekeeping which we now possess, and which we are utilizing in the production of extracted honey, was obtained during the comb-honey era by the solution of the many intricate problems connected with comb-honey production. Producers of extracted honey of today may be thankful that the production of comb honey has afforded so many knotty problems, the solution of which has added tremendously to the richness of our fund of information applicable to extracted-honey production.

[This introductory article on comb-honey production is the first of a series of articles on the same subject to be published in Gleanings during the coming months.]



OUR experiments in mating queen bees on Duck Island, at the eastern end of Lake Ontario, were started in 1919 and were continued on a somewhat larger scale in 1920.

The object of these experiments has been to mate together queens and drones bred from certain Italian colonies in the Experimental Farm Apiary at Ottawa that have shown the best honey-producing and non-swarming qualities and from this to develop by selection a strain of Italians possessing these qualities.

Duck Island was selected for the mating station because it is eight miles away from the nearest island (Galboo Island) and over eleven miles from the nearest mainland (Point Traverse, Ont.). Moreover, Duck Island (including the small adjacent Yorkshire Island) covers only about 1500 acres, and there is good evidence that no honey-bees exist upon it.

Mating Experiments of 1919.

In the 1919 experiments sixteen virgins and 500 drones were taken in twin nuclei on Langstroth frames to the island on July 23. Twelve of the queens began to lay soon, but six of these produced drones only and the

QUEEN-MATING EXPERIMENTS

This Year's Continuation of the Mating Experiments Begun on Duck Island in 1919

By F. W. L. Sladen

(Aplarist, Dominion Department of Agriculture, Ottawa)

other six varying proportions of drones and workers. The cause of the imperfect matings was not ascertained, but it may have been that the drones

were too young or too few. Further particulars of the 1919 experiments will be found in "Gleanings" for February, 1920, pages 80 to 82.

Mating Experiment, 1920.

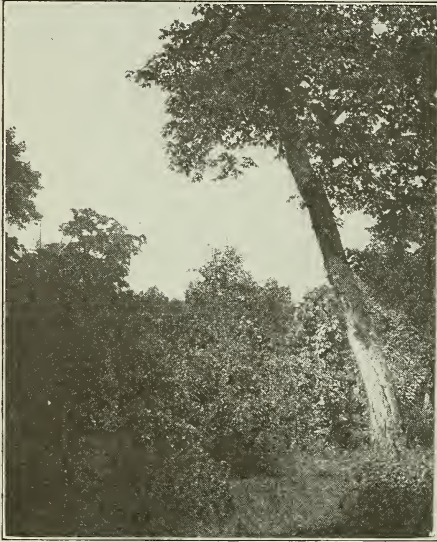
In 1920, fifteen queens, two of them having emerged on July 19, and thirteen on July 25 and 26, with 2128 drones that had emerged between 9 A. M. on July 20 and noon on July 24, were brought to Duck Island on July 28 just as the basswood flowers were beginning to open. They were brought in sixteen twin nuclei, each containing two Langstroth combs and a space for a third comb.

The weather from July 28 to Aug. 2 was windy, cloudy, or cool. August 3 showed some improvement and August 4 was clear, warm, and still, a perfect day for mating. Very favorable weather for mating continued almost every day until the end of the month.

None of the queens had begun to lay when the island was revisited and all the colonies

were examined on Aug. 4, but when examined again on Aug. 14 eleven of the queens were found to be laying and four lost. On Aug. 14, out of the eleven laying queens, seven had their most advanced brood capped, two had large larvae, and two had larvae about two days old. It was subsequently found that all the eleven queens had mated perfectly. In every case large, even patches of all-worker brood were produced.

Nine more virgins that had emerged Aug. 1 and 2 were brought to the island in twin



It is dense and bushy on Duck Island.

nuclei without more drones on Aug. 4. Seven of these virgins were mated perfectly and two were lost.

Twelve more virgins that had emerged Aug. 7 to 11, were brought to the island in similar nuclei without drones on Aug. 14. The result was nine perfect matings, two matings producing partly drones and partly workers and one queen lost.

In all, there were 27 perfect matings, two imperfect matings and seven queens lost from the 36 virgins brought to the island. The remaining queen was lost by accident and her workers were not examined.

The workers produced from 26 of the perfect matings were examined; they were lightly colored enough to show that the queens had been mated with Italians. This helped to support the evidence that they were mated with the drones brought because the colonies on the nearest mainland, Point Traverse, Ont., were found to be mostly black bees.

After the removal of most of the queens on Aug. 30 and 31, queens and drones were raised fortuitously in some of the nuclei, and when the nuclei were removed from the island on Sept. 23, it was found that a honey flow from aster was proceeding and that several of these queens had begun to lay.

When the successfully mated queens were introduced into colonies at Ottawa their wings were clipped in a particular way, by which it will be possible to recognize them next spring.

Future Plans.

It is planned to test the island-mated queens for non-swarming and honey production in 1921, and from the best of them to rear queens and drones for mating on Duck Island during the basswood honey flow at the end of July and possibly also during the aster flow in September. Precautions are being taken to avoid inbreeding.

It is also planned to begin next summer the distribution of virgin queens raised from the best Duck Island stock. Special directions for safe introduction to newly formed nuclei will be sent out with the virgin queens, and it will be possible for a beekeeper to raise a sufficient number of drones from a few of these queens the following year to mate a proportion of any further virgins we may obtain. In this way it is hoped that these breeding experiments may soon become of practical value to Canadian beekeepers, and that their value will increase as the work develops.



ABOUT DR. MILLER

*Thumb-nail Sketches Furnished by
Himself in His Letters to a Friend*

By E. F. Phillips

JUST now we all feel sorrow at the death of Doctor Miller, yet we all wish to remember him, just as he was in everyday life and with all of his delightful human characteristics. At the risk both of intruding a frivolous vein into our thoughts at this time and of writing quite personal things concerning my relationship with him,

it seems only sharing a joy to record here some things from his letters. It is not the intent of this sketch to transmit the good things in these letters, but

rather to allow Doctor Miller thru these notes to reveal his charm as a letter-writer and his warm sympathetic nature.

(1) The first letter that I received from

him was in 1906. At that time he had raised the question as to the age of larvae chosen by the bees for the rearing of queens, when the beekeeper does not interfere.

"I'm afraid you don't know enough to stand up in a straight row and give answers that are correct to the following questions." Then follow the queries indicated, the let-



Dr. Phillips and Dr. Miller in a friendly tilt at the latter's home at Marengo, Ill., Aug. 21, 1920. Mr. Demuth (between them) appears to be umpiring. The dear old Doctor is making one of his characteristic left-arm gestures.

ter closing with this characteristic bit: "Perhaps that's all the confession of ignorance I should make at one sitting. If you can enlighten me—and incidentally others—I'll think a tiny bit more of you than I do now."

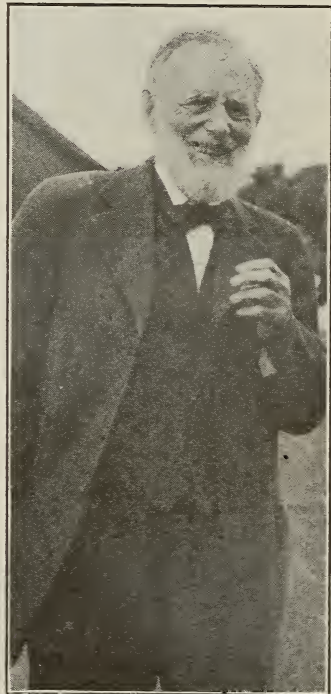
On receipt of the reply, he sent this note, which would warm the heart of anybody: "I take no small comfort in thinking that I can turn over to you some of the questions to which I have not yet fitted answers, and I really believe I am yet to learn some things about bees that I never would have learned if you had never been born. May the date of your death be a long while after the date of your birth." Whereupon he proceeded to ask more questions!

(2) Soon after this incident I wrote asking him to loan me a copy of a foreign bee-journal. "I am exceedingly sorry to say that the journal in question has gone the way of all foreign journals that have acquired a certain age—the way of the furnace. You see if I should keep all, the house wouldn't be big enough to hold both them and me, and I'd rather they'd be turned out than I." Later he kindly sent me all the foreign journals as he had read them. It is interesting to note that Doctor Miller learned to read French and German in order that he might not miss what was happening in bee-keeping on the other side of the ocean, and this too when he was no longer a young man. Later he wrote on his work with languages as follows: "Just a word that may encourage you in the foreign-language business. If your experience is like mine, you will find

that your progress in learning will not be uniform but accelerated. I think I have learned more rapidly in the past six months than ever before. I'm not saying this as an expert; possibly you are a much better linguist than I—if you're not you're pretty poor—but my longer time at it gives me the chance of knowing that one item better than you. Blessings on you."

(3) "I've been watching for a good while to see announcement as to your being at the head of matters apicultural at Washington, and that lately made in the American Bee Journal settled it. Need I tell you how glad I am?"

"I wonder if it will seem presumptuous in me to hint at what may be your weak point, the point that may lead to failure, at least that may prevent you from being as useful in your position as you might otherwise be. I hardly think you will take it amiss. Well, my fear is that you haven't sense enough to take proper care of your physical powers. I'm not afraid of the mental part. My advice is that it be your first care to make of yourself just as healthy and perfect an animal as you can. You can take that advice or



He always enjoyed a joke.

not; if you don't want it, send it back. I need it myself."

(4) After the correspondence regarding the age of larvae chosen by the bees, several related questions were discussed. "I feel just a little like saying that if you'll

grant me this favor I'll never trouble you with any request again; but I don't want to lie, and I know very well that I'll be likely to want other favors of you: so I make no promise, but please tell me anyhow. I love you."

(5) When Doctor Miller wrote his treatment for European foul brood, it caused some consternation among inspectors and others; later on, of course, we found that he was right. In a note I "threatened" to combat his views, with this reply. "What you say sounds a little as if you think I wouldn't like it to have you call me down in print. Look here, my much esteemed fellow citizen, if at any time you wish to make me think just a little more of you, just combat publicly or privately anything I may have said that you think not altogether plumb. I'm sure that I haven't tried to spare your feelings: why should you be tender of mine?"

"I wonder if you know what an old humbug I am, anyway. I pose as knowing things about beekeeping, and then when I get myself off by myself and meditate on the pile of things I don't know, it's so big that the other pile dwindles down very small indeed. Well, we're all poor critters."

(6) "Did I understand you to say that I—that we—didn't appreciate the pictures of the dear little kids and their daddy? That's where you're fooled, altho all the evidence tends that way. Of course, any one with the proper modicum of decency would have thanked you for them long ago. Sadly I confess that I'm a little short on decency, and when badly crowded—as I have been lately—I put off from day to day expecting that each tomorrow will be a little less crowded, and then each day disappoints me: so I'm sure you'll forgive me. You needn't mind giving me a talking-to; my wife has attended to that."

(7) "I thot by the old Colorado rules (grading rules for comb honey) there was a minimum of 21 per case. Instead of that it is an **average** of 21. So I cry 'Peccavi,' which is, being interpreted, 'That's one on me.'"
"Humbly yours,
"C. C. Miller."

"Please understand that 'Humbly' only refers to this time."

(8) In 1915, I suggested to the editors of *Gleanings and the American Bee Journal* the desirability of uniformity in the writing of beekeeping terms, and naturally Doctor Miller was included in the informal correspondence on the subject, which was rather extensive. The following is one of the choice letters on the subject. The clarity of the analysis and the insistence on good form are characteristic.

"To the three (3) Conspirators:—

"Here is my creed. I believe in simplicity, and I believe in clarity. I also believe that we must give some heed to the customs of the best writers—and readers. When words are used together in a more or less

unusual way as one word, it is simpler to write them without hyphens than with. It is easier to write 'queen and drone trap' than to write 'queen-and-drone-trap.' It is easier still to write 'queenanddrone-trap.' With 'queen and drone trap' as I have shown, there is lack of clearness, and danger of mistake. So it is in many other cases, so there must be some way to show the compounding. Mr. Root would dispense in general with hyphens. I would go farther than he and dispense with all hyphens, only that we must have some regard for the general custom. That, I think, is, or at least has been, to use hyphens in compounds until a given compound becomes common, and then drop out the hyphen, leaving the word solid. 'Bee' is not an adjective, and we cannot use it as such without violating both perspicuity and good usage. When therefore it is used in a compound we have the choice of the hyphen or the solid word. I should incline to the view that all compounds in which 'bee' is used might be written solid without waiting longer. That would be a step in a forward direction. It's up to Dr. Phillips' (or Phillips's—I'm not scholar enough to know which is right) conscience to say how far we shall go in advance. Only we mustn't drop out hyphens and leave nothing to tie the parts of a compound together. That way lie confusion and bad usage. Whenever he is a little in doubt whether to have a word hyphenated or solid, I hope he may lean to the side of progress rather than conservatism, and save type and space in writing the word solid.

"I'm holding my breath until he speaks. ccm."

(9) "Haven't time for a cordial reply, so will save the cordiality till you come.

"Mrs. Miller will have an extra plate and knife for you Monday evening, and you can use knife or fingers—or both.

"Come. C. C. Miller."

(10) When in 1915 Mr. Demuth and I announced our findings as to the production of heat in the winter cluster, Editor Root was unconvinced, and wrote to Doctor Miller as follows: "The idea that bees are exercising to keep warm is just a little too much for me to believe. * * * I may come to the conclusion that Dr. Phillips is right, but I am just a little afraid that he has made a mistake." Then after going to the bees for the facts, he wrote as a footnote: "Later: Have just seen both. I am glad to confirm Dr. Phillips. See editorial on the subject in Jan. 15th." After Doctor Miller was sure that Mr. Root and I were in agreement, I had the following: "I always knew I didn't know much about bees, and now you and your accomplices are doing your best to prove what little I do know isn't so. Bad cess to you. I enclose part of a letter from Ernest that I enjoyed and wanted ever so much to send you, but didn't dare. Now that you have interviewed him—or he you—

I think I am betraying no confidence to send it."

(11) A letter on the behavior of bees in the fall brought this reply: "Sir—You're an enemy and a fraud. The more I hear from you the more I don't know the little I thot I knew."

(12) Following the meeting of the National Beekeepers' Association at Chicago in 1919, the last meeting of beekeepers that he attended, I received the following highly prized and characteristic communication:

"The Miller Clan, in conclave assembled, after full discussion, voted unanimously and enthusiastically that the chief factor in making the day of their visit to the Chicago Convention a day to be remembered with great pleasure was one Dr. E. F. Phillips, and it was further voted that the undersigned should notify the said Dr. Phillips of this action.

"In testimony whereof I hereby set my hand and seal on this the 25th day of February, 1919. "C. C. Miller (seal)."

(13) At one of the visits which I had at Marengo the following incident arose, which shows the way in which by the use of a few words Doctor Miller could speak volumes. His dislike for tobacco is well known to all his readers, and on this occasion, while he was showing me his garden, I stopped to light a pipe, which called forth this: "Young man, some day I want to talk to you about the use of tobacco—but I haven't time just now."

One who can look back on 15 years of friendship with a man like the author of these brief extracts is indeed fortunate. There is no better beekeeper than was Doctor Miller, and to this accomplishment he added the striking talent of uniform happiness, which pervaded everything which he touched. The humor of his writings, especially of his letters, was but the manifestation of his satisfaction with life as he found it, bringing happiness not only to himself but to all those with whom he associated.

Washington, D. C.



PORTO RICO is a very small spot on the map. It has many peculiar beekeeping problems, caused by the difference in altitude, rainfall, and the trade winds, which blow most of the year. To be exact, the Island is but 100 miles long and 35 broad and contains about 6300 square miles, with an altitude from sea level to over 3700 feet elevation. The hill country in the center of the Island averages about 2000 feet above sea level. A cause of great variation in the flora is the difference in the rain-

BEEKEEPING IN FOREIGN LANDS

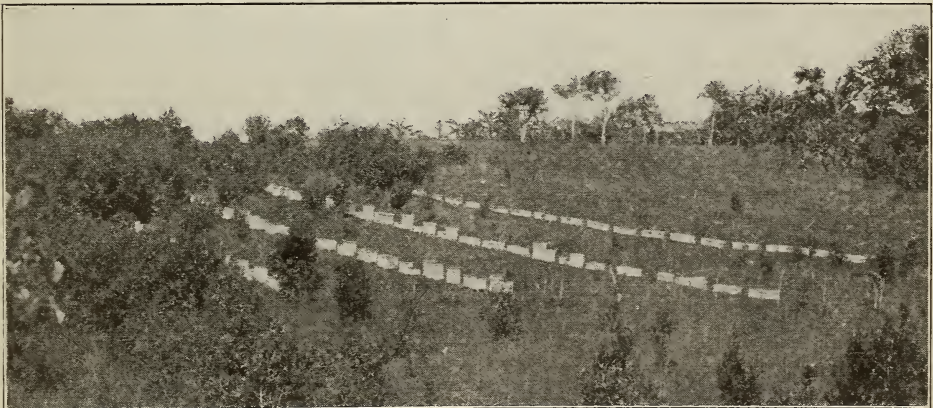
No Foul Brood, No Feeding, No Winter Problem, and Few Swarms in Porto Rico

By Penn G. Snyder

fall, most of which is precipitated by the high hills, on the northern watershed; which has an annual precipitation of from 80 to 100 inches a year.

The south side receives about 40 inches only. This causes a great difference in the luxuriance of the vegetation, which naturally means a difference in the honey flows.

The rains act more or less as a stimulant and cause new growth. The trees then shoot a flush of blossoms, and, if the showers do not continue during the honey flow, you se-



An out-apiary in Porto Rico.

cure a fair yield. However, it usually continues to shower. My home apiary is near the town of Aibonito, 2000 feet above the sea level, and the main source of honey here is guama. In the past six years out of about 24 flushes of bloom there was only one period of blossoming when it did not rain more or less.

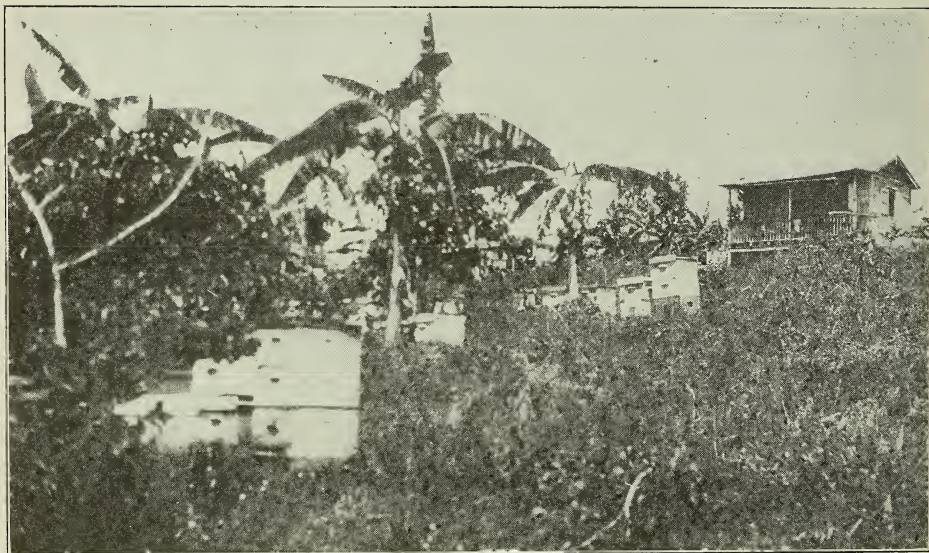
Amount and Nature of Honey Flows.

Before coming to Porto Rico, I heard all kinds of reports of honey yields. What I actually found after being established here, was an average of less than 100 pounds per colony. I question whether the general average of the Island would be that high. This average is from apiaries in the central hill

replace each queen that does not seem to be up to the general standard.

The honey flows here are usually rather long drawn out, but on the other hand the nectar is, I believe, not as thick in body when the bees gather it, as the northern honey. At any rate, hives I have had on scales, gain slowly. Two or three pounds per day is a good average during the honey flows.

The honey comes almost entirely from trees and shrubs. Ground flowers, of which there are very few, play an unimportant part in honey yields. You can count off with the fingers of one hand all the main sources of surplus honey. To enumerate them in the



The growth in Porto Rico is tropical.

parts of the Island and from the north, west, and south coasts, totaling over 2000 colonies of bees.

Different from the States where there are four seasons, we have but two: the rainy and the dry. From year to year there is a variation of these seasons of from one to three months. So there is no certainty when to look for a honey flow.

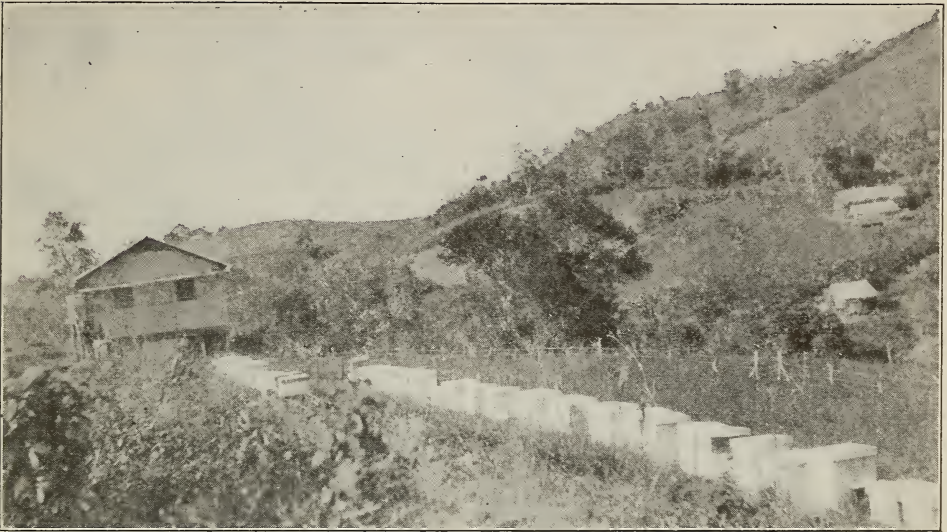
Also the number of the flows from the same sources are just as variable. I have seen five flowering periods in one year from guama, and in the following year, two good blooms and one very slight one. All this does not make for large crops of honey.

The States honey-producers who can count on their flows usually within a fortnight, can understand what it would mean if the flow should be delayed for two months. How would you keep your bees up to a fair working strength? It simply, cannot be done. The best we can do, is to requeen every year and

order of their value, because of large yields or great numbers: guama, guava, moca, orange, and royal-palm. For minor sources we have coffee, jobo, several varieties of palm trees, pomarosa, aguacate, bananas, and century plant. The only ground flower yielding nectar worth mentioning is a species of daisy whose seed are like the *Biden frondosa*, or beggar's tick of the States. This flower grows all over the Island, more or less.

Extracted Honey and How Marketed.

Practically all honey produced on the Island is marketed in the extracted form, for several reasons. First, we are 1400 miles from New York City, our main market. Second, the honey is of poor quality for table use. Third, the slow flows cause heavy wax production, and consequently thick combs. Fourth, this wax has a rather bitter taste. Fifth, there is a difference of from 20 to 30 degrees temperature from the high



An apiary and honey-house in Porto Rico's hill country.

point of day to the low point of night, thus causing the bees to leave the supers when it grows cool. Last, most tropical honeys are not so well ripened as those gathered in the North, and unless the sections are entirely capped, they are likely to leak by the time they arrive in New York City. The humidity is high on the Island, and the transportation to market by water adds to its quota of moisture. For this reason I may say, all honey produced here is extracted and run into fifty-gallon barrels for shipment. Little or no honey is put into the five-gallon tin containers, on account of the extra cost of cans and a much higher rate for steamship freight. Most of our honey is used by baking companies or shipped to Europe. The larger container not only has the call, but seems to be the best for our purpose. Sales of honey for local consumption do not amount to one per cent of the annual crop.

For the past year, the cost of making delivery of honey to New York City from a coast town was 18 cents per gallon. The container costs $11\frac{1}{2}$ cents per gallon.

Freight from Aibonito to the coast is five cents per gallon, making a total of $34\frac{1}{2}$ cents per gallon. The average price received for honey sold in Porto Rico in 1919 was about \$1.15 per gallon. This low price was occasioned by export conditions and foreign exchange.

Little Swarming.

The lack of swarming has been a constant source of wonderment to me, and one I cannot reason out. Our hot tropical sun, slow long-drawn-out honey flows, should spell all kinds of swarming, yet I do not believe ten per cent of the bees on the Island swarm.

Apiary Owners and Employees.

The men employed in the apiaries are usu-

ally peons, who are the more ignorant of the population. The better classes do no manual labor. Naturally, the peons speak nothing but the Spanish language. Like the rest of the world at present, the laboring man is in a state of unrest, and is a growing source of trouble. There are but few of the peons who can be depended upon. Yet we must place responsibility on them. If the employer owns several apiaries in different localities, very frequent inspection trips make the expenses prohibitive, on account of poor communication between points across the Island. It is necessary, as a rule, to follow the coast, and for this autos are used. At this date, the cost of peon labor ranges from 90 cents to \$1.50 per day. Usually a home is provided free for the laborer and his family, in addition to his salary.

About 60 per cent of the bees here are owned by men or firms, who know little or nothing of honey, bees, or beekeeping. The others are owned by professional beekeepers who receive their entire income from bees, and by owners of coffee or citrus-fruit plantations, who have the bees for pollination as well as the honey they yield.

Modern Hives.

The United States Experimental Station at Mayaguez, Porto Rico, fathered modern beekeeping here. With this example, the new beekeepers followed the same methods used at the Station. Practically 98 per cent of the bees here are in eight and ten frame dovetailed hives. The remaining two per cent are in anything. I am sorry to say the two per cent is being added to rapidly by the peon class, and is likely to prove a detriment to the larger beekeeper.

Number of Colonies and Strain of Bees.

I personally know of over 10,000 colonies

here. I believe there are between two and three times that number. There is little doubt there are now too many colonies on the Island, especially in certain localities. Many of the apiaries are composed of hybrids, and some of them are certainly Tartars. Nothing else can be expected when you know there is no thought of improvement of the stock by the average native beekeeper.

Bee Enemies.

One of the great difficulties I have found, is in mating queens. My experience has been, averaging the year, a loss of from 30 to 50 per cent. This makes it rather bad for the "let alone" beekeeper.

Among the enemies of bees, we have bee martin, a bee-eating swallow, and many species of lizards that prey on bees, especially when they are found isolated away from their hives, as are virgins on their wedding flight. In some sections of the Island, ants are a great source of nuisance. There is one variety of ant here which eats all kinds of soft wood. They frequently attack the wood of the hives. Fortunately they can be poisoned when found.

When working with bees we have an oc-

casional surprise party and chase when we see a tarantula make a jump from between the super cover and the metal telescope cover. They sometimes attain a size of from three to four inches across.

Fine Bee Country.

Porto Rico should be of great value to the beekeepers of the United States in shipping early queens and bees to the mainland. There is no foul brood on the Island, and this is a decided advantage to the purchaser. Bees or queens can be reared and shipped any month of the year.

Notwithstanding the difficulties enumerated above, Porto Rico is favored as a beekeeping country. There is no foul brood, no winter problem, no spring shortage of pollen, no feeding, no work with comb honey, and few swarms. In addition to this the Island has an unrivaled climate, making the hill sections a very desirable residential locality.

Aibonito, Porto Rico.

[This article on beekeeping in Porto Rico is the first of a series on beekeeping in foreign countries that we hope to publish during the coming year.—Editor.]



I HOPE the buyer as well as the beekeeper will bear with me in this attempt at an analysis of the beekeeping situation as it is today. Much has

been said and written about the probable success of the beekeeping industry, and undoubtedly much more will be said in the future. But truly, friends, it is high time that we quit talking and went to work. Perhaps we are all guilty of being in the position referred to the old Indian chief who journeyed to Washington regarding a matter his tribe was interested in. After remaining for some time without securing results, he remarked that it was "all talk and no do."

Dealers Not Awake to Situation.

The beekeeping game is one of the most interesting "sure-thing" gambles in American industry. It cannot perhaps be compared with the diamond trade or Standard Oil, but I believe that it could be a hundred times greater than it is today without reaching the limit. Why is the industry not larger than it is? Perhaps the beekeeper is partly to blame, but the beekeeper in general is a producer and usually not a dealer. It is possible then that the dealers have not been awake to the situation nor have they been willing to take the leadership in helping to stabilize the in-

THE BUYER'S PART

Dealers Should Co-operate with Producers in Helping to Stabilize the Industry

By H. F. Wilson

large, the dealer must do the building. Make it profitable to produce honey and there will be plenty of beekeepers to produce the honey. Advertise and place honey before the people and there will be no limit to the demand. Honey products form another field which needs development, and one that will use hundreds of tons of honey when thoroughly worked out.

Beekeeping has too long been a "side-line" with the farmer beekeepers, and honey a side-line with the commission merchant.

Buyers Should Keep Honey at Fair Price.

The secretary of the Wisconsin Manufacturers' Association places beekeeping as tenth among the major industries of Wisconsin, and incidentally remarks that this was the former place held by the brewing industry. Beekeeping will continue to grow because the beekeepers are learning to market their honey at home with a fair profit. Furthermore, the large beekeepers are finding out that they can market their honey without sending it to the dealer. I do not believe that this is a healthy condition, and the

dustry. The success of the beekeeping industry does not depend upon the beekeeper alone, but upon the honey dealer as well. If the honey industry is to be

situation will grow worse and worse unless the dealer steps into the breach and co-operates with the beekeeper to keep honey at a fair price both for himself and the beekeeper.

Local Markets Will Take Care of Crop.

It is not a question of successful beekeeping, but a question of successful marketing. Make a market for the beekeeper, and he will produce the honey. Do not throw the entire load of advertising on the beekeeper, but do your share. I have heard of a bottler who said that the beekeepers were robbers because they asked 20c a pound wholesale for honey; yet there is a steady retail demand for honey at 45 and 50 cents in pound jars and 35c in 10-pound pails.

There is no need to ship a pound of honey out of Wisconsin today, because the local market will take it all if it is properly disposed of. The same thing is true of nearly every other State in the Union.

Profitable Markets Will Increase Crops.

Local advertising in this year selling more than double the amount ever before sold in any one season, and the demand is increasing.

There are a thousand or more splendid locations in Wisconsin where there are no bees, and these places are unoccupied today because there has been no proper stimulus to their being occupied.

Provide a profitable wholesale market for

honey, and these places will be filled with bees. Beekeepers will to the end of time continue to sell honey locally; but the best beekeeping territory is far distant from the biggest markets, and the great bulk of the honey will continue to be distributed by the wholesaler. Just how much any one dealer will handle, will depend upon his vision and ability to look ahead.

Dealers Should Co-operate With Producers.

The two biggest supply manufacturers in the United States have found it profitable to hire specialists to go out among the beekeepers and teach them better methods of beekeeping. Why cannot the dealers do the same with marketing?

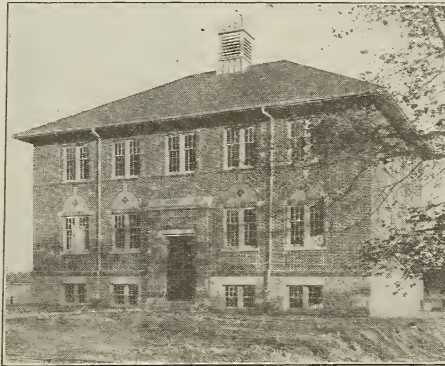
Suppose the producers, the supply manufacturers, and the dealers were to co-operate in a national research laboratory to test the food value of honey and its uses in food products and trades. There are no scientific records available to show the true value of honey except its sugar content. To compare honey with sugar is wholly unfair. While honey is mostly composed of sugar still there are certain undefined properties in honey that are said to be valuable as a laxative and stimulant. Is it true that honey is a remedy for colds and coughs? I do not know, but why not find out?

Also, why cannot the dealers co-operate in an organized campaign to advertise honey on a nation-wide scale?

Madison, Wis.

THE new apicultural building of the Ontario Agricultural College, at Guelph, Ont., is said to be the finest building devoted wholly to beekeeping in America. It will be the center of attraction on the Ontario beekeepers' convention to be held at Guelph Dec. 1 to 3, when it will be formally opened.

The building is 64 feet 6 inches by 47 feet 3 inches. The basement comprises a honey and wax room with steam heat, water, gas, electricity, a dark room, stock room, bench room, lavatory, and a bee-cellar. The details of the bee-cellar are 14 feet 2 inches by 16 feet, walls 18 inches thick, water-proofed on both sides, two by fours nailed on ends on the inside with inch boards on the two by fours, two layers of insulating paper with a two-inch cork board, and finished with ½-inch Portland cement. There is a false ceiling 6 feet by 6 feet from the ground, finished exactly the same as the other walls. The outlet at the top corner is connected with the



The top floor contains a lecture room to seat about 250, seats arranged in semi-circular rows rising at the back to five feet from the floor level. The lecture room will be complete with balopticon, enclosed blinds, sliding blackboard, desk, and observation colonies at the windows for use at class work.

The building is finished in tapestry brick and will cost approximately when finished \$60,000,

ventilating shaft of the whole building and is controllable. A small inlet in the lower corner near the entrance is also controllable. The floor of the cellar is cement. An elevator in the corner of the basement runs up to the lecture room and also a bench room 26 feet by 16 feet for practical work in assembling supplies.

Under the front stairs there is a natural fumigating room.

On the main floor in the front are a microscopic laboratory, small office, and a reading room, together with the general office, the apiarist's office, which includes a fire-proof vault for the keeping of records, etc.



MIGRATORY BEEKEEPING PAYS

Not Difficult to Move Bees, and It Increased the Crop \$5.00 Per Colony

Most of my bees I keep in out-apiaries along the swampy lowlands of Cape Fear River above Wilmington, N. C. The early flow there is very good for building up early, and from strong colonies that have wintered well a fair crop of honey is obtained. The principal honey plants are maple, swamp haw, and several varieties of gum. Toward the close of the early swamp flow the gallberries of the higher lands begin to bloom. This is our chief source of honey and I believe that there is none any finer. Hence our advantage in migratory beekeeping, which we have practiced quite a bit lately.

At the time of our last moving I stapled the hives with several supers of honey all together just as they stood. I then removed the covers and covered the tops of the hives with fly-screen wire cloth. The entrances were nailed up solid, but the ends of the entrance closers were moved back to allow the free passage of the bees till all came in at dusk. Then, with smoker, hammer, and lantern, and a few taps at the entrances the bees were ready to load.

I secured my brother's saw-mill crew with large Pepsi-Cola truck. Only two were engaged for the work, but enough of them would join in for the fun to fill the sides and top of the engine so full that on the return trip an old opossum carrying her young, which we passed on the road, stopped and looked back to take new lessons. There were several machine loads of the "curious" that followed up our party. My bees are about all hybrids, and it is needless to say that many of the "curious" got well rewarded for their unceasing efforts to "find something."

We loaded the colonies with the combs parallel to the axles of the truck. Over rough places we came slowly, but we ran swiftly where the road was fair.

I brought in three of my out-apiaries from 15-20 miles each and built up a big home yard, as the gallberry will support a good many at a place, and I can work them all at the central extracting plant. It is all just as easy as hauling supers back and forth. Our truck had good springs, which enabled us to take a swift gait without breaking a comb. The weather was getting pretty hot in June, but by moving at night the bees fared finely and went to work the next day in their new location. A portion of one apiary that I never brought in fell behind the others just five dollars per hive.

Now, brother and sister beekeepers, migratory beekeeping is not difficult. Bees can be easily moved at night in hot weather by

giving plenty of air. Migratory beekeeping is young but growing rapidly, and, if we take advantage of it, there are great possibilities within reach of most of us.

Point Caswell, N. C. C. E. Corbett.

DRONES IN MATING TIME

Believes Drones from Each Hive Keep by Themselves in One Flock

Under our circumstances, here in the tropics, it seems to me that during the mating season the drones gather together in flocks in the shade under the bananas or below the big trees which encircle the apiary, which is situated in a clearing; and also that they prefer the denser shade. At least, there the strongest flocks are to be found. How many drones are in a flock, I have never counted, nor thought of; but I would believe about 30 or 40 in a strong flock. It seems to me that the flocks keep in the shade just where the shade and the light meet; here they stay sometimes for hours, with whirring wings, their heads directed towards the hives in the apiary. Now and again they will zigzag or change places among themselves. At other times the flock will sally forth, out in the sunshine, to remain there for two or three seconds, darting right back into the shade again, with a flash or glimpse like drops of flying fire or gold. I have always had the idea that the drones from each hive kept by themselves in one flock; at least, I have observed that drones whose color I had happened to notice as being especially bright, would be found in the same place, and darker drones in other places. I believe that the stronger flocks try to gain the most densely shaded places, and that sometimes battles are delivered about them. Also, that the young queens when venturing forth on their mating trip (sometimes after a few circles) fly straight up in the air for a short distance, and thereafter make for such a shady spot. When the queen nears such a spot, the drones will suddenly sally forth, thereby frightening the queen who will sometimes make for another shady spot, and at other times either drop to the ground or rise straight in the air. In any case other drone flocks will approach, standing around, but to the best of my observation keeping in their own flock. Now and again the hovering drone-flocks will make a perfect uproar, and then quiet down again. The louder the noise, the bigger the drones will appear—most likely an optical illusion caused by their whirring wings. I believe that they are most numerous towards the afternoon, say about two or three o'clock; or perhaps they



FROM THE FIELD OF EXPERIENCE



are only most noisy at that time—more so if the weather happens to be dull or sultry. Also, I think that I have noticed that they are more excited on the fourth and fifth days after a batch of young queens have hatched. The reason for this I cannot understand, as I have never seen the drones searching around the nuclei; but I think it is so.

The conditions as set forth by me may be due to the peculiar lay of the land, but I would be glad to have your opinion. Also I hope other readers will let us have their observation. Axel Holst.

St. Thomas, Virgin Islands.

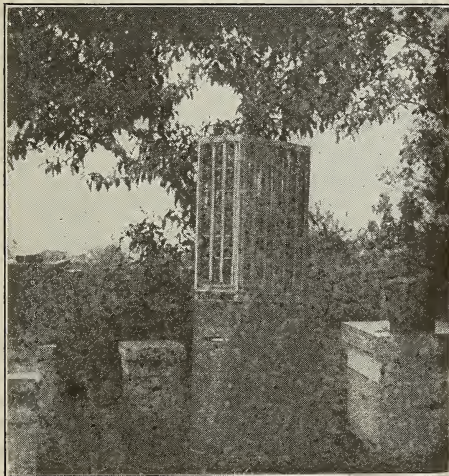
[On referring this to Mell Pritchard, he says he has never observed that drones from each hive keep by themselves in one flock. But he suggests that if this is true it would be an advantage to have all of one's best drones in one hive, in order to bring out a large flock, which would attract the queens away from the smaller flocks and give better results in pure mating.—Editor.]



THE BROWN EXCLUDER FUNNEL

A Sure and Quick Way of Finding Queens When in a Hurry

While working for E. B. Ault of Calallen, Tex., in the spring of 1919, helping rear queens and ship bees, the need of a quicker and easier way of finding queens in large

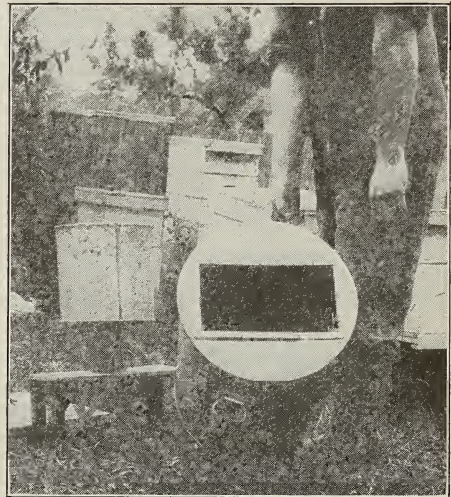


A box-shaped wood-and-wire excluder strainer.

colonies so as to fill pound packages grew pressing, and the idea came to me that a funnel could be made to shake bees thru, using an excluder as a strainer. I drew the plans and told Mr. Ault of it. He at once saw the value of it and had me make two

of them to try. They were tried with success, and I am sure each one saved the time of one man in the bee-yard.

The outside shell was made of light tin, as in the illustration. The zinc cylinder ex-



The outside shell of the funnel.

cluder worked very well. But we found it too frail. It soon shook to pieces. So we made the bottom of wire excluder and reinforced the sides, but then it would not stand the jar. We then made the funnel square, or box-shaped, which I did not like so well.

While visiting T. W. Burleson of Waxahachie, Tex., I found that he had heard of the funnel, and had made one. He partly overcame the frailness of the zinc cylinder by making it box-shaped out of wood and wire excluder and also constructed it so it would slip in and out of the outside shell, making it easier to find the queen and also to dump the drones out.

I suggested to him the light holes around the bottom of the funnel. He thought the bees would crawl thru the excluder down into the dark room better than out to the light. However, either way seems to work well; but I had rather have the light holes, which also give ventilation.

You have noticed when bees are smoked too much and are excited they will run for the entrance, and I believe when shaken into this funnel they will go thru the excluder better when they think they see a chance to get out below.

After a little practice with this funnel it becomes easy to handle and saves time in finding queens. We shake in the bees and smoke them a bit to rush them thru. The drones as well as the queens are sifted out. Usually you can find the queen among the



FROM THE FIELD OF EXPERIENCE



drones trying to get thru. We were successful in finding queens right along. Those we did not find, no doubt, were left on the wall of the hive, or else on the frames we did not shake. However to make sure not to lose the queen after a good look in the funnel (you can find queens among drones better than bees) we would dump the drones out in front of their hives after shaking each colony, so if the queen was overlooked she would run back into her own hive.

This excluder funnel is not the dream of a night, but was thought of and worked out together with perspiration and bee-stings. It has now been used with success two years. Mathis, Tex. Pressly S. Brown.

The funnel shown in the pictures eliminates all drones and queens. Therefore the purchaser gets only workers. The men look



Transferring from the funnel to the shipping cage.

the frames over as they shake them in, and if they see the queen they put her back in the hive and continue to shake until sometimes they have from six to ten pounds in the large funnel. Of course, if they do not see the queen on the frames, all there is to do is to peep into the funnel and almost always she is seen with the drones and can be put back into the hive.

Mr. Brown made a round strainer for his funnel; but I like the one with square corners better than the round one, as the bees run to the corners and pass thru faster.

Waxahachie, Tex. T. W. Burseson,

MY FIRST YEAR WITH BEES

Three Colonies and 249 Pounds of Honey From a Four-pound Nucleus

When I decided to keep bees I began by talking with a farmer neighbor who had raised bees all his life, but who had recently lost them. I asked, "What method did you use in wintering?" "Oh, I just left them on their summer stands. You know bees don't need any protection. They can stand a terrible lot of cold; but the trouble was the winter was so long and cold that the moisture from them just froze in the hives and killed them off," was his reply. Right there I made the decision that I had this much the best of that fellow. I did not know anything about bees and knew it; he did not know any more but considered himself a connoisseur.

I immediately ordered a bee book and the night that it came midnight found me finishing that book. I put in the rest of the night lying awake to digest it. The next morning before doing chores I re-read the chapters on "Feeding and Making Increase." My thirst for knowledge was just aroused, and so I wrote for a sample copy of *Gleanings*, and also a catalog. I next subscribed to *Gleanings* and ordered a bee book, 14 pounds of bees, and supplies for five colonies.

The express company smothered eight pounds of these so that I received, on May 21, only a two-pound and a four-pound package. The weather turned too hot to refill the order, and the breeder returned the money for those lost, also express charges. By the time the bees had arrived, I had the hives on their stands in the orchard with full sheets of foundation, and the feeders in place ready for business.

Foundation being used, it was necessary to keep the bees pulling it out in order that the queen could be kept as busy as possible. Therefore as soon as the bees had drawn out the four central frames, the first part of June, I would take a frame of foundation from the outside and place it in the center of the brood-nest. As soon as this one was well drawn I would again spread by placing a frame of foundation on each side of the middle one, thus leaving two frames of comb and bees on the outside of each and a comb of bees between. This leaves comb and bees on both sides of the two sheets of foundation. In one day the bees would have these sheets well started, and the rapidity with which I could spread my brood-nest was limited only by the number of frames the bees were able to cover.

The next problem was to get the bees started to storing in the supers. I had ordered the shallow extracting supers, but after keeping one of these on for a week



FROM THE FIELD OF EXPERIENCE



or so, and no bees having made any advance in that direction, I took it off and replaced it with a full-depth brood-body. By this time the brood-chambers were full, and I selected four combs that were well sealed and placed them in the second story, at the same time spacing the combs of both stories so that I could fill the alternating vacant spaces with sheets of foundation. A week after I had done this, practically every comb in the hive was drawn out, and the bees had a good start in the second story.

Swarming was controlled by an abundance of room, killing queen-cells, and giving plenty of ventilation by means of three-eighths inch blocks under the corners of the cover and inch blocks under the brood-chamber. The four-pound nucleus I divided once by the Alexander method, and again took frames of bees from the daughter and parent hives to make a third swarm, thus securing three colonies from the four-pound nucleus. When I made the Alexander division I had a little "set-back." I did not have a laying queen to put with the daughter colony and had to wait to raise one. I calculated that this delay lost me about 75 pounds of honey, as the new colony dwindled badly during this time.

We had a constant flow from sweet clover from the middle of June until the last of September, dwindling out by the middle of October, with a flow from alfalfa the first part of July and another the latter part of August. Consequently the rest of the summer was spent in supplying plenty of super room. This I accomplished by lifting the nearly full super and placing an empty under it, leaving them all on until I extracted the last of September.

About the first of July I had my first experience in hiving a swarm that clustered in a big cottonwood. Later in the summer I trapped a swarm from a bee-tree, thus increasing the number of colonies.

About this time one of my farmer beekeeper friends endeavored to convince me that foundation was an unnecessary expense. We went out to his old box hive where the workers were dragging out the drones literally by the hundred. I took him over to my six colonies, and after watching 15 or 20 minutes without seeing a single drone, he admitted I was right.

This is the measure of my first year's success with bees: Three colonies and 249 pounds of extracted honey from my four-pound nucleus, 165 pounds of honey from my two-pound nucleus, 150 pounds of honey from a captured swarm, and five extra combs of honey and pollen from a trapped swarm. The honey was put up in quart jars with a nice label and sold to the grocery stores at a good price. Altogether, I sold \$72.80 worth of honey besides what we kept


for our own family, and 50 pounds that we gave away. The six ten-frame colonies started the winter with not less than 225 pounds.

What, then, are the essentials necessary for success in bee culture? Let me give them as I see them:

First, a good bee range. Second, a mastery of the best bee literature obtainable. Third, a good strain of Italian bees. Fourth, the application of those principles tried and recommended by our foremost beemen, as gleaned from books and magazines.

Shell, Wyo.

T. E. Spencer.



MAINTAINING HONEY PRICES

What Can Be Done by Co-operation and Judicious Advertising

Previous to the war and until shipping was provided and the United States entered the war, honey was selling at about half the present price or less. After that time, due to the lack of shipping to carry honey from the West Indies and South America and other parts of the world that were remote from the United States and Europe (which also produced a honey shortage in Europe), and also to the sugar shortage, produced by the same causes and the unavailability of the German sugar supply, there came a great demand for honey. This was also fostered by the issuing of bulletins by the Federal Government, which urged and explained the use of honey in the place of sugar. This was done by the Government until there developed an actual honey shortage, when other, and not as satisfactory substitutes were also recommended.

These conditions caused the price of honey to rise to where it was during 1919 and 1920, nearly twice the previous price. It also taught many people to use and like honey, who had never used it before.

The question is, what can be done to maintain, at least partially, the present prices? I do not expect it to go all the way back to pre-war prices, but if nothing is done, it will go down nearly to that level.

There are several influences that may be brought to bear to prevent this, but before suggesting them let us look at the pre-war conditions. In 1910 there was produced in the United States between two and three pounds of honey per capita, and there was consumed over 80 pounds of sugar per capita annually. With our honey exportations, it is probable our per capita honey consumption was less than two pounds per annum, or about 2½ per cent of the sugar consumption. Therefore our honey consumption was, and still is, too low. There should be pro-

FROM THE FIELD OF EXPERIENCE

duced and consumed many times as much honey as then or now.

Previous to the formation of the Texas Honey Producers' Association honey was being sold by beekeepers in south Texas for five to seven cents per pound, while now they can get around 16 cents, or more. There are two causes for this change of conditions. One was the formation of the Texas Honey Producers' Association, which acted to regulate the activities of the honey buyers, and gave a ready market to the producer, where he could get nearer the real value of his product. The other was the increased demand caused by the war conditions, mentioned above.

If we can keep up the present demand or increase it, and provide a way of getting the producer into close touch with the market, keeping the honey away from the glutted markets, and sending it to the short markets, there will be approximately a continuance of the present prices. These conditions can be secured by judicious advertising and co-operation.

Let us consider the first subject. The American Honey Producers' League gives us an organization that can advertise honey effectively and impartially. We know the results of the advertising campaign put on by the A. I. Root Company, and how their honey by that means was put on the shelves of grocers who never before handled honey, and in sections where it was an almost unknown food. If one company can produce such results, how much greater would be the results from an organization that included the beekeepers from Maine to Texas and from Washington to Florida, completely national in scope! If the American Honey Producers' League has not sufficient funds for a real national advertising campaign, it should be possible to levy an assessment of one or two cents per colony on its members, which, if all supported it who should, would provide a fund of possibly \$100,000. I don't know the cost of such an advertising campaign, but it seems to me that would make quite a stir if it were judiciously spent.

Regarding co-operation, the American Honey Producers' League is again the tool to be used. This organization proposes among other things to keep its members posted on production, market conditions, and distribution, and demand. This should prevent congestion in glutted markets, and diversion of shipments to markets that are short; giving an even distribution and preventing price cutting.

We know the good results achieved by the Texas Honey Producers' Association, the Colorado, California and other co-operative organizations of beekeepers. If each section will organize and then join the

League, the producers will secure more uniform prices, and ready markets; and the fighting in flooded markets (which, by the way, does the consumer no good) will be almost controlled, except perhaps for small local sales.

Therefore it appears to the writer that the answer to our question is the American Honey Producers' League, and every beekeeper should go into it either directly or thru his association, and advocate a small assessment for general national advertising.

Dallas, Tex.

W. E. Joor.

GOOD RECORD OF INSIDE COLONY

Experience in Keeping Bees in an Observation Hive in a Chicago Home

For several years we planned having an observation hive with bees in our home. Living as we do, in the big city of Chicago with neighboring houses 12 and 25 feet from our house and apartment buildings across the street, it seemed something of an undertaking. At last, however, we secured a shining, varnished beehome for one of our two colonies in the back yard.

We moved the bees a short distance each day until we had them near our blooming flowering currant bush just beneath the southeast dining-room window. Then we raised them a step up and back each day on a scaffolding made of two stepladders and a few boards until we had them over the bush and right against the window. It was about the middle of May when we finally placed the bees in their new home by lifting the frames with the bees from the old hive thru the window into their new home. From that time the bees became an interesting and established part of our family.

We had rested the hive on a support attached to the window sill and fastened securely at the two corners with inconspicuous wires stretching diagonally upward to the window casing. In this way the loosely hanging window draperies were not interfered with, and instead of being an unsightly piece of furniture the hive made a really decorative addition to the furnishings of the room. A writing desk and a chair at one side of the hive and a couch in the adjacent south window made comfortable places to rest while we observed the workings of the busy inhabitants. It was especially pleasant to lie on the couch and listen to the busy hum and imagine we were by the lake side listening to the lapping of the waves. The roar was especially loud at night when all the bees were in the hives veritably working their lives away.

Many were the interesting things we saw

FROM THE FIELD OF EXPERIENCE

the bees do. Upon several occasions we saw the queen for as long as a half hour at a time going about from cell to cell laying eggs. She would first thrust her head into the cell, then back into it, and deposit the egg. It was interesting, too, to see the bees groom one another and to watch the baby bees turning round and round in the cells until they could break the cappings sufficiently to struggle out and be born into the world of work about them.

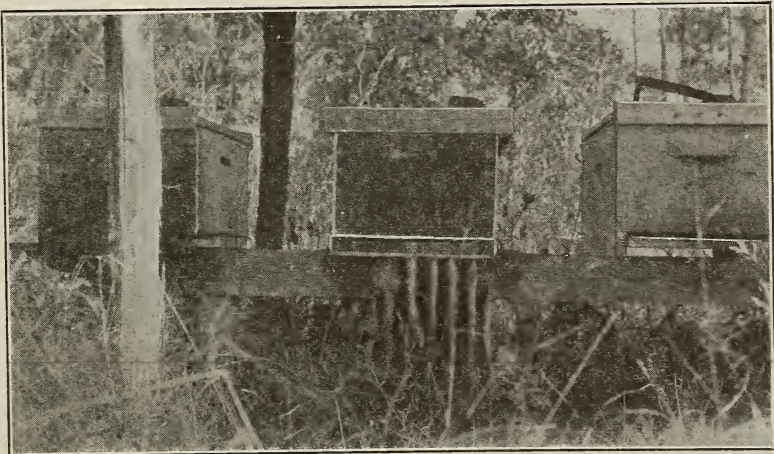
Our children friends were particularly interested in the bees and would gaze at them for long periods at a time and ask innumerable questions. The remarks of some of the children concerning our bees were amusing. One little lame neighbor girl said confidentially over the fence one day, "People think it is very queer to have bees right in the house." Another little girl had heard her brother tell about our bees, but hadn't seen them herself. She said, "You don't have bees right in your house, do you?" When I replied in the affirmative, she said, "They don't make honey for you, do they?" "Yes," I answered, "they make us a great deal of fine sweet honey." "You haven't any of it now, have you?" she asked. "Yes," I said, "we have over a hundred pounds of it left." She looked wistful, sighed, and said, "I wish I were you!"

Last year our inside colony yielded us 125 pounds of as nice white honey as one would wish to see. The back-yard hive, in as equally good condition at the beginning of the season, yielded 75 pounds. This year with the same queen we have had a yield of 92 pounds from the inside colony and a 73-pound yield from the outside hive. It is our feeling that the more even temperature of the house made a more favorable condition and was the cause of the larger yield of the inside hive. Here in Rogers Park with real city all about us our bees must gather and make honey from the fruit bloom of back yards and from white clover and sweet clover of vacant lots and street and railroad sides. The white clover was killed out last winter, which cut down our yield this season.

The bees have required very little care, and we think we have been well repaid for our effort. A half hour's time each week during the midsummer, putting on supers and looking over the brood-chamber to prevent building of queen-cells and subsequent swarming, was the limit of time required. We should be quite lost without our observation hive and plan to have bees in it each season.

Stella L. Gill.

Chicago, Ill.



Picture of a beehive with natural combs built beneath. In sending this picture to Gleanings, J. F. Eckert, president of the North Carolina State Beekeepers' Association, says: "There are eight combs built under the hive shown in the picture, and, as the hive is one of eight frames, it is a mute evidence of the bee that the present 1 $\frac{1}{8}$ -inch spacing is correct according to the notion of the honeybee."

WE used to grade queens by the amount of yellow rings on the bodies of their worker offspring, but E. J. Ladd, Portland, Ore., grades them by the number of frames they will fill with brood. He says on page 673 "S-frame queens now are not satisfactory. Those who know want a 16 to a 20 frame queen."



in burying bees in the ground for winter. This would seem to be a very practical way, especially in a dry section of country. My brother and I tried it over 50

years ago with very satisfactory results, but great care should be taken to see that the pit or clamp is thoroly drained.

* * *

The beekeepers of the country are to be congratulated on present prices of honey. While sugar has dropped 50 per cent in the last few months honey prices still hold up fairly well.

* * *

After reading the beautiful tributes of many beekeepers in November Gleanings in Bee Culture, I found myself saying over and over to myself, almost unconsciously, "Dr. Miller died rich."

* * *

One of the pleasant things about bottling honey is that many who at first buy a few ounces of honey in a bottle, write, wanting to know what it will cost them in five, 10, or 20 pound packages, and so our trade keeps increasing.

* * *

I am in full sympathy with J. T. Bartlett, page 661, in his disgust with the retail honey dealer that had the ill manners to tell him how much honey he should use on his table. If there is anything that starts my ire, it is to have a stranger come into my house and tell me what I ought to do and what of his wares I ought to buy. He is wasting his time and mine, too.

* * *

On page 649 the Editor says: "We will admit that sugar stores fed early, and sealed in the comb, are equal to or possibly better during the coldest part of the winter when bees are not breeding; but after that, honey stores are unquestionably better." This is doubtless as near the truth as it is possible to state the matter of winter food for bees.

* * *

I have many times heard beekeepers say that bees consumed more honey in winter when they could fly, because they could relieve their intestines of waste matter, and in consequence require more honey to fill them. It would be better to think of the greater loss of honey when bees can fly freely as the result of increased activity. When bees are active during winter there is likely to be a loss of vitality as well as honey. It is better to keep them as quiet as possible. W. L. Porter of Caldwell, Ida., gives some very interesting facts and experience

Ah! Mrs. Constance Root Boyden! I am glad you have removed your veil. Thank you. We have had our suspicions for some time. But I just wanted to thank you for making that matter of vitamins so plain on page 669, so we who are not quick to see can understand. I talked with a representative of The A. I. Root Company not long ago, who seemed to know you well, and he told me that you had the genius and enthusiasm of your father running strong in your veins. Well, I can well believe it. Your department in Gleanings proves it.

* * *

If one colony filled that pile of supers with comb honey, as illustrated on cover page of Gleanings for November, it certainly did a big thing. How such an exhibit would take at state or county fairs! Grace Allen, on page 672, tells of making such an exhibit, altho her exhibit was from two hives. Now, wouldn't it be an inducement to offer a generous premium for the largest amount of comb honey from one hive, also the largest amount of extracted honey from a single hive, the honey in both cases to be on exhibition?

* * *

In our postoffice is a notice which reads as follows: "Insure your packages. Value \$5.00, 3 cents; \$10.00, 7 cents; \$25.00, 10 cents;" and so on up. Now, as I understand it, it means, if it means anything, that the post office department will receive packages and will forward them for their regular rates, but will not be responsible for their safe delivery unless they are insured. If lost, stolen, or destroyed, the person has no redress or satisfaction, but will be told, "It was not insured." Now what would we think to see such a notice posted up in an express or freight office? Would it increase our respect for such transportation agencies? Would we not expect such a notice to cover innumerable cases of theft, carelessness, and incompetency? Should we think otherwise because it is a department of the government? Is it not a tacit invitation to careless clerks to be careless? To dishonest clerks and deliverymen to steal? We ship a good deal of honey thru the mails, or try to; but have come to the conclusion that the millennium is not yet here.

SOME years ago an unworthy word was creeping into use in a way that threatened to spoil some of the spirit of the most beautiful holiday of the whole year, that holiday which is dearest when all the old customs and traditions are preserved unchanged. That word was "exchange" when applied to Christmas giving. Some of us "exchanged" gifts with so large a circle of friends that the Christmas planning instead of being a joy was becoming a burden to the busy woman.

But as a result of the press of work during the war, the shortage of household help, the old h. c. of l., that scapegoat for everything, or merely a reaction against a good thing carried too far, there is a change for the better in the observance of Christmas giving. Where we once thought it necessary to spend time and money every year in the selection of gifts for friends who did not need them in the least, we now send cards with a bit of appropriate sentiment, and we spend our time making and selecting gifts for the poor, the lonely, whether rich or poor, and the children, bless their dear hearts. Of course there are times when we wish especially to remember some friend, but that need not start an "exchange" of gifts annually.

Also I believe husbands and wives should not forget each other on Christmas day, altho it may be necessary to make the gifts simple and inexpensive. The amount of love which accompanies the gift is not at all in proportion to the amount of money spent.

DOES the fact that I have been a mother for 21 years and a lover of children for a much longer time entitle me to say just a few words about gifts for children? I am going to risk it.

In the first place, if you really wish to please the children rather than their parents and older friends, give them toys which provide them with something to do either with their hands or brains rather than easily broken mechanical toys. In the first class are building blocks of all kinds, such structural toys as the "Model Builder" or "Meccano," tool chests, workbaskets well equipped, dolls, materials for wardrobes, sets of dishes and cooking utensils for small girls, skates, express wagons, sleds, bicycles, books for either boys or girls, and for older boys apparatus to help in the study of electricity or chemistry. Thru the gift of a telescope and several books on astronomy a boy I know learned more about the stars and constellations than many a college graduate knows who has studied the subject. That same boy amused himself for days at a time



with partly worn-out electric batteries and did wonderful things with them before he could talk plain. Later he was the happiest boy in the whole United

States one Christmas morning when his older brother presented him with an outfit of test tubes, chemicals, etc. I believe the average normal child with unperverted tastes loves to acquire knowledge, and if you give him half a chance he will educate himself faster than the schools can do it, altho without the schools he would probably grow one-sided.

And children love constructive play. When our older son was a very tiny boy my father gave him a present which has amused more children for longer periods than any other toy I ever saw. It consisted of 250 plain wooden blocks 1 inch thick by 2 inches wide and 4 inches long. Notice that twice the thickness is the width and twice the width the length, the proportions of the common brick. Those blocks have always been kept in a closet off the playroom, and they are still there, altho the youngest of our three children is 13 years of age and we are trying to remember to call the playroom the library. There is almost no limit to the number of interesting things a child can do with those blocks, and judging from my own children and their friends I do not see how a family could be brought up without them.

The child whom I pity on Christmas day is not a member of a poor family who can afford to give him only two or three inexpensive but wisely chosen gifts, but the child whose parents, grandparents, aunts, uncles, and friends vie with each other to find wonderful toys to please a child who has never known the joys of "make-believe," that sad sight, a blase baby.

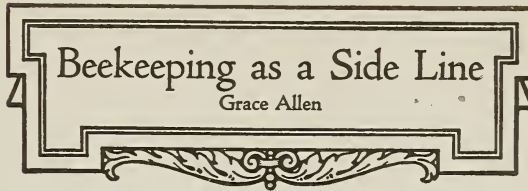
ONE of the most acceptable gifts I ever received was a beautiful brown workbasket made of the long pine needles of Florida and filled with delicious Florida pecans. What doubled my pleasure in the gift was the fact that the friend who sent it made the basket with her own hands, and the pecans were raised in her husband's orchard.

Not all of us can make pine-needle baskets nor raise pecans, but most of us know how to do something well enough to give pleasure to our friends. There is nothing much more acceptable to a honey lover than a section of perfect comb honey or a jar of clear extracted honey produced by your own bees. A number of years ago, wishing to remember a friend who had moved to a distant city we sent him a Christmas box of honey. This consisted of a section of comb honey, a jar of extracted, a brick of fine granulated

THERE is not much to be said, either new or original, about how good a teacher's experience is or high a tuition she charges; it has all been said long ago and many times. But one feels entirely justified in repeating the old remarks. For Experience is a good teacher, and her price does sometimes come pretty high. That is the chief reason for reading and studying, that we may profit by what others have already learned and paid for. But most of us at one time or another are like the woman beekeeper from whom I received a letter a few days ago; we have to learn some things by our very own experience. Perhaps some beginners may benefit from this letter, and learn from some one's else experience, so I am going to copy part of it.

"I noticed in your October department of 'Beekeeping as a Sideline' that your bees had presented you with some honeydew honey this season. I wonder what you did with it. I can't help telling you about our experience. My brother helps me a lot, and we have lots of fun learning things we probably ought to know. We read, too, but some way we always think we can put things over and sometimes we do. But, oh dear, sometimes we don't! This time we did, but we had a time doing it.

"We had given our bees some half-depth frames to get bulk comb honey from, but we put them on too late and most of them didn't get finished, so we just left them on. Then the bees filled them with honeydew and capped it over. I believe they ate most of the clover out, tho, first. We didn't know what to do. We didn't want to leave them on thru the winter. It wasn't because of the honeydew, tho. We knew the bees would have to winter on that because they didn't have anything else. But we didn't think such little combs would do for them to cluster on, and then, besides, we wanted those frames empty so we could get them ready to put on early next spring and get them filled with good clover honey in new comb. So we decided to cut out the honeydew honey and feed it back to them in pans on the hives. Does it sound easy? Well, it wasn't. As soon as we started cutting the stuff out, and that was just what it was, horrid, black, sooty stuff, awfully sickish tasting, the bees must have smelled it and scouted round till they found out how to get in to what we use for a honey-house. I don't suppose that was hard for them to do, because it isn't anywhere near bee-proof. They poured into the room like rain thru a leaky roof. I wish you could have seen us! Honey all over and bees all around. It was like a swarm around us, in the honey and



on our sticky hands and all over the pans and boxes we were putting it in. Some of it we just cut into pieces and jabbed the knife thru the cells on

each side, and some of it we squeezed. My brother did the squeezing, and you can imagine his hands! Of course we both got stung several times, picked up bees and bumped against them and had a dreadful time. We did have sense enough to wait till late in the afternoon to put it in the hives, but even then it got them awfully excited. We had to contract entrances and pile grass up in front of them and do all sorts of things to try to stop the robbing. The next day we looked in the hives to see if they had cleaned it up. The robbers followed us around and jumped on every hive we opened, but we kept on going anyway. We had to, we had started something and we had to finish it. In every hive the top part was always cleaned up fine, just dry comb left, but down underneath where they couldn't get to it, and a lot of honey had drained down to the bottom, it was a sight. The bees were over it so thick we couldn't get them out in any way. We stirred it up, bees and all, to let them get to the bottom. You can't think what a sickly, crawly mess it was. A lot of bees got killed and we wondered how many queens were in it getting killed too. I suppose we'll find that out next spring. We had taken the honey-boards off first. That was silly, too, wasn't it?

"I remember once you said that folks that love bees enjoy everything that happens, even the things that come from their own 'apiarian sins.' If you hadn't written that, I don't believe I'd have dared admit how I laughed right thru this whole 'apiarian sin' of ours. But I can promise you that we won't feed back any more honey by cutting it up or squeezing it."

That was assuredly a disconcerting experience. It would have been better to extract the honey and feed it back in friction-top pails. As for the queens, I don't know whether they would come up into that comb honey or not. If brood-rearing was still going on, quite surely not, having plenty of room, as shown by the fact of needing feeding. But after brood-rearing stops, they seem to roam about the hives more. We had a disconcerting experience of our own along that line.

* * *

I always look thru the yard in late summer or fall to make sure of each colony's having a queen. This fall I was a little late and what was worse, aster had yielded practically nothing, everything was dry and brood-rearing had completely stopped in

most of the hives. Finding neither a queen nor a sign of a queen makes it hard to know for sure whether a colony is queenless or not. But presently I found one queen, then another, on the ground. They had evidently run off the under side of the super cover. Then another on the lower side of a queen-excluder that was being taken off; and still others in about the same way, as tho, having nothing to do below, they were roaming around at the tops of the hives, or ran up there as soon as smoke was blown into the entrance. One was dead in a ball of bees on an alighting-board, another was on the upper side of the super cover of a hive that had not been opened, tho I've no idea in the world where she came from nor how she got there. She took to wing, and that's the last I ever saw of her. I never had such trouble before, and did not try to finish. Robbing was bad, too. Then a heavy cold overwhelmed me, and I had to give up a little requeening I had planned to do on some blacks we had bought and a few other odd colonies. We are wintering on almost solid honeydew, except a few colonies that were given sugar syrup made from a hundred pounds of granulated sugar we had bought for 13 cents when it was retailing for 27 cents—because it was tainted with kerosene. What, oh what, will we find next spring? Instead of the good record of last March, every colony alive and every one queenright, there will likely be a loss.

* * *

One experience that we had this fall was amusing. The only wax we have ever rendered has been from cappings, in the solar wax-extractor. This fall we had a little comb we wanted to get the wax from. Our small solar isn't of much help with comb, and there was scarcely enough to pay to send away. And ever since I started reading beekeeping literature I have read about the very amateurish method of boiling comb up in a sack and getting the wax off the top of the water. And I have looked at many pictures of this time-honored operation, always with a pair of cut-off hands rubbing the sack of combs between two sticks. And always the authors have assured us it was not very efficient, would not get all the wax, and was very messy, yet had been used widely as a makeshift when there was only a small amount of comb. We seem fired with the ambition to try all traditional beekeeping "stunts" once. So on a sunny day in late October, we made a fire in the back yard, between two piles of bricks, and set over it an old boiler which the beekeeping department had previously acquired from the laundry department by the simple means of declining to clean it up after having boiled combs in it. "Oh, we'll buy a new one and charge it to the bees," we had declared in spirited and unanimous refusal. So on this autumn day, we put into it a sack of comb, covered it with water, weighted it down with bricks, and prepared to prod

it occasionally with sticks. While it was slowly heating, we were doing other things, tho I kept wandering back to exult over a drop or two of wax showing on top. "Boiling yet?" Mr. Allen asked as he joined me once. It wasn't, so he put on more wood. "That ought to bring it," he remarked and we left it again. It brought it all right. I was out near one of the rambler roses that was hopefully putting out dainty little October blooms, when the realization was borne in upon me that for several minutes there had been a peculiar hissing sort of sound coming from somewhere. I started for the fire and I wish you could see what I saw. The boiler itself was scarcely visible. In the midst of leaping flame there was a waxy mass of seething foam boiling up over in a hissing sheet. "Oh, come quick! Come quick!" I screamed helplessly, in fine disregard of grammatical niceties. But Mr. Allen, having just gone to the farthest end of the cellar, heard nothing and the wax poured on out into the fire like an oily Niagara into a fiery furnace. And I kept on screaming. Till at last I remembered the hose lying near and sent a stream of cold water into the boiler, whose contents became quiet for a minute, then started climbing up the sides again. More water, this time on the fire also. "We've lost all our wax!" I wailed as Mr. Allen came up and calmly raked the rest of the fire from under the boiler. But not to be cheated from doing as the hands in the pictures do, we fished out the sack, rubbed it with sticks, squeezed it as dry as as possible, and tossed it out. The rest we left till the next day, when we found a disreputable-looking boiler, with a fairly thick sheet of somewhat dirty wax. So, in spite of its loss, that afternoon shows on its credit side two or three dollars worth of wax, a little experience, a little fun, and a memory to smile at in years to come.

* * *

A few days ago I met an intelligent woman who is prominent in a local poultry organization where progressive methods of chicken-raising are upheld. Yet she told me that when she decided a year or two ago to get some bees, she let a man convince her that "those patent gums" weren't any good. "He made me two gums himself, like tall boxes all fixed up with little sticks across, and only charged a dollar apiece for them, and he gave me the bees to put in them," she said. "But I've never got any honey."

* * *

(Mrs. Allen, if you could have seen Mr. A. I. Root carrying your beautiful poem on Dr. Miller in the October Gleanings about the office here, and reading it aloud to us, with tears in his eyes, you would have been intensely gratified. Over and over he would repeat the last line: "Because you lived and loved, and smiled, and died." It was indeed a beautiful tribute.—Editor.)



FROM NORTH, EAST, WEST AND SOUTH



In Southern California.—The Orange Belt Honey Producers' Co-operative Exchange held its annual meeting Nov. 1. There was a large attendance; much enthusiasm was shown, and, in general, the members were well satisfied. General Manager Millsbaugh was present and gave a very encouraging report of the progress of the Exchange. The election resulted in the selection of Sam Nealy and R. E. Fairchild as members of the board of directors. Immediately after adjournment the board organized by electing L. L. Andrews, president; R. Powell, vice-president; and R. E. Fairchild, secretary-treasurer.

Generally speaking, the bees are going into winter in good condition. We find that some colonies need help, and we give it to them by taking combs of honey from those that can spare them. In this way we calculate that all of the colonies we examine now will be left in condition to go until February or early March. All of these will not need attention even then, but some colonies will have consumed all of their honey. There seems to be no way of telling just why one colony will consume so much more honey than another, both apparently being of the same strength and sitting side by side.

Each year finds the beekeepers of the West taking a more active part in fair exhibits. Too much encouragement cannot be given to this long-neglected branch of our industry. It does one good to watch the backwoods beekeeper and see how he straightens up and a smile comes over his face when he first arrives at the beekeepers' exhibit. Sometimes he says aloud and sometimes to himself: "I have better honey or wax than that at home. Next year I am going to bring some of mine, too." Next year arrives and it is the same old story. Which class are you in—the one that furnishes material to help out, or the one that is always going to do so? One of the best ways to advertise is by showing the consumer just what we have. The work of getting the exhibit together and placing it usually falls on the same few. But, as the years go by, more and more of the beekeepers are ready and willing to do their part in most lines. For the last five or six years the Riverside County club has placed an exhibit at the Southern California fair at Riverside. San Bernardino County most years has been a close competitor. This year both clubs outdid anything that they had ever shown in the past. One very interesting feature was a large bear in a cage. All of the children—as well as the "grown-ups"—wanted to see the bear eat honey. Too much time cannot be used in making the exhibit attractive. The time to begin to get the articles ready for the next time is just after the fair closes. Many of the things are ready to use year after year, but something

new always draws attention. Anyone who can design something unique and attractive will help to get the people interested in the exhibit.

Our state legislature meets this winter and while we have a so-called state law governing our beekeeping interests, it is far from up to date. Whenever we talk of amending or passing a new law there immediately springs up opposition. If we are going to keep pace with the great progress the industry has made the past ten or a dozen years, we certainly need a state law that will give the beekeeper, who has seen the possibilities of the business and moves his hundreds of colonies from one section of the State to another, the same chance to carry on his work, unhampered, as the one who keeps 50 colonies in his own back yard. Think this over, you California beekeepers, and let us get together on it.

While the Exchange is still maintaining the same prices as set last June, many outside buyers are offering much lower prices—some as low as 12 cents. The selling of our products before the day of the Exchange was one of the most incompetently handled phases of the game. Many other branches of agriculture are much more easily welded into a state or national organization than ours, but none are more deserving than the beekeepers of the right to get their products to the consumer, with just as little middleman's profit as possible. With all of the orange honey of the State sold and the sage going fast, things look prosperous for our organization.

L. L. Andrews.
Corona, Calif.

* * *

In Iowa.—We expect to finish extracting the fall crop tomorrow, Nov. 4. Take it on the whole, the season has been very favorable for the production of honey. The clover crop was fully up to that of last year and of excellent quality; but the fall flow, which with us is mainly from the heart's-ease, was somewhat disappointing, notwithstanding its bright prospects early in the fall. Too much cool, rainy weather just when the flow was at its best was the main reason. Conditions were much the same in the central part of the State.

We had plenty of rain all summer. In fact, almost too much at times for the clover flow, but it had its advantages in keeping the white clover in the pink of condition all summer. There was a time this fall when it got pretty dry. So much so that we were afraid it was going to hurt the clover; but the recent rains have freshened it up, and it now looks as fresh as ever, and from all appearances will go into winter quarters in normal condition.

The larger beekeepers have tried to maintain, with perhaps in some instances a slight



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rise, last year's prices. Generally speaking, the price asked is 25c for extracted in a wholesale way, and 30c in retail lots. We know of one beekeeper who sold his crop early to a jobber for 25c. The most we have been offered in a jobbing way was 20c.

We sold our comb honey at \$7.00 per case at the apiary without a case, and \$7.50 where it was shipped out. The demand for comb has been good, livelier than last year, and the comb in these parts is cleaned up. But there is quite a little extracted honey in this State still in the hands of producers, and from several letters received from Dr. Bonney (the president of our State association) inclosing letters from large producers and from our own experience with our mail-order trade, the demand is nothing like the past three years. Naturally we might expect some reaction, but there is no dodging the fact that the demand is very moderate. The local store trade is on the blink. Frankly we have been too busy to give this trade the attention we usually do, but in some of our territory there has been some honey offered by other beekeepers in 5-pound pails at 18c, and some comb sold to the merchants at 20c per pound.

This is one reason why the market is dull. Merchants and others soon learn the wide range in prices between beekeepers and consequently are afraid to buy in any quantity, if at all. Especially is this true this time, with the price of everything the farmer has to sell going down, and with the upset of the markets in general.

If there was only some way to educate some beekeepers as to what it costs to produce honey, and what they should get for it, considering the high cost of labor and supplies, money invested "plus a profit," I wish some guy would go after it.

If we beekeepers ever get down to brass tacks we must stabilize our prices in some way, and do it mighty soon. Don't understand me to mean to boost prices beyond reason, for that would only act as a boom-crang. But there is no good reason why one beekeeper should ask 30c for his honey and get it, and another in the same State, yes county, asks 18c—and, of course, gets it. This is simply running the knife into the other fellow's back, and at a very material loss to the one who does it. This has always been the worst drawback in the local markets.

By the time this reaches your readers the bees in this part of the State will in all likelihood be snugly put away in the cellar, as that is the general manner of wintering in our locality. In all the time we have kept bees we have never wintered a colony out of doors. Some of the more careless farmer beekeepers winter outside with no packing, but it is not thought of by those having

much at stake. If colonies are to be wintered outside of a cellar, some manner of packing should be provided, as the winters of eastern Iowa are generally too severe to winter without, and expect bees to come out in the spring strong and ready to gather a honey crop when it arrives.

Center Junction, Ia. W. S. Pangburn.

* * *

In Minnesota. — The annual meeting of the Minnesota Beekeepers' Association will be held in Minneapolis on December 9 and 10 in connection with the State Horticultural Society, the date having been changed from the 7th and 8th on account of failure to secure the room for holding the meeting at the time originally announced.

Minnesota beekeepers have good reasons to feel that this has been one of their best years. It is true that many lost heavily in bees last winter and spring, but the honey flow has been abundant in most localities. More alsike clover is being sown every year and the prospect for the future of beekeeping in Minnesota is very promising. The farmers are putting in also more alfalfa; but some claim that it does not yield nectar in this climate, while others say that their bees produce considerable honey from it. Does it make a difference whether the seed sown has been produced in this climate or in a different climate? Can any one tell us? The yield from basswood was exceptionally good, and, as a consequence, many colonies that wintered poorly and were too weak to gather a surplus from the clovers did bring in a 50-pound or larger surplus from basswood.

I feel that I can assure the beekeepers that foul brood is not increasing in Minnesota. This year the state inspector and his deputies inspected 33 per cent more apiaries than last year and found 34 per cent less colonies infected with American foul brood than last year. Of course, it will be impossible to entirely eradicate American foul brood as long as infected honey and bees are shipped into the State from outside; and, inasmuch as it is practically impossible to keep infected honey out, we may count on there always being American foul brood in the State. But I am thoroly convinced that it can be so far controlled as to cause very little loss. I trust that what I have said will not cause any beekeeper to become careless, for eternal vigilance is the watchword. I agree most heartily with what J. A. Green said in *Gleanings* (September, 1919, page 596), "While I am not afraid of the disease, I have a wholesome respect for it and regret that some people believe it an easy and simple matter to control foul brood." The inspector has had the hearty co-operation of the Minnesota Beekeepers' Associa-



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tion and the Bee Culture Division at the University Farm, as well as the beekeepers throught the State, for which he feels very grateful. This fine spirit of co-operation and the kindly offering of helpful suggestions wonderfully lighten the burdens and lessen the difficulties of the work of the inspector. And while writing on this subject I wish to say that after having served six years as inspector that I have no sympathy whatever with the views now and then appearing in the columns of the bee journals advocating that the inspector's work should be limited to instruction. I think that it will be a long time before the beekeepers of Minnesota will ask to have the authority of the inspector nullified. If we had been compelled to work under the suggested limitations last year, there would be no such report this year as we are able to show. In several instances whole communities would have become infected, if we had been compelled to use the roundabout methods so strenuously insisted upon by some idealists. If the Minnesota law is changed I think it will have more teeth in it, certainly not less.

The bee culture division of the University is planning greater and larger things for the coming year. Prof. Jager, assisted by Prof. Matthews, plans to rear a much larger number of queens next year than usual. He is also planning to test the Jumbo hive in an apiary of 40 to 50 colonies. Besides this Prof. Matthews will conduct an experimental project with 18 colonies, 12 being in square hives of Jumbo depth—one-half of them with 1½-inch spacing and the other half with 1¾-inch spacing—and six colonies in the standard Hoffman hives. The annual short course in beekeeping will be held at the University farm Jan. 3 to 8 under the direction of Prof. Jager. The first four days will be devoted to the problems which are of special interest to the beginner and the amateur. Friday and Saturday will be devoted to commercial beekeeping. Plan to be present.

Minneapolis, Minn. Chas. D. Blaker.

* * *

In Texas.—The honey eaters of Texas have been much interested in the article in *Gleanings* on vitamins in honey, and now are equally interested in bulletin No. 250 of the Colorado Agricultural Station, by Dr. Walter G. Sackett. In this he gives the results of his experiments with "Honey as a Carrier of Intestinal Diseases." Dr. Sackett made the common observation that bees in their thoro search for food and water often visit places where they might become carriers of disease. He, therefore, made a number of solutions of honey and water, and into these he introduced the bacteria causing the more common intestinal troubles. He found that in pure water these

bacteria would live 40 days or more, and in the solution of honey and water the length of life decreased as the per cent of honey increased, and in extracted honey alone they would live only from two to four days. Thus he showed that the chance of contracting an intestinal disease from honey is much less than from water, milk, or other substances having a high water content.

The annual bee-cave story is again in print. This time the cave is located in Menard County, Tex., and contains acres of solid comb honey. The bees in a solid cloud and with a roar like that of distant thunder leave and enter the cave. These bees collect this store of honey from the Rio Grande Valley and Mexico (only 150 miles away). A company is being formed to drill wells into this cave and pump out the honey. The story came to us from a Seattle paper, and shortly afterward a lawyer in Ohio wrote us that a client of his wanted information about the cave as he was about to buy stock in it. Let us warn the public that, while there are numerous small bee-caves in the limestone hills of Texas, the above story is a hoax and any such company is unknown here. If you must buy stock in wildeat schemes, try oil and you will not get stung—at least by bees.

The county fairs have about recovered from the war. This fall large numbers of the counties of Texas had very creditable fairs. In most of them the beekeepers were in evidence and their exhibits attracted much attention. The Guadalupe County fair held at Seguin had a very fine exhibit. The State Fair at Dallas also has the largest beekeepers' display in years. One of the best queens shown was reared in the State Experimental apiaries.

The dry weather of September and early October caused such a shortage of honey flow that in many sections bees were suffering from lack of stores; but the rains have come, the broomweed is yielding, and the bees will go into winter in good shape. The galls on the live oak, from which a heavy flow of poor-quality honey is commonly obtained, have failed to appear this fall. Horsemint is yet doubtful, as there was little moisture at the time the seed ripened. Many seedling plants are now to be seen, and the old honeymen say that the prospect is very good for another big horsemint year.

Henry Brenner, well known as a beekeeper in the United States and West Indies, a fluent writer of bee literature and the originator of the very excellent system of queen-rearing which bears his name, has returned to his home at Seguin, Tex., from a year's absence in Santo Domingo, where he has large apiary interests. He will again engage in the bee work here.

H. B. Parks.



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In North Carolina.—Bees and honey had an exceptionally fine representation in the recent North Carolina State Fair at Raleigh, according to the Raleigh News & Observer in a half-column report of the features of the exhibit, wonderfully demonstrating the possibilities in this State both in ability to make a most creditable showing at this time and the vast resources there are for advancement in the scope and importance of the industry. "Bee Culture is a Coming Industry," was the headline the report carried. And it declared, "A most interesting and significant demonstration of the possibilities and progress in bee culture and honey production in North Carolina was that embraced in the bees and honey division of the fair, where an exhibit by one beekeeper this year was larger than the whole exhibit for the industry in the 1919 fair."

This year the exhibits were assembled under the direction of C. L. Sams, the Government bee specialist for North Carolina, assisted by R. W. Etheredge, a successful sideline in beekeeping at Selma, N. C. Mr. Etheredge did not put in a competitive exhibit, but had a quantity of honey in tins and a unique display in shallow extracting super combs in which he had induced his bees to inscribe thereon in large bold honeycomb lettering, the words, "Pine View Apiaries, Selma, N. C." The explanation of just how Mr. Etheredge induced his "educated bees" to work out this wonderful lettering on the frames made a most interesting story for the thousands of fair visitors. The lettering was indented. He really intended to have his bees produced raised letters; but he took the completed frames and cut the lettering in the honey just a little too late to catch the full honey flow, and the bees just moved below the honey in the crushed cells instead of building out these cells for the lettering as he had intended for them to do. However, he got a very creditable job of sign painting from his bees, any way.

Eight of the prize ribbon awards at this fair went to the Lower Cape Fear Apiaries, W. J. Martin, Wilmington, five of them being blue ribbons for highest awards for various types of honey and bee products. J. G. Killian, Ridgeway, won first prize for finest section comb honey; E. E. Kirkham first for white honey; and J. G. Powell, Raleigh, first for dark honey. The award for the largest and best exhibit went to W. J. Martin, operating Lower Cape Fear Apiaries.

The judging for the Bees and Honey division was by C. W. Cary of Norfolk, who is especially popular among North Carolina beekeepers and thru whom special supplementary prizes went to the various winners of highest awards. These included uncapping knife, bee-brush, smoker, comb founda-

tion, and a number of other articles especially useful in bee culture.

With the enthusiastic co-operation of Secretary Joseph E. Pogue of the State Fair, Director Sams is already planning to assemble an exhibit for the bees and honey exhibit next fair, that will be several times larger than the one this year. Fully five times as much space has been allotted to the division, and there are assurances that the cash prizes will be more than doubled by the fair management. There will be big special prizes from numerous sources that will prove a wonderful factor in bringing together one of the finest displays ever gotten together in this section of the country.

Wilmington, N. C.

W. J. Martin.

* * *

In Ontario.—I presume most of central and eastern Canada, as well as as Ontario, has been blessed with wonderful weather during the past autumn. Today (Nov. 9) I noticed some fodder corn in a neighbor's orchard that had not been cut, and it was as green as ever. Tomatoes and other tender vegetables are untouched by frost in sheltered locations—certainly a very rare thing in our latitude for the second week in November.

Clovers have been growing all fall and at present are looking fine indeed, making prospects good for next year so far as the beekeeper is concerned, provided, of course, that it does not winter kill; but, needless to say, the real beekeeper never worries about what might happen, as enough always does happen to make things interesting without doing any worrying.

In the November Gleanings I referred to the sweet-clover situation in our district, and since that comment was written at least two farmers in our neighborhood have burned up their sweet-clover crop in the field after cutting it. While there is absolutely no market for it at present, it seems too bad to sacrifice the crop after it is grown; and, if I had the seed, it would be sport enough to hold it for a year or more if necessary, instead of burning it in the field after all the labor and expense of growing it. But we still look to alsike as our main honey source here in this part of Ontario at least, and I am glad to note that the stand is good for next season, and that farmers are still thinking of growing this clover, even if it is only about half the price it was a year ago.

Honey markets are still dull in a wholesale way, as dealers will not load up with large quantities at a time unless they can buy at a price that they feel is absolutely safe. But honey is not the only item in the line of food and other products that are being handled like that; so in this period of readjustment in prices (which was bound to come sooner or later) beekeepers will just



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have to take their share of losses with others and feel just as cheerful as possible while doing so.

In looking over Gleanings for November, one cannot help but come to the conclusion that two queens are in a hive and tolerated there for some time, much oftener than we have been led to believe. About the middle of October of this year, while a helper and myself were examining a yard to see how well the colonies were provided with stores, I happened to lift out the center comb from the brood-nest of a bright Italian colony. The queen in spring had been marked as "failing." She was closely clipped, and so was readily seen on the comb at any time, as she was a very yellow Italian. As I lifted the comb from the brood-nest I was amazed to see two Italian queens within two inches of each other on the comb, paying no attention to each other but seemingly both of them engaged in egg-laying, as they had a patch of brood in all stages, late as it was in the season. They had full wings, showing that both were young, and while both were smart and active, one was about a third larger than the other. In superseding the old queen, two queens or more had been raised, and for some reason at least two of them were allowed to remain in the hive till middle October. They were left alone and the hive marked for future reference, and, if spared till next spring, I shall be looking forward with interest to see if there are two queens still on duty. In the fall of 1918 I united two colonies that had American foul brood, shaking the bees from the two hives together late in the season and starving them for a time, and feeding up later. Notwithstanding all the rough usage at such unseasonable times, both queens were alive in the colony quite late in the next spring. So, as already intimated, it looks as if we will have to change some of our set rules along the line of bees' having but one queen always.

From present indications, there will be a big crowd at the annual meeting of the Ontario Beekeepers' Association. Of course, the attendance at this meeting is always large as compared with many other associations of a like nature. This year the meeting is later than usual, and many farmer beekeepers will be able to attend, as the farm work will be over and at the same time they can attend the winter fair which immediately follows the beekeepers' meeting. Many young, enthusiastic beekeepers will be there, for even if honey is a bit cheaper never has there been a time when so many seem to be interested in the business. Early as it is for planning next year's work, we have had several applications from young men wishing to work with us another year.

Sugar has been tobogganing here in Can-

ada during the last few days at a pace previously set by our friends across the line. A drop of \$3.00 or more in 10 days is fast work, and wholesale prices here are now from \$13.00 to \$15.00 a hundred, with more "drop" in sight. Just how this will affect the honey market remains to be seen, but I do not believe the same ratio of decrease will show up in honey—but this is only my opinion.

J. L. Byer.

Markham, Ont.

* * *

In Northern California.—I said in the October issue of Gleanings that the forecast was but half a crop of honey for our section this season, and belated reports from various districts have borne out the prediction. As a matter of fact, it is doubtful whether half a crop was actually produced. There have been several 500 and 1000 colony beekeepers that did not average 20 pounds to the colony. What northern and central California need more than anything else is a wet winter. We need also (and this is a factor which we can control) a regular clean-up in American foul brood. This disease is gaining a firm foothold in various places and is a most serious problem everywhere bees are kept. The prevalence of American foul brood this season was to be expected, as it is always found in an aggravated form following a year of scanty honey production. Next spring is the time to get after it and make as thoro a clean-up as possible. It is to be hoped that our inspectors will drive home the importance of a thoro and early clean-up, and that everyone of our readers will not only keep a keen watch for symptoms early in the spring, but also attempt to get others to do likewise. If any infected colonies are found, treat them early. Do not wait until May, but do it in March and April; there will be crops from colonies so treated. Not only this, but the possibility of infected colonies' being robbed out will also be minimized.

Modesto, Calif.

M. C. Richter.

* * *

In Pacific Northwest.—Bees here will go into winter quarters in fine shape, and there seems to be a disposition among beekeepers towards some winter protection. In other words, they seem to realize that it pays to keep bees better.

Weather very fine and bees flying daily in the warm part of the day. No change to speak of in the honey market, except that honey is selling well and many have sold their entire crop. One good beekeeper with a crop of seven tons has sold on the public market at 35c per pound net. Just as soon as the entire crop is sold out, he and his family go south for the winter.

Portland, Ore.

E. J. Ladd.

HEADS OF GRAIN

FROM

DIFFERENT FIELDS

Chocolate Honey Candy. At the Ohio State beekeepers' exhibit at the State fair last September there was a unique feature that certainly proved a drawing card. Besides the usual exhibits of bee supplies and honey there was an exhibit of honey candies, these candies being made right on the grounds. This work was under the direct charge of L. H. Benninghuff, for Mr. McPherson of the Capitol Confection Company; Louise McPherson, Mrs. L. H. Benninghuff, and Rhode McCune made the candy. During the whole week of the exhibit great crowds assembled around this particular exhibit, paying five and ten cents for a package of chocolate-honey candies, made with pecan nuts and honey rolled in chocolate. These candies were so delicious that they advertised themselves; and most of the time there was a big jam around the exhibit. Pretty girls selling and pretty girls making the candy were a part of the exhibit. But the real thing was the candy itself. We are told they had to work night and day, and actually used up 45 cases of comb honey, 350 lbs. of sweet chocolate, and 30 lbs. of pecan nuts. The accompanying illustration shows the chocolate-candy honey booth and those in charge, with the crowd held back to give a clear view. The experiment proved to be such a success that something of the kind will be put into operation in other places.

By the way, the Ohio State beekeepers' co-operative exhibit of honey and honey appliances was likewise a great success. Whole crops of honey were sold, and the general public was delighted and edified.

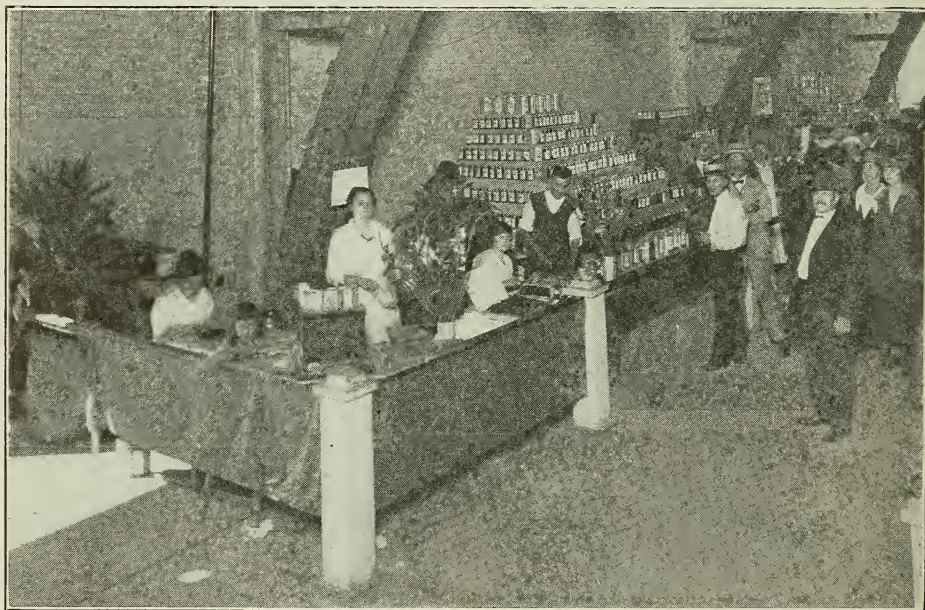
Medina, O.

E. R. Root.

Queens Commit Suicide.

What becomes of a superseded queen? The bees ostracize her and she commits suicide. This I know positively. I observed a case carefully six or eight months ago. I had a fine queen being superseded, and for days I looked at the entrance hourly and opened it every second day. Early one morning about six o'clock I found my fine old queen on the wide alighting-board a foot below the entrance with her head toward the entrance, calm, still, if anything sad, dejected. At the entrance was a cluster of five or six bees all watching her; all appeared to pity her, yet offered her no food, and did not approach her. It was a sad spectacle to behold. With pity and respect for her past virtues I picked her up gently, opened the hive carefully, placed her on a frame in among her offspring, and greatly to my surprise every bee left her immediately, envious at once, sullen, deliberate.

I replaced the frame with the old queen on it and was preparing to close the hive and watch the entrance again when she



The making and sale of chocolate-honey candy was a feature of the Ohio beekeepers' display at the Ohio State Fair held at Columbus in September last. The picture shows the candy booth, with the crowd held back so that the photographer could get a clear view of this booth.

HEADS OF GRAIN FROM DIFFERENT FIELDS

crawled upon the top of the top-bar, walked deliberately to the back of the hive, and jumped off into the grass and disappeared. I looked carefully for her, but that was the last of my poor old mother queen.

My experience is that beekeeping is an exact science, every known act producing an exact result under identical conditions. Therefore, all superseded queens commit suicide from the mortification of ostracism.

Tampa, Fla.

Hafford Jones.

Breaking the Record at 750 Pounds. Some 40 years ago B. F. Carroll of Texas produced 750 pounds of horsemint honey from a single colony in one season. If I am not mistaken, during all the years that have intervened till now this record has not been broken. Many have reached the 500-pound mark; not a few have reached

600 pounds; and a large number have secured a barrel of honey of 31 gallons per colony. It remained for W. J. Harvey of Upalco, Utah, to smash the record and then some. In 1918 from one colony he produced 908 pounds of honey, sweet clover and alfalfa. In 1919 he took from the same colony 744 pounds; for the last four years from all his



W. J. Harvey, a champion honey producer.

25 to 30 colonies he has taken six cans on the average to the colony; or, taking it in pounds, 360 pounds per colony. While there are some who have beaten this as an average, there is no one, so far as I know, who has reached the 900-pound mark from a single colony.

From a letter of Mr. Harvey we make the following quotation:

"Here is a condensed outline as to how my best colony was handled: (Abbreviations are: P—pollen, br—brood, fr—frame, em—empty brood frame put in.) April 12, 7 fr br 2 em; April 20, 5½ fr br 3 em; May 7, 8 fr br 1 em; May 17, 8½ br 1 em; June 3, 10 fr nearly full br; June 16, 9 fr full one ¼ P ¼ br ½ em; July 7, 1 em; July 19, 1 em. This is a 10-frame standard hive, and, of course, where so many empty frames were put in some were raised to the super. This is a 1918 queen and a direct descendant of my first hive, which I have handled without smoke or veil, one hour after sundown. This good hive made four surplus frames of pollen. The extracting dates were as follows: July 7, 164; July 19, 181; Aug. 2, 200; Aug. 23, 171; last, 28; total, 744."

It might be interesting in this connection to say that Mr. Harvey believes in strong

colonies and winter protection. He attributes no small part of his success to the fact that he has his colonies packed during the winter; then when harvest comes on he has a force of bees of the right working age that are strong enough to smash the record.

If history repeats itself, some fellow will bob up and say, "I can go him one better." If so, let him come on with the proof. I talked with two or three of Mr. Harvey's neighbors who verified his statements.

Allow me to say that the district around Upalco is extraordinarily good. It is well stocked, however, with bees and beekeepers, so there is no chance for another fellow to get in unless he buys somebody out and pays the price. And it will be some price.

E. R. Root.

Why Californians Do as They Do. California beekeepers have the name of being careless. There is a reason, perhaps.

In other sections of the United States one finds his location, and places his apiary for the honey flow or perhaps for a year. In either case he can take time and care and place each hive just so many feet apart, and so on, making a very beautiful yard. Here is what we are learning by experience in the land of flowers and sunshine.

When we first landed here we made three resolutions. First, use hive-stands; second, extract ripened honey; third, refrain from using honey from brood-nest. Our friends would look at the hive-stands and say, "You'll not use them long." "We extract frames ¼ capped and take honey from the hive-body or rather the brood-nest." But we firmly believed we would stick to our way, yet here is how we did it.

Landing here in January and no locations in sight, we placed all of our colonies in one yard. Then the fun began in finding locations for the orange flow. We would think we had a fine place and would drive a little farther on, and find out some other fellow thought it a fine place, too, and was located there. On and on we would go. Some had heard bees hurt the orange blossom. Others were afraid Johnny or Mary might get stung. But others were glad to have the bees located near them. So with time and patience we succeeded in finding room for all. Some want honey for rent, others cash. First we took hive-stands, and Mr. Bunger stepped off so many feet between rows and squinted from one end of the row to the other until things were just so.

Our first yard was large and nicely arranged, being in a small canyon with large orange groves to the east and green hills to the back. We could not boast of such a large yield of orange honey as some others, since our colonies were not in the condition of

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the California bees at the beginning of the orange flow. Some only built up, just storing the brood-nest full. Some made 150 pounds surplus, but a larger per cent made less.

Now for the extracting. Our fellow beekeepers were throwing honey out thin and fast long before we were. Note I say "thin." We left ours on until well capped and threw it out thick and slow. In fact, so slow that we had to quit one afternoon, as the combs were almost as heavy after extracting as before. The next morning we built a hot fire and warmed the combs, trying again with better success. But breaking resolution No. 2, next year we shall do as they do in California.

After the orange flow new apiaries began to appear along the desert and canyons for sage, wild alfalfa, buckwheat, and mountain flowers, so we knew it was time to move again. When new locations were found, we placed our colonies without any stepping off and squinting. We just cleared a little patch of sagebrush off and set the hives down without hive-stands. Resolution No. 1 broken.

And resolution No. 3 was very soon broken when Mr. Bunger began to lift those full hives to move them. We soon took out from two to three frames of honey, making the load much lighter to handle.

So we will say in conclusion that the Californians are not careless always; but conditions are different, making it necessary to move in a hurry, extract in a hurry, and move again. So by another year we will be true Californians in almost every way. We are enjoying every bit of this year, learning lots and getting our share of nature's sweets and making an increase of 200 colonies.

Mrs. Roy Bunger.

Ontario, Calif.

Educating the Barnacle Beekeepers.

The rapid spread of American foul brood has become a menace to many beekeepers in various parts of New York and has assumed threatening proportions in many quarters.

To meet this situation an appropriation of \$10,000 was secured from the State to fight bee diseases. This fund is used to employ inspectors during that season of the year when inspection and treatment will do the most good. With this appropriation available some 14 or 16 short-time inspectors, in addition to our regular inspectors, have been at work in various parts of the State. To facilitate the work the State was divided into as many districts as there were inspectors, one or more counties for each district, according to the amount of work to be done in the various localities.

It has been found that the reports of the rapid spread of American foul brood, assuming almost the aspects of an epidemic, are true, and that there was, and will continue to be for some time to come, a great need for State aid in combating the disease. It is felt that a great amount of good work at inspection has been accomplished, especially in instructions to a large class of beekeepers who would never know how to treat their bees for disease except for the instructions to the beekeeper on the spot. It is recognized that this class of bee owners are more or less unworthy to receive free instruction; yet, because they are a positive menace to the beekeeping interests of the whole country when the deadly bee diseases are abroad in the land, and because the educational facilities of colleges, conventions, and bee periodicals will never reach them, it is policy to carry the education to their doors and force it on them if possible. If it were possible to educate this large class of barnacle beekeepers not to keep bees, the greatest possible service to the occupation of beekeeping would be rendered.

Kenmore, N. Y.

O. L. Hershiser.

Bees Do Steal Eggs.

Quite recently I had occasion to remove a hive of bees from one side of my residence to a warmer side, as no sun came on that side of the house in the winter. In order not to lose any of the flying bees I placed a hive with five drawn-out combs which had been stored for several months on the old stand. As I foresaw, in a few days I had three frames full of bees. Being a very busy man I had no time to unite these bees to the old stock for several days. To my great surprise some 14 days after when I opened up the hive, I was thunderstruck to find a queen-cell in the center of the second frame with an egg in it. I had a good look over all the frames to find out whether a fertile worker had got busy, but no trace of another egg could be found. Being curious I decided to let the bees go ahead, and see if they would rear a fertile queen from that cell. In due course it was capped and caged, and quite a good-sized queen emerged and was mated and is proving one of my best layers.

I think this a clear proof that bees do steal eggs, for there was no possible chance of that solitary egg's having been put in the hive in an old frame. Have you or any of your readers had a similar occurrence?

Johannesburg, S. Africa. W. G. Davis.

[For many years there has seemed little doubt that eggs are sometimes, tho very rarely, moved from one story to another and apparently from one hive to another. We have had a number of such reports from re-

HEADS OF GRAIN FROM DIFFERENT FIELDS

liable men and have known of one case ourselves. Even Cheshire spoke of the possibility of bees' moving eggs from one cell to another. And as long ago as 1885, in the September Gleanings, following a report of

an egg apparently stolen from another hive, A. I. Root said that quite a number of such cases had been reported in which it was very hard to explain where the egg came from, unless it was stolen.—Editor.]

The Obstructionist. By Bill Mellvir

(With Apologies to Walt Mason.)



I know an old-time rusty hick, who thinks he's beastly clever. He thinks he knows the latest trick and is the slickest ever. He's known it all these forty years. His dome is badly swollen with knowledge which this old cheese fears might some day all be stolen. If others knew the tricks of trade with this old duffer trusted, there'd be such scads of honey made, the market would be busted. And so he keeps his precious kinks from Tom and Dick and Harry, till now the stuff he knows, by jinks, is more than he can carry. He always kicks like forty steers at any bee-instruction and thinks he's saved us all these years from ruin and destruction. He keeps a study of our craft from being taught in college. He serves as watchdog for our raft by stifling spread of knowledge.

And when we beemen have a meet or hold a big convention, he tries to throw us off our feet by starting some contention. He likes to rag us from the stump until he's in a lather and says we're going to the dump where all the bow-wows gather. Oh, this old kicker is a nut with fly-wheel backward turning. He's in a measly little rut: his gears are idly churning. He can not stop the caravan of progress swiftly gliding. He's now a tin-horn also ran, with has-beens he's abiding. For when he parked beside the road to block the whole procession, his knowledge, ah! that mighty load, soon slipped from his possession. One can not keep right up to date while so much knowledge hiding, for Wisdom seeks the helpful skate who's in the front rank riding.

QUESTION.—
I am making a specialty of extracted and bulk comb honey. I use the Danzenlaker hive, with the hive-body as supers. I use full sheets of foundation. Some of the combs are crooked, some too thick and some are too thin. Is there not some device, similar to the fences used in section supers, to insure straight combs of uniform thickness? Something on the order of the queen-excluding honey-board might answer. If there is nothing for this purpose, would you recommend the queen-excluding division-board?
North Carolina. R. E. Carter.

Answer.—If the hives are kept level and if the colonies of bees are kept strong and are given a full set of foundation at one time, we see no reason why those combs should not be drawn out evenly, when there is a good flow of honey. But if your honey flow is slow or intermittent or if your colonies are not booming strong, the bees will begin work on some of the combs ahead of others, building these combs thicker unless you use some such device as that you mention.

Questions.—(1) I have read about the flight that bees make in the fall in November, and they say you should put your bees away in the cellar right after the flight. Can you tell me what a flight is and how to distinguish it? (2) Does it take any more honey in a hive that is in a poor cellar than in a cellar in which there is a furnace?
Minnesota. Charley Krueger.

Answers.—(1) During warm days in the late fall bees will often fly from their hives not as a swarm, but simply a few bees leaving and returning to the hives just as they might do any day which is warm. On such days as this all the bees actually needing a flight would take it. Therefore such days are spoken of as good flight days. (2) A good cellar should be darkened and well ventilated and should have an even temperature of about 45 degrees. If the cellar is too cool it becomes necessary for the bees to be very active in order to keep up the temperature of the colony, and this unusual activity on their part compels them to use an unusual amount of stores; so there will be considerable saving of stores if the right cellar temperature is maintained.

Question.—I intend to quit the city life and would like to buy myself a farm in New York State out on Long Island. I intend to put up about 75 hives to begin with. And what I would like to know is: Do you think a bee farm with 75 hives will bring enough money for two to live on?
New York. Fred Sollner.

Answer.—Of course, if you have had experience with bees, then it might be safe to start in with 75 colonies; but, as a general proposition, it is much better to start with a few and then as you gain in experience gradually increase the number. Now, as to the number of colonies that would be necessary in order to support two, that would

GLEANED BY ASKING

Editors

depend a great deal on the two individuals, on the local conditions, the amount of nectar to be obtained in any given locality, and also upon

the price at which the honey would sell. Of course, the seasons vary, but in a locality where colonies average 100 pounds per colony and in a season when honey sells at 20c you can readily see that your 75 colonies would produce \$1500 worth of honey, but of course, there would be some expense connected with this. In order to make a living good years and poor ones, just as they come, you would probably want more colonies, very likely as many as 150, or even more. A year ago a number of beekeepers in Michigan whose colonies averaged 100 colonies to the beekeeper, had an average income of nearly \$3000, but, of course, at that time prices were very high.

Question.—Will it be perfectly safe to use foul brood hives again by scraping the inside carefully, then charring slightly the inside with a blow-pipe and painting inside and out.
Pennsylvania.

John Major.

Answer.—Yes, the method that you suggest of cleaning your hives would certainly make them safe to use again. However, we do not think that it would be necessary after scraping and charring the inside of the hive to paint it. The scraping and charring ought to be sufficient. Of course, we infer that you are speaking about American foul brood, for in case of European foul brood it is not necessary to disinfect the hives at all.

Question.—I purchased a supply of carbon bisulphide to kill moths which were working on my unfinished sections and frames of honey that I had reserved to give to weak colonies. I gave all of those combs a slight treatment of carbon bisulphide, and a while afterwards I gave three of those frames containing honey to a colony that was short of stores, and in 24 hours afterward half of the bees in the hive were dead. These frames were carried from the honey-house in the open air to the hive. I would like to know if the rest of those frames of honey will still be poisonous to bees or people. If so, that dope is going to cost me about \$100; but I am pretty sure the moths will die.
West Virginia.

T. A. Youngblood.

Answer.—The report you gave us of killing your bees by the use of combs that had been treated with carbon bisulphide is difficult to understand, for in all the years that carbon bisulphide has been used for this purpose we have never yet had a report such as yours. We are wondering just how you applied the treatment. The carbon bisulphide is not supposed to be sprayed on the combs, but is simply put in a shallow pan and placed at the top of a pile of combs to be treated, the pile being carefully covered at the top and bottom and left 24 hours. The Texas Experi-

ment Station has made various experiments with carbon bisulphide and in a bulletin, June, 1918, by F. B. Paddock, he states that when the supers are taken down the confined gas will escape immediately, even before they can be carried separately to a building. Of course, if the carbon bisulphide was put immediately on the combs this might make a difference. We do not know. Perhaps Prof. Paddock will enlighten us.

Questions.—(1) Are bees injured by helping themselves to molasses and skimmings that are taken from it while it is being made? They do not take to it readily until it begins to ferment. (2) Will sweet cider injure the bees? (3) Where lumber is very cheap, as it is around the mountain saw mills, do you think it would pay to provide winter packing for bees in single-walled hives? Some are in standard ten-frame and some in Long Idea hives. We are located in the mountains in northern Alabama, and the bees are in an exposed location. Alabama. Lucian C. Scott.

Answers.—(1) The fermented molasses skimmings would not be good stores for the bees. (2) Sweet cider is also a very poor thing to allow the bees to store. (3) Since your bees are in such an exposed location we believe you will find that it will be of benefit for the colonies to have a little protection as you suggest, altho, of course, less protection is needed in your locality. A windbreak would also be a great help.

Question.—In the fall I divided a colony by the Alexander method and a few days later found them dragging dead bees from the one on the old stand. I examined them and found no honey, so I gave them a comb full of it and in a few days they were all right. Was starvation the cause of this? Nebraska. Burton Kiltz.

Answer.—If the old swarm was short of stores, this might have been the cause of their carrying brood from the entrance. They also would do the same thing, if the entrance was not sufficiently contracted so that the brood became chilled in the night, or if too few bees were left with the brood, as sometimes happens with the division moved to a new stand.

Questions.—(1) What information can you give me about candied honey? What is the reason it candies, and what can we do, if anything, to prevent it? The stores do not care to handle our honey because they say it candies in such a short time, it is difficult for them to handle, but their customers all like it. It is very thick, of good color, and of fine flavor. They tell us that other beemen furnish them with large tanks of honey which they guarantee will not candy. Do they put anything in it? (2) Why is it that at the end of the honey flow I find that quite a number of my colonies are queenless, some of which were the strongest the first of the season. (3) Will the colony swarm out when the queen goes out to mate? California. Bartlett Boyd.

Answers.—(1) The reason that some honeys candy more readily than others is because they contain a greater amount of dextrose. Also, agitation of honey and sudden changes of temperature always hasten granulation. If you heat the honey to at least 130 degrees Fahrenheit and take pains that

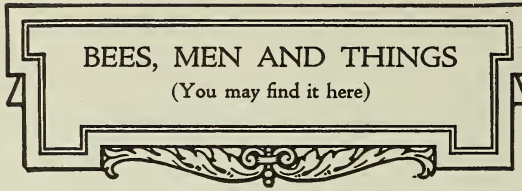
it does not become any hotter than 160 degrees Fahrenheit, which is a rather high temperature, you will probably be able to put your honey up so that it will remain liquid for a much longer time. It is better to hold the temperature at 130 or a little more for some time rather than to use too high a temperature. When heating your honey before bottling you will probably not have much difficulty with its granulating while on the hands of the storekeeper. We know of nothing that you could put in the honey to prevent its granulation, and anyway, you would not care to do so since this would adulterate the honey. (2) There are different reasons that might account for the queenlessness of your colony after the end of the honey flow. In case you do not use queen-excluders and the queen is allowed free use of the entire hive, it is possible that she might go into the supers and raise brood there; then when you remove the supers you might accidentally remove her also. We have known colonies to become queenless in this way: Again, there is a chance that the old queens were superseded and perhaps the young queens were lost in mating. Or, it may be that the colonies after the honey flow swarmed without your knowledge, and the old queen left and the young one was lost when she took her wedding flight. (3) Sometimes small nuclei do swarm out with the virgin queen when she leaves the hive to be mated, but usually the bees and queen return shortly.

Question.—We packed two colonies last winter, each being packed the same. The colony with the less winter stores came thru the winter finely, while the colony with the more stores wintered badly, more than half the bees dying. What could have been the cause? Ohio.

Mrs. Silvia Petrecca.

Answer.—We regret that you did not tell us more about the two colonies. Without knowing more of the conditions it is impossible for us to explain why one wintered so much better than the other. It is possible that one colony was stronger than the other in the fall, or it may be that one was more exposed to the cold winds in winter. You say nothing about the size of the entrances. Of course, if an entrance was left large enough so that a mouse could enter the hive, poor wintering could be expected. Sometimes also we have known of field mice making their nest under the hive. In most cases this would probably do no harm, but if the mice were close enough to the bottom of the hive so that there was an occasional jarring of the hive, this would cause the colony to winter poorly. As a further suggestion we might say that if a queen is old or poor, colonies often do not raise as much young brood in the fall as they would do if they had a good queen. Therefore, there are not as many young bees to go into winter quarters. Colonies that are composed mostly of old bees in the fall do not winter nearly as well, and in some cases perish outright.

I HAVE an old dog-eared A B C that I bought about 36 years ago. It is about worn out making young beekeepers, starting them right when they first enthuse. I would not swap it to you for the finest morocco-bound book that you can put out, altho Doolittle's comments are worn off by much use."—Hugh L. Lynn, Daviess County, Ky.



"This is one of the best places in Indiana for a fall flow. There are tons of honey here that are never gathered."—T. C. Johnson, Deputy Bee Inspector, Logansport, Ind.

"In walking across my lawn at noon today I noticed a considerable bloom of dandelion and bees working on it. How is that for 'Our Lady of the Snows' on the fifth day of November?"—Edwin V. Hillson, Norfolk County, Ont.

"We are very much pleased with Mr. O. Jones' very latest plan in transferring, a description of which appeared in your September number. We gave it a thoro test and found it very satisfactory indeed."—Goodwin & Fowler, Woodroffe, Ont.

"My bees did very well this summer. I increased them five to one, that is, I made 55 from 11, spring count. After leaving them about 60 pounds I will have a little over a ton of honey to sell." Herman Volter, Aitkin County, Minn.

"I have been a beekeeper for 62 years. I have taken Gleanings since it started as a quarterly, so I have been with you quite a while now. I shipped honey to D. W. Quinby, brother of M. Quinby, to New York City.—F. A. Snell, Carroll County, Ill.

"We have had strains of bees that would not start supersede cells, no matter how old or poor the queen was. Just as long as she was in the hive the bees respected her. Other strains would start cells and have them capped before I had discovered that the queen was failing."—A. W. Lindsay, Wayne County, Mich.

"The average person, I find, has no idea what is meant by 'extracted' honey. All honey removed from the comb he thinks is taken out by mashing the comb with the hands. The statement, 'This honey extracted from the comb by machinery—never touched by human hands,' I think is good advertising, and some reference to this fact should be a part of every honey label."—O. K. Paxton, Hamilton County, Fla.

"While at work in a sanitarium I distributed more than one section of honey where indications pointed to places where it might improve a jaded appetite, and I would often

have a convalescent come to me inquiring whether or not I had allotted to him a block of honey. When I admitted that it was probable that such an

accusation might be true, they declared that their appetites had returned with the eating of that honey, and that they had since continued to improved."—Benj. B. Jones, Baltimore County, Md.

"The honey business in Montana was hit a hard jolt this year by a new pest on the alfalfa and sweet clover. Our state entomologist is at sea in regard to this insect. He claims that it is something entirely new and never encountered anywhere else. Aside from ruining the alfalfa seed crop, the honey crop is cut in two. This is not the old alfalfa weevil but has been named 'Thrips.' I will average about 75 pounds from 300 colonies, which is about half of what it should have been."—R. A. Bray, Sweet Grass County, Mont.

"I have 46 colonies of bees, all packed (Nov. 1) two to four weeks ago. Twelve hives have two ten-story bodies. The whole yard will average 40 pounds. We had a great flow of white aster; and on account of the beautiful warm weather 80 to 90 per cent is capped. I might add that I have never had any trouble with aster honey, whether capped or not. Many young bees are being raised. I consider this all right, as I have plenty of stores."—O. C. Wall, Davie County, N. C.

"I think the cause of the so-called 'disappearing disease' may be having the bees underfed or fed with unbalanced rations when they were in their 'baby' or grub period. We know that sufficient water, fresh pollen, and honey constitute a balanced ration for grubs. Therefore, if inclement weather prevents them from going out in the spring to supply a lack of any of these three rations, the result is under-nourished young bees, which I think might cause the so-called 'disappearing disease.'"—J. H. Fisbeck, Missouri.

"The bees do not bother the first bitterweed that blooms in May and June, but they begin on the second crop which opens about Aug. 15 and continues until Sept. 20. If we would take notice and extract this and save it for next spring, the bees, after the bitterweed flow is over, could get a nice crop from boneset, smartweed, goldenrod, and a number of other flowers. I believe that a colony, having a second story full of honey or even a shallow super full in the fall is worth three colonies in one-story hives for either honey or increase."—J. E. Sutton, Marengo County, Ala.

ABOUT 65
beekeepers
of Florida
met at Gaines-
ville on Oct. 6
and organized
the Florida
State Beekeep-
ers' Association.
J. W. Barney
of Bradentown was elected president; J.
K. Isabel of Wewahitchka, vice president;
J. R. Hunter of Wewahitchka, treasurer,
and K. E. Bragdon of Cocoa was elected sec-
retary.



ingly. We are
passing thru
miles of cotton
fields, some of
them almost as
white as snow.
Ernest is also
very well. It is
quite cold yet
even 'way down
in Dixie,' but I think no frost. Of course,
we cannot use our tent, but have to stop at
hotels with steam or other heat in our
rooms."—A. I. Root.

* * *
The honey exhibit this year at the West-
ern Washington Fair, Puyallup, Wash., is
said to be the largest exhibit of its kind
ever shown in that State.

* * *
H. B. Parks has resigned as state apiarist
of Texas and on Nov. 1 will take up his
new work in the sales promotion and exten-
sion department of the Texas Honey Pro-
ducers' Association.

* * *
The New Jersey Beekeepers' Association
will hold its annual meeting at Trenton on
January 13 and 14. A complete program of
this meeting may be had by writing to the
secretary, E. G. Carr, New Egypt, N. J.

* * *
Arthur Rattray, Almont, Mich., has re-
cently sold his interest in the Domestic Bee-
keeper to E. A. Little, Lansing, Mich. Mr.
Rattray will be associate editor under the
new management.

* * *
The annual meeting of the Minnesota
State Beekeepers' Association will be held
on Dec. 7 and 8, in the meeting rooms of the
Medical Association, Donaldson Bldg., 7th
and Nicollet St., Minneapolis, Minn.

* * *
The Illinois State Beekeepers' Association
will hold its annual meeting on December
14 and 15, 1920, in the sun parlor of the
Leland hotel at Springfield, Ill. Details and
further information can be secured by writ-
ing to the secretary, G. M. Withrow, Me-
chanicsburg, Ill.

* * *
The annual meeting of the Michigan Bee-
keepers' Association will be held on Jan.
25, 26, and 27 at East Lansing, Mich. The
sessions will probably be held at the Agricul-
tural College, and arrangements will be
made so that those desiring rooms at the col-
lege may secure them by writing to the sec-
retary, R. H. Kelty, East Lansing, Mich.

* * *
A. I. Root writes from somewhere in Dixie
(see Notes of Travel, page 754) as follows:
"I am so well that I sleep from 8 P. M. to 6
A. M., and no nap at all or almost none
thru the day. I am enjoying the trip amaz-

* * *
The annual meeting of the Pennsylvania
State Beekeepers' Association will be held
at Harrisburg on Jan. 26, during the big
agricultural week of the Keystone State.
Dr. E. F. Phillips will be one of the speak-
ers.

* * *
At a recent meeting of the Oregon Bee-
keepers' Association, A. J. Sanford of Red-
mond was elected president, and H. A.
Scullen secretary. A two-day conference for
this association to be held some time during
the winter is now being arranged.

* * *
H. A. Scullen of Corvallis, Ore., has re-
cently been appointed in charge of bee cul-
ture work at the Oregon Agricultural Col-
lege. He will have charge of the class work
at the college as well as that of helping bee-
keepers of the State with their local prob-
lems and assisting in organization work.
Prof. Scullen was formerly special Field
Agent in Beekeeping Extension work for
the State of Washington, but resigned from
that position to take up commercial honey
production in Oregon.

* * *
The annual convention of the Chicago
North-Western Beekeepers' Association
will be held in the Great Northern hotel,
Chicago, on Monday and Tuesday, Dec. 6
and 7, 1920. An exceptionally good program
will be presented. Many prominent bee-
men from states both east and west have
signified their intention of being present
and will take part in the discussions. Any-
one desiring a program please write the
secretary, John C. Bull, 1013 Calumet Ave.,
Valparaiso, Ind.

* * *
A joint meeting of the Washington State
Beekeepers' Association and the Inland Em-
pire Beekeepers' Association will be held in
Spokane, Wash., on Dec. 14, 15, and 16. On
Wednesday forenoon, Dec. 15, there will be
a joint session of the beekeepers and horti-
culturists to discuss topics of mutual inter-
est; and Wednesday evening there will be
a big banquet for all who desire to partake.
A splendid program is being arranged for
this meeting. Further information can be
secured by writing to George W. York, First
Ave. and Lincoln St., Spokane, Wash.

MY good friends, familiar as it has been to me almost all my life, I have never yet understood the full application of our first text until within just a few days. I have always taken it as having a personal application—that is, as referring to one's individual life. Now, it is a good thing to have made your peace with the dear

Savior and with the great heavenly Father; and it is a good thing to be "hungering and thirsting" every day for a purer and cleaner life—cleaner in *thought* as well as in word and action. But this new meaning that has come to me is that we should be hungering and thirsting for a *better humanity*, and that we should love our neighbor as ourselves, to a sufficient extent to be hungering and thirsting for the glad time when all humanity shall be cleaner and purer. We should be hungering and thirsting and also *praying*, "Thy kingdom come, thy will be done on earth as it is in heaven." I have spoken about studying humanity in our great cities, looking from one to another of the great masses that throng the crowded streets. I have been hungering and thirsting, somewhat unconsciously, for the glimpses that would tell of better and purer lives.*

Just about 25 years ago I visited the Battle Creek sanitarium. I do not need to say Battle Creek, *Michigan*, for almost every body knows where Battle Creek is. Well, I have been in touch, more or less, with the great work being done there, not only for 25 years past, but for 45 and perhaps 50

*Right here a letter has been placed on my desk which is a fair sample of other letters that have been coming continuously for almost 40 years. For quite a time I gave them place in Gleanings under the head of "Kind Words;" but lately there have been so many of them that it is impossible to find room for them, especially since Gleanings has been made a monthly instead of a semi-monthly. Well, these letters emphasized what I have been trying to tell you—that almost unconsciously, in this Home Department, I *have* been hungering and thirsting after righteousness. Below is the letter.

"Mr. Root, I have never met you, but I take Gleanings in Bee Culture, and I certainly enjoy reading the Home Papers. They are the first thing I read when I receive the paper, and they have done me a world of good. I want to thank you for them.

"Hoping you may be spared to write many Home Papers, and with best wishes for you and yours, I remain, "Your friend, "R. B. ELDER."
Darlington, Pa., Oct. 4, 1920.

OUR HOMES A. I. ROOT

Blessed are they which do hunger and thirst after righteousness; for they shall be filled.—Matt. 5:6.

And there shall in no wise enter into it anything that defileth, neither whatsoever worketh abomination or maketh a lie; but they which are written in the Lamb's book of life.—Rev. 21:27.

Know ye not that ye are the temple of God, and that the Spirit of God dwelleth in you?—I. Cor. 3:16.

writes as follows:

I am glad that you have not forgotten my invitation to visit us. I am hoping every year to have the pleasure of seeing you here. I should like to take some rides with you over our beautiful country roads and chat with you about a lot of things in which, I am sure, we are mutually interested.

Be assured we will take good care of you if you come. We have had many visitors further along in years than you. Your activities are so numerous I always think of you as young rather than old.

Our good friend, Dr. Stephen Smith, still visits us quite frequently. He was with us on his ninety-eighth birthday, and expects to be with us on his hundredth birthday. Your friend,

J. H. KELLOGG.

Battle Creek, Mich., Aug. 22, 1920.

Well, on Sept. 28 it was my pleasure to set foot on the grounds of the new sanitarium. Just then something happened that almost startled me. I did not know what it was for a while. As usual I began studying the faces and actions of the crowds of people I met there, especially the boys and young and old men. I glanced over them with a feeling of joy, and began thanking God, and I did not know just *why*, I did so either.

Now, dear friends, I am going to step on delicate ground—maybe on holy ground, as did Moses when he stood before the burning bush; and my most earnest prayer is that I may be enabled to do good and not offend, even if I talk plainer, perhaps, than I have done of late. Unconsciously I was thanking God because, among the hundreds I met there outdoors in the beautiful sunshine, there was not visible a cigar, pipe, nor cigarette. As I passed over the grounds on the outside of the great edifice there were no stubs of cigars, no half-burned cigarettes, nor even ashes that somebody had brushed off from his cigar. When I went into the great building, then into the office where guests registered, there were no filthy spittoons. When I went into a closet (or any of the many closets), there was no tobacco spittle in the closet-bowls, nor any spattered on the walls or

years. I knew their great sanitarium was burned up some years ago; and I knew, also, by reports that they had built another and better one. For some time back my good friend, Dr. Kellogg, at the head of this great institution, has been asking me to make them a visit and see how they were prospering. At the close of a recent letter he

over in some corner. Everything was as spotless and as clean as *Mrs. Root* herself would have it. I suspect she will scold a little when she sees this, but I am going to take the chances.

I will now digress a little right here. Yes, dear friends, I wish to digress a lot in the story I am going to tell, and I pray that the story may do good.

Some years ago when taking a trip down to my Florida home I decided to investigate the toilet rooms so far as I could. In one county seat where I had to stop to catch a train there was no closet, and I was told that I would have to go over to the courthouse, a block or so away. They had just erected a new edifice, and it was a model of neatness and beauty. A nice room had been fixed up for a closet, with marble, porcelain, nickel silver fixings, and all modern improvements; but, altho the edifice had been but recently finished, tobacco juice was spattered over all the marble floor, porcelain closets, and elsewhere, until the whole place was just awful, even to look at. I think the poor janitor must have become disgusted with the habits of the men folks and lost courage. I am afraid some of these filthy habits belong to some lawyers, doctors, and possibly professors, and the poor janitor had evidently given up all hopes of keeping things neat and sweet and clean, altho he had all modern appliances for doing his work.

At the great Union Depot in Miami, Fla., things were for a while so well kept that I rejoiced; but on my last visit in that same depot it looked a good deal like the courthouse I have described.

In Jacksonville, Miami, and I presume in many other cities, they had special closet rooms where one could open the door only by putting a nickel in the slot. These for a while were kept in pretty fair shape; but at the time of my last visit in one of these city places the locks had been broken off, the doors swung wide open, and I think one door was hanging by only one hinge, and the same filthiness was evident once more. Maybe I am exaggerating the matter. If so, I shall be very glad to be corrected.

Just one more digression.

Mrs. Root dreads riding on the cars because she gets carsick. On our last trip, however, from Florida to our Medina home she did not get carsick at all. But I did. I will tell you why. The smoking room in the Pullman car was right close to our berth. An electric fan was put up to insure "good (?) ventilation." The fan was so placed that it pulled the tobacco smoke and other fumes from the smoker right into my face. Yes, I *could* have gotten another seat, but almost every berth was occupied, upper as well as lower, and I could not just then get another seat without trespassing on the good nature of some other tired passenger. Why did I not complain? Well, since I am getting old I have thought many times I

would stop grumbling and try to put up with what others put up with.

Let us now get back to my text. I do not mind so much the little inconvenience myself; but when a great part of humanity is suffering, I feel the responsibility is placed on my shoulders, at least to a certain extent, by the great Father above, and that I *ought* to complain and let my voice be heard.

Well, it was my pleasure to be in and all about that wonderful sanitarium for about four days. In this place we are told there are 50 expert doctors and something like 400 nurses. I took a full course of treatment—that is, as full as I could in four days, and every doctor who examined me was free from anything in his breath that would indicate tobacco. May God help us to work for a time when our *physicians* (to say nothing of anybody else) shall be free from the tobacco habit. I do not know for sure, but I imagine that quite a large part of these 50 "expert doctors" are women; and I was so much impressed during the four days of my stay at Battle Creek that the words of my second text came into my mind involuntarily—"And there shall in no wise enter into it anything that defileth, neither whatsoever worketh abomination or maketh a lie." I found this in the next to the last chapter in the last book of the Bible. For several years past the children have insisted that I should have frequent examinations by competent physicians. Now, with no disrespect to the city doctors who have looked me over, I want to say that the clean, sweet men and women at Battle Creek are doing their work better and more thoroly than any I have ever met anywhere else. I was particularly impressed by one doctor—Dr. Stewart. Instead of being very sober, as most doctors seem to think they must be, he, in a kind, friendly way, asked me more questions than any other doctor ever asked me before—gave me time for a full inspection, made some suggestions, and seemed as anxious to help me over my few minor troubles as if he were my own son.* Right here I wish to ask the users of tobacco, whose eyes rest on these pages, to look over that second text of mine, and see how well their lives contribute to make, such a place, of this world of ours. Perhaps I might mention right here that my son, E. R. Root, took me up to Michigan in a brand-new Dodge automobile. I rode 200 miles in one day, and over some roads about as bad as you can find anywhere, and felt "as spry as a cricket" when I reached home at night; and I might *almost* say that I did not have a nap from daylight till long after dark. I have been thanking the Lord for it ever since, and am

The above is not only true, but there is another thing connected with it that impresses me. In some respects this sanitarium seems to be conducted on the principles of some of our modern factories. It is, in fact, a great factory for health. As I passed from room to room I found other patients ahead of

looking forward with lively anticipation to a trip by automobile from Medina, O., to Bradentown, Fla., in just a few days. Well, here is a point:

My son, "E. R.," looked after my comfort and convenience with all the solicitude of a mother. I think one of the greatest joys of my life was teaching him to walk and talk, and look over the pages of the Scientific American, and explain to him—that is, I did it after a fashion—before he could stand alone. We have been "chums" almost 60 years, and now when I begin to feel symptoms of failing from old age he is eyes and ears for me—especially ears; and when it comes to stopping at night he absolutely insists that I shall have the best protection and comfort the city affords. When we go to Florida, however, we expect to sleep outdoors in a tent—not only to save money but to save health. Now, suppose I had been so silly or shortsighted as to remain single all of my life as some young men are doing—yes, women, too—where would the Home of the Honeybees be?

Let us now go back to the tobacco matter again.

If you think I overestimate the harm that tobacco is doing, read the following. It was clipped to put in another department, but I think it will come in well right here:

THE USE OF STIMULANTS.

On the outside page of the *No-Tobacco Journal* for March, we find this:

TOBACCO A DECEIVER.

The following quotation from President G. Stanley Hall of Clark University is a terrific indictment of tobacco: "The basis of all intemperance is the effort to secure, thru drugs, the feeling of happiness when happiness does not exist. * * * There are many drugs which cause this pleasure, and in proportion to the delight they seem to give is the real mischief they work. * * * Alcohol gives a feeling of warmth or vigor or exhilaration, when the real warmth or vigor or exhilaration does not exist. Tobacco gives a feeling of rest which is not restfulness. * * * One and all the drugs tend to give the impression of a power or a pleasure or an activity which we do not possess. One and all their function is to force the nervous system to lie. One and all the result of their habitual use is to render the nervous system incapable of ever telling the truth. One and all their supposed pleasures are followed by a reaction of subjective pains, as spurious and as unreal as the pleasures which they follow. Each of them, if used to excess, brings in time insanity, incapacity, and death."

Can any one dispute the truth of the

me waiting for their turn to come; and each expert doctor, or oftentimes two doctors with their apparatus, microscopes, or other instruments, kept doing the same thing over and over. When it came my turn to have some blood taken from my arm a couple of expert women bared my arm in no time and applied the lance and secured a sample of blood, and then put on an antiseptic plaster; and the whole thing was done, as it seemed to me, in less than a minute, and so on thru the entire office hours. With the aid of all up-to-date scientific apparatus a patient was thoroly examined from head to foot in a fraction of the time that would be occupied by the ordinary physician.

above? The *No-Tobacco Journal* is published at Butler, Ind., at 25c per year.

God knows, dear friends, that I do not wish to dictate. I do not wish to dispute your right to use tobacco if you still choose to do so—that is, in the case of grown people; but I do wish to do everything in my power to hinder the little fellows from smoking cigarettes. In passing thru our large cities I watch especially the boys to see how many are smoking cigarettes. I recently said to Ernest, after we had been all over and thru this great sanitarium, "Ernest, is there any other spot in the whole United States where we can find hundreds and even thousands congregated without a single human being, old or young, who is addicted to the tobacco habit?" He smiled, and suggested Dr. Dowie and Zion City; but I confess I have not heard very much of Dr. Dowie or his successor of late; and I am thanking the Lord that there is at least one spot in our United States where tobacco in all its forms is successfully banished, and that this institute has kept up and prospered for about 50 years, and this causes me to think it is a pretty good institution, and that it is on a sound basis.* Perhaps I might remark right here that in the dining-room, where they have the best and finest menu that I ever found in my life, there is neither tea nor coffee. The rule of that establishment seems to be, no stimulants of any sort.

On our trip home I greatly enjoyed seeing the crops thru Ohio and Michigan. In both States they were harvesting sugar beets. Great loads were being taken from the fields and carried to the refineries. In fact, they were heaped up so much on many of the huge wagons that they dropped off on the road. Ernest was curious enough to stop the auto and pick up some of those beets that had been dropped, and we have just had some cooked, and found they were about the finest beets we ever tasted.

Now, here is another *exceedingly* short cut between producer and consumer. If sugar ever gets away up again, or, more particularly, if the time ever comes when we can not *buy* sugar, let us grow sugar beets in the garden, and in this way we shall not only have sugar at an insignificant cost, but we shall have the sugar just as God made it. I think our best medical authorities now agree that sugar in the form of sweet fruits or vegetables is very much more wholesome in every way than it is after the best part has been taken out at the sugar refineries. The same thing applies to sorghum. In getting the bran out of wheat, and the color out of sugar and everything else in that line, we are "refining" ourselves into our graves.

Another thing that pleased me greatly

*I notice the following in Good Health:

"The Battle Creek Sanitarium represents a new departure in the treatment of the sick. For the first time in the history of medicine, all rational and scientific remedies have been brought together under one roof."

was great fields of alfalfa and sweet clover all over Michigan. We could not well tell when riding rapidly thru the country which was which—that is, if they had been just freshly cut. Where the growth was high enough to permit blossoms, the beautiful blue of the alfalfa told the story. Both showed a beautiful bright green when everything else seemed hurt by the drouth; and a great part of the fields, at least where the sweet clover grew, was, I suppose, the biennial, for the annual has not as yet gotten into the *fields*.

TOBACCO AND THE WAR; FROM A DRUGGIST WHO DOES NOT, NOW, SELL TOBACCO.

Friend Mr. Root:—The cause of tobacco made great strides forward by the war. This is very discouraging, but nevertheless it is so. It appears that the habit of smoking cigarets in the army was at a premium. I remember a solicitor called on me in the interest of a donation in favor of the "Knights of Columbus," and a folder was handed to me. On it was a soldier represented as wounded and receiving aid from a worker in their cause. I could not make out the illustration very well; so I asked what it was that the worker was represented as doing for the soldier. "Why," said the solicitor, "the worker is helping the poor man to a cigaret."

Tobacco is very poisonous to some, and kills many who have a tobacco heart. It is the cause of more stomach, digestive, and nervous troubles than any other one thing, including whisky. The popularity of cigarets during the war, in my opinion, had the influence on our legislature to loosen the cigaret law to allow them to be sold to people 21 years old.

I contracted the tobacco habit thru the negligence of my parents when I was less than 10 years old, while in the inquisitive age, the time the youth is ready to try anything once. The only thing that made me ever quit it was that it was ruining my health; and about 15 years ago I quit and have never used it since. After ceasing the use of tobacco, in about 18 months the nicotine leaves the body, and the person is rarely troubled afterward with the craving for tobacco. Tobacco and whisky go together, and I offer the following in proof. About 20 years ago when the drug stores had the lawful right to handle whisky I had some whisky in Government bond in Kentucky. I released a barrel and when the barrel was empty I saved it in two for a couple of tubs. In each end on the heads of the barrel, nailed to the inside of the heads was a one-pound plug of "old honesty tobacco," for each head. My opinion of the purity of "Kentucky whisky" was somewhat shaken.

(Not for print under my name.)

**THE NEW SWEET CLOVER GROWING WILD IN
NEW CASTLE, DEL.**

I am enclosing two samples of what I have gathered for sweet clover, white and yellow variety (annual). Will you kindly examine and either confirm or deny my judgment regarding the samples?

H. E. WILLIAMS.

Care Newlyn Hotel, New Castle, Del.

On receipt of the above we sent for more specimens of the new clover. I knew that the height of the white variety depended on whether it was really the new that is making such a stir just now. And in reply he sent us a photograph of one of the plants and a letter, which we give below.

Dear Mr. Root:

In reply to your inquiry as to the height of bush the specimen came from, I am sending you one of three branches taken from a single root of the white species. The yellow grew about 30 inches high, but it was all gone by the second week of August. No Christmas tree ever looked prettier to me than did that stock of white sweet clover with its branches filled with blossoms and seeds. When I stood it up in my room the folks inquired what kind of a "weed" that was, and when I told them it was the bees' Christmas tree there was some mirth and laughter. Then they told me, as they have many times before, that I was "bug-house and bee crazy;" but that did not hurt me, and I joined them in a laugh at their ignorance for they call it "gummer" and say it is a curse to the farmers "down the State."

HARRY E. WILLIAMS.

New Castle, Del., Oct. 19, 1920.

Along with the cut giving the above he sends us what he calls "one of the branches." Well, this "branch" when spread out on the floor is a trifle over 9 feet. Now, if this plant pictured above grew from the seed in the one season just past, it is certainly the new variety. He furthermore states in his letter that "more than half a bushel of this white sweet clover seed has been secured."

NOT ONLY, "A LAND FLOWING WITH MILK AND HONEY," BUT EGGS ALSO.

Just now it would look as if nobody knows what this new sweet clover may ultimately amount to. Here in Medina I have been trying to get the chickens to eat sweet clover; but there is such a vast variety of green stuff that they have not as yet "acquired the appetite." Down in my Florida home chickens eat everything green—even potatoes. Unless they are carefully fenced off they greedily grab every potato sprout as soon as it is visible above ground. Now I have not tried it yet, but I feel sure they will get a large part of their rations from this new sweet clover if permitted to do so.

The letter below is what gives me faith:

I am sending you some pictures and results of an experiment with the annual sweet clover here in British Columbia. I planted the seed in a chicken run, and when the plants were three or four inches tall chickens were turned in on the clover and kept it cropped down close to the ground all summer. In August I transplanted a few plants.

(The picture I am sending you is of one single plant grown 46 inches tall in 80 days.)

They came right on and came into bloom in a few weeks' time and have been in bloom right up to present date, Oct. 20, and look like remaining in bloom for some weeks to come. The above results will show that this clover will stand pasturing close, and still thrive and produce a good crop in the fall, and also set seed if given a chance. Chickens are very fond of it as a green food. The remainder of the plants in the chicken run I am watching to see if they will winter over and bloom early next year.

It has been a very dry summer here, and this fall has been very cold and wet. But this unfavorable weather has not affected the growth of this clover in the least. I will let you know later whether this plant winters over here.

W. P. LONG.

1970 Kingsway, Vancouver, B. C., Oct. 20, 1920.

NOTES OF TRAVEL

"A PENNY SAVED IS A PENNY EARNED."

Well, today is the 4th of November and we haven't started on our Florida trip yet, but expect to start tomorrow morning; and, by the way, a few days ago it cost us \$4.00 for a room at a hotel, with two beds, in the city of Delaware, O. Then it cost another dollar to put our automobile "where thieves do not break thru and steal." Well, in order to cut down, a little, expense like the above in traveling, Huber has recently purchased "an outdoor sleeping tent for tourists." It hitches on to the auto, and makes a most comfortable bed, as I am just now well able to testify, because I have had a most refreshing nap right outdoors in a strong northwest wind. In fact, I greatly prefer it to any "steam heat, hot and cold water, bath included," that costs \$4.00 for just lodging. This sleeping tent is abundantly protected from rain, wind, or frosty air, even for an old man like myself. If it's really true that "a penny saved is a penny earned," one might get rich and have the fun of traveling, and see Uncle Samuel's dominion at the same time.

In addition to the above we have a little stove or radiator that is warmed by the exhaust from the engine. The beauty of it is that there is a dial with a little hand that can be moved to give any degree of heat that may be desired according to the weather; and another beauty of it is that, like the outdoor sleeping-tent, the *fuel* costs nothing. In fact, we rather decided that the engine gave a little *more* power when the exhaust went thru the heater than otherwise. The heater is called "Perfection," and can be had at any city garage.

We started on Saturday, November 6. Just before leaving I went into the printing department, and "Barney," the "boss printer" on Gleanings, asked: "Mr. Root, are you expecting to travel on Sunday on this trip?"

Barney has been in my employ over 50 years, and naturally knows me and my habits pretty well. We expected to start the day after election, but Saturday morning was the best we could do. With no Sunday travel we must be out two Sundays and I replied:

"Barney, I shall surely attend church and Sunday school wherever I am, if able. In the afternoon we may travel some. I have not as yet decided."

Well, dear friends, *one* Sunday has passed in a most happy way, and we did not travel at all.* Ernest got in touch with a legal friend at Newark, O., Mr. J. H. Miller, a member of the Civic Reform Union. Mr. Mil-

*"A Sabbath well spent bringeth a week of content," etc.

ler, like the centurion of holy writ, has "buildd a synagogue." We attended worship in the new church just dedicated about a week ago.

Mr. Miller was the leader of the dry fight, about 10 years ago, when poor Etherington gave his life, as a martyr, to the cause of prohibition.

Business called us first in the southwestern part of Ohio, where I enjoyed seeing the wonderful crops of corn harvested. Then we went over to that beautiful National Pike that goes from Columbus, Ohio, to Washington, D. C. It is the most perfect highway for automobiles, for *hundreds of miles*, I was ever on. The riding up and down and around the great hills of eastern Ohio was to me an unceasing inspiration. Of course, the hills took more gasoline and more time. I was pained to see so little use made of these hills for fruit or agriculture, but it may come in time. Over in Pennsylvania we found most beautiful apples all along the highway, and right on the peak of one of the highest "passes" (2800 feet high) the finest glittering red Spitzenbergs were sold "two for a nickel," and they were big ones, too.

I told you we were going to carry along a sleeping tent. Well, we have now been out five nights, and "E. R." decided we were too far north for a man 81 years old to "camp out," and here comes a problem that troubles me. Mrs. Root has always given me a clean place to sleep, wash, etc. Well, she and the three matronly daughters enjoined E. R. to carry it out, "regardless of expense." One night the best we could do was a room for two, not first-class, which cost \$2.00. Next time a room with bath and steam heat, \$4.00. Next in a bigger city, \$6.00. This latter would have been \$3.50 for *one person*. The above is for room alone, with no meals. After much experience, Ernest declares anything cheaper will expose us to filth and possibly disease. Would it not be well if that "commission" to consider the "high cost of living," should consider "the high cost of a decent place to sleep?"

Let me go back a little. When crossing the highest mountains, I had the earache, and later there was a queer snapping in my ears. As it was rather cold weather, I had a slight chill; but a high-priced room at night with steam heat to warm me up, and a hot bath in the morning (until the sweat dropped from the end of my nose) made me all right the next day. It was not until 24 hours later that I recalled the same snapping in my ears in crossing the Rocky mountains years ago.

Tonight (Nov. 10) I am once more in a high-priced room, at Fredericksburg, Va.

Classified Advertisements

Notices will be inserted in these classified columns for 30c per line. Advertisements intended for this department cannot be less than two lines, and you must say you want your advertisement in the classified column or we will not be responsible for errors. Copy should be received by 15th of preceding month to insure insertion.

REGULAR ADVERTISEMENTS DISCONTINUED IN GOOD STANDING.

(Temporary advertisers and advertisers of small lots, when discontinued, are not here listed. It is only regular advertisers of regular lines who are here listed when their advertisements are discontinued while they are in good standing.)

Heard & Woodhull, Vollmer & Demuth, Fred Telschow, W. W. Talley, Spokane Seed Co., Bert Smith, C. W. Phelps & Son, J. B. Notestein, Michigan Honey Producers, G. H. Merrill, L. C. Mayeux, F. W. Lesser, Allen Latham, E. L. Lane, Chas. B. Hatton, Alfred W. Fleming, The Farmer Apiaries, W. B. Crane.

HONEY AND WAX FOR SALE

HONEY in barrels, 16c a lb. J. Gakler, Memphis, R. D. No. 1, Tenn.

FOR SALE—Light honey, two 60-lb. cans to a case. I. J. Stringham, Glen Cove, N. Y.

FOR SALE—Very choice white clover extracted honey in 60-lb. cans. Noah Bordner, Holgate, Ohio.

FOR SALE—Clover and buckwheat honey in 60-lb. cans. Bert Smith, Romulus, N. Y.

FOR SALE—Choice white clover honey in 60-lb. cans—none finer. J. F. Moore, Tiffin, Ohio.

FOR SALE—Very fine quality basswood-milkweed (mostly milkweed) honey in 60-lb. cans. P. W. Sowinski, Bellaire, Mich.

FOR SALE—White clover and basswood blend honey in new 60-lb. cans, two in case. Sample 20c. Geo. M. Soward, Cato, N. Y.

FOR SALE—Buckwheat honey in new 60-lb. cans, two to the case and 160-lb. kegs. B. B. Cogshall, Groton, N. Y.

FOR SALE—Clover honey with slight basswood blend, new 60-lb. cans; also buckwheat, 60-lb. cans. H. F. Williams, Romulus, N. Y.

FOR SALE—White and amber honey in 5-lb. pails, packed in cases of 12. R. C. Wittman, St. Marys, Pa.

FOR SALE—One ton clover-basswood honey in 5-lb. pails, 25c a lb. Also fall honey in 60-lb. cans. H. S. Ostrander, Mellenville, N. Y.

FOR SALE—Well-ripened raspberry-clover blend honey in 60-lb. cans. Two cans to case, 25c a lb. Fred Telschow, Waymart, Pa.

FOR SALE—Finest quality extracted clover honey in 10-case lots. Write for prices. Chalton Fowls & Co., Oberlin, Ohio.

FOR SALE—Clover and buckwheat extracted honey. Well ripened. Put up in new 60-lb. cans and 5 and 10 pound pails. H. B. Gable, Romulus, N. Y.

FOR SALE—Well-ripened, thick and rich white-aster honey in 120-lb. cases at 20c f. o. b. Brooksville, Ky. Sample 25c. H. C. Lee, Brooksville, Ky.

For best table honey try a case of Weaver's sweet clover Spanish needle blend, none better. Price 18c in 60-lb. cans. Joe C. Weaver, Cochrane, Ala.

FOR SALE—Finest Michigan basswood and clover honey, well-ripened and of good flavor, put up in 60-lb. cans and 5 and 10 lb. pails.

A. S. Tedman, Weston, Mich.

FOR SALE—White clover honey, almost water white. Put up in new 60-lb. tin cans, two to the case. Write for prices.

D. R. Townsend, Northstar, Mich.

FOR SALE—Finest Michigan raspberry, basswood, and clover honey in 60-lb. cans, 25c per pound. Free sample.

W. A. Latshaw Co., Clarion, Mich.

FOR SALE—New crop extracted clover honey two 60-lb. cans to case, \$30.00 per case; in 5-lb. pails, \$1.50 per pail; packed 12 pails to case or 30 to 50 pails per barrel. H. G. Quirin, Bellevue, O.

FOR SALE—660 lbs. of white clover honey in gallon cans at 25c a lb. f. o. b. Bellevue. Terms, cash with order.

N. B. Querin, R. D. No. 7, Bellevue, Ohio.

FOR SALE—White honey in 60-lb. cans, sample and price on request. Also white clover comb, 24 sections to case. The A. I. Root Co., Inc., 23 Leonard St., New York City.

Extracted honey. New crop white sage, white orange 20c a lb., L. A. alfalfa 15c, white Haitian 12c, amber 11c, Chilian 10c. Beeswax 30c. Walter C. Morris, 105 Hudson St., New York City.

FOR SALE—Cabbage palmetto honey, fine quality, in barrels 15c, in 5-gal. cans \$2.00 per gallon, in 5-lb. pails \$1.00 f. o. b. Florida.

Ward Lamkin, Arcadia, Fla.

FOR SALE—10,000 lbs. A1 quality white sweet clover honey, in new 60-lb. cans. Will sell in quantities to suit. Sample free.

W. D. Achord, Fitzpatrick, Ala.

FOR SALE—Choice clover extracted honey in 60-lb. cans, two to the case, \$24 per case. Selected No. 1 comb honey, 24 sections to case, eight cases to carrier, \$60 per carrier.

J. D. Beals, Oto, Iowa.

FOR SALE—Clover, basswood or buckwheat honey, comb and extracted, by the case, ton, or carload. Let me supply your wants with this fine N. Y. State honey.

C. B. Howard, Geneva, N. Y.

EXTRACTED HONEY—New Western white clover, two 60-lb. cans to case, 20c a lb.; light amber extracted, 2 cans to case, 18c a lb.; extra light Haiti honey, 400-lb. bbls., 14c a lb. All f. o. b. New York, immediate shipment.

Hoffman & Hauck, Inc., Woodhaven, N. Y.

FOR SALE—Clover extracted honey of unsurpassed quality; new cans and cases, prompt shipment. You will be pleased with "Townsend's quality" extracted honey. Not a single pound extracted until long after the flow was over; thus the quality. Would advise intending purchasers to order early, as we have only a half crop. Address with remittance.

E. D. Townsend & Sons, Northstar, Mich.

HONEY AND WAX WANTED

Quote me your best price on clover honey in 60-lb. cans. E. C. Pike, St. Charles, Ills.

BEESWAX WANTED—For manufacture into SUPERIOR FOUNDATION. (Weed Process.) Superior Honey Co., Ogden, Utah.

WANTED—Bulk comb, section, and extracted honey. Write us what you have and your price. J. E. Harris, Morristown, Tenn.

WANTED—Extracted and comb honey. Carload or less quantities. Send particulars by mail and samples of extracted.

Hoffman & Hauck, Inc., Woodhaven, N. Y.

BEE SWAX WANTED—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

WANTED—Beeswax. We are paying 1 and 2c extra for choice yellow beeswax, and in exchange for supplies we can offer a still better price. Be sure your shipment bears your name and address, so we can identify it immediately upon arrival, and make prompt remittance.

The A. I. Root Co., Medina, Ohio.

We buy honey and beeswax. Give us your best price delivered New York. On comb honey state quantity, quality, size, weight per section, and sections to case. Extracted honey, quantity, quality, how packed and send samples.

Chas. Israel Bros. Co., 486-490 Canal St., New York City.

FOR SALE

HONEY LABELS—New designs. Catalog free. Eastern Label Co., Clintonville, Conn.

FOR SALE—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

ROOT'S goods at Root prices. A. W. Yates, 3 Chapman St., Hartford, Conn.

FOR SALE—Barnes foot power saw, used very little, \$50.00. E. E. Lawrence, Doniphan, Mo.

FOR SALE—One-pound jars in two-dozen cases, ten cases or more at \$1.75 per case, f. o. b. factory. A. G. Woodman Co., Grand Rapids, Mich.

FOR SALE—Annual sweet-clover seed, garden-grown, hand-stripped, 1 oz., 50c. Supply limited. Order early. S. Rouse, R. D. No. 2, Ludlow, Ky.

FOR SALE—SUPERIOR FOUNDATION, "Best by Test." Let us prove it. Order now. Superior Honey Co., Ogden, Utah.

ROOT'S BEE SUPPLIES—For the Central Southwest Beekeeper. Beeswax wanted. Free catalog. Stiles Bee Supply Co., Stillwater, Okla.

FOR SALE—Good second-hand empty 60-lb. honey cans, two cans to the case, at 60c per case f. o. b. Cincinnati. Terms, cash with order. C. H. W. Weber & Co., 2146 Central Ave., Cincinnati, O.

FOR SALE—8-frame supplies, 20 colonies bees and 40 supers with foundation, 1 Hatch wax press. Best offer. No disease. Hickory Shade Apiary, Otterville, Mo.

FOR SALE—To reduce stock, crates of 96 one-gallon cans, with bails and three-inch screw caps, at \$17.50 per crate f. o. b. Grand Rapids. A. G. Woodman Co., Grand Rapids, Mich.

Set your wares with Sign Boards, the silent salesmen. Plan now to sell next year's crop with them. Signs made to order. Prices reasonable. Satisfaction guaranteed. Investigate. H. A. Schaefer, Osseo, Wisc.

FLORIDA BEEKEEPERS—You can save money by placing your order for Root's Bee Supplies with us. We carry the complete line. Will buy your beeswax. Write for catalog. Crenshaw Bros. Seed Co., Tampa, Fla.

FOR SALE—Good second-hand double-deck comb-honey shipping cases for $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$ sections, 25c per case, f. o. b. Cincinnati. Terms, cash with order. C. H. W. Weber & Co., 2146 Central Ave., Cincinnati, Ohio.

FOR SALE—Comb foundation which satisfies the most particular beekeeper. Wax worked at lowest rates. E. S. Robinson, Mayville, N. Y.

PORTER BEE ESCAPES save honey, time and money. Great labor-savers. For sale by all dealers in bee supplies. R. E. & E. C. Porter, Lewistown, Ills.

FOR SALE—Genuine White Annual Sweet Clover. Garden-grown on our grounds and guaranteed pure. New crop seed, 1 lb., \$5.00; $\frac{1}{4}$ lb., \$1.50; 1 oz., 50c, all postpaid. Henry Field Seed Co., Shenandoah, Iowa.

FOR SALE—Ten 10-frame Root KD hives; 10 10-frame extra hive bodies; 25 lbs. medium brood foundation; 200 frames; 10 10-frame queen-excluders, good as new. Will sell at a bargain. Inquire of H. C. Green, 939 West River, Elyria, Ohio.

FIVE-GALLON SECOND-HAND CANS—Buy supply now for next season as price advancing. In good condition, two to a case, 50c per case or 100-case lots at 40c per case f. o. b. New York. Hoffman & Hauck, Inc., Woodhaven, N. Y.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey-gatherers as can be found; May to August, untested, each, \$2.00; six, \$8.00; doz., \$15.00; tested, \$4.00; breeders, \$5.00 to \$20.00. J. B. Brockwell, Barnetts, Va.

FOR SALE—500 pounds of Dadant's light brood foundation for Hoffman frames, put up in boxes holding 50 pounds net. This foundation is in the best of shape, the same as I received it. I will not accept orders for less than one box. Price, 75c per pound. M. E. Eggers, Eau Claire, Wisc.

FOR SALE—Root's Extractors and Smokers, Dadant's Foundation, and a full line of Lewis' Bee-ware. Our new price list will interest you. We pay 38c in cash, and 40c in trade for clean yellow beeswax delivered in Denver. The Colorado Honey Producers' Association, 1424 Market St., Denver, Colo.

FOR SALE—An old good book, "The Winter Care of Horses and Cattle," by a great farmer, the late T. B. Terry. Mr. A. I. Root urged Mr. Terry to write this book, and he wrote the publisher's preface for the work. Any one who owns a cow or horse should own this book. We now have left only 150 copies of this paper-covered booklet of 50 pages. These we will sell to the first 150 people who send us 20c for a copy.

The A. I. Root Co., Medina, Ohio.

REAL ESTATE

LOCATION FOR SALE—Four acres, good six-room house, barn and store house in Alapaha, Ga. Good town, healthful and never-fail bee location. Could include 100 colonies bees in the best condition. Priced to sell. S. E. Jones, Alapaha, Ga.

WANTS AND EXCHANGE

WANTED—Several bee-outfits (preferably near home). H. G. Quirin, Bellevue, Ohio.

WANTED—Foot-power lathe and foot-power saw. John Rick, Reading, Pa.

WANTED—To rent small fruit farm with suitable place for poultry and bees. Will buy apiary in connection. Location preferred, Iowa or northern Missouri. Write Box 231, Greeley, Iowa.

OLD COMBS WANTED—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1920 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

WANTED—Old combs and cappings for rendering on shares. Our steam equipment secures all the wax. Superior Honey Co., Ogden, Utah.

WANTED—A Barnes saw outfit for cash. Describe fully age, etc., tools if any. B. S. Underhill, Litchfield, Ohio.

WANTED—Shipments of old combs and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendered. The Fred W. Muth Co., Pearl and Walnut Sts., Cincinnati, O.

WANTED to correspond with parties having bees in 10-frame standard hives, that will lease them on shares. Will give good contract and references. Have a good location in southwest Iowa. W. A. Jenkins, 144 Simmons St., Galesburg, Ills.

BEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, R. D. No. 3, Vincennes, Ind.

Hardy Italian queens, \$1.00 each. W. G. Lauer, Middletown, Pa.

Golden Italian queens, untested, \$1.25 each; dozen, \$12.00. E. A. Simmons, Greenville, Ala.

PACKAGE BEES—On all orders booked before Jan. 1, 1921, with cash in advance, I will make 1920 prices. E. A. Harris, Albany, Ala.

FOR SALE—30 stands of bees, \$9.00 each; 8-frame hives. No disease. Bargain to early buyers. H. D. Hopkins, Otterville, Mo.

PACKAGE BEES and PURE ITALIAN QUEENS. Booking orders now for spring delivery. Circular free. J. E. Wing, 155 Schiele Ave., San Jose, Calif.

FOR SALE—Vigorous leather-colored Italian queens, famous three-banded stock. Bees in two and three-pound packages. Write for information and prices for 1921. Shipments begin about May 1. C. M. Elfer, St. Rose, La.

I am ready now to book your orders for bees in 2 and 3-pound packages for next May and June delivery, also 3-banded Italian queens and nuclei. Write for price list. C. H. Cobb, Belleville, Ark.

We are now booking orders for early spring delivery of two and three frame nuclei, with untested or tested queens. Write for prices and terms. We also manufacture cypress hives and frames. Sarasota Bee Co., Sarasota, Fla.

FOR SALE—Three-banded and golden queens and bees in comb packages for spring delivery. No disease. Safe arrival and satisfaction guaranteed. Try me for price, quality and service. M. Voince, Bunkie, La.

I am now booking orders for three-banded Italian queens and nuclei for spring delivery. Untested queens, April 1 to May 1, \$1.25 each. May 1 to July 1, \$1.00. Discount on large orders. Nuclei, one three-frame, \$4.50; 50 or more, \$4.00 each. L. R. Dockery, Carrizo Springs, Texas.

FOR SALE—Three-band leather-colored Italian bees and queens, two-pound packages only. Shipping season from April 15 to May 20. Safe arrival and satisfaction guaranteed. No disease. Order early if you wish prompt delivery. Write for price list. J. M. Cutts, Montgomery, R. D. No. 1, Ala.

DAY-OLD QUEENS—Superior improved Italians. Mailed in safely-introducing cages. Safe arrival and satisfaction guaranteed anywhere in the U. S. and Canada. Send for circular. Order in advance. Prices, April to October: 1, 75c, 12, \$7.20; 100, \$60. James McKee, Riverside, Calif.

BEES BY THE POUND — Also QUEENS. Booking orders now. FREE circulars give details. See larger ad elsewhere. Nueces County Apiaries, Callallen, Texas. E. B. Ault, Prop.

The A. I. Root strain of leather-colored Italians that are both resistant and honey-gatherers. These queens and bees need no recommendation for they speak for themselves. Orders taken now for next season. Untested, \$1.50; selected untested, \$2.00; tested, \$2.50; select tested, \$3.00. Circular free. For larger lots, write, A. J. Pinard, Morgan Hill, Calif.

FOR SALE—Pure Italian queens, Golden or leather-colored, packages and nuclei; 1 untested queen, \$1.50; 6, \$7.50; 12, \$13.50; 50, \$55.00; 100, \$100; virgins, 50c each; packages 24 and under, \$2.25 per pound; 25 and over, \$2.00 per pound; nuclei, 1-frame, \$4.00; 2-frame, \$6.00; 3-frame, \$7.50; queens extra. One-story 10-frame colony with queens, \$12.00. Golden Star Apiaries, R. 3, Box 166, Chico, Calif.

HELP WANTED

WANTED—Young man, good character, worker, wants work in modern apiary to learn business. Any location, start any time. J. F. Elliott, 45 So. Portland Ave., Brooklyn, N. Y.

We need here in January for established apiary work, a proficient beekeeper. Conditions and prospects goods. Write full details. E. L. Sechrist, Monte Cristi, Dominican Republic, West Indies.

WANTED for the season of 1921 an experienced queen-breeder. State experience had, reference, age, height, weight. W. J. Forehand & Sons, Ft. Deposit, Ala.

WANTED—Two industrious young men to help in our bee business for the season of 1921. Begin work March 1. Good chance to learn the bee business. The Farmer Apiaries, Ramer, Ala.

WANTED—Young man to learn queen and package business, will pay small wages and furnish board. Will increase wages as party learns business. To begin March 1. J. M. Cutts, Montgomery, R. D. No. 1, Ala.

SITUATIONS WANTED

A young man, 26, single, college graduate, becoming interested in bees and honey wishes to connect himself with a concern of that nature. At present employed on foods. Can furnish very good reference. Julius Nemetz, Mt. Carroll, Ills.

Books and Bulletins

DADANT'S SYSTEM OF BEEKEEPING.

This is the title of a new book by C. P. Dadant, covering completely the Dadant system of keeping bees with the large hives which they have used for so many years with such success. In view of the fact that large hives, and that means big colonies, are now beginning to receive the attention that they properly merit, we believe that this work will be well received. It is well printed, nicely illustrated, and covers 115 pages.

Special Notices by A. I. Root

"PLANNING THE FARMSTEAD."

The above is the title of a most valuable farmers' bulletin, No. 1132, sent by the Department of Agriculture. In the near future farming is going to be managed somewhat as we manage our great manufacturing enterprises. When I was a child, one of

seven in our family—three older and three younger—we used to get our water from a spring at the bottom of a hill. It was very nice soft water, but it had to be lugged a sixteenth of a mile uphill. After a while we built a cistern; but the cold spring water we so much preferred for drinking that we seven children had exercise "a-plenty" in carrying water uphill.

Well, there are not always seven children in the family. Oftentimes the overworked farmer's wife has to carry the water. But the time is coming when the farmer's wife will have running water right in the kitchen, and, perhaps, both hot and cold.

This matter of providing good water near at hand without any great outlay of money to get it, is only one of a dozen or more things to be considered. Having a house away back from the highway I used to think was a big blunder. But this bulletin gives some very good reasons for the house being a certain distance away from the highway. I used to think, too, that (to save steps) the barn and out-buildings should be close to the dwelling. The bulletin makes some suggestions why horses, cows, and chickens should not be very close to the dwelling, and suggests that the vegetable garden should be between the two. It also discusses the arrangement of buildings and a lot of other things of vital importance that every farmer, and especially the farmer's wife, will recognize and assent to when they read about it. Of course we can not well change buildings, roads, wells, etc., that are already located; but there are certain things that can be changed to save useless travel, etc., without very much trouble or expense.

This bulletin has eight illustrations and 24 pages. For a copy write to the Department of Agriculture, Washington, D. C., asking for the above.

ORDERS NOW BOOKED

for 1921 shipments of bees and queens. Send for descriptive circular and price list.

R. V. STEARNS,
Brady, Texas.

PATENTS Practice in Patent Office and Court
Patent Counsel of The A. I. Root Co.
Chas. J. Williamson, McLachlan Building,
WASHINGTON, D. C.

For Immediate Sale!

We have a quantity of 5-lb and 10-lb. pails on hand. Write us at once for prices. We will make them right.

THE A. I. ROOT COMPANY OF IOWA
Council Bluffs, Iowa.

Beekeepers

NO DOUBT YOU WANT TO SAVE MONEY ON YOUR BEE SUPPLIES FOR NEXT SPRING. NOW IS A GOOD TIME TO DO IT. TAKE ADVANTAGE OF OUR DECEMBER DISCOUNT AND WRITE TODAY FOR PRICES AND CATALOG. OUR PRICES WILL SAVE YOU MONEY. ALL MATERIAL AND WORKMANSHIP GUARANTEED. TEXAS BEEKEEPERS SHOULD ADDRESS A. M. HUNT OF GOLDTHWAITE, TEXAS. HE SELLS THE BEST. LEAHY MFG. CO., Higginsville, Mo.



EVERGREENS

Hill's Hardy Tested Varieties

Fine for windbreaks, hedges and lawn planting. All hardy, vigorous and well rooted. We ship everywhere. Write for free Evergreen book. Beautiful Evergreen Trees at moderate prices.

D. Hill Nursery Co., Box 246 Dundee, Ill.

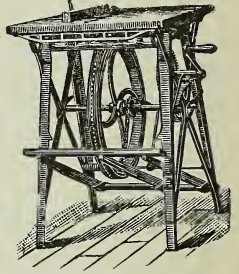
BARNES' Hand and Foot Power Machinery

This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

Machines on Trial

Send for illustrated catalog and prices.

W. F. & JOHN BARNES CO
545 Ruby Street
ROCKFORD, ILLINOIS



INDIANOLA APIARY

will furnish 3-banded Italian bees and queens: Untested queens, \$1.00 each; tested, \$1.50 each. One pound bees, no queen, \$2.00. No disease.

J. W. SHERMAN, VALDOSTA, GA.

SWEET CLOVER 4⁵⁰/_{BU.}

Unhulled White Blossom Sweet Clover. For winter or early spring sowing. Builds up land rapidly and produces heavy Money Making Crops while doing it. Excellent for pasture and hay. Easy to start. Grows on all soils. Have Hulled Scarified Seed at Low Prices. Sold on a Money Back Guarantee. Write today for Big Seed Guide. Free. American Mutual Seed Co. Dept. 951 Chicago, Ill.



Raise Guinea PIGS FOR US!

We need men and women, boys and girls everywhere to raise Guinea Pigs for us. We tell you where to get them, show you how and buy all you raise. Big opportunity for money making. Thousands needed weekly.

Easy to Raise—Big Demand No special knowledge.

Large Profits experience or equipment needed.

They breed the year round—are very prolific—require but little space or attention. Pay better than poultry or squabs—cost less to house, feed, keep, easier raised—less trouble, market guaranteed.

Particulars, contract, and booklet how to raise **FREE**

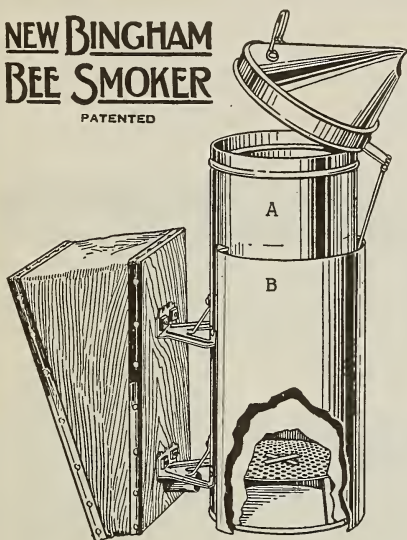
CAVIES DISTRIBUTING COMPANY

3145 Grand Avenue, Kansas City, Mo.

Largest Guinea Pig breeders and distributors in America.

NEW BINGHAM BEE SMOKER

PATENTED



The Bingham Bee Smoker has been on the market over forty years and is the standard in this and many foreign countries. It is the all-important tool of the most extensive honey producers in the World. It is now made in five sizes.

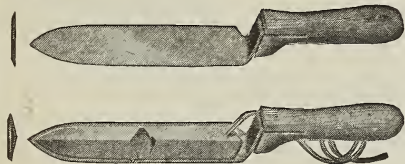
	Size of stove inches.	Shipping weight lbs.
Big Smoke, with shield.....	4 x10	3
Big Smoke, no shield.....	4 x10	3
Smoke Engine.....	4 x7	2 1/4
Doctor.....	3 1/2 x7	2 1/4
Conqueror.....	3 x7	1 3/4
Little Wonder.....	3 x5 1/2	1 1/2

The Big Smoke has just been produced in response to a demand for a larger-size smoker, one that will hold more fuel, require filling less often, from extensive bee handlers.

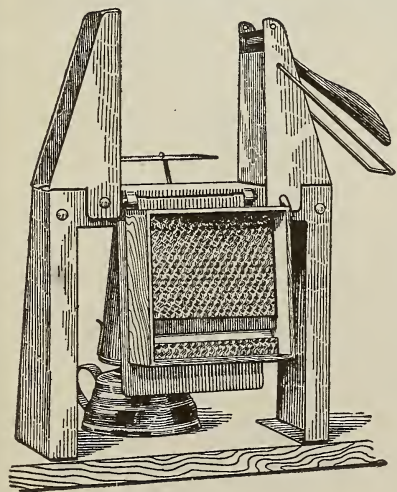
East Lansing, Mich., May 10, 1920.
A. G. Woodman Co., Grand Rapids, Mich.

Dear Mr. Woodman:—I have now had several weeks' opportunity to try out the New Smoker called the Big Smoke, with the guard about the fire pot. The smoker is even more than I anticipated and unless something else is brought out that is still better, you can be assured that this particular one will be standard equipment for this place from now on.

B. F. Kindig,
State Inspector of Apiaries.



The Genuine Bingham Honey Uncapping Knife is manufactured by us here at Grand Rapids and is made of the finest quality steel. These thin-bladed knives, as furnished by Mr. Bingham, gave the best of satisfaction, as the old timers will remember. Our Perfect Grip Cold Handle is one of the improvements.



The Woodman Section Fixer, a combined section press and foundation fastener, of pressed steel construction, forms comb-honey sections and puts in top and bottom foundation starters, all at one handling. It is the finest equipment for this work on the market.

TIN HONEY PACKAGES

- 2 lb. Friction top cans, cases of 24.
- 2 lb. Friction top cans, crates of 612.
- 2 1/2 lb. Friction top cans, cases of 24.
- 2 1/2 lb. Friction top cans, crates of 450.
- 5 lb. Friction top pails, cases of 12.
- 5 lb. Friction top pails, crates of 100.
- 5 lb. Friction top pails, crates of 200.
- 10 lb. Friction top pails, cases of 6.
- 10 lb. Friction top pails, crates of 100.

Ask for our special money-saving prices, stating quantity wanted.

Send us an itemized list of your requirements and let us figure on your goods for 1921. Our new catalog will be issued about Jan. 1.

A. G. Woodman Co., Grand Rapids, Mich., U. S. A.

Sell Your Crop of Honey to

Hoffman & Hauck, Inc.
Woodhaven, N. Y.

No Lot too large or small, and Purchase
your

Containers, Prompt Shipment

2½-lb. Pails, case 2 doz.....	\$1.90 each
Crates of 100	\$ 7.25
5-lb. Pails, case 1 doz.....	\$1.80 each
Crates of 100	\$11.00
10-lb. Pails, case ½ doz....	\$1.60 each
Crates of 100	\$17.50
5-gal. cans used 2 to case....	50c case
WHITE FLINT GLASS JARS, SCREW CAPS	
Qt. Honey 3-lb. size 1 doz. cartons	\$1.25 each
1-lb. " 2 doz. "	1.70 each
½-lb. " 3 doz. "	2.00 each

QUALITY BEE SUPPLIES

FROM A
RELIABLE HOUSE

Without fear or favor I place my
BEE WARE and SERVICE before you.

It is the small annoyances that often
grow into disastrous results. Avoid the
so-called "little losses" by using MON-
DENG'S goods. Quality is first—save
time when you put goods together by get-
ting supplies that are accurately made.
Service is next—no delays when bee sup-
plies are ordered from my factory.

I am ready to meet urgent needs.
Send for my latest price-list.

CHARLES MONDENG

146 Newton Ave. N. and
159 Cedar Lake Rd.

MINNEAPOLIS, MINNESOTA.

MASON BEE SUPPLY COMPANY

MECHANIC FALLS, MAINE

From 1897 to 1920 the Northeastern
Branch of The A. I. Root Company

Prompt and Efficient Service
BECAUSE—Only Root's Goods are sold.
It is a business with us—not a side line.
Eight mails daily.
Two lines of railway.
If you have not received 1920 catalog send name at once.



"Best" Hand Lantern

A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc. needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. Agents wanted. Big Profits. Write for Catalog. **THE BEST LIGHT CO.**
306 E. 5th St., Canton, O.

SPECIAL SALE OF

HONEY JARS

We have a surplus stock of
taper jars, holding 9 ounces, put
up two dozen in a case, including
lacquered tin tops, at our Phila-
delphia branch. The cost of these
jars has more than doubled in the
past three years. We offer for a
short time the surplus stock avail-
able at 85 cents per case, \$8.00
for 10 cases, \$75.00 for 100 cases.
Prices f. o. b. Philadelphia.
Send your order direct to

THE A. I. ROOT COMPANY
Medina, Ohio

9-oz. Taper Jar

Beeswax Wanted

In big and small shipments,
to keep Buck's Weed-pro-
cess foundation factory go-
ing. We have greatly in-
creased the capacity of our
plant for 1920. We are
paying higher prices than
ever for wax. We work
wax for cash or on shares.

Root's Bee-supplies

Big stock, wholesale and
retail. - Big catalog free.

Carl F. Buck

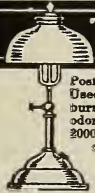
The Comb-foundation Specialist
Augusta, Kansas

Established 1899

NEW ENGLAND

BEEKEEPERS will find a complete stock of up-to-date supplies here. Remember we are in the shipping center of New England. If you do not have a 1920 catalog send for one at once.

H. H. Jepson, 182 Friend St., Boston, Mass.



The "BEST" LIGHT

Positively the cheapest and strongest light on earth. Used in every country on the globe. Makes and burns its own gas. Casts no shadows. Clean and odorless. Absolutely safe. Over 200 styles. 100 to 2000 Candle Power. Fully Guaranteed. Write for catalog. AGENTS WANTED EVERYWHERE.

THE BEST LIGHT CO.
306 E. 5th St., Canton, O.

World's Best Roofing at Factory Prices

"Reo" Cluster Metal Shingles, V-Crimp, Corrugated, Standing Seam, Painted or Galvanized Roofings, Sidings, Wallboard, Paints, etc., direct to you at Rock-Bottom Factory Prices. Positively greatest offer ever made.

Edwards "Reo" Metal Shingles
cost less; outlast three ordinary roofs. No painting or repairs. Guaranteed rot, fire, rust, lightning proof.

Free Roofing Book
Get our wonderfully low prices and free samples. We sell direct to you and save you all in-between dealer's profits. Ask for Book No. 1283.

LOW PRICED GARAGES
Lowest prices on Ready-Made Fire-Proof Steel Garages. Set up any place. Send postal for Garage Book, showing styles.

THE EDWARDS MFG. CO.,
1283-1288 Pike St., Cincinnati, O.

FREE Samples & Roofing Book

FOR SALE—5000 fences for 4 x 5 x 1 3/4 sections to be used with slats, \$4.00 per 100; 50 ten-frame Danzenbaker comb honey supers, nailed and painted, good as new, \$2.00 each; 500 Alexander feeders, 30c each, f. o. b. Montgomery.
J. M. Cutts, Montgomery, Ala.

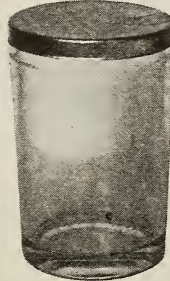
Large, Hardy, Prolific Queens

Three-band Italian only. Pure mating and safe arrival guaranteed.

One, \$1.30; 6, \$7.50; 12, \$13.50; 100, \$110.00

Buckeye Bee Co., Lock Box 443 Massillon, Ohio

SPECIAL SALE OF PRIVATE TUMBLERS



We have a surplus stock of private tumblers, holding 6 1/2 ounces, put up two dozen in a case, including tin tops, at our Philadelphia branch. The cost of these tumblers has more than doubled in the past three years. We offer for a short time the surplus stock, available at 80c per case, \$7.50 for 10 cases, \$70.00 for 100 cases. Prices F. O. B. Philadelphia. Send your order direct to

6 1/2 Oz. Private Tumbler.

THE A. I. ROOT CO.,
Medina, Ohio.

GRASS SEED

FREE SAMPLES

Wonderful Value Wholesale Prices Highest Quality
Don't fail to investigate these bargains. Re-cleaned Tested Timothy \$3.95 bu. Sweet Clover unhulled, \$4.50 bu. Alsike Clover & Timothy \$5.85 bu. Sudan Grass 81-2c lb. Prices cover some grades of limited quantities. Clover and other Grass & Field Seeds at low prices. All sold subject to State or Government Test under an absolute money-back guarantee. We specialize in grass and field seeds. Located to save you money and give quick service. We expect higher prices—Buy now and save big money. Send today for our money-saving Seed Guide, explains all—free.

American Mutual Seed Co. Dept. 651 Chicago, Ill

BEEKEEPERS!

Place your order for Supplies NOW and take advantage of the Early Order Cash Discount, 5 per cent for December, 4 per cent for January. Our stock of Standard Hives, Supers, Hive Bodies, Brood Frames, Foundation, and all other Standard Goods is complete. "If you want the Cheapest, buy the Best."

Our Aim is to give Prompt Service, Highest Quality, and Guaranteed Satisfaction to our customers. Send us a trial order; we feel confident you will be satisfied.

Our annual catalog will be ready for mailing, January, 1921. It's free for the asking.

AUGUST LOTZ COMPANY, BOYD, WIS.

Tin Containers

A Complete Line. Your Orders Solicited for

Friction-Top Cans and Pails

Five-Gallon Square Cans
With Screw or Solder Cap

Packers' Cans
Open Top or Hole and Cap Styles

Wax Sealing Preserving Cans

Unexcelled manufacturing and shipping facilities.

W. W. BOYER & CO., INC.
Baltimore, Md.

IT IS GETTING NOISED AROUND that E. S. Robinson is turning out a first-class quality of comb foundation, and selling it at a price which means a big saving to the beekeepers.

Although my product has been on the market only two seasons, it has pushed its way to the front so rapidly that last season I found it necessary to turn down orders totaling thousands of pounds.

If you wish to make sure of your supply of foundation for the coming season, remember that you must **order early**.

I guarantee my foundation to be made of clean, pure beeswax, with perfect impression, and cut to exact size with all edges perfect.

Your own wax worked into foundation at lowest rates. Send for price list.

E. S. ROBINSON

Mayville, N. Y.

Our Food Page—Continued from page 734.

in cold water. When done pour on a buttered platter and when cool enough to handle pull until white, working in the vanilla while pulling it. This taffy will not crystallize as a plain sugar taffy is sure to do in a day or so, but as the surface becomes moist and sticky after standing it is well not to cut in pieces until shortly before it is to be eaten. If a chocolate taffy is desired, a square of chocolate or 2 tablespoons of cocoa may be added to it when boiling.

CARAMELS.

½ cup honey 2-3 cup cream or evaporated milk.
2 cups light brown sugar
1 teaspoon vanilla 1 cup chopped nuts

Boil the sugar, cream, and honey with as little stirring as possible until the thermometer registers 256 degrees F. or when it forms a firm ball when tested in ice-cold water; add nuts and vanilla and pour at once into a flat buttered pan or platter. When cold cut in squares with a sharp knife and wrap in waxed paper.

If the chocolate flavor is desired, grate a square of chocolate into the boiling syrup.

PANOCHÉ.

2 cups light brown sugar ½ cup milk
⅓ cup (2 level table- 1 cup chopped nuts
spoons) honey 1 teaspoon vanilla
½ cup cream or evaporated milk

Boil the first four ingredients until the thermometer registers exactly 234 degrees F., remove from the fire and beat and stir until it begins to thicken, add the nuts and vanilla and beat until nearly cool, pour into a buttered platter and cut in squares when firm. 234 degrees is what is sometimes called the "thread" stage. The syrup will "hair" at 238 degrees, but should not be cooked that long for fudge or panoché.

POPCORN BALLS.

½ cup honey 2 teaspoons butter
2 cups sugar ¾ teaspoon salt
2-3 cup water 3 quarts popped corn

Cook the first 4 ingredients together until the thermometer registers 270 degrees F. or until a little tried in cold water is brittle. Pour slowly over the popped corn which has been sprinkled with the salt, mix well and form into balls, using as little pressure as possible. Either brown or white sugar may be used.

NUREMBERG LEBKUCHEN.

(Repeated by request.)

1 pt. (2 cups) brown sugar ½ cup ground candied orange peel, lemon peel, and citron
1 pt. honey
1 pt. molasses 1 cup nut meats chopped
1 tablespoon butter 1 tablespoon cinnamon
1 tablespoon lard 1 tablespoon ground cloves
1 pt. sour cream
2 scant tablespoons soda

Warm the butter and lard and mix with the sugar, honey, and molasses; add the sour cream in which the soda has been dissolved, the dry ingredients, and flour enough to make a stiff cooky dough; put in a cool

place and leave 8 or 10 hours or until the next morning. Then roll out, cut in shapes, and bake in a moderate oven. A little more flour may be added in the morning if necessary to roll. When cold frost with an icing made from pulverized sugar and water and flavored with a little lemon. Put in stone jars, cover with paper, and tie and keep in cool place a month before using.

CHRISTMAS PUDDING.

- | | |
|------------------------------------|------------------------------|
| 1 cup suet chopped fine | 1 cup sour milk |
| 1 teaspoon salt | 2 1/2 to 3 cups sifted flour |
| 1 cup honey | 1 teaspoon soda |
| 1 egg | 1 teaspoon baking powder |
| 1/2 cup raisins cut fine | 1 teaspoon cinnamon |
| 1/2 cup dates cut fine or currants | 1/2 teaspoon cloves |
| 1/4 cup citron cut fine | grated rind of 1/2 orange |

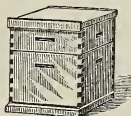
Blend the suet with the honey, beat in the egg, add the sour milk, and then the flour in which the other dry ingredients have been sifted, adding the fruit which has been dusted with a little of the flour last. The pudding should be about as stiff as fruit cake. Steam in well-oiled mold for three hours or more. It may be steamed in several small molds to be used as gifts.

"Special Crops" A high-class illustrated monthly journal devoted

to the Growing and Marketing of Ginseng, Golden Seal, Senega Root, Belladonna, and other unusual crops. \$1.00 per year. Sample copy 10c. Address

Special Crops, Box G, Skaneateles, New York

BEE SUPPLIES



We are prepared to give you value for your money. Our factory is well equipped with the best machinery to manufacture the very best bee supplies that money can buy. Only the choicest material suitable for beehives is used. Our workmanship is the very best. Get our prices and save money.

EGGERS BEE SUPPLY MFG. COMPANY., INC.

Eau Claire, Wis.



Completely Destroys the Weed Growth

More than that, the BARKER breaks the hardest crust into a level, porous, moisture-retaining mulch—all in the same operation.

A ten-year-old boy can run it—do more and better work than ten men with hoes. Saves time and labor, the two big expense items.

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Eight reel blades revolve against a stationary underground knife — like a lawn mower. "Best Weed Killer Ever Used." Works right up to plants. Cuts runners. Aerates the soil. Has leaf guards, and shovels for deeper cultivation—3 garden tools in 1.

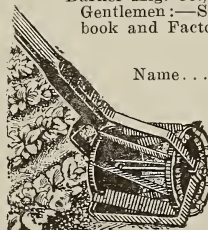
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Name

Town

State

R. F. D. or Box

NOTICE!

In our plans to make the equipment at Council Bluffs absolutely up-to-the-minute and complete in every way, so that we can serve western beekeepers even more promptly and completely, we are now installing an AIRCO FOUNDATION mill. We hope to be turning out that famous and supreme foundation on our mills in a few weeks. And we are going to use great quantities of wax in the process. Send us your combs or your rendered wax, and we will be glad to work it into AIRCO on trade basis, or remit cash if you prefer. We are paying top market prices, both in trade and cash. Let us send you a shipping tag, and quote on your next season's need in foundation.



THE A. I. ROOT CO. OF IOWA
COUNCIL BLUFFS, IOWA.

“falcon” helps swell the nation’s honey crop

The last honey crop of the United States is estimated 250,000,000 pounds, which at the present high prices means a value of fully \$50,000,000.00. (News item.)

“Falcon” bees and bee supplies played an important part in the attainment of these figures.

“Falcon” reputation for quality is nationwide and universal. Exacting bee-men depend upon “Falcon” for the suc-

cess of their honey crops. We urge you to place orders now for early spring delivery.

We have an excellent dealer’s proposition for beekeepers who wish to handle “Falcon” supplies. Write

FALCONER MANUFACTURING CONCERN
Falconer (near Jamestown) New York

Where the best beehives come from.

THE AULT 1921 BEE SHIPPING CAGE

Patent Pending

- 1st. It is a dark cage, much more so than the open screen cages we have been shipping in in the past.
- 2nd. The feeder uses pure sugar syrup. Better than Honey or Candy to ship on; it contains water as well as feed.
- 3rd. Feeders are made more substantial, 1-3 larger, and have screw cap that will not jar out.
- 4th. Instead of one small hole, we now use a cotton duck washer in the screw cap that has proven to overcome all the objections found to the liquid feed method.
- 5th. The Cage is one piece screen wire protected by thin boards on the outside. Send for free circular describing the cage in detail, prices, etc.

Queens---Package Bees---Queens

ORDERS ARE COMING DAILY FOR 1921 SHIPPING.

4 per cent Cash Discount for Nov., 3 per cent for Dec., 2 per cent for Jan. on all orders. Or will book your order with 20 per cent down, balance just before shipping. My Free Circular gives prices in detail, etc. Safe delivery Guaranteed within 6 days of shipping point. We ship thousands of pounds all over U. S. A. and Canada.

1-pound pkg. bees \$3.00 each, 25 or more \$2.85 each.

2-pound pkg. bees \$5.00 each, 25 or more \$4.75 each.

3-pound pkg. bees \$7.00 each, 25 or more \$6.65 each.

F. O. B. Shipping Point. Add price of queen wanted.

- | | | | |
|--|-------------|--|-------------|
| 1 Untested Queen, \$2.00 each; 25 or more | \$1.75 each | 1 Tested Queen, \$3.00 each; 25 or more | \$2.70 each |
| 1 Select Unt. Queen, \$2.25 each; 25 or more | \$2.00 each | 1 Select Tested, \$3.50 each; 25 or more | \$3.00 each |

NUECES COUNTY APIARIES

CALLEN, TEXAS

E. B. AULT, Proprietor

Merry XMAS Mr. Beekeeper

After a prosperous season, you are planning to celebrate by having an extra Merry Christmas. We wish you all the best and merriest of times for this joyous season.

We are now beginning our 1921 season, and the wise beekeeper will realize that this is the time to send in his order. Why wait until the "rush" begins and so many orders are coming in.

We have just sent in our stock order, and shipments will soon be on the way. We shall have lots of foundation and other goods on hand.

Send in your order now, and we can give you the very best of our attention.

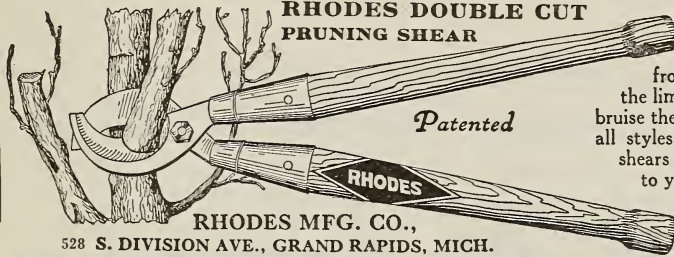
Write us for quotations, send for our catalog, we are always glad to receive inquiries.

We allow 5% early order discount for this month.

SEND IN YOUR ORDER NOW.

F. A. Salisbury

1631 West Genesee Street
Syracuse, N. Y.



RHODES DOUBLE CUT PRUNING SHEAR

Patented

RHODES MFG. CO.,
528 S. DIVISION AVE., GRAND RAPIDS, MICH.

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. All shears delivered free to your door.

Write for circular and prices.

QUEENS



In announcing our policy for 1921, we feel that the few changes we make will be to the mutual advantage of our customers and ourselves. The demand for our queens has become such that we will discontinue the sale of bees in packages, and will devote all our time and attention to rearing and developing our strain of Italians that have proved so satisfactory to our customers in the past. We will sell but **ONE GRADE OF QUEENS**, and that **THE VERY BEST** that we are capable of producing. Our original stock was procured from Mr. Doolittle and by constantly breeding for desirable qualities, and by rearing all queens under the most favorable conditions, queens of high standard are the result.

WE ARE NOW BOOKING ORDERS for 1921 delivery, and those wishing to get queens at any specific date should place orders early, as we fill orders in rotation. Our shipping season is from May 15 to Oct. 15.

Prices for 1921.

1 to 4 inclus., \$3.00 ea.
5 to 9 inclus., \$2.90 ea.
10 or more, \$2.80 ea.
Breeding Queens,
\$12.00 each

EVERY QUEEN is reared by me personally, and by me inspected before I put her into the mailing cage. Safe arrival, pure mating, and satisfaction is our guarantee. We are specializing on **BREEDING STOCK**. We do not sell package bees, nuclei, or virgin queens.

Write for our 1921 Catalog.

JAY SMITH

ROUTE 3, VINCENNES, INDIANA

52 Christmas Reminders in a Year

Fifty-two renewals of your Christmas morning delight when the postman makes his weekly call with

The Youth's Companion

Still \$2.50 a Year

And still the same in purpose—to provide the best of reading for young and old, to promote the welfare of the Family everywhere, in every way, at all times.

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The most for the money—the greatest variety—the highest quality—and in ideal *weekly* portions. Entertaining, suggesting, informing, inspiring and full of fact and fun.



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| 1. THE YOUTH'S COMPANION for 1921
52 Splendid Weekly Issues X-1 | } \$2.50 |
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| <hr/> | |
| 1. THE YOUTH'S COMPANION . \$2.50 | } \$3.50 |
| 2. McCALL'S MAGAZINE . . . 1.50 | |
| 12 Monthly Fashion Numbers | |

THE YOUTH'S COMPANION, BOSTON, MASSACHUSETTS



TRADE-MARK

ANOTHER CHRISTMAS and ANOTHER NEW YEAR

Haven't all of us connected in any way with beekeeping in America much to be grateful for at this Christmas time, and much to hope for from the New Year?

Just to suggest Europe and the hard and terrible conditions over there, involving the beekeepers as much as any other class, makes us glad indeed that we are here and not there—here where there are law and order and peace and plenty.

In these days of readjustment in this country, when we are getting back to normal, getting back to times when a dollar will again be a dollar, the beekeeper with his honey is better off generally than the farmer with his wheat and wool and fruit—and where he can secure or make a local market for his product he is far better off than the general farmer.

Looking forward to the New Year: It will continue to be a time of readjustment, but not of so violent readjustment as is now going on. Honey will begin the new year better and more widely advertised to American consumers than ever before. It has fair promise to be more extensively used than ever before, and the beekeeper can hope with us that the abnormal and monstrosly high prices charged today for the iron and steel and tin and for the white pine and the basswood that go into his supplies, will have to drop, so that his supplies may be made cheaper and the prices reduced just as fast as costs will permit. We hope for this as much as any beekeeper can.

Then, recalling our beekeeping blessings here and now in America, and hoping for a prosperous season in 1921, let us wish each other a Merry Christmas and Happy New Year, and face the future with good courage and good sense.

THE A. I. ROOT COMPANY

M E D I N A O H I O

TESTING DADANT'S FOUNDATION

From the first year of sale of DADANT'S FOUNDATION the Dadant firm had at least three hundred colonies of bees.

The tests for satisfactory foundation were made with their own bees, their aim being to manufacture and sell only such goods as would be satisfactory to their own bees, in their own apiary.

Every square inch equal to sample in every respect was the aim, and it was done at all times as thousands can testify who have used these goods.

Not satisfied with the mills they were using, they tried different workmen until they got a mill that would make a foundation without "fishbone," as the beekeeper called it; and also got mills that would make foundation of different weights from five square feet to the pound for brood to thirteen square feet for sections.



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Now the Dadant apiaries have increased to nearly a thousand colonies in ten apiaries. The different locations give a chance for tests in heavy flows, in light flows, in a dearth, for fall crop, for spring. All, so that the proper tests can be made, and only the most satisfactory foundation sent out to the many customers.

DADANT'S FOUNDATION

Every inch, every pound, every ton equal to any sample we have ever sent out. Specify it to your dealer. If he hasn't it write us.

DADANT & SONS, HAMILTON, ILL.

CATALOG AND PRICES ON BEE SUPPLIES, BEESWAX, WAX WORKING INTO COMB FOUNDATION, AND COMB RENDERING FOR THE ASKING

Gleanings in Bee Culture

Index for 1920

Published by The A. I. Root Company, Medina, Ohio

Index to Gleanings in Bee Culture

Volume XLVIII

In using this index the reader should not fail to note that it is divided into five departments, namely, General, Editorial, A. I. Root's writings, Contributors, and Illustrations. The index of General includes everything except Editorials, Illustrations, and A. I. Root's writings.

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