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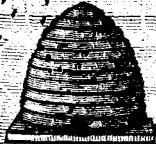
VOL. IV, NO. 40

1888

DECEMBER 26

PUBLISHED EXCLUSIVELY IN THE INTERESTS OF THE HONEY PRODUCER

THE CANADIAN



JOURNAL

THE FIRST \$ WEEKLY IN THE WORLD

ONE DOLLAR PER YEAR

THE GREATEST POSSIBLE GOOD TO THE GREATEST POSSIBLE NUMBER

PUBLISHED BY
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BEETON ONT.

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| C. C. Miller..... | 1 75 | 1 60 |
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THE D. A. JONES Co., LD., Beeton, Ont.

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- A BIRD'S-EYE VIEW OF BEE-KEEPING, by Rev. W. F. Clarke. Price 25c
- SUCCESS IN BEE CULTURE as practised and advised by James Heddon—price in paper cover, 50 cents.
- BEEKEEPERS' GUIDE OR MANUAL OF THE APIARY, by Prof. A. J. Cook. Price, in cloth, \$1.25.
- FOUL BROOD, ITS MANAGEMENT AND CURE by D. A. Jones. Price, 11c. by mail; 10c. otherwise.
- A. B. C. IN CARP CULTURE, by A. I. Root, in paper 50c.
- HONEY, some reasons why it should be eaten, by Allen Pringle. This is in the shape of a leaflet (4 pages) for free distribution amongst prospective customers. Price, with name and address, per 1000, 3.25; per 500, \$2.00, per 250, \$1.25; per 100, 80c. With place for name and address left blank, per 1000, \$2.75; per 500, \$1.70; per 250, \$1.00; per 100, 50c.

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Barnes' Foot Power Machinery

See advertisement on another page. We have just arranged for the sale of these machines, and we can quote a price F.O.B. cars at Toronto (duty and freight paid thereto). On application we will forward catalogue and pricelist free.

THE D. A. JONES Co., LTD.
Beeton, Ont.

PUBLISHERS' NOTES.

We will always be glad to forward sample copies to those desiring such.

Send us the names of three subscribers with \$3 in cash and receive as a premium one C. B. I. Binder.

Send postal card for sample of leaflet, "Honey, some reasons why it should be eaten."

The CANADIAN BEE JOURNAL will be continued to each address until otherwise ordered, and all arrears paid.

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ERRORS. — We make them: so does everyone, and we will cheerfully correct them if you write us. Try to write us good naturedly, but if you cannot, then write to us anyway. Do not complain to any one else or let it pass. We want an early opportunity to make right any injustice we may do.

We can supply Binders for the JOURNAL 55 cents each, post paid, with name printed on the back in Gold letters.

Subscription Price, \$1.00 per Annum. Postage free for Canada and the United States; to England, Germany, etc. 10 cents per year extra; and to all countries not in the postal Union, \$1.00

The number on each wrapper or address-label will show the expiring number of your subscription, and by comparing this with the Whole No. on the JOURNAL you can ascertain your exact standing.

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Space measured by a scale of solid nonpareil of which there are twelve lines to the inch, and about nine words to each line.

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|------------------------|--------|--------|---------|
| 6 lines and under..... | 2.50 | 4.00 | 6.00 |
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THE CANADIAN BEE JOURNAL

| | |
|---|--------|
| AND "Gleanings," semi-monthly..... | \$1.75 |
| " " "American Bee Journal," weekly..... | 1.75 |
| " " "American Apiculturist," monthly..... | 1.75 |
| " " "Bee-Keepers' Magazine," monthly..... | 1.40 |
| " " "Bee-Keeper's Guide," monthly..... | 1.40 |
| " " "Rays of Light"..... | 1.20 |
| " " "The Bee-hive"..... | 1.25 |
| " " "Beekeepers' Review"..... | 1.40 |
| " " "Beekeepers' Advance"..... | 1.20 |

TO CONTRIBUTORS

Communications on any subject of interest to the Bee-keeping fraternity are always welcome, and are solicited.

Beginners will find our Query Department of much value. All questions will be answered by thorough practical men. Questions solicited.

When sending in anything intended for the JOURNAL do not mix it up with a business communication. Use different sheets of paper. Both may, however be enclosed in the same envelope.

Reports from subscribers are always welcome. They assist greatly in making the JOURNAL interesting. If any particular system of management has contributed to your success, and you are willing that your neighbors should know it, tell them through the medium of the JOURNAL.

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THE BEE-KEEPERS' REVIEW for December has four extra pages — twenty in all. Upon the first page is a brief history of the REVIEW; also an excellent

PORTRAIT OF ITS EDITOR,

One of these beautiful Ives reproductions. The special topic of this issue is: "Sections and their adjustment on the Hives," and it is handled by such men as Jas. Heddon, Dr. C. C. Miller, R. L. Taylor, Oliver Foster and Dr. G. S. Tinker. A copy of this issue will be cheerfully sent free to all who apply.

Price of the REVIEW 50 cts. a year.

The Production Of Comb Honey!

Although this neat little book contains only 45 pages, it furnishes as much practical, valuable information as is often found in a book of twice its size. It is "boiled down."

It begins with taking the bees from the cellar and goes over the ground briefly, clearly and concisely, until the honey is off the hives; touching upon the most important points, and especially does it teach where, where and how foundation can be used to the best advantage; when combs are preferable and when it is more profitable to allow the bees to build their own combs.

Price of the book 25 cents.

SPECIAL OFFERS.

For 65 cts. we will send the REVIEW one year and "The Production of Comb Honey." For \$1 we will send all the numbers of the REVIEW for the past year (1888), the REVIEW for this year (1889) and the "Production of Comb Honey;" or, for the same amount (\$1), we will send the REVIEW for two years from Jan. 1st, 1889, and "The Production of Comb Honey." Stamps taken, either U.S. or Canadian.

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W. Z. HUTCHINSON

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LOOK HERE!

Nickel plated pen and pencil stamp with name 30c.; Nickel plated stamp with name, 30c.; Black wax nut handle with name on, 15c.; Your name in rubber or any of the above sent post paid on receipt of price. Clubs amounting to \$1.20 sent for \$1. Boys and girls can make money canvassing for these stamps. Every school boy and girl should have a pen and pencil stamp. It contains a pen, lead pencil and stamp for printing your name on your books, etc. Write your name plainly. Remember you have no duty to pay on these stamps when you deal with us.

Gem Rubber Stamp Co., MALAKOFF, ONT

WE WANT AGENTS

to canvass for subscribers to the AMERICAN AGRICULTURIST, the great Rural Magazine. In our annual premium list just issued we illustrate and offer 200 useful and valuable premiums which are given those sending subscribers or we pay a cash commission as may be preferred. In addition to the premiums or cash commission allowed canvassers for every club of subscribers procured we offer

\$2250 IN SPECIAL PRIZES,

to be presented the 221 Agents sending the 221 largest clubs of subscribers to the AMERICAN AGRICULTURIST before March 1st, 1889.

\$2250

TO BE

GIVEN

AWAY.

| | |
|--|-------|
| \$650 Fischer Boudoir upright Piano for the largest club | \$650 |
| \$200 in cash for the second largest club | 200 |
| \$150 in cash for the third largest club | 150 |
| \$150 Keystone Organ for the fourth largest club | 150 |
| \$125 Bradley two-wheeler for the fifth largest club | 125 |
| \$100 in cash for the sixth largest club | 100 |
| \$50 each for the next two largest clubs | 100 |
| \$25 each for the next three largest clubs | 75 |
| \$10 each for the next ten largest clubs | 100 |
| \$5 each for the next fifty largest clubs | 250 |
| \$3 each for the next fifty largest clubs | 150 |
| \$2 each for the next hundred largest clubs | 200 |

221 SPECIAL PRIZES TO THE AMOUNT OF \$2250

Remember these special prizes will be presented in addition to the premiums or commission allowed for every club of subscribers procured.

It makes no difference how large or how small the club is, the persons sending the largest number of subscribers before March 1st, will receive the first prize of a \$650 piano; the person sending the second largest club will receive \$200 in cash and so on for the balance of the prizes.

You cannot work for a better publication than the AMERICAN AGRICULTURIST. Its superior excellence, together with its great reputation gained by nearly fifty years of continuous publication, make it one of the easiest journals to canvas for. All our promises will be carried out in every respect, and you can rely on receiving good treatment.

SEND THREE TWO-CENT STAMPS for premium list and specimen copy giving full description of premiums and particulars of the above offers.

ADDRESS AMERICAN AGRICULTURIST,

751 Broadway, New York City.

Mention this paper.

BEE-KEEPERS' **PRINTING.**

We make a specialty of Apiarian Printing, and have unequalled facilities for Illustrated **Catalogue and Label Work.**

Note these figures, which include printing.

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| | 500 | 1000 |
| Note Heads, good quality..... | \$1 15 | \$1 90 |
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| Letter Heads, Superfine..... | 1 75 | 2 50 |
| “ Linen..... | 2 00 | 3 25 |
| Envelopes, business size, No. 7, | | |
| white..... | 1 15 | 2 00 |
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| Business Cards..... | 1 50 | 2 50 |
| Shipping Tags, 40c., 45c. and 50c. per 100. | | |

Our new book of labels contains nearly 100 specimens of elegant honey labels. Write for prices for any printing required.

THE CANADIAN BEE JOURNAL,
7 BEEETON.

EXCHANGE AND MART.

FOR Sale—1 Barnes foot power circular saw, as good as new; price \$40. Also 4 honey tanks, hold 550 lbs each \$2.50 each. Edward Lunau, Buttonville, Ont.

Muth's Honey Extractor.

Perfection Cold Blast Smokers, Square Glass Honey Jars, etc. Send ten cents for "Practical Hints to Bee Keepers." For circulars apply

CHAS. F. MUTH & SON,
Cor. Freeman & Central Avenues, Cincinnati

SALESMEN WANTED.

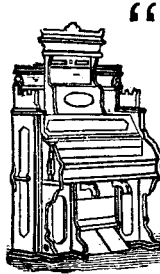
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FOR SALE in Culloden, County of Oxford, a comfortable Dwelling, Outbuildings and four-fifths of an acre of splendid land, planted with the choicest fruit. In connection there are 60 Hives of Italian Bees with plenty of stores to winter, and everything else for carrying on Bee-keeping. All for Six Hundred Dollars (\$600). Owner leaving, and must sell. One of the finest districts for Bee-keeping in Ontario, situate two miles from Brownsville station, Michigan Central Railroad. Come and see, or apply to

JOHN A. CAIENES,
Culloden, Ont



“**BELL**”
ORGANS

Unapproached for
Tone and Quality.

CATALOGUES FREE,

BELL & CO., Guelph, Ont.

9 Cords in 10 HOURS



Runs Easy NO BACKACHE. **Folded.**
BY ONE MAN. Greatly improved. Also **TOOL** for filing saws whereby those least experienced cannot make a mistake. *Sent free with machine.* To others, for common cross-cut saws, by mail \$2.00. Hundreds have sawed 5 to 9 CORDS daily. We want all who burn wood and all interested in the timber business to write for our illustrated *Free Catalogue.* We have exactly what you want, the greatest labor-saver and best-selling tool now on earth. First order from your vicinity secures agency. No duty to pay. We manufacture in Canada. **FOLDING SAWING MACHINE CO., 808 to 811 So. Canal Street, Chicago, U. S. A.**

THE AMERICAN APICULTURIST

Will be mailed from Oct. 1 1888 to Jan 1 1890 for 75 cts. The editor has had 30 years experience in rearing Queens and practical Bee-keeping, and now proposes to give the result of that long experience in a series of articles in the **APICULTURIST.** The first Article will appear in the Nov. 1888 issue. The details of a new method of rearing Queens in full colonies, without making the colony queenless, will be given to each subscriber. Send for sample copy. Address **AMERICAN APICULTURIST, Wenham, Mass.**

NEARLY 30 TONS OF
DADANT'S FOUNDATION

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IT IS KEPT FOR SALE BY MESSRS.

- T. G. NEWMAN, & SON, Chicago, Ill.
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 - GEORGE E. HILTON, Fremont, Mich.
 - J. M. CLARK & CO., 1409 15th St., Denver, Col.
 - E. L. GOOLD & Co., Brantford, Ont.
- and numbers of other dealers. Write for **SAMPLES FREE** and Price List of Bee Supplies. **We guarantee every inch of our Foundation equal to sample in every respect.** Everyone who buys it is pleased with it.

CHAS. DADANT & SON,
HAMILTON, Hancock Co., Ill.



"THE GREATEST POSSIBLE GOOD TO THE GREATEST POSSIBLE NUMBER."

VOL. IV. No. 40

BEETON, ONT., DEC. 26, 1888.

WHOLE No. 196

May the coming year of '89
To apiarists prove of gain ;
May hives o'erflow with nectar
And highest prices reign.

EDITORIAL

OUR friend Mason "goes" for "Observer" for talking back about untrimmed journals etc. in this issue. Why, Doctor, "Observer" never thought of hurting anybody's feelings, he wanted to be pleasant, and poke a little fun at those who were so troubled over the untrimmed and uncut journals.

THE CANADIAN BEE JOURNAL

seemed to have been picked out specially and was particularly mentioned and as the editors failed to take up the gauntlet, "Observer" did. It is true that the C. B. J. has not been without its faults in this respect, but we have now made such changes in the "make-up" of the JOURNAL as will we trust remedy this defect. After all was it worth all the space that has been used over the matter?

* *

OXFORD BEE-KEEPERS.

From the dailies of the 19th inst. we clip the following item relative to the Oxford Bee-keepers' annual meeting, held at Woodstock. We hope to have a fuller report of the meeting from the Secretary for our next issue: "The

annual meeting of the Oxford Bee-keepers' Association was held here yesterday afternoon. The officers elected for the ensuing year are: President, William Goodger; Vice-President, S. T. Pettit; Sec.-Treas., J. E. Frith; Directors—M. S. Shell, Martin Emign, J. B. Hall, Dr. Duncan, F. A. Gemmil; Delegates to the Ontario Association—J. E. Frith and S. T. Pettit. It was decided to hold the spring session on May 21st, 1889. The afternoon was taken up with a discussion of various question of interest to bee-keepers.

* *

W. Z. Hutchinson, of the *Review*, expresses his intention of reviewing the papers now being published in the CANADIAN BEE JOURNAL on "Practical Bee-keeping." We are glad to have him do so, and we feel that when published in conjunction with the papers these articles will add value to them.

* *

LANGSTROTH REVISION.

At last we are to have the revision of Father Langstroth's book, undertaken by the Messrs. Dadant some time ago. It has been a long time on the way, but we have no doubt its excellence will make up for all the impatience exhibited by those who wanted to see it. The price will be \$2 post-paid. We will have them for sale at that price as soon as issued.

Are there any further particulars forthcoming with respect to the coming convention at Owen Sound. We should like to have the program for publication in our next issue. We observe that J. E. Frith and S. T. Pettit are the delegates from the Oxford Bee-Keepers Assoc. We trust that all the affiliated local Associations have chosen their representatives to this meeting.—Since this was in type we have received the program and it appears elsewhere.

.

We wish to impress strongly upon the minds of all present members of the O. B. K. A. the necessity of having their fee for membership for 1889 paid up previous to the election of officers. You will all remember our remarks relative to the unrepresented districts for the present year, and why they were left in such a state.

O. B. K. A. CONVENTION.

PROGRAM.

- Jan. 8th, 2 p.m.—Appointment of Com. Management.
 Minutes of last meeting read.
 Secretary's Report.
 Treasurer's " "
 Auditors' " "
 Affil. Soc. " "
- Jan. 8th, 7 p.m.—President's Address.
 Paper by Mr. S. Corneil, on Ventilation of Hives for Winter, and discussion on.
 Business Recom. by Com.
- Jan. 9th, 9 a.m.—Election of Officers.
 Paper by S. T. Pettit, on Priority of Location and discussion on.
 Other business as recom. by Com.
- Jan. 9th, 1 p.m.—Deciding on next place of Annual meeting.
 Paper by A. Pringle on Bees for Pleasure and Bees for Profit, and discussion on.
 Other papers and necessary business.

For the CANADIAN BEE JOURNAL.

Dr. Mason on Observer.

I WOULD just like to say that "Observer" is "off his base," when he says in the C.B.J.: "If I had Dr. Mason's head under my arm I'd make him take all that back about there being too many 'Observers,' etc." I believe I was right in what I said, and that most, if not all of your readers agree with me, and when I

think I am right, no Canuck, or any other man has got "Observer"ation enough to make me take anything back, and if "Observer" once had my head under his arm, he'd wish to have his name changed. Yes, siree, "the doctor" does weigh "somewhere over 200 pounds," and enough over not to be afraid of any who think it smart to "dab" at people without letting it be known "who struck Billy Patterson." I had a little tilt some time ago in the C.B.J., with "Amateur Expert," and quit because of his, or her, assumed name. I like to know who is fooling with me when I'm hit.

"Observer" must have awfully big feet or awfully big corns, to have them trodden on so easily. Perhaps he's put so much into them that he hasn't enough left for a name. I wonder who is throwing "sass over other people" if it is not "Observer." I supposed you would be pleased to hear your readers say what they like or dislike about the C.B.J., and I did not think it would be throwing "sass" at anyone, or treading on anyone's "corns" either.

"I'm waiting to see Brothers Hutchinson and Mason 'go for' A. I. Root now because the latest edition of the *A.B.C.* has a whole lot of uncut leaves," says the wonderful "Observer." Well, just tell him to keep on waiting, for I have two copies of said *A.B.C.*, and every leaf has been cut and trimmed in the very best shape, and I have no doubt friend Root would consider it a favor to have the opportunity of replacing every one that is, in any way, imperfect. Let "Observer" try it.

The last number of the C.B.J. that came to me had four uncut leaves; more than ever before, and I'm afraid if I say anything about it I'll have *all* the leaves to cut, yet when I wrote before I did not know that friend Hutchinson had said anything about uncut leaves. Now, "Observer" has put in his say about the matter. Wonder he didn't observe it before.

And then he puts his "feet" in by noticing the difference between McFadden and McFadyen. Probably a printer's mistake, at any rate, too small for anyone but "Observer" to notice.

"I believe Daniel McFadden to be the creation of a most fertile imagination," says the same "Observer" But what kind of an imagination is "Observer" a production of? *Unfertile*, perhaps.

If "Observer" wants to know who is trying to get out of his way, just tell him to enquire for

A BEE MASON.

P.S.—If there is any bad grammar or incorrect spelling in my article, please correct it so "Observer" won't have a fit.—A.B.M.

PRACTICAL BEE-KEEPING.

BY D. A. JONES.

PAPER IV.—CONTINUED.

WAX, COMB AND FOUNDATION.

ADVANTAGES OF FOUNDATION.

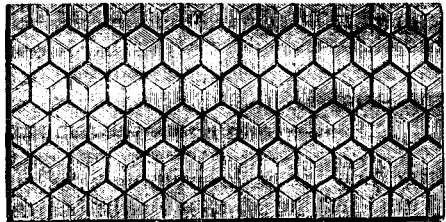
WHEN sheets of wax impressed on each side with the form of cells is called foundation, and though the use of these sheets to aid the workers in the costly matter of comb building, was only commenced by beekeepers some fourteen years ago, it is to-day considered an absolute necessity by fifteen of twenty apiarists. The advantages of its use are, the ensuring of straight combs, and additional surplus. Prof. Cook is very emphatic on this latter point. On p. 311 of his *Manual* he says: I am certain that bees that have to secrete wax to form comb do less gathering. Wax secretion seems voluntary, and when rapid seems to require quiet and great consumption of food. If we make two artificial colonies equally strong, supply the one with combs, and withhold them from the other, we will find that this last sends less bees to the fields, while all the bees are more or less engaged in wax secretion. Thus the other colony gains much more rapidly in honey; first, because more bees are storing; second, because less food is consumed. This is undoubtedly the reason why extracted honey can be secured in greater abundance than comb honey."

The use of plain sheets of wax made by dipping on glass is very old and although they answer fairly well, the bees will not draw them out as readily, nor are they as economical, containing a greater weight of wax to the sheets.

MELTING THE WAX.

There are three processes in making foundation, melting, sheeting and milling the wax. The melting is done in a double walled tank of heavy tinned iron sides and copper bottom. The measurements of the one in use in our wax room is inches long, inches wide and deep. The inner tank is two inches smaller every way and has legs to bring

the top nearly level with the outer. Between the two walls is the water heated by steam from the boiler, and by no means can the wax become over heated. The inside tank is divided



COMB FOUNDATION.

into three compartments by two sheets of tin at the bottom of which are three or four holes an inch in diameter. The solid wax is placed in the two outside divisions and the melted material flows through the holes into the centre which contains nothing but liquid wax.

BOARDS FOR SHEETING.

The sheets of wax are procured by dipping planed boards into the hot wax, of the length and width desired and half an inch in thickness. We use but two sizes each three feet long and nine and twelve inches wide. The boards should be of clear pine, absolutely free from knots and pitch streaks. They should be soaked in cold water for from twelve to twenty-four hours prior to use; water will not permeate knots or pitch streaks hence the unsuitability of such. I have known several who soaked their dipping boards in hot water but I cannot say that it is the better way.

Having soaked the boards it is necessary to warm them through and this is done by dipping them quickly into the hot wax and then in cool water continuing until board and wax together are an inch or thereabout in thickness. The steam generated next the board makes the removal of the wax easy.

SHEETING WAX.

With boards thus prepared, wax melted and kept liquid at from 160 ° F.

to 170 °, the air in the room warmed to about 90 ° F., the sheeting may be proceeded with. Have convenient, two tanks ten inches wide, a trifle longer than the dipping boards and six inches deeper, containing cool water. The operator immerses the board one-half its length, gives it a quick turn and immerses the other half, so that the film of adhering wax overlaps in the centre. It is immediately placed in the water tank for a second of two to cool the outside of the film, and these operations alternated until the sheet is the desired thickness. To remove the wax from the board shave the edges with a hardwood knife, and, under water, peel off one corner, running the thumb and finger the length of the sheet, and the removal is effected. This appears an easy matter, but, as in everything else, it requires practice. But with boards water-soaked and warm, the wax and room of right temperature, there is not much danger of the sheets cracking. The finest sheets are made by dipping, as I have said, from both ends; in dipping one end only the wax runs from the top while being withdrawn and the bottom is thicker than the top. When boards are dipped edgewise, unless the resulting sheets are passed under rollers to equalise the thickness there will be some parts thicker than others, and the the upper half being thinner than the lower will cause the sheet to warp and curl when being milled. Dipping endwise is far the better and more speedy; one man can sheet twenty-five to thirty pounds an hour with ease. Some authorities recommend dipping from one end only, which was formerly the plan practised by all makers of foundation, but at the National Convention at Cincinnati I explained the advantages of utilising both ends and now it is generally adopted.

A. I. Root uses brine for soaking his sheeting boards, and if the wax sticks he sponges them with lye.

FOUNDATION MILLS.

There are five foundation mills in use—the Root, Dunham, Vandervoort, Pelham and Given. In the four first mentioned the sheets of wax are passed between rolls embossed with lozenge-shaped dies which impress the wax with the shape of the cells. Originally these

sheets received only the impression of the cell base, but now have short side walls.

The Given press resembles in appearance the antiquated but useful Washington printing press now disappearing from even the smallest village office, and stamps the sheets by plates, embedding at the same operation fine wire for supporting the sheet in the hive frame. I do not know of any of these machines in Canada, but many in the United States who use it speak most highly of its ease in working.

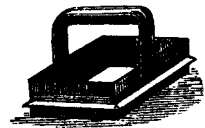
Formerly the Dunham machine was the favorite with me, but I now use the Vandervoort in two sizes—brood and section—twelve and six inch rolls. With them the very perfection of foundation is made at the rate of about fifty pounds an hour.

LUBRICANTS.

It is necessary to constantly apply a lubricant to the rolls to prevent the wax sticking to and clogging the dies. Starch paste with or without a little salt; weak lye and an infusion of soap bark, are used, but soap suds made from good white soap I find the most satisfactory. A. I. Root published an article recommending salt in the shape of starch paste made with brine—the sheets to be soaked in brine in addition to applying it to the rolls. He tried it and it worked so satisfactorily that I believe he uses it altogether now. With us it did not give as good results as the suds.

CUTTING FOUNDATION.

To cut the sheets to size pile them up ten or a dozen high and slice them with a sharp butcher knife, using a board of the dimensions required as a guide. Abbott L. Swinson recommends wiping the knife on a rag saturated with coal oil. In this way he states he can cut



SECTION FOUNDATION CUTTER.

through a pile of forty sheets without any sticking. Occasional dipping in the soap suds will answer the same purpose.

The thin foundation used in sections

is cut to the right size with a tin cutter as here shown.

USING OLD FOUNDATION.

After exposure to the air for a length of time the sheets harden on the surface and bees will not work on old foundation as readily as on freshly made. Where the bee keeper carries over foundation to the second year, it should, before using, be dipped in water as warm as the wax will bear, about 120° F., which will restore it at once to its original softness.

WEIGHTS OF FOUNDATION.

Manufacturers make three kinds of foundation, light and heavy for use in brood frames, and very light for sections. The light brood will require two dips and runs about seven square feet to the pound, while the heavy runs four and five feet to the pound, and needs three dips. Section foundation is very thin, made with one quick dip, and runs from eight to twelve feet to the pound. This is the run of average section foundation, but some writers speak of its running fourteen and fifteen feet to the pound, but I think there is very little shipped lighter than ten. With this weight the base can be made as thin as the septum of natural comb and the extra wax being in the cell walls, the bees draw it out with more facility. Bees usually thin down the base of the foundation to their liking, but when honey is coming in rapidly and nights are cool they will sometimes neglect this working more upon the side walls. This is the cause of the "fish bone," so called, occasionally found in sections of comb honey.

WORKER AND DRONE FOUNDATION.

Foundation can be impressed with either worker or drone cells so that the apiarist can have the bees build whichever comb he desires. Drone foundation was formerly used largely in sections, but its use has been abandoned owing to the non-attractive appearance of the capping and also from its great liability to break down in shipment; the cells being larger than the worker, contain more honey, whilst the cell walls are only the same thickness, lessening the stability of the comb about twenty per cent.

About 1876 I bought from A. I. Root the second roller foundation mill made. The cells it impressed were slightly larger than worker, a medium between that and drone. I with others had an idea that by constantly breeding in these large cells the size of the bees would be increased and sometimes I imagined there was a slight gain in size, but not sufficient to counter-balance the disadvantages. When the foundation sagged a little, drone eggs were laid in the elongated cells, and even without sagging some queens would lay a larger proportion of drone eggs than in regular worker foundation. This mill was used for a number of years and superseded by one which turned out regular worker sized base.

FLAT BOTTOMED FOUNDATION.

Some foundation is made with flat bottoms to the cells but the bulk of the fdn. used has the base of natural shape. The bees, I believe, change the flat bottoms and consequently, it is said, take longer to complete the comb. Mr. Thomas Cowan and several eminent apiarists do not coincide with this view. I prefer the rhomboidal base.

CLEANING THE ROLLS.

Should the wax stick, turn the rolls, and let a stream of hot water fall on them from a height of about two feet. The wax becomes softened and dislodged, or a jet of steam from a boiler will remove it even more rapidly.

MILLING THE WAX.

It is a simple matter to feed the sheets into the mill, but the rolls must be kept constantly wet with soap suds or some other lubricant. On passing through the end will be embedded in the ones, but this may be loosened with a flat pointed stick. As the sheet rolls out the operator supports it with two narrow strips of wood flat on one side and oval on the other. Formerly we ran sheets only three feet in length but latterly we have joined the sheets just as they are going between the rolls and are thus enabled to run sheets of brood foundation ten to twenty-five feet and section (four inches wide) of a hundred and even two hundred feet. The sheets for the section foundation are dipped on boards 3ft. long x 12 inches wide, and these plain sheets are cut into strips

four inches wide before being run through the six inch mill.

WEED'S ARTIFICIAL COMB.

Mr. E. B. Weed, of Detroit, has succeeded in making an artificial comb with septum the same thickness and walls as light and deep as natural comb. This is for use in sections. For brood he uses, I understand, a thin wooden base to give sufficient strength to the comb to put a swarm on in hot weather, and to bear extracting. At this writing I have only seen a small sample of the first-mentioned and cannot speak from experience of its practical value, but it certainly is a marvellous production.

ONE-SIDE CELL FOUNDATION.

At various times beedom has been agitated with reports of "new inventions" in the shape of foundation having some material foreign to nature as a base and with cells on one side only. M. Koerbs, a German, makes great claims for an invention of this kind, but its practical value has yet to be proven.

A great many years ago before foundation machines were made I became interested in comb foundation and tried glass, wood, tin, paper, as bases for sheets of wax, etc., without much success. In one of my experiments I waxed the side of the division board and placed it next to the combs. The bees drew out cells on some of it, other places they would build brace combs between that and the combs next. Portions of the wax, especially towards the bottom of the division board, they did not seem inclined to work on, and spots of smooth wax were left untouched. I could induce them to build comb or draw them out by taking a small hexagonal stick and indenting the thin layer on the board so that it had somewhat the appearance of an imperfect septum. Since then we have tried calico, bleached cotton, various kinds of paper, tracing linen, tin, glass, wood and tinfoil. On my return from Cyprus with bees in 1880 I brought samples of wood foundation from Mr. Abbott, of Southall, London. The only cloth I could get the bees to accept with any degree of satisfaction was tracing linen, and the only paper a very heavy linen with a smooth surface. On sheets of this paper I have frequently written the Lord's Prayer in

a large bold hand, dipped the paper in hot wax, passed it between the rollers, and had the bees draw it out into perfect comb and fill with honey. Years ago I exhibited this at Toronto Exhibition, also wood, metal and cloth foundation. After it was drawn out the bees would gnaw at the septum and seemed to fancy the threads in the cloth were moth webs, and commenced pulling and gnawing them out; if they were left in long enough they would tear every shred of the cloth away. All the experiments proved was the utter uselessness of proceeding on this plan.

For the CANADIAN BEE JOURNAL.

AN ENTOMOLOGICAL QUERY.

YOU will find enclosed one dollar and fifty cents, being the price of Cook's Manual, which I am well pleased with; it shows that bees have more enemies than I was aware of. When we took our bees out of the cellar in the spring, we cleaned and white-washed it and put our milk in, but found a lot of dust on the milk every day. We examined it with a magnifying glass and found it to be small insects, so one day we got hold of a small wasp and examined it, and found the body was covered with small insects, very much the same as in the cellar, but rounder. We came to the conclusion that they came off the bees, but never saw any on bees. Any information on this would be gladly accepted.

WILLIAM MCKENZIE.

Woodbridge, Ont.

From the Bee-Keepers' Review.

Heddon Case, Wide Frames and T Supers, the Last-Named Preferable.

I HAVE heard men say they were satisfied with their arrangements for taking surplus honey and wanted nothing better. I have never had anything with which I was entirely satisfied, and never expect to have. None the less, I think I can tell something about the advantages and disadvantages of different sections and supers. At present I am using T supers and one-piece, $4\frac{1}{2} \times 4\frac{1}{2} \times 1\ 15/16$, sections, which is equivalent to saying that in the present state of my knowledge I know of nothing better. I have used, previous to using the T supers, 6 lb. boxes on box hives, also on frame hives, wide frames, and Heddon supers, giving each a thorough trial, and to a less extent two or three other kinds of surplus arrangements. If I were like some, merely

keeping a few colonies for the pleasure of it, and cared nothing for the amount of labor as compared with the amount of surplus, I am not sure but I would use wide frames. But as I am trying to make the most money for my time and labor, I can't afford wide frames. In their defense, however, I may mention that the difficulty of getting sections out of them has been overrated. A certain W. Z. H., in many respects a very decent kind of a man, once said, if I remember rightly, that he could empty a Heddon super while he was getting the first section out of a wide frame. Quite true, probably; but it only showed he didn't know how to empty wide frames, for the first section should never be taken from a wide frame, but the whole eight at once; and I think I can take 1,000 sections out of wide frames in less time than out of Heddon supers. Still, if I did not want to use separators, I would rather use Heddon supers than wide frames, on account of less labor in manipulation. Even without separators, I much prefer the T super to the Heddon, on account of greater ease and safety in taking out sections, particularly if the sections are allowed to remain in the supers till the weather becomes cool.

In your editorial, Bro. Hutchinson, you speak of "the inability to contract the surplus apartment to less than a whole case" in tiering up. Let me take issue with you. Any number of sections from one to twenty-four may be put in a T super. It is some trouble, and I doubt if it would be desirable to put in fractional parts of rows across, but I have during the past season used a number of supers in which each super contained a single row, or six sections, and others containing 12 sections, the full super containing 24 sections. These partly filled supers work satisfactorily—as satisfactorily, I think, as any other system, with or without tiering up. So long as I use T supers, I presume I shall each year use some partly filled. All that is necessary is to put in place of an omitted row a thin board in the bottom, or some pieces of sections.

As to width of sections, I have used in considerable numbers five different widths, measuring 6, 7, 8, 9 and 10 to the foot. On the whole I found no advantage in having any other than the ordinary 2-inch, or, to be exact, 1 15/16 inch.

When I first heard of side openings to sections I whittled them out in about 100 sections. So far as I could judge from so limited a trial, I could see no advantage in them. We are apt to become enthusiastic over new things, especially those of "our own git up," and I have thought that the advocates of open sides were just a little too extravagant in their claims. The claim that "the greater accessibility to all parts induces the bees to enter more readily"

I don't. I have no difficulty in getting my bees to commence work in sections as soon as I want them to, and I wouldn't give a cent, I think, to have them commence any sooner than they do. Give them a single section (somewhere near the centre of the super), out of which honey has been emptied, and there is no trouble about their beginning as soon as I want them to. Considerable stress is laid on the point that a bee can save a good deal of travel by going across from one section to another, instead of going around. What does she want to go across for, or around, either? If she has a load to deposit in a section she would better go straight up, transact her business, and then go straight down again, without wasting time in unnecessary travel crosswise. I think bees may be a little more inclined to extend their work sidewise, if there is ready access in that direction, and this may count for something when the super is not crowded full of bees. I have seen open bee-ways with very straight combs well secured to the sides, and I have seen just as straight and just as well-secured work with closed sides; and I have seen bulgy work with open as well as closed sides.

I changed from four-piece to one-piece sections regretfully. The one-piece give more trouble by being out of square. There is trouble about breaking at the corner. They have the "naughty" corner, but they are more rapidly put together, and I changed pretty largely, because I wanted to follow the crowd. I don't believe in following the crowd always, especially in morals and politics; but as far as possible I think it is better to use what is nearest a standard article in the way of supplies. I like the two-piece sections well.

C. C. MILLER.

Marengo, Ill.

From the British Bee Journal.

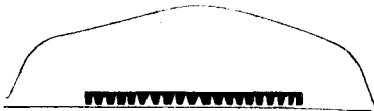
MINORCAN BEES.

IN July last we announced that through the kindness of Mr. F. C. Andreu, there was a probability that the qualities of Minorcan bees would be tested in England. The queen, which was transmitted to Mr. Abbott, was safely introduced, and we have a further report from him in August that the queen had done well, and that he had been able to raise a number of young queens: but, owing to the bad season, there had been a difficulty in getting them fertilised, only one out of fourteen raised proving fertile; also, owing to the weather, although Mr. Abbott had induced the queen to lay a large number of eggs in drone cells, he could not persuade the worker-bees to rear the larvae, although they were well supplied with food. Mr. Abbott does not enter into the merits or demerits of the Minorcan race, as they have had no chance at present of showing what they are. Our correspondent, Mr. F. C. Andreu, had stated they resembled Carniolans, but it will be seen from a letter in our columns this week,

that he corrects his former statement. He also alludes to what M. Bertrand says in respect to these bees in the *Revue Internationale*. We have had an opportunity of seeing these bees and found them different in appearance to Carniolans, resembling more closely our common bees, except that they are much darker, almost black, and appear to have a more glossy surface. We cannot say much for their temper, which appears very different from that of Carniolans. They seem much more irritable and inclined to sting. Of course there will be a difference in various colonies in this respect, and, like Cyprians and other stinging races, those hives containing the youngest bees will be the quietest. That they are very free with their stings we have abundant evidence, although we have not ourselves felt the sting is a mild one like that of Carniolans, or a virulent one like that of Cyprians and Syrians. Mr. Andreu assures us they are mild in disposition and easily handled.

When we examined the bees a short time ago, it was on a cool day, and as soon as the quilts were removed we found that, whilst the other races of bees were all snugly and compactly clustered, and that they were hardly stirred by the disturbance, the Minorcan bees were spread over the combs, were much more vivacious, and flew out to resent the intrusion. Numbers of bees ran out at the entrance, whilst with the other bees not one was seen to leave that way. A smoker was not used in either case, so that all had the same treatment.

We were much interested in the peculiar barricade constructed in front of the entrance, and which we find quite different in appearance to anything we had seen before. The barricades were built up apparently of the usual materials, viz., propolis and wax, and extended the whole length of the entrance, which was about 8 inches long. We have seen bees build barricades to protect themselves against robbers and also the death's-head moth, but in such cases the inside of the entrance is filled with propolis and wax, and a hole left here and there just as the bees



seem inclined. In these barricades there is a regularity that is most beautiful, and has called forth the remark from one correspondent that 'they seem for all the world the work of engineers learned in the art of self-defence.' In this case the barricades form a regular trellis, each hole being nearly one-quarter of an inch wide,

or just large enough to allow a bee to pass, and having an upright bar of about one-eighth of an inch wide between each hole. The illustration will give an idea of the structure. When we first heard of these barricades the idea at once occurred to us that they were probably intended to keep out the rose-beetle (*Cetonia Aurata*), very common in the South of Europe, and that he habit was probably inherited.

We are told that in Minorca the practice is common for the bees to systematically and scientifically barricade the entrance in the autumn. It is very interesting to find that the bees when first transported to another land carry on the same practice, for this was the only hive in the apiary that had built barricades. We think it shows that the habit is inherited and transmitted from one generation to another, because there is a use and necessity for it. As the bees are possessed of a certain amount of intelligence we shall expect to find that they will drop this habit when they find they have not the same need for their barricades in their new circumstances. With us the rose-beetle is not so plentiful that it should be reckoned as an enemy of bees, and therefore shall expect that the bees in time will abandon the barricading. They will not probably do so at once, but may take several generations before they entirely give it up. Of course, if the race is crossed the habit would probably be bred out very rapidly. We should be glad to hear whether the Minorcan bees reared by Mr. Abbott and other gentlemen have been noticed to possess this peculiar characteristic. We do not think the bees have been tried long enough out of their native country to speak positively as to their good or bad qualities; at any rate the past season was too bad to give them a fair chance

SPECIAL BOOK NOTICE.

We have a number of books which have been superseded by more recent editions, which we will sell at very low prices. In some instances they may be a trifle worn or abraded. We have:

| | REGULAR PRICE. | OUR PRICE. |
|---|----------------|------------|
| 1 British Bee-keepers' Guide Book, T. W. Cowan, edition 1886—good as new..... | 50 | 35 |
| 1 Bee-keepers' Guide, Prof. A. J. Cook, edition 1882..... | 1 25 | 50 |
| 6 Bee-keepers' Guide, Prof. A. J. Cook, edition 1884..... | 1 25 | 85 |
| 1 A.B.C., A. I. Root, edition 1883—a good deal worn..... | 1 25 | 50 |
| 1 A.B.C., A. I. Root, edition 1883—good as new..... | 1 25 | 75 |
| 1 A.B.C., A. I. Root, edition 1886..... | 1 25 | 75 |

First come, first served. Now, don't all speak at once.

CAPPINGS.

PLENTY BEES THERE.

In the *Beinenwirthschaftliches Centralblatt* Dr. Souder says that there are more colonies of bees in Scheswig-Holstein than in any other province, there being one hive for every eight or nine of the inhabitants. In Switzerland there is one hive of bees to every thirteen or fourteen inhabitants.

* *

The latest issue of the *Review* and *Gleanings* contain portraits of the editors and very good looking men they are. May they both have better health and long lives to labor in the cause of apiculture.

* *

It did us good to read in the A. B. J. that Rev. L. L. Langstroth has again recovered (at least partially) from his severe indisposition, lasting for some months, which caused a great weakness of body, although it did not induce the distressing despondency of former periods of illness. As usual, he has not been able to use his pen during the intervening months covered by his indisposition. He writes us that he begins "to feel that the worst is now over." We hope it is, and that he may now be able to enjoy the remaining years of a noble life, and when the summons comes to enter eternal life, he may receive a hearty welcome at the portals of Glory, and become one of "the living stones" in the Temple of Heaven, where no *discordant voice* of censures or bitterness will ever be heard, and all experience will be perfect bliss, and all expressions will be perfect praise, and "love divine will ennoble every heart" and hallelujahs exalted employ every tongue."

ONTARIO BEE-KEEPERS' ASSOCIATION.

The annual meeting of the Ontario Bee-keepers' Association will be held at Owen Sound, January 8 and 9, 1889. Sessions at 2 and 7 p.m. first day, and 9 and 1 p.m. second day.
W. COUSE, Secretary.

Attention is called to the list of books in this number. In this connection we might say that we can supply you with any standard book on the market and at lower rates than the stores. Write for prices on the works required.

SUNDRY SELECTIONS.

W. BROCKIE—This year is drawing to a close and it is better to remit for the *Bee Journal* in time. I have only a few hives that I have more for pleasure than any thing else, but I could not do without the *Bee Journal* at all, for I don't know much about them except what I have learned from reading it. This has been a poor year in this neighborhood, so very dry. They filled up their hives in the fall from thistles and other flowers as much as will do them this winter. I was well pleased with the queen that was sent from the Association, she went to work right away.

Pinkerton, Ont.

J. M. G.—Part of my bees are in clamps, packed with chaff. At the entrance of some of them I find little heaps of fragments of bees; legs, wings, heads and bodies, all pulled to pieces. What is the cause of this? Do the bees do it or is it done by mice. I have a board leaned against the clamp over the entrances with equal parts of arsenic, flour and sugar behind it. The clamp is made of good inch lumber nailed tightly together, set about one foot from the ground, and the hive entrances are about three eighths of an inch deep. By answering the above question through the C. B. J., you will confer a favor on a subscriber.

Ingersoll, Ont.

It certainly looks as if mice have got into your hive. We have observed similar things when mice have gained admission to hives. They may have put in an appearance after the arsenic mixture had lost its freshness. Try a little more newly mixed. If unsuccessful, open top of hive carefully, see that the mice run out, then cover the top with wire cloth under the chaff; at the entrance place two strips of tin, one above and one below with a space between too small for mice to pass.

No matter what kind of printing you want, it can be done at this office. Visiting cards, bill heads, envelopes, pamphlets, note-heads, anything. Write for figures.

TO THE DEAF—A person cured of deafness and noises in the head of twenty-three years standing, by a simple remedy; will send a description of it FREE to any person who applies to Nicholson, 30 St. John St. Montreal.

In return for the names of ten bee-keepers sent us on a postal, we will send the "Bee-Keepers' Dictionary" value 25 cents.

DETROIT HONEY MARKET.

Best white comb in one pound sections 16 and 18 cts. Supply not large but equal to the demand. Beeswax 22 and 28 cents.

M. H. HUNT.

Bell Branch, near Detroit.

CONVENTION NOTICE.

OXFORD BEE-KEEPERS ASSOCIATION.

The Annual meeting of the Oxford B.K. Association will be held on the 3rd Tuesday 18th of Dec., 1888, commencing at 9 a.m. promptly, at the Council Chamber, Woodstock.

Members will please be prepared with detailed statistics of Apiarian Products, &c. to fill the Government annual report.

J. E. FRITH, Secretary.

Read the grand array of premiums offered on page 756 of this issue.

HONEY WANTED.

We will pay 12 cents per pound for good extracted honey, delivered in Beeton, in exchange for supplies at catalogue prices, and we will take all that offers, allowing 30 cents each for the tins when they are the "Jones sixty-pound."

COOK'S MANUAL—NEW EDITION.

We have now in stock ready to go by return mail the latest edition of Prof. Cook's Manual. The price this time is \$1.50, postpaid, but the increase in price is most fully compensated for in the increased quantity of matter and the better quality of the work.

GOOD BOOKS

—FOR THE—

Farm, Garden AND Household.

THE FOLLOWING VALUABLE BOOKS WILL BE SUPPLIED FROM THE OFFICE OF THE CANADIAN BEE JOURNAL. ANY ONE OR MORE OF THESE BOOKS WILL BE SENT POST-PAID DIRECT TO ANY OF OUR READERS ON RECEIPT OF THE REGULAR PRICE, WHICH IS NAMED AGAINST EACH BOOK.

FARM AND GARDEN.

| | |
|---|--------|
| Allen's (R.L.&L.F.) New Am. Farm Book | \$2 50 |
| Barry's Fruit Garden. New and revised | 2 00 |
| Beal's Grasses of North America..... | 2 50 |
| Brackett's Farm Talk, Paper, 50c. Cloth | 75 |
| Brill's Farm Gardening and Seed-Growing | 1 00 |
| Farm Appliances..... | 1 00 |
| Farm Conveniences..... | 1 50 |
| Farming for Profit..... | 3 75 |
| Fences, Gates and Bridges | 1 00 |
| Fuller's Practical Forestry..... | 1 50 |
| Gregory on Cabbages..... | 30 |
| Gregory on Onion Raising..... | 30 |
| Harris' Gardening for Young and Old | 1 25 |
| Henderson's Gardening for Pleasure... | 2 00 |
| Henderson's Gardening for Profit..... | 2 00 |
| Johnson's How Crops Feed..... | 2 00 |
| Johnson's How Crops Grow..... | 2 00 |

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|---|------|
| Johnson's How to Plant.....Paper... | 50 |
| Long's Ornamental Gardening..... | 2 00 |
| Onions—How to raise them Profitably | 20 |
| Our Farm of Four Acres.....Paper... | 30 |
| Quinn's Money in the Garden..... | 1 50 |
| Silos and Ensilage..... | 50 |
| Starr's Farm Echoes..... | 1 00 |
| Stewart's irrigation for the Farm, Garden and Orchard | 1 50 |
| Ten Acres Enough | 1 00 |
| The Soil of the Farm | 1 00 |
| Thomas's Farm Implements and Machinery | 1 50 |
| Treat's Injurious Insects of the Farm and Garden | 2 00 |
| Waring's draining for Profit and Health | 1 50 |
| Waring's Elements of Agriculture | 1 00 |
| Weld's and Others' A.B.C. of Agriculture | 50 |

FRUITS AND FLOWERS.

| | |
|--|------|
| Bailey's Field notes on Apple culture | 75 |
| Elliott's Hand Book for Fruit Growers Paper, 60c | 1 00 |
| Fuller's Grape Culturist | 1 50 |
| Fuller's Illus. Strawberry Culturist ... | 25 |
| Fuller's The Propagation of Plants.... | 1 50 |
| Fuller's Small Fruit Culturist, new ed. | 1 50 |
| Fulford's Peach Culture New ed..... | 1 50 |
| Henderson's Practical Floriculture.... | 1 50 |
| Husmann's American Grape Growing & Wine Making..... | 1 50 |
| Parsons on the Rose..... | 1 00 |
| Saunders' Insects Injurious to Fruits. | 3 00 |
| Vick's Flower and Vegetable Garden. | 1 25 |

HORSES, RIDING, ETC.

| | |
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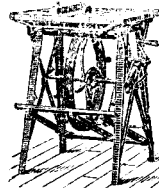
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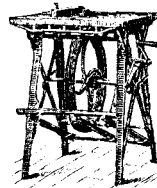
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