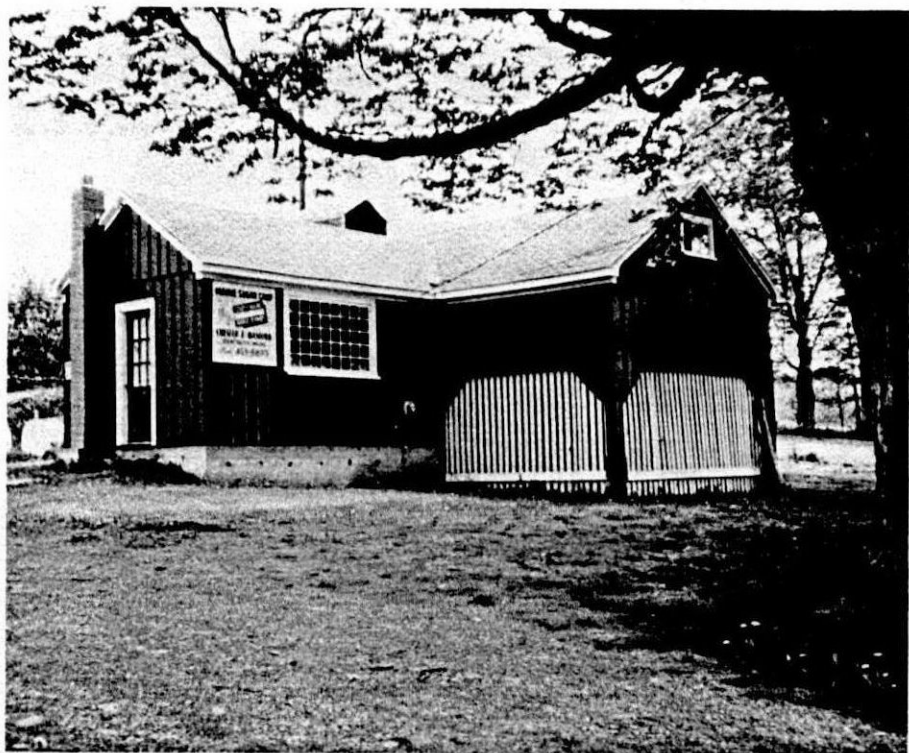


MAPLE SYRUP DIGEST



Vol. 23, No. 3

October 1983

Address Correction
Requested to:
Bainbridge, N. Y. 13733

BULK RATE
U. S. POSTAGE PAID
BAINBRIDGE, N. Y.
PERMIT NO. 12

G. H. GRIMM COMPANY, INC.

Maple Syrup Equipment — Hay Tedders

P. O. Box 130

Rutland, Vermont 05701

NEW



MAPLE SYRUP COLOR KIT — — — —

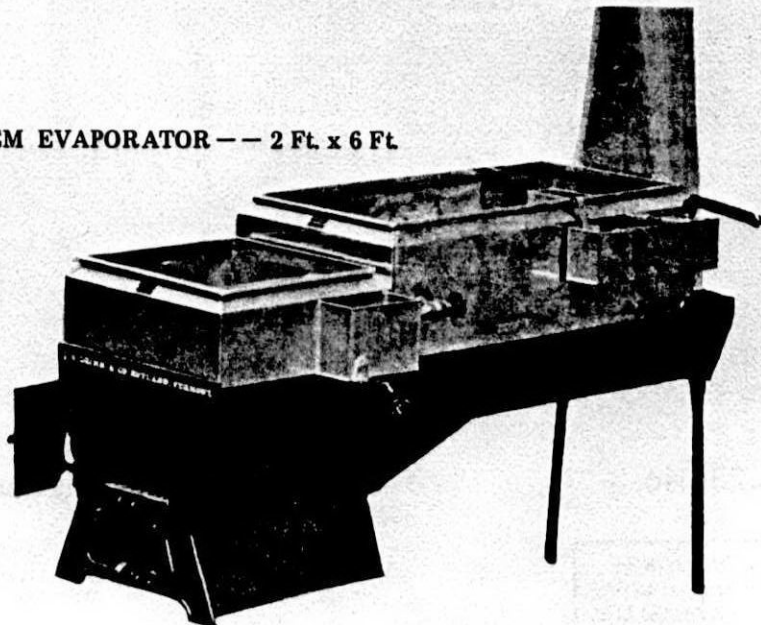
for grading consisting of a stainless steel holder 7" long with 5 slots, for 1 oz. sq. bottles; 3 slots have amber shaded glass pieces, imported from Germany and ground for us by a professional company who have matched the three pieces to co-inside with the Master sets at the U. S. Bureau of Standards for Maple Syrup in Washington, D. C., as evidence by light meter curves supplied to us, being correct to market.

The three colors are as follows:

1. U. S. Grade A "Light Amber" or Vermont Fancy or AA in Canada
2. U. S. Grade A "Medium Amber" or Grade A
3. U. S. Grade A "Dark Amber" or Grade B

Our kit has square 1 oz. bottles. Three containing glycerene must always stay in the kit in back of each glass. The other two to be used filled with a sample of syrup to be tested.

GEM EVAPORATOR — — 2 Ft. x 6 Ft.



GRIMM ANNOUNCES

"NEW LOW PRICES ON EVAPORATORS"

Specializing in stainless steel pans.
Highest quality chromium-nickel content.
Corrosion resistant — All flues 7½" deep

RAISED FLUE "LIGHTNING" & DROP FLUE "GRIMM"

Be sure to get our "New LOW PRICELIST"
before ordering.

Cookley Tin Pans also available if desired.

Everything for the Sugarmaker:

Spouts
Buckets
Covers
Tanks
Hydrometers
Thermometers
Pumps
Grates
Stack



Filters
Sugar Molds
Drills
Plastic Jugs
Plastic Tubing
Evaporators
(oil or wood)
Pails
Cans

Cartons
Candy-making
machines
Gas Evaporators
Steam Evaporators
Steam Hoods
Color Sets
Grade Stamps

SIPPLE SUGAR MAKER

A practical machine for making the finest grain of Maple Candy. It brings out the delicate maple flavor. A proven outfit with stainless steel Pig or Boiling Pan, stainless steel Worm and stainless steel Trough. With gear reduction motor. Makes 15 lbs. per batch.

THE MAPLE SYRUP DIGEST

Published & Edited by: Lloyd H. Sipple
R D #2, Box 126
Bainbridge, N. Y.
Phone: 607-967-7208

Published four times a year.
(Feb., July, Oct., Dec.)

Postage

Paid at Bainbridge, N. Y. 13733

Mailed outside our circulation
area for \$3.00 per year.

Printed by:

LaTourette Rapid Reproductions Inc.
13 No. Canal Street, Box 598
Oxford, New York 13830

NORTH AMERICAN MAPLE SYRUP COUNCIL DIRECTORY OF OFFICERS

Russell DavenportChairman
Shelburne Falls, MA 01370
413-625-2866
Gordon GowenVice-Chairman
Alstead, NH 03602 603-835-6531
Michael GirardSecretary-Treasurer
Simsbury, CT 06070 203-658-5083

DIRECTORS

Sandra Webber 207-778-4234
Farmington, ME 04938
John Kroll 612-732-2575
Long Prairie, MN 56347
Terry Healey 616-582-7683
Charlevoix, MI 49720
J.L. Maxwell Spicer 902-392-2823
Spencers Island, N.S. BOM 1S0
Arthur Merle, Jr. 716-535-7136
Attica, NY 14011
Ture Johnson 216-834-4206
Burton, OH 44021
Ronald Shaw 705-325-6878
Hawkestone, ONT LOL 1T0
Edward Curtis 717-253-3759
Honesdale, PA 18431
Wilson "Bill" Clark 802-325-3203
Wells, VT 05774
Adin Reynolds 715-449-2057
Aniwa, WI 54408

COVER PICTURE

Chester E. Basford's Maple Syrup in Maine. This is a 1500 tap operation all on tubing, centrally located in Maine near Waterville just off Interstate 95.

DIGEST ADVERTISING RATES

2 Page Spread . . . \$355.00
Full Page 190.00
1/2 Page Vert. or Hor. 105.00
Column Inch 15.00
Classified55 per word
Deadline for copy -
First of month preceding
Issue

FILTER BAG LINER

**SAVES TIME
INCREASES LIFE OF BAGS**



No need to remove filter bag from syrup filtering tank. Just remove liner from bag, rinse out solids in hot or cold water and replace. Liner has long life with careful use.

KOPEL FILTER PAPER COMPANY

2538 S. Damen Avenue, Chicago, Ill. 60608

Serving the Maple Syrup Industry
more than 25 years

Editorial

First, the bad news:
Maple Industry loses two friends.

A great loss occurred to the maple industry in early March when Aaron Hall was killed in an auto accident. Aaron was a part owner of Maple Syrup Supplies Co. of Pottersville, Michigan and will be greatly missed by his friends and customers.

About the same time, Eugene Running, of Cambridge Springs, Pa. passed away after a long illness. Gene was well known and respected within the Pennsylvania and Ohio maple business and will surely be missed by all who knew him.

Now the good news:

It looks like the surplus of syrup is gradually diminishing. It's getting harder to find good syrup in bulk in New York State and I hear it's the same elsewhere except where there may have been a better crop. Some producers are hanging on to some waiting for a better price which is gradually creeping up.

There must be plenty left in Canada because of the amount coming across the border at prices we can't even compete with. But there's still plenty of market for top quality products. We just have to work harder to find them.

I don't have anything more really urgent to write about so I won't waste space. Hope you've all had as nice a summer as we have.

Smada Farms Inc.

has everything a
MAPLE PRODUCER needs.

GRIMM - LIGHTNING

EVAPORATORS - PANS

LAMB TUBING & FITTINGS

KRESS JUGS

**SMALL BROTHERS
EQUIPMENT**

BACON JUGS

LITHOGRAPHED CANS

--- **NEW PRODUCT NEWS** ---

**AUTOMATIC DRAWOFF
110 volt**

A drawoff which completely compensates for barometric pressure changes without a boiling water probe. Digital temperature readout and syrup temperature adjustment from boiling point of water to 9.9 above boiling point.

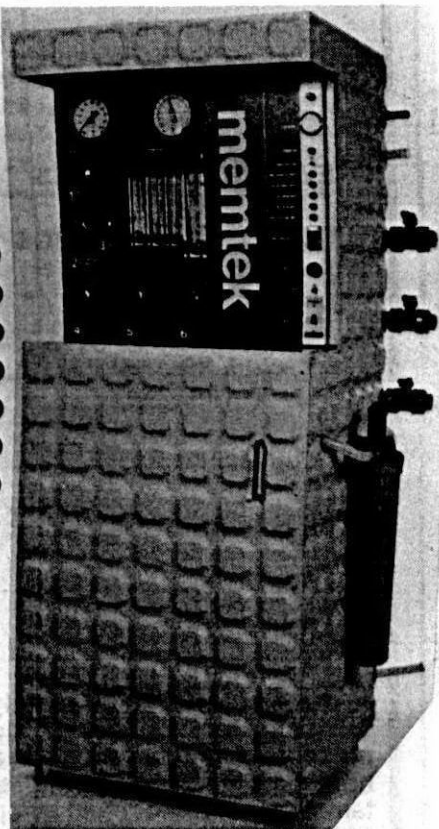
--- --- --- --- --- --- ---
**WE BUY & SELL BULK SYRUP
NEW & USED EQUIPMENT
CATALOG AVAILABLE**

Star Route Rt. 41 N
GREENE, N. Y. 13778

607-656-4058

MEMTEK CORP. REVERSE OSMOSIS

R/O'S made especially for
maple sap concentrating



Fuel costs will be reduced
70-80%.

Sugar House time is re-
duced 50-60%.

Absolutely no change in
flavor or darkening of color.

The best service organiza-
tion in the Maple Industry.

We offer early purchase
discounts as well as pre-
payment rebates.

R/O

Contact your local Memtek sales rep. today

Robert Coombs Jacksonville, Vt. 802-368-2452

Mike Glard Simsbury, Ct. 203-658-5983

Dave Mayotte Fletcher, Vt. 802-849-6810

Thomas Todd Norwood, NY. 315-353-2808

Dan Johnson Jaffrey, NH. 603-532-7379

Distributed in U.S. BY Bill Coombs

A few sales areas are still open.

Call today - 802-464-5232 Wilmington, Vt.

FROM THE CHAIRMAN



Another summer has just about gone and the cooler weather has many producers thinking about sugaring again. The summer programs have been very well attended and enthusiasm is high. Several people even predicted a better than average crop next Spring. The favorite reason for a better crop is the large amount of sunshine we are having this summer. Many factors influence the sap run as well as the sugar content. Some day we may know the effect of dry weather, insect damage, acid rain and the many other conditions that

cause stress in our maples.

The over-supply of syrup seems to be dwindling as more emphasis is being placed on marketing. I even hear of small increases in the price of bulk syrup. We have a very unique product and once the consumer becomes exposed to Pure Maple he seldom is satisfied with the blends or imitations. Any effort to inform the public about Pure Maple Products will in the long run help the entire industry.

The 24th annual meeting to be held in Traverse City, Michigan on October 24 and 25 is all set. Terry Healey and his committee have planned a great program for us.

Next year will be our 25th year and I hope it will be a banner year for the Council.

I am asking the directors to enter into a discussion concerning the **Maple Digest** the second day at Michigan. The Council will be 25 years old next year. We should re-evaluate the **Digest** as it is the most important voice of the Council. I want discussion on:

1. Do you think the **Digest** does its job?
2. Suggestions for improvement.
3. Talk to advertizers and see if they feel they get their money's worth.
4. The **Digest** is the responsibility of the Council and reflects the work and enthusiasm of the members. It is up to the directors to insist that the **Digest** does the best job possible in representing the Council and the Maple Industry.

Please give this subject you concern.

Russ Davenport



VACUUM TUBING INSTALLATIONS

- ★ We will survey your sugar bush and give you an estimate on cost.
- ★ IPL tubing stays in the woods all year.
- ★ We will travel anywhere in Western N.Y., Eastern Ohio or Northwestern Pa.
- ★ Expert team to assist in initial installation.
- ★ IPL vacuum tubing users had excellent productions in W.N.Y.
- ★ New & used evaporators. Big Savings.
- ★ Reverse Osmosis, woodsaver grates.

Call or Write Today!

SCHAMBACH'S MAPLE SYRUP

Equipment & Supplies
7288 Hayes Hollow Road
West Falls, N.Y. 14170
Phone: (716) 652-8189



Roger Sage presents Dr. Robert Morrow a plaque as Lew Staats looks on.

1983 New York Maple Tour

By Lewis J. Staats

The 1983 New York Maple Tour took place on August 1 and 2 in Essex and Franklin counties of Northern New York.

The tour was based at the Hotel Saranac of Paul Smith's College. Buses were used for transporting the group throughout the tour. The value of this means of transportation became obvious as the group traveled through the heavy tourist use villages and mountain roads.

On Monday, August 1, the groups journeyed to Lake Placid to tour the Olympic Ski Jump Complex and the Uihlein Sugar Maple Research-Extension Field Station. Information and demonstration stops included past research summaries, new research on the use of vapor compression

New York Maple Syrup Recipe Cook Book

Ceryl Nutt

R.D.# 6, Box 139A Camp St. Ext.
Jamestown, NY 14701

Price: \$6.00

evaporation, sap collection using tubing and vacuum systems, thinning and sugar bush management, insect detection and identification, testing individual tree sap sweetness with the use of a refractometer, and a tour and discussion of the clonal bank and progeny sugar maple plantations.

The banquet and program were held on the evening of August 1 at the Hotel Saranac. 260 tour participants were served an excellent roast beef dinner. Masters of ceremony were Guy Hutt, Cooperative Extension Agent in Essex County and Bill Pauling, Cooperative Extension Agent in Clinton County. First of the speakers was Dr. Harry Miller, acting president of Paul Smith's College, who welcomed the tour group to Hotel Saranac and gave an overview of Paul Smith's College. Several members of Cornell University staff spoke on Cornell's interest in maple syrup production including; Dr. Kenneth E. Wing, Associate Dean; Dr. Ray Oglesby, Chairman of the Department of Natural Resources; Dr. John Kelley, Department of Natural Resources; and Lewis Staats, Extension Specialist, Maple Syrup Production. Roger Sage, President of the New York State Maple Producers Association, discussed programs and activities of the Association. The reigning New York State Maple Queen, Miss Jill

EVERYTHING FOR THE MAPLE PRODUCER

Grimm, Lightning Evaporators,
Lamb Tubing and Supplies,
Bacon and Kress Jugs.

ORDER EARLY AND SAVE

HAROLD TYLER MAPLE FARMS
607-638-9474 Westford, N.Y. 13488

Komrowski, was introduced. Dr. Robert Morrow, recently retired Professor of Forestry from Cornell University was presented a plaque from the New York State Producers Association in recognition for his contributions to the Maple syrup industry.

Dr. Morrow presented a history of the Uihlein-Cornell maple program emphasizing the valuable support and gifts from Mr. and Mrs. Henry Uihlein of Lake Placid. Mr. and Mrs. Uihlein were then honored with a plaque presented by the New York State Maple Producers Association.

Tuesday morning, the tour traveled through the Adirondacks to visit Mt. Van Hovenberg bobsled and luge runs and three very nice maple operations in the Keene and Keene Valley area. The first maple stop was Frog Alley

Farm operated by Harold Heald in Keene Valley. Here syrup is produced on a 2.5 by 8 wood fired evaporator from 475 buckets on leased trees. Second stop found the group at Wade and Jud Whitney's family operation in Keene. This operation consists of a 5' by 14' wood fired evaporator with preheater which handles 2000 taps, 1600 of which are on vacuum. The last stop of the day was at the Alstead Hill Sugar House. This has a 5' by 15' wood fired evaporator and a sugar bush being improved by thinnings.

In finishing the 1983 New York Maple Tour, tour participants were given the opportunity to view equipment exhibits at the tour base in Saranac Lake from early afternoon until 5 pm.

Sugarmakers...

YOUR REPUTATION STARTS HERE



THE "LIGHT FANCY" JUST DOESN'T HAPPEN!

When Mother decides to run, you have to gather every drop quickly and keep it moving through storms, over mud, snow, and debris by the most sanitary means possible—all the way to the sugarhouse. If you don't do this job well - NOTHING ELSE MATTERS!

A well designed tubing network with our SAPSUCKER vacuum pump at the end delivers cleaner sap and a lot more of it - for a small increase in cost and no increase in labor. When you boil it all down, in a bad year CLEANER and MORE could be your profit.

Our new SAPSUCKER II is "built the way things used to be built." If you would like to know more about SAPSUCKERS and the outstanding features of our latest models, ask your dealer for a SAPSUCKER BROCHURE or contact the factory direct. You'll find that:



A SAPSUCKER IN YOUR BUSH IS THE BEST HIRED HAND YOU'LL EVER HAVE!

SUGAR CAMP, INC.

Rt. 2, Box 337, Rapid City, MI 49676
Phone (616) 331-6328

U.S. MAPLE



TUBING CONNECTORS SPOUTS "T's"

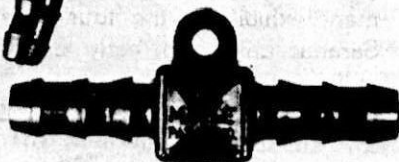
SPOUTS

- Black color aids in rapid tap-hole thawing.
- For removal use 1" wrench or hammer.



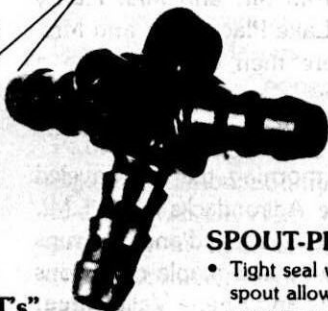
CONNECTOR

- Will not pull apart.



SPOUT-PLUG

- Interconnection between "T" and spout.



SPOUT-PLUG

- Tight seal with spout allows pressure or vacuum washing of tubing in place.

"T's"

- Tapered "T" with smaller first ridge for easier tubing insertion.

TUBING

"SUPER-COLD" — Green translucent color. I.D. is standard for complete interchangeability. Minimizes ultraviolet sunlight deterioration. Blends with nature in summer for year round lines. Has a broad temperature range in which elasticity remains the same. Excellent for cold weather use and reduces extreme sags in warmer weather.



Owned and operated by Sugarmakers. Sugarmakers with extensive tubing experience, concerned about quality and service. All items are: • Guaranteed against defects of any kind • Completely interchangeable with other brands allowing you to trade a section at a time. Fittings are: • Made from a new formula. Dupont ST 801 Nylon for low temperature and impact strength • Designed not to pull apart • Rugged, most plastic per fitting on the market • Vacuum tight.

U.S. Maple Inc. is owned by the following producers:

Bruce Bascom, Bascom's Sugar House, P.O. Box 138, Alstead, NH 03602
(603) 835-6361, 835-2230

Hilton Foote, Middlebury, Vt. 05753
(802) 462-2472



Mr. and Mrs. Henry Uihlein II Honored By The New York Maple Producers Association

By John W. Kelley
Lewis J. Staats

At the 1983 New York Maple Tour banquet held August 1 at the Hotel Saranac of Paul Smith's College in Saranac Lake, the New York State Maple Producers Association presented Mr. and Mrs. Henry Uihlein II of Lake Placid a plaque in appreciation of their many years of generous support to maple syrup research.

The Uihleins have supported agricultural research at Cornell University for many years. In 1965, the Uihleins made the sugar bush portion of their Heaven Hill Farm at Lake Placid available to Cornell University for research and demonstration projects in maple syrup production. In addition to the lease of these forest lands, the Uihleins provided numerous gifts to help develop facilities and to obtain equipment for the direct support of the Cornell maple program. In 1981 the Uihleins deeded to the University 200 acres of the sugar bush as a gift. Also included in this gift was an 8-

acre parcel of land to be used by Cornell in cooperation with the U.S. Forest Service for a genetics study of "sweet tree" sugar maples. Progeny and clonal seed tree bank plantations were established on this site in the spring of 1983.

The Uihlein Sugar Maple Research - Extension Field Station has been named in honored of Mr. and Mrs. Henry Uihlein II. Cornell University and the New York State Maple Producers Association recognize and appreciate the continued support and interest of the Uihleins in the furtherance of maple syrup research and extension.

NEW & USED

Sugaring Supplies

SMALL BROS. & GRIMM EVAPORATORS
AND ACCESSORIES • US MAPLE
TUBING • SUGARHILL NH, VT & ALL
STATE CONTAINERS • RO EQUIPMENT •
BULK, WHOLESALE & RETAIL SYRUP SALES

SEND FOR
CATALOG
(\$1.00 outside
New
England)

Bascom's Sugar House

R.D. 1, Box 138
Alstead, NH 03602
(603) 835-2230 or
835-6361



LAMB *Naturalflow*

NEW AT LAMB'S MAPLE TUBING FOR .05 A FT.

For years I have offered to make a competitive tubing with our same regular material but with a thinner wall, the same as our competitors. I can make it so it will hold just as well on the fittings and it will sell for 5 cents a foot. I have not made it because of our dealers disapproval.

This 5/16 thinner wall, light weight tubing will be plainly lettered so as not to confuse it with our best grade 33U tubing.

As most of you know, our regular tubing has a very heavy wall. It will last longer and has less stretch in it. We think it is the best and it sells for 5½ cents a foot. I have heard rumors that some skid logs with it.

We also used to make a ribbed tubing. We quit because it builds up with a heck of a load of snow or ice. This stretches it, making it smaller and it is prone to pulling off the fittings. Also, if you wrap it tightly around a tree, unless the ribs are wide, the ones on the outside of the bend are under a great strain. In a short period of time the ribs check. Then you have no ribs at all and the tube flattens.

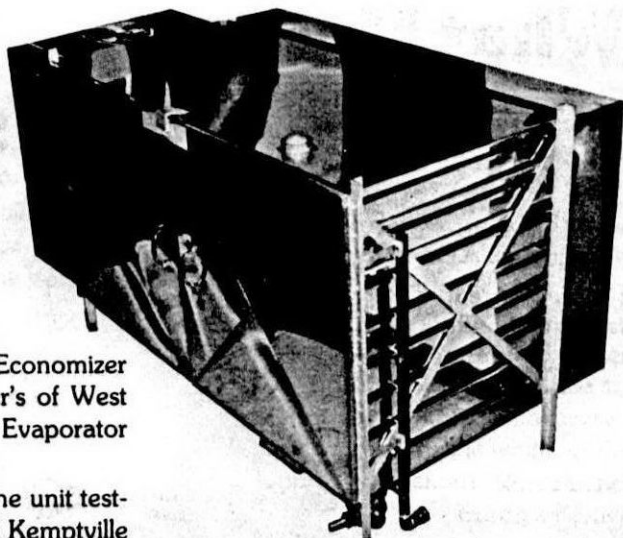
Our tests show that our regular heavy wall tubing is much better for this purpose or any other situation we have run into so far.

Robert M. Lamb

P.O. Box 368 Route 49
Bernhards Bay, N.Y. 13028

Phone (315) 675-3652
Home (315) 675-3559

Report On The Raithby Economizer



Subject: The Raithby Economizer placed at Mr. Earl Parker's of West Chazy, N.Y. by Leader Evaporator Co., Inc.

This unit is much like the unit tested by Bill Langenberg of Kemptville College of Agricultural Technology in Ontario.

The principle of the Economizer is to evaporate sap at temperatures below the boiling point.

Design of the Economizer:

The economizer consists of 8 - 4x8 stainless steel trays (Ontario unit had aluminum trays) providing 256 sq. ft. of surface area for evaporation. The trays are stacked one over the other and the sap is routed downward through each tray. A 24" tubeaxial fan is used to draw air over the sap in each tray which creates a negative pressure allowing the sap to steam at a lower temperature. This fan also removes the steam coming off the sap. A 1/2" gear pump driven by a 1/3 H.P. electric motor is used to pump the sap from the economizer to the evaporator. Steam produced by the main evaporator is the fuel used to operate the economizer. By the use of an air tight hood the steam is ducted from the evaporator to the economizer. The trays are double walled trays. The sap is in the upper portion of the tray

and the steam is in the lower portion. The steam being directly under the sap heats it and causes it to evaporate.

We have made a few changes to the unit that was designed and tested in Ontario and found the results to be very **favorable**. The unit tested in Ontario showed a 65% increase in evaporation. The unit tested at Mr. Parker's, we feel showed a substantial increase over the previous years testing. Because of lack of time we were unable to install a flow meter but intend to do this next spring. We have based our results on sugar content only. 2 1/2% sap going into the economizer came out at 4.6%, 2% came out at 4.2%, 1.6% came out at 3.8%.

We feel the increase is the direct result of using a heat exchanger (pre-heater) and the routing of the steam.

We plan to do further testing of this unit at the start of the next sugar season.

Look for a future article for more promising results.

What Makes A KRESS Jug?

Superior thread and neck finishes to assure proper sealing.

Extra thick walls to guard against deforming and to improve keeping qualities



Minimal to no flashing

Assortment of decorative designs available in choice of one or two colors

What do folks have to say about KRESS jugs?

Dear Sir:

I have recently tried some of your Kress jugs that I won as a door prize on the '82 New York Maple Tour. They are of higher quality than the _____ jugs I've used in the past.

*William VonMatt
Rome, New York*

Dear Sir:

We sell maple syrup and candy and have been using your Kress jugs for eight years ... we have a lot of comments about your jugs. Our customers love them. We are pleased with the quality of your jugs as we had used others before we used yours.

*John & Carol Deets
Titusville, PA*

Dear Sir:

We have used Kress jugs purchased through M.M.S.A., so we know they are good. Our customers say they are "cute".

*Paul Bergmann
Traverse City, MI*

Dear Kress Creations:

We are very discouraged with the metal cans as they rust and the caps and inner seals are assorted sizes. We have decided not to buy them next season. We feel that Kress jugs are the most attractive plastic containers of all the ones we've looked at ... Ninety-nine percent of the people who buy our syrup choose your container over the metal.

*Randy Whitcher
Warren, NH*

***Try KRESS jugs and become another one of our very satisfied customers.
If our jugs aren't available in your area, write or call us.***

KRESS

CREATIONS, INC. 349 Christian Street • Oxford, CT. 06483 (203) 264-9898

THE SUGAR MAPLE BORER

Douglas C. Allen

Forest Entomologist, College of
Environmental Science and
Forestry Syracuse, New York

Lewis J. Staats

Extension Specialist, Uhlein-Cornell
Experimental Sugar Bush,
Lake Placid, New York

Few scenes distress a woodlot owner more than scarred tree trunks. This unsightly damage is of special concern to maple syrup producers, because a sugar maple's ability to produce sap is, for the most part, determined by tree vigor and general health. The sugar maple borer rarely kills trees, but it can be a major cause of trunk and crown damage in sugar-bushes. In some regions, incidence of borer activity is low, but in many areas, 25 to 50 percent of the sugar maples may be attacked. Recognition of borer damage and an understanding of the ecological conditions that favor the insect will help woodlot owners reduce the economic impact of this pest.

The adult sugar maple borer is a black beetle distinctly marked with bright yellow bands of varying width and shape (Fig. 1). The beetle is ap-



Figure 1.

proximately one inch long, and it belongs to a group commonly referred to as longhorn beetles, a name evoked by the unusually long antennae, or feeler-like structures, that are attached to the beetles' head.

The beetle deposits one to a few eggs in crevices or holes that it chews through the bark, usually on the basal 20 feet of a tree trunk. Many trees are probably used for egg laying, but the more vigorous ones are able to overcome the newly hatched larvae. Following egg hatch, the white, grub-like larva (Fig. 2) enters the tree and

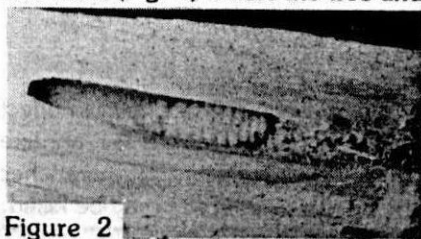


Figure 2

YES!

KRESS jugs are available
in New Hampshire

One and two color designs

CONTACT:

Ancestral Acres
R.F.D.
Ashland, NH 03217

Hardscrabble Tree Farm
35 Bridge Street
Colebrook, NH 03576

feeds beneath the bark. Eventually it excavates a shallow transverse or oblique feeding gallery in the sapwood and inner bark (Fig. 3). As a result of

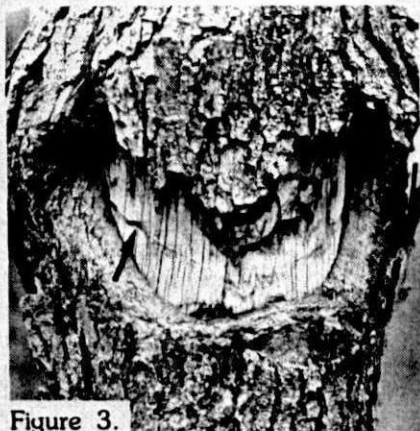


Figure 3.

this girdling, which is similar in effect to the damage caused by an axe blaze or logging scar, large branches above the feeding site may be killed.

This is important to sugarbush operators, because the amount of sap produced by a tree is primarily a function of crown size. Larval feeding also destroys inner bark tissues in a large area adjacent to the site where feeding actually takes place. A large cat-faced scar or area of exposed wood is often produced (Fig. 3) and a significant portion of the tree trunk may be rendered unusable for tapping. Sugar maple borer scars are not always easy to detect. Sometimes they are conspicuous, but often the damage is hidden beneath slightly cracked and loosened bark (Fig. 4). The presence of the larval gallery engraved on the surface of the exposed sapwood (Fig. 3) distinguishes scars caused by sugar maple borer feeding from scars that are caused by other agents, such as fungi.

H. W. Cook Farm Service, Inc.

DeRuyter, N. Y. 13052

Serving the Maple Industry for
Over 60 years



Leader - King Evaporators
Gas & Electric Tree Tappers
Bits, Filters, Spouts
Sap Buckets, Covers
(new and used)
King Plastic Sap Bags
Metal Decorated Syrup Cans

Sugarhill Plastic Jugs
Rubber Candy Molds
Maple Cream Tubs
Lamb Tubing & Fittings
Pellets
Storage & Gathering Tanks

Open daily 8:00 - 5:00

Phone: 315-852-6161 and 315-662-7208

Write for Free Catalog

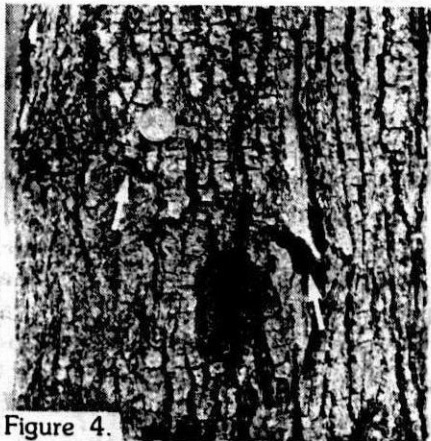


Figure 4.

The borer requires two years to complete development from egg to adult. In preparation for overwintering during the second year, the fully grown larva excavates an oval, 3/8 - 5/8 inch diameter gallery that penetrates the sapwood to a depth of 2-4 inches (Fig. 2). This may severely

degrade the first board that is sawn from that part of the log. In addition to this physical damage, borer attack stimulates a physiological response in sugar maple that protects the tree, but may further reduce the quality of lumber cut from previously infested sawlogs. For example, chemical barriers and callus tissue develop in the vicinity of borer injury. This is the tree's way of compartmentalizing the damage to prevent invasion of healthy tissue by wood-inhabiting microorganisms. The callus imparts a twisted grain to newly formed wood adjacent to the wound, while the chemical barrier results in a mineral stain, giving an undesirable color to lumber cut from the injured portion of the log.

Recently completed research at the State University of New York,

SPECIAL

CAR LOAD SALE

SPECIAL

SAVE ON YOUR

PLAIN 1 — GALLON MAPLE SYRUP CANS

Special price until supply gone

packed — 30 — 1 gallon cans per case

.60¢ each plus shipping charges

Order now and save

Write or phone



REYNOLDS

SUGAR BUSH INC.

ANIWA, WIS. 54408 Ph: 715-449-2057

College of Environmental Science and Forestry, showed that successful sugar maple borer attacks are generally limited to sugar maples that have been stressed and are in a weakened state. For the maple syrup producer, a program of proper sugarbush management that encourages maximum sap production, rapid growth and vigorous trees will help to reduce the incidence of damage. For example, proper thinning of stands during the highly susceptible pole timber stage, when tree diameters are between 5 to 11 inches, is especially important in a program of preventative maintenance. If sawtimber is the management objective, removal of previous-

ly damaged trees is also recommended to improve the quality of the residual stand and allot growing space to sound, and presumably, more valuable trees.

The sugar bush operator should use careful judgment, however, before condemning a tree. It is not necessary to remove sugar maples at the first sight of damage. As long as a tree pays its' way in terms of sap production it should be preserved.

Fig. 1. Sugar maple borer adult.

Fig. 2. Larva of sugar maple borer in the overwintering cell.

Fig. 3. Damage caused by larval feeding. Arrow indicates transverse feeding gallery.

Fig. 4. Appearance of loosened and cracked bark that often conceals borer damage (arrows).



BAIN-GIRARD & CO.

MICHAEL GIRARD
GREG GIRARD

NEW & USED MAPLE SUGARING EQUIPMENT

We Are Agents For:

- SMALL BROS. EVAPORATORS
- LEADER EVAPORATOR CO.
- TEKNIK EVAPORATORS
- U.S. MAPLE TUBING & FITTINGS
- KRESS JUGS

Please Write For A Used Equipment Price List

11 VILLAGE ROAD • SIMSBURY, CONN. 06070
PHONE (203) 658-5083 or (203) 658-0270



Small Brothers inc.

Champlain Chevrolet Bldg.
Enosburg Falls, Vermont, USA
05450

423 Main Street
Dunham, Que. Canada
JOE 1MO

Tele. (514) 295-2451 2441

MANUFACTURERS OF A COMPLETE LINE OF SUGAR MAKERS SUPPLIES

FAMOUS SINCE 1890

OVER 50 U.S. DEALERS

EVAPORATORS

From 2 x 4 to 6 x 22
5 Models to Choose From

NEW and USED
Hobby model evaporator
Oil Fired Arches
Preheater hoods
Stainless steel pans
Gas finishing fires
24 x 30 to 4 x 6
Wood Finishing pans

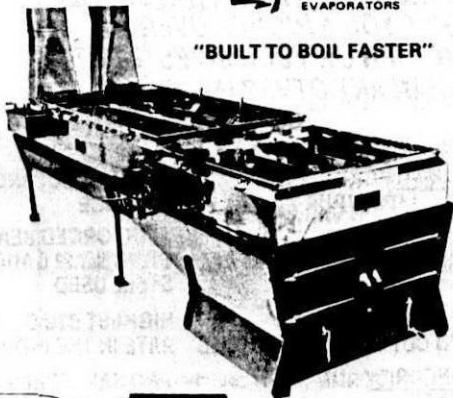
Filter tanks
Sugar machines
Butter machines
Candy molds
Thermometers
Hydrometers
Storage tanks

Used buckets
Gathering buckets
Complete vacuum systems
SIHI pumps
Filters
Heated canner
Pumps

Lightning

EVAPORATORS

"BUILT TO BOIL FASTER"

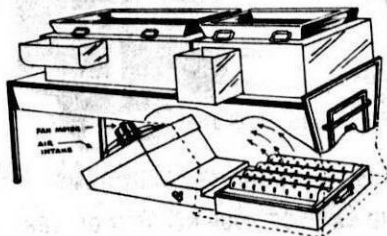
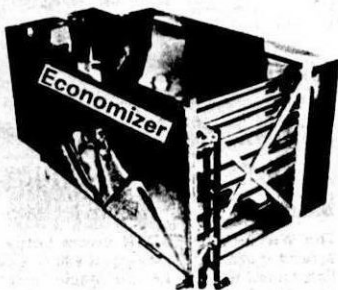
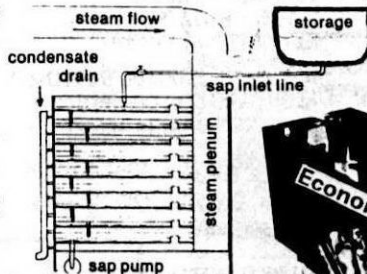


Reverse Osmosis 100-20,000 taps
16 models

Cut operating costs by approximately
75%. Designed for both small and
large maple operations.

New Economizer

Raithby Economizer
Utilizes all steam from existing
evaporator. Increase total
efficiency to 65%. Can be installed
on any evaporator. 40%
fuel consumption decrease.



New Woodsaver

Increase your heat by 20% and burn 50% less wood! Im-
possible! Wrong, it is being done. Designed to be installed on
any make of woodfired arch.

Send me complete FREE information, catalog and price list and nearest distributor

Name _____

Address _____

Zip _____

Have your representative contact me as soon as possible.

Telephone (_____) _____

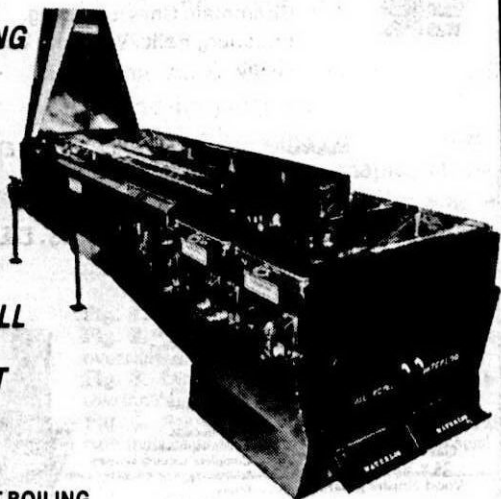
Number of Taps _____

WATERLOO "The Economizer"

**THE ENERGY AND LABOR SAVING
EVAPORATORS OF THE 80's**

**WATERLOO EVAPORATORS
HAVE BEEN PRODUCED
AND IMPROVED FOR OVER
60 YEARS.**

**A WATERLOO EVAPORATOR WILL
GIVE YOU A HIGHER OVER-ALL
RETURN ON YOUR INVESTMENT
THAN ANY OTHER MAKE.**



YOU GET:

**SPEED FOR TOP
QUALITY SYRUP**

**DURABILITY TO
STRETCH YOUR DOLLAR**

**ECONOMY
TO CUT OPERATING COSTS**

**SECURITY AND
EASE
OF OPERATION**

**LARGEST BOILING
SURFACE**

**REINFORCED SEAMS +
STRICTLY 22 GAUGE
STEEL USED**

**HIGHEST BTU CONVERSION
RATE IN THE INDUSTRY**

**TWO SAP LEVELS AND
DOUBLE FLOATS FOR
EXTRA SECURITY**

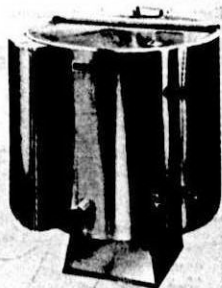
**REVERSIBLE RAISED BOTTOM.
FLUE PANS FOR COMPLETE
"ON ARCH DRAINAGE"**

**MULTIPLE FRONT PANS FOR
EASY AND SAFE HANDLING**

WATERLOO/ESCAN STEAM KETTLES

**A MUST FOR THE PRODUCER WITH
MAPLE SYRUP MARKETING IN MIND**

The WATERLOO/ESCAN steam kettles will reheat your syrup for sterile packaging, it will boil your syrup up to 255° Fahrenheit to produce your Maple Taffy, your Maple Cream, your Soft Sugar, your Candies and your Hard Sugar Blocks.



WATERLOO ALSO OFFERS THE FAMOUS ELECTROHOME R/O SYSTEMS

FOR OUR FREE 16 PAGES CATALOGUE AND NAME OF YOUR NEAREST DEALER

**WRITE TO: WATERLOO EVAPORATORS INC. 6064 FOSTER ST. WATERLOO,
QUEBEC, J0E 2N0 CANADA TEL.: (514) 539-3663**

"An Interesting Centurian"

Benjamin Franklin Bridges grew up in the early 1800's and lived past his four score and ten. "For many years all the traffic on the upper Connecticut went past his door for the river, being the most convenient and inexpensive means of transportation, --"

He told stories of "ye olden times" and this his maple sugar story:

"One night the camp was visited by a bear, who devoured a half kettle of warm syrup. Next night from the cross-stick swings a kettle of liquid sweets, simmering gently over the glow of an oak chunk. A closely barricaded cabin stands at a little distance, and between these two objective points, crouch four excited boys, with chattering teeth and cramped muscles, hoping their visitor will again appear. The evening wears on; strange sounds come out of the darkness; there is a rustle of dry leaves behind them, and every boy clutches his gun and wishes himself safely behind the cabin door. Suddenly a pair of glowing eyes peers from the thick-

SMALL BROTHERS

Lightning Evaporators
The new wood saver

REVERSE OSMOSIS

Other equipment & supplies

U.S. MAPLE TUBING & SUPPLIES

SAPSUCKER VACUUM PUMPS

BRODIES SUGAR BUSH

Otsego County Route 34
1 mile off N. Y. 165 in South Valley
Westford, N. Y. 13488 607-264-3225

et, and in breathless silence the watchers see a monster brown bear leisurely approach, his huge form magnificent by the flickering firelight. After gravely patrolling the circle

SHOW OFF YOUR FANCY SYRUP IN

JUGS BOTTLES JARS

MAPLE PRODUCTS SELL
BEST IN GLASS

WE ALSO CARRY MANY
TYPES OF PLASTIC CONTAINERS

INCLUDING THE KRESS JUGS.

Send for complete list.

M. R. CARY CORPORATION

P. O. Box 122
Salina Station
Syracuse, N. Y. 13208

FOOTE'S MAPLE GARDENS

RD 2, Cornwall Cider Mill Rd.
Middlebury, VT 05753

Distributors for U.S. MAPLE INC.

Green Tubing/Orange & Black Pipeline



New Design Spouts & Tees,
Connectors and
4 way Manifolds
manufactured in
Middlebury, VT

802/462-2472

where centers the sweetness he craves, a close investigation is attempted, during which his inquisitive nose is burned. This calls out a roar of pain and a stay in the proceedings. But after sundry whimperings and doleful head shakings, he rises to the occasion and looks in the tempting dish. The sight proves too much for his fortitude; down goes a big brown paw, and with a howl of rage is withdrawn and thrust in bruin's capacious mouth. This is repeated again and again, amid grunts of satisfaction and whines of pain. By this time the courage of the quartet has revived and there comes a rattling volley from the

rifles, followed by a general stampede. The listeners in the cabin, not daring to venture out, can judge only by the growls and roars of agony, that some of their shots have taken effect. A search next morning discovers an enormous bear, quite dead, his glossy coat bedaubed with syrup, while his right paw, blistered and burned clean of hair, marked him as a native born New Englander in his love for maple syrup.

This article was written by Laura Sanderson and found in a history of Franklin County, Mass. *Picturesque Franklin 1891* by Russell M. Davenport.

MAPLE & METAL

A WINNING COMBINATION

FOR OVER 100 YEARS



FOR CANS • CARTONS • SHIPPERS • LABELS

FOR THE DEALER
NEAREST YOU
CONTACT US
• • • • •
DEALER INQUIRIES
INVITED

MAPLE SUPPLIES COMPANY

WEST SECOND STREET (P.O. BOX 895)
BARRE, VERMONT 05641
IN VERMONT (802) 479-1827
IN OHIO (216) 247-2967

Microorganisms on Plastic Tubing Walls.

By Warren King¹ and Mariafranca Morselli

Sugar maple sap contains water and all the precursors of color and flavor, which develop when the sap is boiled to syrup. These precursors, mainly a sugar, sucrose, and small amounts of amino acids, phenolics, organic acids, and mineral ions, are subject to change during a sap flow season due to the metabolic changes in the tree, mediated mainly by temperature. Genetic differences among sugar maple trees also may play a role in these changes. But sugar maple sap also is a good growth medium for microorganisms. Depending on ambient temperature, microorganisms

act on the sap biochemistry at the tap-hole and in the sap collecting and storing systems.

The metabolic activity of microorganisms in sugar maple sap includes the enzymatic hydrolysis of some sucrose molecules, causing a small increase in sap invert sugar (mainly glucose) that contributes to the darkening of the syrup and to the development of the caramel flavor. Hence, microbial contaminants in the sap from tapholes, collecting systems, and storage tanks change syrup grade (1,2,3,4).



**MAPLE
PRODUCTS, INC.**
JACKSONVILLE, VERMONT
05342

Tel: 802-368-2345

Dealer for a full line of maple sugaring equipment specializing in "Leader" and "King" evaporators.

Many sizes of gathering and storage tanks kept in stock as well as the small utensils used in making maple syrup.

Buying and selling of bulk maple syrup.

Processor and packer of maple syrup and candies in consumer packages.

Since the 1950's, because of research by Willits and colleagues, the maple syrup industry has recognized that sugarbush sanitation is of the highest priority for producing clean sap, and in turn, light-colored table syrup with good maple flavor. The profit of a sound maple sugaring operation depends largely on the quality of the syrup and the highest financial return is derived from the production of table grade syrups.

The widespread use of plastic tubing systems in sugaring operations has eliminated the extensive labor needed to collect sap from buckets. Furthermore, the use of vacuum pumps, which increase the rate of sap flow, has doubled sap yield. Sap quality problems arise if the tubing sags and if the sap lingers within the tubings or the large conduits. Maple

producers have postulated that, even when the tubing system is properly positioned, the sap flow will decrease, because of microorganism build-up on the plastic walls, at the tubing connection with the spout, and in other critical spots.

Previous work has documented the number of bacteria and yeasts found in maple sap from different collecting and storing systems (2,3,4) but no research has been reported on the identification of microorganisms adhering to the plastic tubings.

With funding, in part, from the Chittenden County Sugar Makers Association, we have initiated a study to identify the microorganisms adhering to the internal walls of plastic tubings.²

In one experiment we compared the number and type of microor-

B/P

BERLINER PLASTICS

B/P

THE INNOVATOR IN MAPLE SUPPLIES

Berliner Plastics, Mike Berliner Pres., has a full line of MAPLE PRODUCTS including the ORIGINAL FORMULA GREEN WEATHER RESISTANT GRADE TUBING/ORANGE LO-HEAT MAINLINE. Our molds are producing super-tuff spouts/tees/6 ways etc. PLUS our line of MAPLE JUGS with/without GRADESTAY coating, and the ONLY LICENSED USDA PERMANENT GLASS GRADING KIT. See your B/P systems authorized distributor with his full line of maple equipment supplies. Distribution for ground floor opportunities. Contact us now:

SUGARHILL JUGS

TUBING SYSTEM DISTRIBUTORS

SYRUP RESALE

**USDA
Appr.**



**CANADA
Appr. &**

What every sugar maker has wanted.

USDA Approved Kit AVAILABLE NOW: \$65.00

Permanent (low cost) glass panel grading kits (certified to USDA/Canada Specs) obsoletes the nonapproved "Glycerine" type

**NEW: TRUCK CAPS (f-glas)
FORESTRY SUPPLIES
PLASTIC SHEET/BAGS**

See your B/P distributor, or contact:

Mike Berliner, Pres. / Berliner Plastics
1973 Lake Ave., Lake Luzerne, N.Y. 12846
518-696-2478

ganisms found in early, mid-season, and late saps with the microorganisms found adhering to 5 feet of tubing used to collect the same saps. The sap was collected by gravity in a sterile flask from one taphole drilled with a bit and filled with a plastic spout, both rinsed in 10% bleach solution. The tubing from the spout was new. The tubing sections were cut and handled in sterile conditions.

For the experiment flushing the tubing with a sterile phosphate buffered saline solution and swabbing the tubing walls in 5 different areas proved to be more effective for removing microorganisms than did scraping the walls. The flushing technique was designed to remove any organism loosely attached to the tubing walls, while the swabbing technique was used to remove organisms strongly adhering to the walls. The microorganisms from the flushing solutions and swabs then were incubated for 3 days at 27°C (81°F) in the media proper for each type. Five biochemical tests then were performed to identify the organisms (5), and for each test, controls were run with known microorganism cultures (AT-CC³) These procedures will be published elsewhere.

★ **FIVE GAL. CANS** ★

1 3/4" or 3" screw cap & seal, welded seam, \$3.50 each (less in bulk).

Cardbd ctns for them 70¢ also, Sugarhill Jugs and cartons; Waterloo equip; Tubing & fittings; Davies cans by the truckload.

W. Allen RD Box 254
Castorland, NY (315-346-6706)

In a second experiment, sterilized sap and trypticase soy broth (a sterile nutrient solution) were inoculated into 25, 1-foot long, sections of the tubing used during the previous sap season at the Proctor Maple Research Farm. The tubings had been washed with a 10% bleach solution and rinsed with hot water immediately after the previous sap season and then were stored during summer and fall in a large dark, screened, and aerated area at the Farm. Cut, sealed (air permeable) tubing sections containing the liquid were incubated for five intervals up to 2 weeks at 27°C (81°F) to allow for bacteria and yeasts, presumably present after storage in either a dry or spore form, a chance to grow. We flushed and swabbed the tubings at each interval, and then incubated the microorganisms in different nutrient media, and used the same identification procedures as in the first experiment (5).

A third experiment consisted in inoculating five new clean tubing sections with slightly contaminated sap. The same procedures as in the other experiments were used for incubation

**AMERICAN MAPLE MUSEUM
Cookbook**

The American Maple Museum has completed its first cookbook. Single copies will be mailed for \$4.25 including postage.

Send request to:

American Maple Museum
P.O. Box 81
Croghan, N.Y. 13327

and identification of microorganisms.

Results and Conclusions:

The results of the first experiment are given in Table 1. Early in the sap season, tubings and sap were void of microorganisms, we believe because the taphole had been drilled with a clean procedure, although we did not use the aseptic procedure we use to collect sterile sap. However, a dramatic increase in microorganisms, although not at the same rate, was found in the flushing solutions at mid- and late-sap season in microorganisms adhering to the plastic tubings. Furthermore, even after the tubings were flushed, microorganisms still were found by swabbing the walls. More pseudomonads (fluorescent and nonfluorescent) from the tree bark and enterics from human contamination were recovered by flushing and swabbing procedures than were found in the sap. If we consider that flushing the tubing should dilute the microorganism sample, then we conclude that increase of microorganisms in flushed and swabbed samples means that adherence of microorganisms to the walls did indeed occur. Strong evidence also indicates that more adherence occurred in the tubing sections closer to the spout.

The results of the second experiment, designed to establish the number and type of microorganisms in the tubings stored for more than 6 months, surprisingly did not show any surviving microorganisms--not even one colony--for all the different techniques used. We hypothesize that the thorough bleach washing of the tubings preceding storage and/or high summer temperatures have kil-

led the microorganisms, both spore- and nonspore-forming organisms. If any spore had been present in the tubings, the length of the incubation period would have allowed them to germinate.

In the third experiment, designed to recover microorganisms deposited from sap on new tubing walls, about 20 microorganism types present in sap readily adhered to the tubing wall surface. This experiment will be repeated and confirmed. Microorganism types will be published elsewhere.

Recommendations:

More research is needed to confirm these preliminary findings from one season, one tree, one location and one type of tubing, and to enable us to extend specific recommendations how to clean tubing walls more effectively. However, in light of these findings, we recommend using the cleanest tapping technique possible in a sugarbush; also, washing the tubing and conduit systems at least once during the sap season and after it. The practice of washing the tubings only before the sap season starts,

NATURAL AND L. P. GAS BURNERS

Proven Since 1952

ELMER WINTER

11171 Sisson Highway, Route 75
North Collins, N. Y. 14111

BUDDY SYRUP

Convert to marketable grades
by new FDA approved process
For information and prices contact
CLAUDE HILLS, Consultant
Flourtown, Pa. 19031
(215) 233-0132

Table 1. Average microorganisms in sap and on tubing walls, reported in colony forming units per milliliter (CFU/ml).

Microorganisms Types	Early				Mid				Late			
	Sap		Tubing walls		Sap		Tubing walls		Sap		Tubing walls	
	Flushing	Swabbing	Flushing	Swabbing	Flushing	Swabbing	Flushing	Swabbing	Flushing	Swabbing	Flushing	Swabbing
TOTAL YEASTS	0 x 10 ⁰	0 x 10 ⁰	0 x 10 ⁰	0 x 10 ⁰	3.8x10 ²	2.1x10 ²	6.0x10 ¹	4.8x10 ⁵	1.8x10 ⁵	4.8x10 ⁵	1.8x10 ⁵	1.4x10 ³
TOTAL AEROBES	0 x 10 ⁰	0 x 10 ⁰	0 x 10 ⁰	0 x 10 ⁰	8.1x10 ³	1.1x10 ⁴	5.0x10 ²	8.0x10 ⁵	--	8.0x10 ⁵	--	2.8x10 ⁶
TOTAL AEROBES & FLUORESCENT PSEUDOMONADS	0 x 10 ⁰	0 x 10 ⁰	0 x 10 ⁰	0 x 10 ⁰	8.9x10 ³	1.8x10 ⁴	5.4x10 ²	1.1x10 ⁶	2.0x10 ⁷	1.1x10 ⁶	2.0x10 ⁷	4.9x10 ⁴
TOTAL PSEUDOMONADS	0 x 10 ⁰	0 x 10 ⁰	0 x 10 ⁰	0 x 10 ⁰	4.0x10 ²	1.0x10 ³	2.1x10 ²	2.4x10 ²	6.0x10 ⁵	2.4x10 ²	6.0x10 ⁵	8.7x10 ²
TOTAL GRAM POSITIVES	0 x 10 ⁰	0 x 10 ⁰	0 x 10 ⁰	0 x 10 ⁰	1.1x10 ²	1.6x10 ²	0 x 10 ⁰	1.2x10 ⁵	1.2x10 ⁵	1.2x10 ⁵	1.2x10 ⁵	1.5x10 ³
TOTAL ENTERICS	0 x 10 ⁰	0 x 10 ⁰	0 x 10 ⁰	0 x 10 ⁰	4.4x10 ³	1.1x10 ⁵	2.2x10 ⁴	7.1x10 ⁵	2.2x10 ⁶	7.1x10 ⁵	2.2x10 ⁶	2.7x10 ⁴
TOTAL FERMENTERS. & NON-FERMENTERS	0 x 10 ⁰	0 x 10 ⁰	0 x 10 ⁰	0 x 10 ⁰	2.9x10 ²	--	1.0x10 ¹	1.0x10 ²	3.8x10 ⁵	1.0x10 ²	3.8x10 ⁵	7.0x10 ²

or just letting the first sap run out of the system, is not sufficient to maintain clean tubings, hence clean sap, throughout the season.

¹Undergraduate student and research associate professor, respectively, Botany Department, Maple Research Laboratory, Agricultural Experiment Station, University of Vermont.

²Lamb Tubing System. Robert M. Lamb, Bernhards Bay, N.Y. Use of name of manufacturer does not imply endorsement by the Vermont Agricultural Experiment Station over others not named.

³American Type Culture Collection, Rockville, Md.

References

1. Naghski, J. and C. O. Willits. 1955. Maple Syrup. IX. Microorganisms as a source of premature stoppage of sap flow from maple tap-holes. Appl. Microbiol. 3:149-151.

2. Sipple, L., J. C. Kissinger, C. O. Willits. 1970. A survey of microbial contamination of maple sap in field collection systems. USDA Agr. Res. Ser. Pub. ARS 73-68.

3. Morselli, M. F. and M. L. Whalen. 1979. Temperature effect on sap storage. Nat. Maple Syrup Digest. 19(1):22-23.

4. Frank, H. A. and C. O. Willits. 1961. Maple Sirup. XVIII. Bacterial growth in maple sap collected with plastic tubing. Food Technol. 15:374-378.

5. Wolf, P. L., B. Russell, and A. Shimoda. 1975. Practical Clinical Microbiology and Mycology: Techniques and Interpretations. Wiley & Sons, N.Y.

SUGAR BUSH SUPPLIES CO.

- COMPLETE SUPPLIER TO THE MAPLE PRODUCER
- WE STOCK BACON JUGS, LAMB TUBING SYSTEM
- AUTUMN LEAF CANS, LABELS & CREAM TUBS
- LEADER, KING, VERMONT EVAPORATORS NEW & USED
- WE BUY USED EQUIPMENT & MAPLE SYRUP

Give Us A Call or
Write For Catalog

2611 Okemos Road
Mason, Michigan 48854
Tel - (517) 349 - 5185

American Maple Products

Newport, Vermont 05855

- produces maple syrup,
- buys bulk Maple Syrup from other producers,
- packs Pure Maple Syrup,
- makes Maple Candies, Maple Sugar and Maple Butter,
- wholesales these products to the retailer
- and supplies leading food manufacturers with Bulk Maple Syrup or Maple Sugar.

CAN WE HELP YOU WITH YOUR MAPLE REQUIREMENTS?



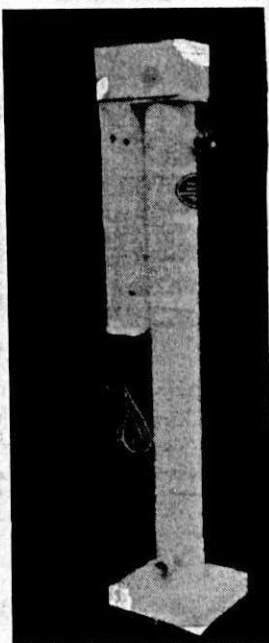
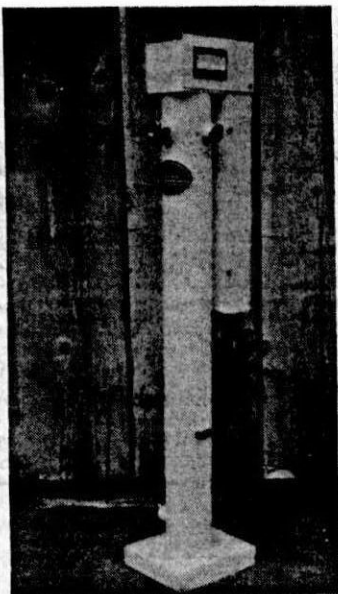
sugarhill[®]

MAPLE CONTAINERS

"SEE YOUR DEALER"

**ULTRAVIOLET LIGHT: THE NATURAL
PURIFYING ENERGY OF THE SUN
Kills Microorganisms**

Greatly extends sap storage life



**Tested by the University of Vt.
Sap Treatment Systems Co. Brandon, Vt
Distributed by Bill Coombs**

Box 186, Wilmington, Vt. 05363

\$595.00 shipped UPS

Sales areas still open inquire Bill Coombs

CLASSIFIED

"CHIEFTAIN WILD RICE", the ideal companion item to sell with your delicious Maple Syrup. For full information write: Chieftain Wild Rice Co. Rte. 7, Hayward, WI 54843

ULTRAVIOLET TREATMENT OF SAP A PROVEN SUCCESS. 1983 UVM research project finds in-line ultraviolet treatment of maple sap a viable solution to high microorganisms. Treated sap produces higher grade syrups and allows longer sap storage periods. Write or call for complete details. Sap Treatment Systems Co, Box 307, Brandon, VT. 05733 802-247-6139

FOR SALE: 4 x 12 Leader pans (Vermont style); 4 x 12 1/2 wood fired arch; new smoke stack. Cliff Nightingale, R.D. 5, Amsterdam, NY 12010 518-882-9334

FOR SALE: Used 2 1/2' x 10' Leader Evaporator, Hood, 350 gal. Holding Tank -300 Buckets, Spiles and Lids. Robert Vollmar, 255 Pierce Lane, Chillicothe, Ohio 45601 Phone 614-775-5614

2800 TAPS USED TUBING, 50¢ / tap. Less for lot. Keith Beardslee, Box 233, Cornish Flat, NH 03746, (603) 675-5825

3 x 8 LEADER EVAPORATOR (King) wood fired, Stainless steel front pan. Steam hoods, arch, stacks, complete unit, extra parts, excellent condition. \$2000.00 Fred Stevens, Grassy Meadows, W. VA. 24943

FOR SALE: Used Osmonics R/O 1 year old, 6 membranes, 2 used 1 year and 4 brand new. Model 330-43. price \$12,000. negotiable Call Bill Coombs 802-464-5232 Wilmington, VT. 05363

FOR SALE: 5*8 King Flue pans, each has own arch with high temp. Plybricko Insulation, stack, and oil burners. One has a pre-heater. They are trained to work together for \$4,500. But will separate to a good home for \$2,500. each Delivered in VT. Call Don Harlow Putney, VT. 05346 802-387-4303.

WANTED: Agents or Distributors to sell complete line of Canadian Maple Syrup Equipment. SMALL BROTHERS INC., P.O. Box 160, Dunham, Quebec, Canada. JOE IMO. Tel: 514-295-2451.

3' x 10' Lightning s.s. pans; preheater hood; 4 x 16 Grimm wood fired complete, gas fired finishers, used tubing, Universal vacuum system, several Sapsucker vacuum pumps, used wood fired arches. SMADA FARMS INC., Star Route, Greene, NY 13778. 607-656-4058

ARCHIE'S SUGARBUSH

Dear Mr. Editor,

My wife she sez, "Honest Archie, sometimes she calls me truthful Archie, please tell that nice Mr. Editor man how conservative we was the year after the winter of the blue snow."

Well, ya see, this year was bad for syrup. No sap, dry weather, cold, sunny, windy, the horses would clomp-clomp on the frozen ground -- but we did have one heck of an early run when we had all 20 evaporators operating with an evaporator operator running each evaporator. Them was union men, too.

We had to have an extra 50 gallons of syrup so I told the evaporator operators to take off their overalls and soak them in hot water. Well, by the time we ran that hot water through one vaporator we made 60 gallons of the finest looking syrup. Not much on flavor, though, but we sold it anyway.

We took pride in bing true conservationists. Saved everything. Didn't throw nothing away. True conserving people we was.

Your truthful friend
Archie

BACON MAPLE SYRUP PACKAGING SELLS PURE MAPLE SYRUP



Dealers and Associations listed can supply you with:

- Bacon Jugs - 8 oz, pint, quart, 1/2 gallon and gallon.
- Our new 14 oz. Maple Leaf Flask & Labels.
- Custom printed jugs and custom printed labels.
- Individual Mailing Cartons and Multi-pack Shipping Cartons.
- Name and grade labels.

Everything we supply is backed by Charlie Bacon's promise of superior quality and service at a fair price.



BACON'S SUGAR HOUSE

TM

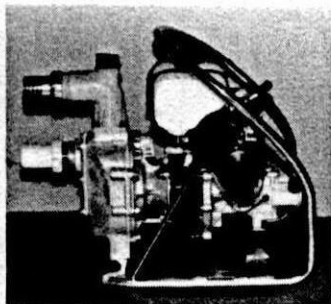
JAFFREY CENTER, NEW HAMPSHIRE 03454

(603) 532-8836

DEALERS & ASSOCIATIONS CARRYING BACON'S JUGS

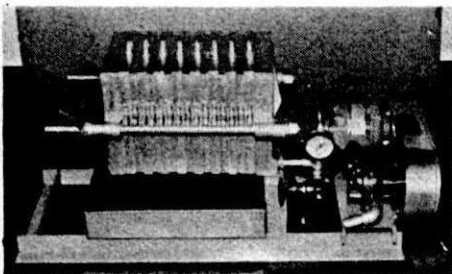
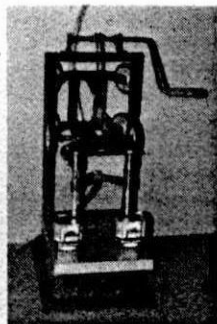
R.N. Johnson, Walpole, NH 03608	(603) 756-3321
N.H. Maple Producers Assn., Warehouse, Rt 106, Loudon, NH 03301	(603) 783-9961
Richard Moore, RFD No. 8, Concord, NY 03301	(603) 267-8217
Devon Lane Farm Supply Inc., Daniel Shays Hwy., Belchertown, MA 01007	(413) 323-6607
James Ewen & Sons, 66 Elmwood Rd., Lunenburg, MA 01462	(617) 582-6655
Donald Amero, W. Woodstock, VT 05091	(802) 457-3722
Dean Burrington, RD #1, E. Burke, Vt 05832	(802) 626-5730
Clark Brothers, Wells, VT 05774	(802) 325-3203
Coombs' Maple Products, Inc., Jacksonville, VT 05342	(802) 368-2345
The Dakin Farm, Ferrisburg, VT 05456	(802) 877-2936
Danforth's Sugar House, County Rd., Montpelier, VT 05602	(802) 229-9536
Hilton Foote, Cornwall Cider Mill Rd., Middlebury, VT 05753	(802) 462-2472
Leader Evaporator Co., St. Albans, VT 05478	(802) 524-4966
David R. Marvin, Johnson, VT 05656	(802) 635-7483
David Mayotte, Cary Rd., Fletcher, VT 05448	(802) 849-6810
Vermont Sugar House, Exit 3, 1-89, So. Royalton, VT 05068	(802) 763-8809
W. Barry Branon, 54 Cogan Ave., Plattsburgh, NY 12901	(518) 563-1063
Lansing Burdick, 335 East Rd., Stephentown, NY 12168	(518) 733-5591
Campbell's Maple, Smyrna, NY 13464	(607) 627-6653
Charles R. Emerson, RD 1, Alfred Station, NY 14803	(607) 276-6481
Farnum & Cumming Maple Products, Locust St., Roxbury, NY 12474	(607) 326-4226
	(607) 326-7569
David Nascimbeni, Glen Durham Sugarhouse, Cairo, NY 12413	(518) 622-9878
Larry Smith, Rt. 55, Box 177, Napanoch, NY 12458	(914) 647-5539
Harold Tyler, Maple Farms, Tyler Rd., Westford, NY 13488	(607) 638-9474
Ralph VanBrocklin, RFD No. 2, Canton, NY 13617	(315) 386-3036
Neil C. Wright, 28 Liberty St., Camden, NY 13316	(315) 245-1519
	(315) 245-1434
Northeastern Pennsylvania Maple Producers Association	(717) 689-2353
Court House, Honesdale, PA 18431	(717) 253-5970
Potter-Tioga Maple Prod., Assn., Coudersport, PA 16915	(814) 274-8540
Robert McConnell, Coudersport, PA 16915	(814) 274-9143
H.W. Russell & Sons Maple Farms, Rome, PA 18837	(717) 247-7361
Somerset County Maple Producers Association	
c/o Dale Jeffrey, Box 15, Wagners Rd., W. Salisbury PA 15565	(814) 662-2904
Sugar Bush Supplies, 2611 Okemos Rd., Mason, MI 48854	(517) 349-5185
Kinny & Hodgkins Maple Supplies, Thorndike, ME 04986	(207) 568-3683
Kinny & Hodgkins Maple Supplies, Yarmouth, ME 04096	(207) 846-4570
Maine Maple Products, Inc., Titcomb Hill, Farmington, ME 04938	(207) 778-3803
Wyman W. Manes & Son, East Orwell, OH 44034	(216) 583-2388
Richards Maple Products, 545 Water St., Chardon, OH 44024	(216) 286-4160
O. C. Stevens & Son, Maple Lane Farm, Mt. Gilead, OH 43338	(419) 946-3300
Reynold's Sugar Bush, Inc., Aniwa, WI 54408	(715) 449-2057
Ivan Puffenbarger, Rt. 637, Blue Grass, VA 24413	(703) 474-2771
Small Brothers Inc., Dunham, Que., Canada JOE 1MO	(514) 295-2441

MORE NEW ITEMS FROM "LEADER"



A compact 2 cycle gas engine driven centrifugal pump. Capable of delivering upwards of 80 gallons per minute - 1½" ports - dependable TAS engine. This one will surprise you.

Too troublesome to fill cans? Not anymore, with a 2 spout gravity filler. Designed by a local producer, the simplicity makes for a very dependable unit. Adjustable table for all size containers.



The LEADER 10" plate and frame PRESSURE FILTER is offered because of numerous inquiries from the Maple Producers for a larger filter press.

Thoroughly tested by both producers and packers. Filtering capacity of up to 150 gallons.

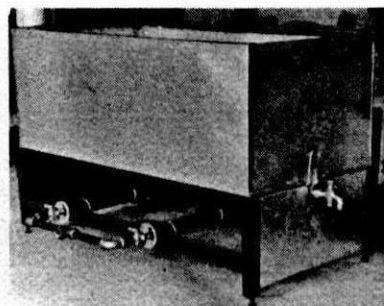
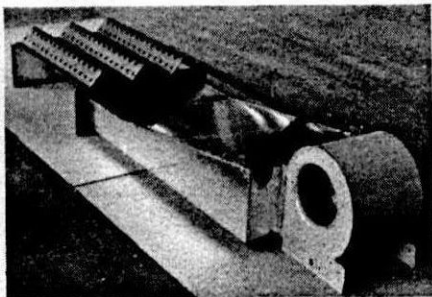
Have you checked on the Raithby Economiser? Maybe this will give your operation the needed increase in production. We are a licensed manufacturer for the U.S.A. Give us a call.

QUALITY AND SERVICE SINCE 1888

FOR THE MAPLE SYRUP PRODUCER

The LEADER air induced units used with wood firing are set up with 4 speed direct drive blowers to offer the correct amount of forced air.

Use only *dry*, seasoned wood.



The LEADER 16" x 32" gas fired finish unit is ideal for the small canning operations and "boiling down" to make candy or sugar. 2 projected port ring burners rated at 33,000 BTUs for a well balanced unit.

LEADER - KING - VERMONT

EVAPORATORS

with the most sq. ft. of
heating surface

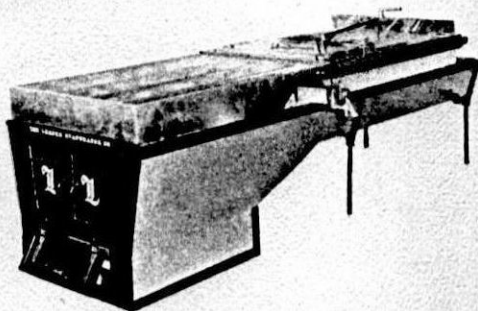
STORAGE - GATHERING TANKS
dependable - rugged

LAMB - MAPLEFLO PIPELINE

O.O. CANS - CARTONS

BACON - KRESS - SUGAR HILL JUGS

**ADDITIONAL ITEMS FOR THE
MAPLE SUGAR MAKER**



Leader Evaporator Co. Inc.

25 Stowell St.

St. Albans, Vermont 05478

TEL: (802) 524-4966 or 524-3931



LAMB *Naturalflow*

NATURAL FLOW

**The Original & Backbone of
Maple Tubing**

5/16 PVC TUBING APPROX. 20. LB TO THE 500'
ROLL FIVE & ONE HALF CENTS PER FT. .070 TO
.075 OF AN INCH WALL THICKNESS, SPOUTS .20 EACH
T'S & CONNECTORS .10 EACH
1/2" - 3/4" & 1" MAINLINE AT SAME OLD PRICES

**MORE
NEW FITTINGS COMING
FOR YOUR CONVENIENCE**

**FOR NEW DESCRIPTIVE PRICE LIST
& INSTALLATION BOOKLET
WRITE OR BETTER YET**

**SEE YOUR
NATURALFLOW DEALER**

NATURALFLOW & MAPLEFLOW

Robert M. Lamb

P. O. Box 368 Route 49
Bernhards Bay, N.Y. 13028

Phone (315) 675-3652
Hone (315) 675-3569