

MAPLE SYRUP DIGEST



VOL. 27 No. 2

July 1987

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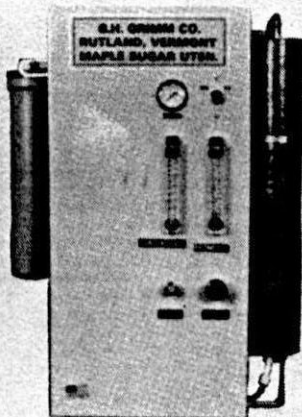
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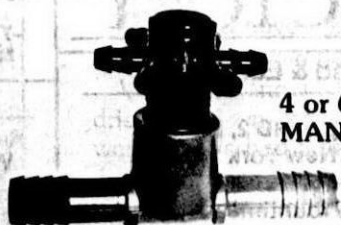


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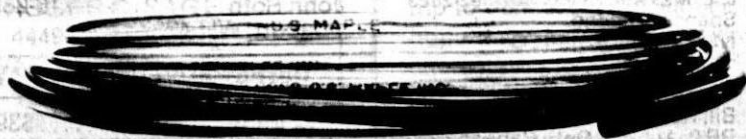
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FIELD EDITORS

- CONN.** Darrell Russ 203-642-5090
Westside Rd., Norfolk, Ct 06058
- MAINE** Robert S. Smith
36 Middle St.
Skowhegan, ME 04976
- MASS.** James Graves 413-625-9066
R.D. 1, Shelburne Falls, MA 01370
- MICH.** Frank Majszak 616-228-5835
R.D. 1, Baatz Rd.
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Warner Rd., Rt. 103
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- N. S.** J. L. Maxwell Spicer 902-392-2823
Spencers Island
NS, Canada BOM 1S0
- OHIO** Ture Johnson 216-834-4206
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- ONT.** Bill Robinson 519-529-7857
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- PENN.** Robert McConnell 814-274-9143
Box 252, Coudersport, PA 16915
- VT.** Ray Foulds 802-864-6305
5 Clover Street
So. Burlington, Vt. 05403-5913
- WISC.** John Roth 715-289-3820
R.D. 1, Cadott, WI 54727
- N. ENG.** Sherb Doubleday 802-334-2793
Newport, VT 05855

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COVER PICTURE

by Bruce Sartell
Thompson, Pa

Glenn L. Blewett is pictured with the yoke and buckets that he used as a young man. They were handed down to him from his father and grandfather. He used them to gather sap that was boiled in an iron kettle.

From what he has been told by his relatives, he was never named for a month when he was born because they didn't think he would live. He weighed only 5 lbs and looked like a skinned squirrel. He refused the bottle for extra nourishment. He says he only uses it now when it is necessary.

Glenny is a naturalist, born June 18, 1904. Being a bachelor, he lives alone on the family farm. He had a sawmill, raised sheep, had a dairy and milk route for many years. He takes care of the local cemetery and even today you might find him boiling sap.

GREETINGS FROM THE CHAIRMAN



We could have collected sap in tennis shoes and never gotten our feet wet!

Very little snow all winter and the driest April on record. (April 86, the wettest.) We had a better syrup season than last year, which from reports I get is not true over most of the maple belt. Nice rains came and the crops which were planted earlier than usual are looking good. Our trees leafed out the end of April, 3 weeks ahead, and it was difficult to observe the warbler migration which usually peaks about May 10.

The council delegates voted to accept Vermont's offer of \$250.00 seed money, matched by the NAMC to help hosting states and provinces get started on their meetings. The total to be returned by Dec. 1st of the same year used.

We enjoyed reading the interesting, busy, diary of the Merle Family in the Feb/Mar. 87 issue of Farm and Ranch Living. (Arthur Merle is the NAMC delegate from New York.) We hope Art and Florence will find time to plan their trip to Minnesota in October, in fact we hope many of you are making plans to attend the Council meeting.

John Kroll

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A "CAUSE" FOR CONCERN

by Lynn Reynolds

I offer you a real "cause" for concern. Our maple trees are dying. Maple decline is evident in the Eastern and Midwestern parts of North America. Reports indicate that atmospheric pollution is becoming more of a problem in some areas of maple syrup regions. Our industry may be in jeopardy. We need research to determine the cause of maple decline. And research requires money.

The maple syrup industry is willing to raise this money for research. We are willing to pay our own way. The North American Maple Syrup Council has provided a system to raise funds for this research. Most container companies are already collecting the 1¢ per maple container to be contributed to this research fund.

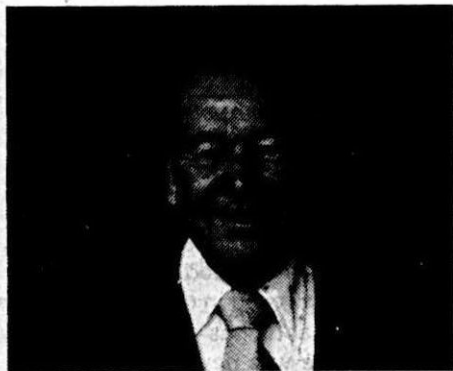
Then, What's Wrong?

The wrong is that not all maple container manufacturers are participating!!!!

Why Not? What can we do about the situation?

This is what we have to do. We Must:

- 1) Talk to our maple container dealers to insure that they know we support the system and are devoted enough to it to make it work. Tell them we will not give up and we won't quit.
- 2) Dealers must talk to their distributors passing along the vote of confidence that we the producers are giving to this fund raising system of your Council.
- 3) Distributors or representatives must deliver the message to the manufacturers that the monies must be raised. Monies must be raised now, and the industry is demanding their participation. Remember, this is costing the container manufacturers nothing. Their reward is our future support.
- 4) Write letters to all your container manufacturers letting them know how



strongly you feel about raising funds for maple research, how you feel about your maple trees, how you feel about the maple syrup industry, and how important you feel that it is for them to collect and contribute the 1¢ per maple container to the North American Maple Syrup Council Research Fund. Overwhelming them with your letters will let them know just how much we really care. Congratulate and thank those companies participating. Urge those that have not yet committed to do so now.

- 5) And finally, we must use every opportunity to promote the raising of research funds by contribution from the container manufacturers. Let them know we are concerned. Let them know we care about our maple trees. Let them know without research we may be without maple trees. Let them know without maple trees we would not need their containers. Let them know by all working together we can produce monies and do the necessary research. And let them know that if they participate we will support them with our container business.

Let us notify the industry and go on record that we have just begun. To anyone out there who has developed reservations, second-thoughts, or doubts about this new fund raising system, wipe them out of their minds. We have not even started to fight yet. Please join me in the on-going struggle to eliminate this "cause for concern".

*it
boils down
to one
thing...*



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COMMING EVENTS

VERMONT MAPLERAMA

The 1987 Vermont Maplerama will be held on July 17-18 in Addison County with registration taking place at the "Main Event" in Middlebury. Meal and exhibits, also a speaker, will be at the above mentioned place. Tours of the county sugar houses and a chicken barbecue at our Field Days Fair Grounds are planned.

1987 NEW YORK STATE MAPLE TOUR

The 1987 New York State Maple Tour will be held in Wyoming and Cattaraugus Counties which are located in Western New York on Tuesday and Wednesday, July 21 and 22.

The Tour will be centered around Arcade, located in southern Wyoming County. Transportation to Maple Tour stops will be supplied with the use of buses. Tour stops will include several excellent maple operations which demonstrate efficient production techniques, good marketing, and sugar bush management.

For more information please contact:

Mr. Steve Childs, Cooperative Extension of Wyoming County, Agricultural Division, 401 Main Street, Warsaw, NY 14569, 716/786-2251.

THE ONTARIO REPORT

by Bill Robinson

The 1987 Maple Season can only be described as short! The Southwestern, Waterloo and Algoma areas reported a crop of 2/3 - 3/4 of normal while the rest of the Maple producing areas had a 50% or less. The prices for Canada #1 syrup sold in 4 litre cans in the season ran from \$30 - \$40 across the province with a few producers breaking through the \$40 barrier.

The Ontario Maple Syrup Producers summer tour is centered in the Perth area of Lanark county. The tour is on the 24 and 25 of July, 1987 and sponsored by the Lanark and District local of the Ontario Association. The tour starts out at the Lions Hall at the Fairgrounds in Perth. The first stop on the tour is at Brian and Marion Pauls and family sugar camp at Watsons Corners with a 9,000 tap operation and a R.O. Machine. The second stop is at Charles Temples of Watsons Corners and featuring a 4500 tap operation and a R.O. machine. Lunch is at MacDonalds Corners with the next stop at Vernon and Judy Wheelers who have a 4000 tap operation that all flows to the sugar camp and a Woodsaver on the evaporator. Next stop is at Elmer, George and Darlene Conoy who have a 4500 tap operation and a R.O. The Friday night banquet is at Farrell Hall in Perth at 7:00 P.M. On Saturday morning the tour leaves from Lions Hall in Perth with the first stop at Art Publowl near Perth with a 325 tap operation on buckets. Don and Marion Dodds in Middleville hosts the next stop and they have 2000 taps on tubing. The last stop of the day including lunch is at George and Shirley Deugo at Cedarhill. They have a 6350 tap operation and a Pancake house that has been operated since 1969. The Pancake House was started by Shirleys parents and is called Fultons Pancake House. It is open from December to April every year.

Registration for the tour are PREREGISTRATION ONLY. Please let the Committee know if you are coming and call Marion Paul at (611)259-5276.

The OMSPA Annual Meeting is being held in Pembroke on September 25-26, 1987. The hall is on the main street and is called Thee Place for more information call or write Dave Gardiner, R.R.#4 Eganville KOJ1TO (613)745-2049

PENNSYLVANIA MAPLE TOUR

The Northwestern Pennsylvania Maple Association will sponsor the State Maple Tour on Sept. 25 - 26, 1987 with headquarters at Riverside Inn, Cambridge Springs, PA. 16403. Phone 814-398-4645. You are to make your own reservations for overnight lodging.

For further information, contact:

Mrs. Florence Running, Sec'y.

RD 1, Cambridge Springs, PA 16403

or

Joseph S. Beard

Crawford Co. Extension Office

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MINNESOTANS MAKE PLANS TO HOST NAMC

Minnesota Maple Producers met May 8, 1987 at the Grand Rapids Sawmill Lodge for their annual meeting. The discussion among committees for the upcoming NAMSC from 3 - 5:30 P.M. was productive and we have chosen the "Future of Maple" as a theme with climatology, fertilization, concern for maple environment and economics being some topics worthy of consideration as technical presentations. A Show & Tell from producers in attendance and syrup judging contest were also suggested as part of the program.

We'll be meeting Oct 22, 23, 24 in Duluth, Minnesota's port city on Lake Superior with its aerial bridge, giant lake carriers, foreign ships and connection of downtown skywalks. Our hotel is the Radisson, Duluth. Arrangements have been made to have one meal at "The Depot", St. Louis County's Heritage and Arts Center, with its 1910 Village and Nationally acclaimed collection of antique trains.

The meeting broke for a 5:30 dinner after which the maple contest winners were announced. Carmen and Bob Maschler placing first. We adjourned at 9 P.M. and sampled the maple desserts before leaving for home. Our attendance was forty persons.

Of course you'll be hearing more from us and we hope many of you are thinking of coming to Minnesota in October.

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HALL OF FAME INDUCTEES

AMERICAN MAPLE MUSEUM



L to R: Gordon and Betty Gowen, Ruth Anne and Ron Shaw

RON SHAW

by Walter Humphreys

Ron Shaw was born and raised on the farm he now operates. He is the fifth generation on the farm. Ron worked with his father for 10 years starting in 1955 and was active in 4H and the Ontario Junior Farmers Association and held all the offices of the county association.

Ron's wife, Ruth Anne, was the local County Dairy Princess when he met her. They were married in 1964 and bought the home farm from Ron's father, Norman, a year later. Norman built a new house in the maple bush on the next concession.

In 1967 the farm was converted from dairy to a farrow and finish operation of 50 to 60 sows. All the feed for the hogs is grown on their own or rented land. The Shaws have two children, Carol Ann, 21, who works at a tourist center and Tom, 18, who helps Ron on the farm and expects to attend the University of Guelph this fall.

Ron started at a very young age helping his father operate their 75 acre sugarbush which has been tapped since 1904. At present there are about 6000 taps, all on tubing with vacuum. The sap is concentrated in a R. O. machine,

then to a 6' x 10' oil fired evaporator and a 3' x 6' finishing pan with steam coils from an oil fired steam boiler. About 90% of the syrup produced is sold at the sugar house or used in the 75 seat pancake house, run by Ruth Anne during March and April and weekends in the fall.

In 1965 Ron helped organize the Ontario Maple Syrup Producers Association and was elected 2nd vice president. He served as president from 1970 to 1972 and was a Provincial Director for 20 years. He was president of the Simcoe and District Maple Producers Assoc. in 1966 and 1967 and was the Ontario representative to the I.M.S.I. for its first five years.

Ron has been the Ontario delegate to the North American Maple Syrup Council since the Province became a member in 1973 and was the chairman in 1980-1981.

He has been very active on committee work for both the Ontario Association and the Council. He was a member of the Committee for uniform grades for the U.S.A. and Canada. He chaired the committee for compulsory grading in Ontario.

Ron was on the committee that asked for an Agro-Forester to work for the Maple Syrup Industry and is still working with the Province on the acid rain problem which is a very serious problem

in the sugar maple areas of both countries.

For the past 20 years, Ron has given freely of his time for the improvement of the Maple Syrup Industry and the industry is in better shape today because of it.

GORDON GOWEN

by Fred E. Winch, Jr.

Gordon Gowen was brought up to maple syrup as his area in the Connecticut Valley is one of the larger producing areas in New Hampshire and his family produced syrup on the hilly parts of the farm.

After graduating from High School, like most of his generation, Gordon served in the Army of Occupation in Japan. He returned to the farm and enrolled at the College of Agriculture at Cornell, graduating in 1952 with a B.S. in Dairy Husbandry, while there he was a varsity baseball player and was in the University Glee Club. He immediately went into partnership with his father and in 1953 married.

The partnership prospered and he purchased Tamarack Farm from his father in 1957. Besides dairy, maple was always a vital part of Tamarack Farm. During the early '50's Gordon put his hand to expanding the sugar-bush by weeding and thinning additional acres. These served as demonstrations of management and growth of maple in the county. At the same time he became an active member of the New Hampshire Maple Producers Association and participated in the meetings "to learn all there was to know" about maple. With the growth in maples resulting from thinning, production grew from 2900 taps to a present 4,000. This brought Gordon to need better gathering methods and he started using tubing as soon as it was available. His installations became early demonstrations and his advocacy of labor efficient methods adaptable to New Ham-

shire hills made a large impact on both sides of the Connecticut River.

He became deeply involved in the Association as a Director. His goal was better grading and marketing. As containers were a continuing problem for producers he was instrumental, when Chairman, in leading the group to buying and distributing, at cost, well made and accurately sized cans. He was early concerned with grading and grade nomenclature, not only in New Hampshire but throughout the maple area and led the fight to institute such grades.

He early became a delegate to the Triennial Maple Conferences at Philadelphia, missing only the first two. When the need for a National Maple Organization was proposed he backed the formation of the National Maple Syrup Council as a way to have a united front on tariffs, grades, research and equipment. When sap purchase was proposed he took on the idea and became a demonstrator of how to do it, and how to price sap. He is now purchasing sap from more than 700 taps. With involvement in State and National maple efforts he became an alternate director in the Council from 1964, then Secretary-Treasurer from 1974 to 1980 and did yeoman service there, then went on to vice chairman 1981 to 83 and Chairman from 1983 through 1985.

Back at the ranch four children graced the family, two boys and two girls. Tim, the senior son, went into partnership with Gordon in 1979. With Tim on board the partners continued improving and expanding the bush and these activities are frequent demonstration areas. Production of one gallon per three taps in the norm, sales from the farm sales room keep pushing production.

Maple is one crop that excels but dairy is also a top and efficient production item. Milking 40 registered Holsteins of which many are state production leaders (21,000 + lbs of milk) in



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1987 ANNUAL MEETING

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their age group and one is New England Leader.

With his energetic character Gordon is, or has been, involved in farm, civic and government groups and is a spokesman for Agriculture and maple. To name a few there are: Breed Organizations, D.H.I.A.; Artificial Breeding groups, Milk Coops, County Extension; Grange, Farm Bureau, Town Selectman; Advisory Board to Commissioner of Agriculture and State Forestry Boards.

Although he no longer plays baseball he is coaching a Senior Softball League.

As he says, "I made a living on the side selling milk, maple syrup, hay and some breeding stock" all with the help of Betty his wife. I have been proud to know Gordon and Betty for more than 25 years.



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VERMONT MAPLE NOTES

by Ray Foulds, Jr.

PRODUCTION COSTS - 1987

A study of Annual Production Costs which can be expected in 1987 by an average sugar maker with 2,000 taps was made by the Proctor Maple Research Farm in Underhill. They are as follows:

Production Costs, 1987

2,000 Taps	Buckets	Tubing
Cost of Woods Operation:	\$ 3.20 per tap	\$ 2.15 per tap
Cost of Boiling, etc.:	3.34 per tap	3.75
Total Cost:	\$ 6.54 per tap	\$ 5.90 per tap
Total Cost/Gal.		
Syrup:	26.15	18.87
Retail Syrup Price/Gal.:	25.70	25.70
Net Return/Gal.:	\$ -.45	\$ 6.83
Capital Investment as follows:		
Woods Operation	2,000 Buckets	2,000 Tubing
Processing (oil-fired)	\$16,227.15	\$ 8,027.17
	15,578.95	15,578.95
	\$31,806.10	\$23,606.12

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3.) **New Equipment** Gordon and Jim Richardson of Woodstock reported on a new innovation in boiling equipment which they devised. It was an additional pre-heater pan, mounted over the back pan of their evaporator, in which sap was agitated as it boiled. They estimated that this increased the capacity of their evaporator by 65% - increased sap to 10% sugar content. Their new pre-heater pan is now being made by Small Bros., Swanton, Vt. A 4' or 5' unit costs about \$7,000.

4.) **Value of Industry** It was estimated that an increased number of taps would be made in 1987, but mostly by established sugar makers. At \$22 per gallon the Vt. industry is worth \$1.5 million. At \$30/gallon it is worth \$2.75 million. Additional value can be attributed to the capital investments and jobs of employees in plants making maple equipment, cans, etc.; also to increased returns from syrup when sold as sugar-on-snow, etc.

5.) **Damage to Tubing By Animals**

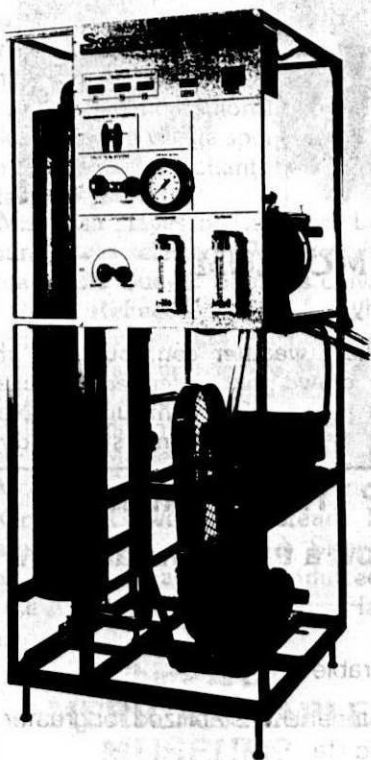
The Vt. Agricultural Experiment Station at UVM reported on a study of damage to plastic tubing done by animals during the period 1984-86 in Vermont. Results were:

- Three out of four maple producers reported some type of damage.
- Where tubing was left up all year there was more damage than when the lateral lines were taken down.
- Laterals suffered the most damage, spouts next.
- Chipmunks, squirrels, and hedgehogs were thought to do the most damage.
- No methods were found successful in controlling the pests.
- Average annual costs from damage came to \$44 for smaller producers (less than 1000 taps) and to \$469 for larger producers (over 2,000 taps). Total value lost in syrup production was 2% of the total value of the syrup.

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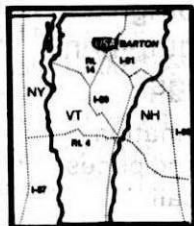
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L to R: Karen Keefer, Lisa Hayes and Lori Tallman

AMERICAN MAPLE MUSEUM

by Martha Company

On Saturday, May 16th, the 1987 opening festivities at the American Maple Museum in Croghan marked the 10th anniversary of the Museum. The

excellent weather contributed to the large crowd that attended. Tourists were present from throughout New York State and many surrounding

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states including New Hampshire, Pennsylvania, Ohio and Ontario, Canada.

The day began with a pancake breakfast served to a capacity crowd.

At 10:30 the Miss New York State Maple Queen pageant began, followed by the induction of two men, who have made outstanding contributions to the maple industry. At 1:30 a parade, including several phases of Maple Syrup production, proceeded down Main Street. This was followed by a chicken barbecue. Throughout the day there were exhibits and demonstrations and a bake sale. The village sponsored a craft fair and several merchants had sidewalk sales.

Miss Lisa Hayes of Croghan, Lewis County, was selected 1987 New York State Maple Queen. She was crowned by Miss Rebecca Buel of Gilboa, Schoharie County, the 1986 reigning queen. Lisa's alternates are Miss Karen Keefer, the Lewis County Maple Queen and Lori Tallman, queen of the Central New York Maple Festival at Marathon in Cortland County.

Gordon Gowen of Alstead, New Hampshire, and Ronald Shaw of Hawkstone, Ontario, were inducted into the American Maple Museum Hall of Fame.

Where is the AMERICAN MAPLE MUSEUM?

On Main Street, Rt. 812, Croghan,
Lewis County, NY 13327

Museum Hours:

Mid May through June 30:

Sunday, 12:00 Noon - 4:00 PM

Mon. Fri. Sat., 11:00 AM - 4:00 PM

July through Mid September:

Sunday, 12:00 Noon - 4:00 PM

Weekdays Except, Tue. & Wed 11:00
AM - 4:00 PM

Off season and group tours by appointment, please. For information on Motels, Bed & Breakfast, Campgrounds, etc., phone the American Maple Museum, 315-346-1107



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MAJESTIC MAPLE

Members of the state Department of Transportation Pomfret Tree Crew show the girth of the "Norwich Maple" near the Norwich Sheraton Inn as Donald M. Swan, president of the Con-

necticut Botanical Society, at far left, looks on. From left are Mike Beaulieu, Charles Kennerson and Raymond Nelson.

MAJESTIC MAPLE TREE U.S.A. CONTEST LIST OF ENTRIES

December 31, 1986

NAME & ADDRESS	TREE LOCATION	(A)	(B)	(C)	SCORE
1. Bucky Weaver, Bolton Landing, NY, Norwich, Ct	269"	90'	79/4	378.75	
2. David & Christie Kenigsberg, Shaftsbury, VT	226	85	77/4	330.25	
3. John Steffens, New Woodstock, NY	226	66	71/4	309.75	
4. Wallace Deth, E. Burke, VT	216.6	66	82/4	303.10	

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5. Margo Rome, Jeffersonville, VT, Cambridge, VT	198.5	78	76/4	295.5
6. Mike Klopchin, W. Rutland, VT	192	86	68/4	295.0
7. Mason Blake, Suncook, NH, Pembroke, NH	172	97.8	83/4	290.55
8. Clinton Thompson, Gouverneur, NY, De Kalb, NY	192	83	61/4	290.25
9. W. R. Murray, E. Hartland, CT	196	69	77/4	284.25
10. Donald Brown, Bristol, VT, Lincoln, VT	189	73	59/4	276.75
11. Mrs. Marie Nevinger, Warsaw, NY	186	69	85/4	276.25
12. John Smith, Eau Galle, WI	144	95	46.5/4	250.63
13. John Smith, Eau Galle, WI	113	110	67/4	239.75
14. Enos Torsch, Lachine, MI, Green, MI	100	105	40/4	215.0
15. Paul Cahill, Waterbury Ctr., VT	110	81	57.5/4	205.38
16. Hilaire Yvonne Robillard, Derby, VT	125	64	53/4	202.25
17. John Smith, Eau Galle, WI	104.4	80	59.5/4	199.28
18. John Smith, Eau Galle, WI	93.6	84	61.5/4	192.98
19. Carol Warner, Williamsfield, OH	102	72	64/4	190.00
20. Janet Reed, Hardwick, VT, Hyde Park, VT	84.7	88	41.6/4	183.10

Scores were determined by using the dimensions submitted with the entry incorporated into a formula based on the American Forestry Association rule of:

(A) the tree's girth at 4½ ft. height, in inches;

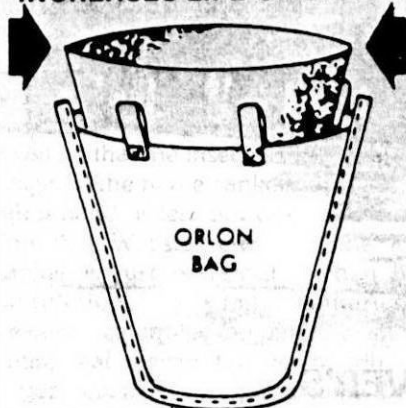
(B) the tree's height in feet; and

(C) the tree's average branch spread, in feet.

The SCORE is the sum of (A) plus (B) plus 1/4 of (C)

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FALL CANKERWORM DEFOLIATION WARRANTS A WATCHFUL EYE

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State University College of
Environmental Science and Forestry
Syracuse, New York

Lewis J. Staats
Uhlein-Cornell Experimental Sugarbush
Lake Placid, New York

Outbreaks of this defoliator, known to science as ***Alsophila pometaria*** Harris, have been reported periodically in the northeastern United States since 1790, but mention of infestations appeared in colonial literature as early as 1661. These early writings make fall cankerworm one of the oldest insect pests recorded in North America. It belongs to the moth family Geometridae (from the Greek **geometr**, meaning land-measurer). Members of this group are commonly referred to as spanworms, measuring worms, inchworms or loopers. These terms reflect the caterpillar's peculiar method of locomotion. Because it is not equipped with legs in the middle of its body, the caterpillar (Fig. 1) walks by bringing the posterior end forward in the vicinity of the front legs and, in doing so, the body forms a loop. This behavior also gives the impression that the insect is inching along. Origin of the name cankerworm, on the other hand, is less obvious. One definition that Webster gives for the term canker is rust or tarnish. When high populations of fall cankerworm develop, caterpillars eventually eat the entire leaf except for the midrib and larger veins. At low population densities, however, only parts of the leaf are consumed and uneaten portions frequently turn brown, because major leaf veins are severed when caterpillars chew holes in the leaf blade. This discolored foliage is probably the origin of the latter part of the insect's common name. The term fall refers to the time of year that moths are present and, in a nomenclatural way, distinguishes this

species from a close relative known as the spring cankerworm, the adults of which are active in the Spring.

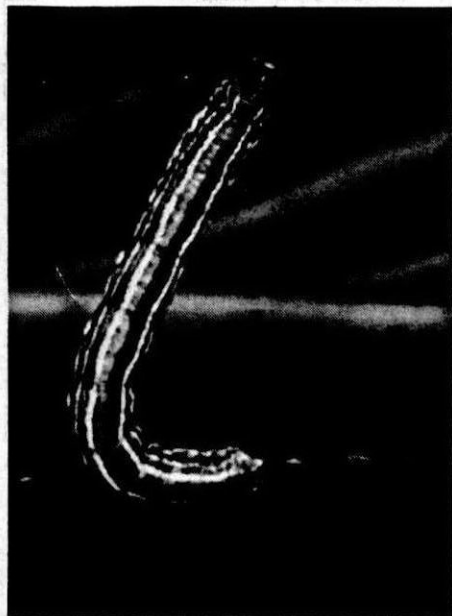


Figure 1. Fall cankerworm caterpillar (larva). This example is dark green, many cankerworms are much lighter. Actual length is approximately one inch.

Biology - Saga of a Cold Hardy Creature

Fall cankerworms overwinter in the egg stage, which is attached to the bark of twigs (Fig. 2) or the tree bole. The small, brown, barrel-like eggs are deposited in groups of a few to several hundred during November and early December. Eggs hatch and the caterpillars begin to feed in late April or early

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Figure 2. Fall cankerworm egg mass. Actual length of mass is one-quarter of an inch.

May, at about the time that host buds begin to open. When fully grown, cankerworms are approximately one inch long, and may be pale green, reddish grey or nearly black with a pair of white to pale yellow longitudinal lines on the back. Feeding is usually completed by early to mid-June, at which time caterpillars crawl down the tree and enter the soil to pupate. The pupa is a quiescent stage during which the caterpillar eventually transforms into a moth. The cycle is completed in late Fall when moths emerge, mate and oviposit.

The female moth is wingless (Fig. 3) and must crawl to the nearest tree and then ascend into the crown to deposit

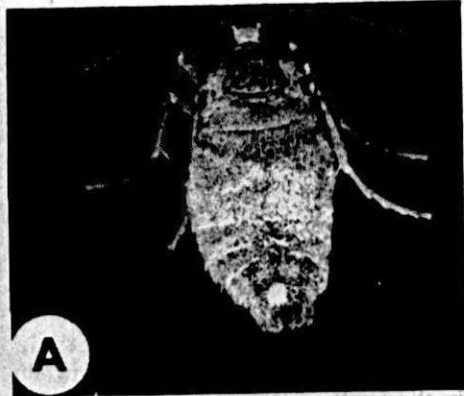
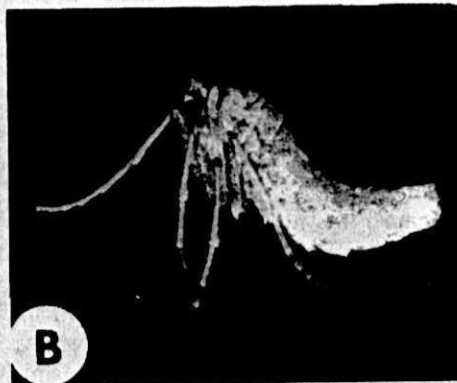


Figure 3. Female fall cankerworm moth: A, top view; B, side view. Actual length is approximately one-quarter of an inch.



eggs. While patiently waiting on a deer stand in late November, we have often watched the glossy, light to dark ash-gray females struggle up the bole of a beech or sugar maple, and marvelled at their ability to motivate while temperatures hovered around the freezing mark. At this time of year, flying insects are relatively rare so the brownish-gray male moths readily attract attention as they flutter around trees in search of females.

Food Plants - a Broad Diet Enhances Survival

During colonial times, fall cankerworm was looked upon as a pest

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because the caterpillars damaged apple trees. Indeed, apple is one of its favorite hosts. Over the centuries, however, it has earned a reputation by defoliating a variety of tree species, especially elm, red oak, basswood and sugar maple. Cankerworms feed at the same time, and often on the same plants, as gypsy moth. When high populations of the two overlap, trees are stripped very quickly. Heavy defoliation (i.e., 50-60 percent or more) early in the growing season often stimulates a tree to re-leaf. The production of a second complement of foliage during a single growing season places trees under severe physiological stress. Subsequently, these low vigor trees are often invaded by secondary agents such as fungi and wood-boring insects. These organisms apply the **coup de grace** to low vigor trees. They are secondary only in an ecological sense, because they require a weakened or stressed tree for successful development. Oak and elm are especially susceptible

to this sequence of events. Defoliated oaks, for example, are frequently invaded by a lethal root inhabiting fungus called Armillaria root rot and a beetle known as the two-lined chestnut borer. The latter feeds beneath bark on the tree trunk and large branches, and, in the process, essentially girdles the tree. Similarly, defoliated elm is attractive to the notorious European elm bark beetle. This inner bark borer is a double threat, because it not only girdles the tree, but beetles often inoculate the tree with spores of the Dutch elm disease fungus.

Importance to Sugarbush Operators

Early defoliation and subsequent stress to sugar maple may significantly lower sap production the following spring. Three or more successive years of heavy cankerworm defoliation may also pave the way for Armillaria root



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Figure 4. Sugar maple leaf showing typical shot hole feeding damage.

rot, sugar maple borer or crown dieback. These events, and others, either singly or in combination, can have a negative economic effect on a maple products business.

Cankerworm populations are fickle, which makes it difficult to predict defoliation. Characteristically, a two to four year outbreak is followed by several years when the insect is very scarce. Many natural enemies help to bring about the demise of an infestation, but one of the most important is a tiny wasp that parasitizes the egg.

Forest entomologists know very little about the conditions that allow population density to increase to damaging levels. Therefore, we do not have a bio-

logical or physical barometer that we can use to predict a potential for defoliation. The insect's feeding behavior, however, can provide a clear signal of threatening conditions. The habit of chewing holes in leaves, called shothole feeding (Fig. 4), as opposed to feeding on the leaf margin, makes cankerworm damage, like that of many other loopers, readily detectable. The relative abundance of shothole damage from one year to the next can serve as a gross indicator of population change or a portent of stressful defoliation. A brief walk through the sugarbush in late May or early June is all that is necessary to detect a potential problem. Because many geometrids feed in this manner, a pro-

fessional should be consulted before deciding whether or not control measures are warranted.

Pest Management Recommendations

First of all, sugarbush operators should contact service foresters or extension specialists on a regular basis to learn if cankerworm infestations occur in the region. These people may also be able to provide a pest leaflet that describes the insect in more detail. As is the case with all major forest pests, it is important for concerned people to familiarize themselves with the damage and general appearance of potential pests. Early detection and conscientious monitoring of population change is important, and these activities are essentially your responsibility as a forest manager or landowner.

When a suspicious condition is discovered, consult a specialist to verify identification and have your situation evaluated. If conditions warrant, the specialist will be able to recommend currently approved control measures.

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OHIO MAPLE PRODUCERS ORGANIZATION

Our organization came into being December 12, 1986 at a meeting in Wooster, Ohio. Respondents to a survey on maple production were invited to this meeting and producers from most areas of the state were able to attend. A committee had previously met several times in drawing up suggested "Articles of Organization". These statements were further refined at Wooster and eventually adopted unanimously by those in attendance.

As indicated in the Articles, members of the first Board of Directors were selected by those at the meeting. (There are still several gaps in the board. These individuals should soon be selected and the board filled out). This board then organized, developing the first officers of the association. We are now in the phase wherein additional memberships

need to be sold so that further organization can continue. The directors are to be elected by the districts in subsequent years and their final number will depend upon the number of taps represented by the membership from that district.

We have long needed an organization in support of our maple producers and which could serve as a point of contact for the customer who buys our product. It is hoped that the vast majority of producers will see the value of their membership in such a group. In addition, Extension personnel, Forestry personnel, equipment manufacturers and distributors, and others involved in the betterment of the industry will be welcomed as members. A logo and/or label needs to be developed in order that we can make our presence known.

It is essential to increase the membership as fast as can be possible. Annual dues is to be \$10.00 of which \$2.00 is earmarked for a subscription to the MAPLE SYRUP DIGEST. Those pre-

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sent at Wooster have already enrolled and mail enrollments are being accepted. The maple meetings at Mount Gilead and at Burton will feature opportunities to become a charter member.

It was decided to have 5 districts in the state and it was necessary to consider the mileage involved in having a meeting in any particular area. This occasioned certain districts with far less producers than others. The first board is to have 2 representatives from each district. After sign-up is completed, each district will have one director plus as many others as there are multiples of 20,000 taps represented by those who have become members.

Districts are as follows:

- 1) 28 north-central and north-west Counties
- 2) 14 south-west counties
- 3) 11 central counties
- 4) 21 south-east counties
- 5) 14 north-east counties

Directors for these areas are:

- 1) Gordon Feindel - SENECA, and Mark Stump - CRAWFORD
- 2) Joe Dill - CHAMPAIGN, and Robert Roemer - BUTLER
- 3) William Brown - KNOX, and Ned Mosher - FRANKLIN

- 4) Les Ober - GEAUGA, and Hilton Farley - GEAUGA

Officers for the initial year were elected as follows:

Chairman - Hilton Farley - GEAUGA
Vice-Chairman - Gordon Feindel
SENECA

Secretary - Les Ober - GEAUGA
Treasurer - William Brown - KNOX

Addresses:

Hilton A. Farley (Chairman)
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Middlefield, Ohio 44062
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Gordon Feindel (Vice-Chairman)
976 State Route 635-N
Tiffin, Ohio 44883
(419) 937-2675

Les Ober (Secretary)
11177 Kinsman Road, Box 207,
Newbury, Ohio 44065
(216) 564-5457

William Brown (Treasurer)
7185 Quaker Road,
Fredericktown, Ohio 43019
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TAPPING GUIDELINES

George L. Buzzell, Orleans County Forester

Sugarmakers are well aware of the fact that trees respond to environment.

Some aspects of a tree's environment may be beyond landowner control. However, many highly significant factors are definitely controllable through good management. There is no substitute for proper management. Proper management is not only within individual control, it should be considered an individual obligation if we expect continued benefits from our trees. Proper management can reap bonuses in healthier trees and increased efficiency and income.

Some important areas of proper management include recognizing site capabilities and limitations, proper thinning and orderly tree replacement, proper protection from destructive agents such as insects and grazing; and proper tapping procedures.

The advent of tubing systems has had a significant impact on site selection, thinning, and tapping procedures. For example, prior to tubing, real swampy areas were not tapped because the sap could not be gathered. Observation indicates these areas do not usually produce healthy trees or profitable volumes of sweet sap. The use of tubing allows easy gathering from these areas.

Destructive agents such as insects and grazing livestock injure and weaken trees, reducing their capacity to produce tappable wood and high volumes of sweet sap. We can deal with many of these agents. Livestock should be excluded and insects should be controlled where possible.

Proper thinning is absolutely essential to the process of establishing and maintaining a healthy, productive sugarbush.

Too much thinning, no thinning, or poorly-timed thinning all contribute to poor tree health. For example, stands weakened by defoliation should be

allowed to recover before thinning. Thinning too soon after heavy defoliation can result in heavy dieback. Excessive soil disturbance and root damage is also a cause of tree problems.

Similarly, tapping too soon after heavy defoliation can result in heavy dieback.

No thinning at all results in crowded trees which will be seriously weakened as a result of severe competition.

Tubing systems are considered a pain to take down for thinning. As a result, many stands are not thinned at all.

Other stands are over-thinned to reduce the "pain" of handling tubing too often. Usually, frequent, light thinning is best in well-managed sugarbushes. This requires frequent handling of tubing.

Very preliminary informal observations indicate additional practices such as fertilization may hold promise for improving tree health.

Genetic studies are also uncovering extremely interesting information.

Proper Tapping

As stated, the use of permanent tubing systems is relatively new and has resulted in problems directly affecting tree health. Many trees are being over-tapped and/or improperly tapped. This has resulted in serious widespread health problems and has contributed heavily to tree dieback.

One problem seems to be caused by the use of too-short droplines on permanently installed systems. This has resulted in a clustering of tapholes. Taphole location has been largely determined by "bringing the taps to the spouts."

Power tappers allow faster tapping and can lead to less time spent looking at each tree and taphole before moving along to the next tree. Many sugarmakers hire untrained help to tap. This often results in poor taphole location.

Continued tree productivity depends on determining the proper number of taps per tree and then distributing these taps over as large an area of tappable

wood as possible. Distributing these allowable tapping injuries properly will keep them separated from each other by larger areas of healthy white wood. Thus, the tree will be better able to continue (normal sap flow) functioning. Drop line location and length should be adequate to reach these properly located tapholes.

Recommended minimum dropline length for a permanent system is thirty (30") inches. Generous dropline length will allow vertical staggering as well as horizontal offsetting of new tapholes. These long droplines can be kept from sagging below the lateral lines by tying them back when tapping closer to the trees.

Place new taps at least six inches to one side and one foot above or below any old taps which are still open. This is important!

TAPPING GUIDELINES

These guidelines are designed to help the sugarmaker compensate for reduced tree capacity.

They are based on:

1. Tree growth as determined by measuring the thickness of growth rings in fractions of an inch. Use increment borer on a few trees of each size class in each soil type. Only bore one inch deep to minimize tree injury.

2. Available tappable area determined by measuring the net or live circumference of the tapping band. **Tapping Band** - refers to the tappable shell or live circumference of a maple tree which is available for tapping. It is vitally important that taps be properly distributed over as large an area (both vertical and horizontal) as possible.

The measured live (or usable) circumference can then be used to figure adjusted tree diameter. Each tree should be closely inspected and adjusted tree diameter determined by measurement. For example, a cluster of open tapholes should not be considered part of the tappable shell. The nontappable shell should include this cluster and an additional six inches on each side of the cluster.

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ter (minimum horizontal offset from old open taps).

This tapping guideline is unique because it does require minimum tree growth necessary to seal over tapholes and produce new wood for future taps. It also separates the usable shell of the tree from the unusable shell of the tree and relates this shell or circumference to adjusted diameter.

1 tap = 12" to 18" diameter for a healthy tree or . . . usable circumference of 36" to 54".

Outside Growth rings at least 1/8 inch thick-

If growth rings are less than 1/8 inch thick see your Forester.

2 Taps = 18" + diameter for a healthy tree or---usable circumference of 54" and over. Not over 2 taps.

-Growth rings at least 1/8 inch thick-

If growth rings are less than 1/8 inch thick reduce number of taps.

-See your Forester-

Spread taps over as large an area as

possible.

Place new taps at least six inches to one side and one foot above or below any old taps which are still open. This is important!

Why the "Adjusted diameter is so important -

Example:

A 20 inch diameter tree has had two taps per year for five years- clustered on one face. A number of these tapholes are still open. Sap flow has been seriously reduced in this face which can easily exceed ten inches wide. These taphole injuries (compartments) may combine, compounding injuries and speeding up decay. This twenty-inch diameter tree has a total circumference of sixty inches. Reducing this total circumference by the overtapped ten inch face plus the necessary horizontal offset of six inches on each side of this face equals a **usable shell or circumference** of 60" minus 22" or thirty-eight

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inches. Since the diameter is roughly 1/3 of the circumference, the **adjusted usable diameter** of this tree is now 1/3 of 38" or about 13 inches. At best, a 13 inch diameter tree can handle one tap per year. Continued use of two taps on this tree will speed up injury, dieback and will lead to premature death.

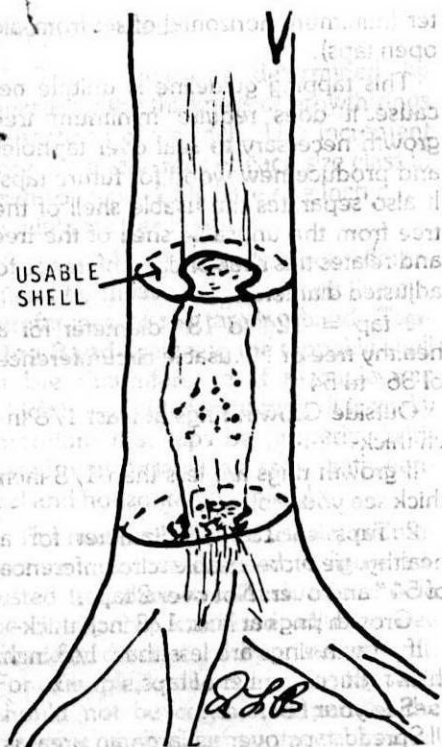
Yearly inspection of the tapping band will determine when and if an acceptable shell of new wood covers the taphole cluster, making the tree usable for more than one tap per year.

Reminder -

Take time to determine the proper number of taps per tree.

Place new taps at least six inches to one side and at least one foot above or below any old taps which are still open.

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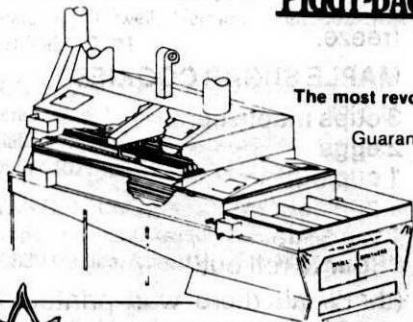


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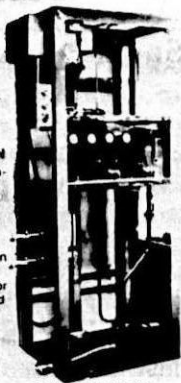
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WOMEN'S PAGE

From an old cook book, but still very good!!

MAPLE MOUSSE

1 pint maple syrup
yolks of 3 eggs

- mix well and boil until thread spins, then cool.

beat 3 egg whites

beat 1 pint heavy cream

- fold together with cooled syrup mixture.

freeze.

MAPLE SUGAR COOKIES

3 cups maple sugar

2 eggs

1 cup butter

1 cup sour milk

1 tsp soda

"flour to roll out"

(that's all there was printed! We used to know what to do with that kind of directions.)

FOOD VALUE OF MAPLE SYRUP AND MAPLE SUGAR

Maple syrup contains 68% carbohydrate. One tablespoon of maple syrup contains 50 calories and 5% of recommended daily iron allowance. Maple syrup contains per tablespoon: 21mg calcium, 35mg potassium and 2mg sodium.

ARCHIE'S

SUGARBUSH

Dear Mr. Editor:

My wife, she sez, "Honest Archie," sometimes she calls me Truthful Archie. "why don't you tell that nice Mr. Editor man about the time I helped my uncle Rufus make maple syrup." It wuz like this:

Uncle Rufus lives over in West Virginy on the side of one of them tha

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mountains. His farm's awful steep and last summer he fell out of one of his meadows and broke a leg. Now he's getting along in years and didn't mend too fast so when it come tapping time he still couldn't get around too good.

My wife thought somebody oughta go help him out, and besides that, Uncle Rufus didn't tap many trees but he always made an awful lot of syrup and we thought maybe we could learn something.

This was a couple of years before the year of the blue snow. We wuz only running 12 evaporators then but they kept me pretty busy so she went.

Now Uncle Rufus' sap bush is way up on top of the mountain and the sap house is down in the valley. The road is steep and rocky and rough as all git out and to keep the sled from bouncing

around too much going up the mountain with the gathering tank empty, they used four, 100 lb. bags of cane sugar for ballast. Uncle Rufus said that worked out just about right. Of course, coming down with the tank full they didn't need the ballast so they didn't bring the sugar down. It wouldn't be right to overwork the horses. Every load it was the same - four bags going up, none coming down.

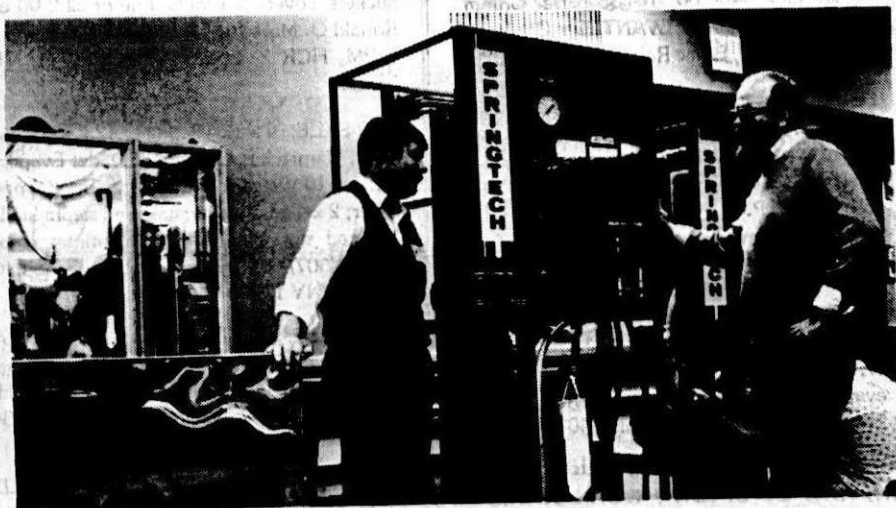
When the season was over, I went to get my wife and she told me all about it. I figured there must be an awful big pile of sugar up on that mountain so I hiked up there to see it. You know, them bags wuz all empty! Somebody must of stole it.

We never did learn how Rufus could make so much syrup from so few trees.

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Gary Gaudette (left) of Leader and Bill Coombs chat beside the SPRINGTECH RO Machine at the NAMSC Annual Meeting in Rutland, Vermont.

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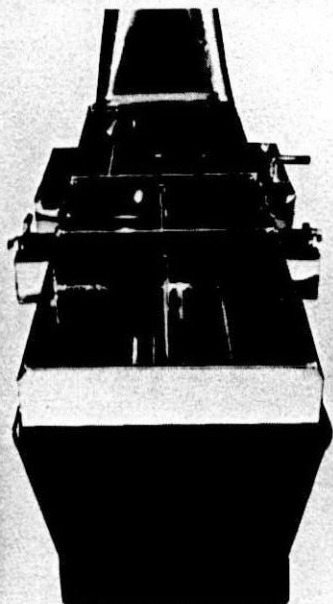
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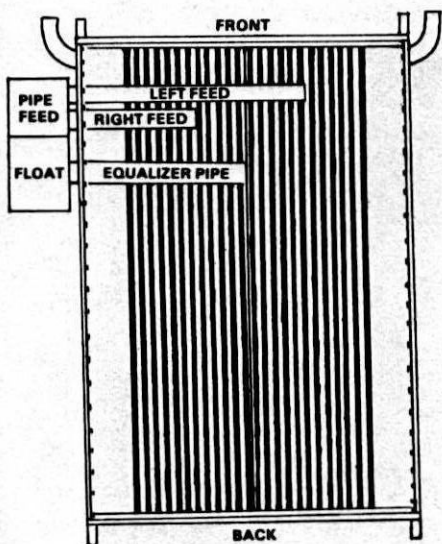
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