

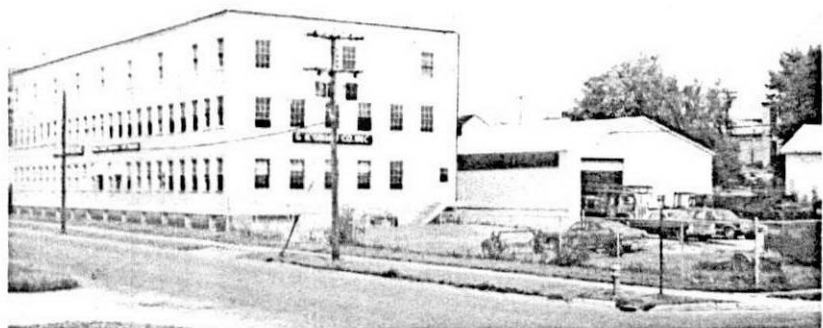
NATIONAL MAPLE SYRUP DIGEST NATIONAL



Vol. 9, No. 4

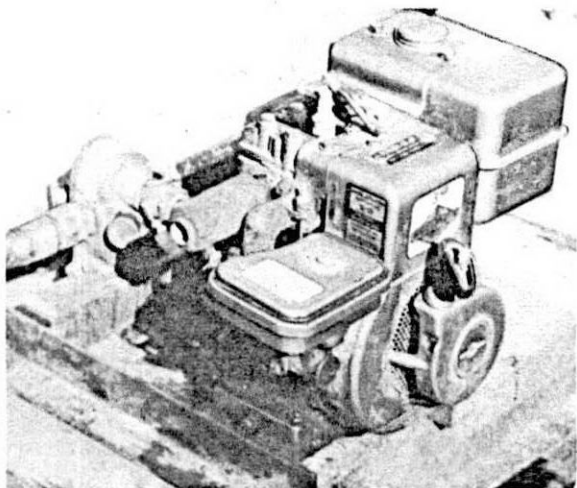
December, 1970

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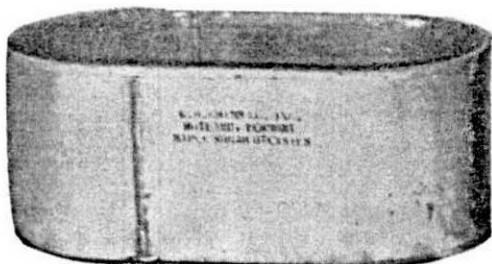


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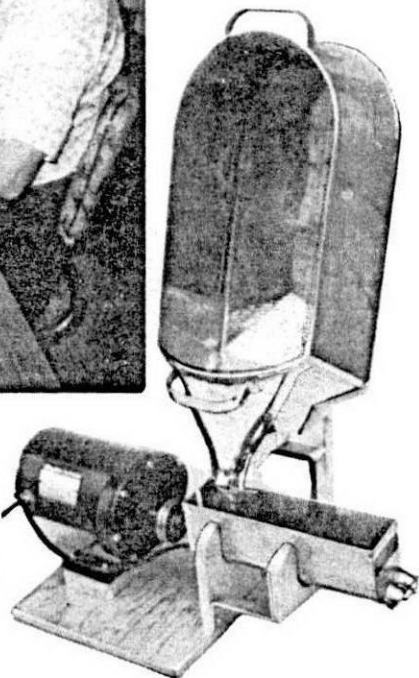
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COVER PICTURE

The title of this month's cover is "Peace on Earth, Good Will Towards Men". It appeared, in color, on the 1966 Allis Chalmers calendar and was so appropriate we just had to steal it.

NOTICE-BACK ISSUES

The following issues of the Digest have been printed to date;

Vol. 1, No. 1,2,3,4
Vol. 2, No. 1,2,3
Vol. 3, No. 1,2,3,4
Vol. 4, No. 1,2,3,4
Vol. 5, No. 1,2,3,4
Vol. 6, No. 1,2,3,4
Vol. 7, No. 1,2,3,4
Vol. 8, No. 1,2,3,4
Vol. 9, No. 1,2,3,4

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CURTIS RE-ELECTED PRESIDENT OF NATIONAL MAPLE SYRUP COUNCIL

by Edward P. Farrand



Edward A. Curtis of Honesdale, Pa., was re-elected president of the National Maple Syrup Council during its meeting at Lukan's Farm Resort, near Honesdale.

Also re-elected were; Robert Coombs, Jacksonville, Vermont, vice president; and Floyd Moore, Oqueoc, Mich., secretary-treasurer.

Editorial

In setting up a publication, one problem the editor has to contend with is making the copy exactly fit the space available. In this issue we ran out of space first. The solution is to eliminate the most unimportant article which is, of course, the editorial. The printer did allow room enough for me to explain why there is no editorial.

Ed Farrand of Penn State sent a brief summary of the National Council meeting (above). We expect to have more information about the Council's activities in the next issue. Now, if the printer doesn't have to clip off the last sentence, I'll wish you all a VERY MERRY CHRISTMAS AND A PROSPEROUS NEW YEAR.

Maple syrup council officers, directors and members from Canada, the New England States, New York, Wisconsin, Michigan, Pennsylvania, and Ohio attended the two-day council meeting. About 60 of the participants attending were producers.

Delegates from states reported this year's production as being from fair to very good.

Two resolutions were passed. One of these supported the encouragement of temporary support to assist producers in holding their bulk syrup - to fill the usual syrup shortage during fall and winter months.

Another resolution urged stepped-up research in the control of Gypsy Moth and Saddled Prominent. Both of these insects have become serious pests of sugar maple stands.

Some of the topics discussed at the meeting were packaging, marketing and more efficient methods of production.

Local organizations assisting in making plans for the meeting were: Wayne County Chamber of Commerce, Northeastern Pa. Maple Syrup Producers Ass., Hawley Chamber of Commerce, Pa. Maple Syrup Producers Council, and the Wayne County Extension Service.

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MAPLE DEVELOPMENT COMMITTEE

Condensed report

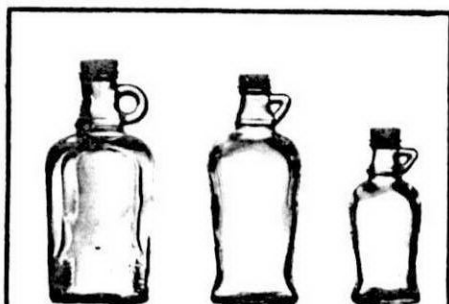
The Maple Development Committee of the South Central New York Resource, Conservation and Development Project is taking significant steps to benefit our industry. The economic study of the New York industry by Cornell's Department of Agricultural Economics was largely financed with R C & D funds. The findings of that study have been analyzed and steps proposed to get the industry on a firm foundation.

Space does not permit even a summary of the data contained in the 190 pages of this economic study. The conclusions drawn from it are our immediate concern.

Many producers are losing money on their enterprise, and will probably go out of business when new equipment is needed or other discouraging factors arise. Likewise, many operators are showing satisfactory profits on their businesses. This latter group are not only the efficient operators, but are also skillful in marketing their products at a reasonable retail price. Larger marketing organizations, such as central evaporator plants, are needed to reach outside the local area. Central evaporation plants will depend upon purchasing sap. Large losses are universal in selling sap because sap values have not met the costs of production.

One is depressed by all the loss figures in the economic study. There are, however, rays of sunshine. One point missed by many readers of the study is the fact that an average week's wages in 1950 purchased 15 gallons of maple syrup, where in 1969 it purchased 20 gallons. This does not indicate an increase in the purchasing power of wages, but rather that the retail selling price of maple syrup has not kept up with inflation. With constantly increasing costs of production and a "fixed" selling price, losses are what must be expected. If the industry is to survive, this situation must be corrected.

The poor syrup years and the elimination of syrup carry-overs may be a blessing in disguise in that it sets the stage for price increases. Encouragement of retail prices that meets production costs and pro-



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vides a profit for the operator is a major R C & D objective.

The R C & D Maple Committee is also encouraging maple producers to expand to effect the economics and marketing position of the central evaporator plant.

SAP PRODUCTION

It is recognized that a supply of sap for sale is the price requirement for central evaporator plants. The R C & D Maple Committee has therefore studied this question in detail.

Several years ago, Cornell's Dr. Robert Morrow examined the losses that tapping caused to timber production, and concluded that it was more profitable to manage a maple stand for sap production than owner who rents his trees as well as the owner tapping his own bush.

The average cost of owning a forest was placed, in the economic study, at 9.99 cents per tap. This figure gives the usual rental price of 10 cents per tap used in New York a basis of fact. It should be noted, however, that small sized, small crowned trees may not produce sap values which will warrant the 10 cent rental, while large crowned trees may produce residual values of several times this amount.

When the results of the economic study were known, it was concluded that the syrup manufacturer must pay enough for sap to eliminate the losses on sap production. Although the role of sugar bush management in increasing sap income was mentioned, no data were given to support the effects of such management.

There is a direct relationship between the size of the tree crowns and the cost of syrup production, (See Winch and Morrow's Cornell Extension Bulletin 974, Production of Maple Syrup and other Maple Products, 1962)

The 1971 sap prices proposed by one of the large sap purchasers, applied to Cornell's data, produced the following:

Tree diameter	13"	19"	24"	28"
Spacing (crown deameter)	18 ft.	25 ft.	32 ft.	40 ft.
Gallons sap per tap	10	12	13	15
Sugar content	2.0	2.2	2.5	2.8
Sap value per tap hole delivered at evaporator	\$0.60	\$0.82	\$1.14	\$1.38

It should be further stressed that the 18-foot spacing requires almost twice the tapping equipment and labor, 40 percent more gathering, 40 percent more fuel, and 40 percent longer boiling time than the 40 foot spacing. With these facts in mind, the R C & D Maple Committee strongly recommends sugar bush management as a definite assistance to the maple industry.

REQUIRED SAP PRICES

The economic study showed the average sap producer needs an income of 89 cents per tap hole for a break-even operation. The ten most profitable producers had costs of 75 cents per tap hole. It must be remembered that these costs include the 10 cents per tap hole cost of owning the forest.

Sap production varies widely, not only between stands, but also from year to year. New York's average production is quoted by several authorities as ranging from 12 to 16 gallons of 2.0% sap to 9.2 to 10.5 gallons of 2.5% sap per tap.

The economic study proposed that sap prices be raised to eliminate losses and provide profits on that phase of the operation. One large sap purchaser raised delivered sap prices in 1970 above those used in the 1969 economic study. Another raise in sap prices is proposed for 1971. Following is a brief presentation of the comparable sap prices:

% Sugar	1969	1970	Proposed
	(\$7.00 Syrup)	(\$8.00 Syrup)	1971 (\$8.50 Syrup)
1.5	\$0.02	\$0.02	\$0.022
2.0	.045	.05	.06
2.5	.06	0.072	.08
3.0	.075	.09	.10
3.5	.09	.107	.118
4.0	.105	.124	.136

A comparison of sap values applied to the average production figures gives the sap returns as follows:

1969 - 54 to 74 cents per tap

1970 - 60 to 83 cents per tap

1971 - 72 to 99 cents per tap

These proposed 1971 sap values bring sap production income within the cost range from the economic study.

SYRUP CONTRACT

Since the cost of sap production for the 10 most efficient producers in the economic study was placed at 75 cents per tap hole, the committee has proposed that purchasers guarantee an income to the sap producer of 75 cents per tap hole providing he deliver a minimum of 12 gallons of 2.0% sap per tap. In the opinion of the committee, the purchaser in Central New York runs small risk of loss by this proposal. Since most local sugarbushes produce more than the minimum amount. The risk is considered worthwhile to encourage sap production.

GUARANTEED INCOME

The plight of the small producer who lacks markets and the large producer who needs additional syrup was considered. Professor Winch proposed that small producers might contract their syrup crop to a central evaporator plant. The following is quoted from Winch's material:

"There is another way being discussed at present. That is, to follow the lead of other agricultural crops more perishable than maple syrup, as for example, lettuce or grapes. That is, to produce under contract. This would mean that the producer contract his crop to a producer packer for a specified price per pound based on quality (density, flavor, color) of table grade product, as well as on the per gallon price of retail syrups. Thus, \$8.00/gal. table grade, light amber syrup could result in a suggested contract price of 40 cents/lb. for light amber, table grade syrup of 66 degrees B. density. Such contracts in addition could and should carry a clause preventing contracting producers from selling syrup locally for less than a specified price (ex.: \$8.00) retail or a given price wholesale."

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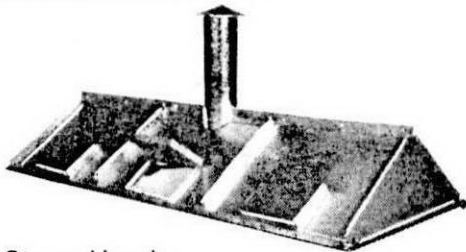
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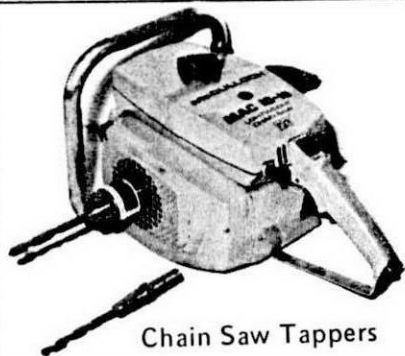


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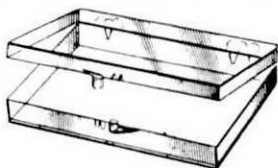


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Remember, Tue. Jan 26 is MAPLE DAY with the annual maple banquet at noon and a timely program with speakers in the field of maple.

At 11:30 a.m. is the crowning of the 1970 Vermont Maple King and Queen. Also the presentation of the honorary lifetime maple awards and plaques.

New this year will be the introduction of a maple contest for youth such as FFA, FHA, 4H etc. Be sure to enter your maple products of all kinds in the regular farm show contests. Visit sugarmakers booths all 3 days or Tue. evening. Note: For contest rules for King and Queen, contact Everitt Willard, Vt. Department of Ag. Montpelier, Vt.

ATTENTION VERMONT MAPLE PRODUCERS

Do you really want the MAPLE DIGEST? If you do please make a serious effort to support it. Send your dollars direct to Lloyd Sipple, Ed., Bainbridge, N. Y. or support it thru your state Assoc. We'll do all we can to keep it coming to you WITHOUT subscription, but your help is needed.

Another maple season approaches and world maple supplies are at an all time low, in all 4 grades. Too many of you are still putting too much syrup in gal, 1/2 gals. or even milk cans without sufficient market. At 45 to 55 ¢ per lb. in bulk you might consider owning your own barrels or 5 gal. cans. Your assoc. provided epoxy drums last yr. at about \$10.00 each to interested members. Let us know NOW about 1971.

Be sure to attend your county maple meetings, they're for YOU. Join your State Maple Assoc. now for a better 1971 sugaring. Send dues to Mrs. Carolyn Perley, R. D. No. 1, Richford, Vt.

Keep your eye on PLASTIC containers for 1971 with metal cans harder to come by and high prices. The day of plastic may be here: They are on the market.

THE 1970 VERMONT MAPLERAMA



Serving box lunch at A. Lahar farm, Albany, Vt. on August 8, 1970

by
Raymond T. Foulds, Jr.*
Extension Forester, University of Vermont

A total of over 250 persons attended the fifth Vermont Maplerama, or state maple tour, which was held in the "North-east Kingdom" section of Vermont on August 7 & 8, 1970. The best attended of any Vermont tour yet held, it was made possible by the cooperation of several different groups and agencies, including a sugar makers committee representing both Caledonia and Orleans Counties; the Caledonia County Maple Producers Association; the Extension Service, University of Vermont; the Vermont Maple Sugar Makers Association; the Vermont Department of Forests and Parks; and the Vermont Department of Agriculture. Chairman of the

Maplerama was Maurice LaPlant of Sutton. Vice Chairman was Donald Kilborn of Derby. Secretary was Philip K. Grime of St. Johnsbury. Treasurer was Roger Whitcomb of Derby. Malcolm Franz and James Noyes, Foresters for Caledonia and Essex Counties, were in charge of arrangements.

As in the past, the purpose of the Maplerama was to give sugar makers a chance to visit locations where the latest techniques of maple production were being used, as well as examples of good market-

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ing. A particular effort was made to include a visit to an average sugar maker - in this case Andrew Ward of Danville - rather than just to larger sugar makers. A colorful souvenir Maplerama program was prepared which described the details at each of the stops.

As the Tour began on Friday morning the sugar house and sales room of Maurice LaPlant was the gathering place. People registered and heard of his 3,500 bucket operation, which included a tank truck with a pump for roadside sap gathering. They observed his modern oil-burning evaporator, roadside sales room, varied cans and jugs of syrup, and home-made candies. He told of publicizing his enterprise through sugar-on-snow parties and other publicity.

From the LaPlant sugar house the tour continued by bus to the King George Farm, also in Sutton, where farm manager Kenneth Barrett showed and described his modern maple business. The sugar house has such features as two oil-fired evaporators with steam hoods, electric lights, a concrete floor, a pressure filter, and aluminum siding. Approximately 4,000 taps on a hill about 1/2 mile from the sugar house are connected to storage tanks by plastic tubing, and a pump pulls a vacuum on the line. An additional 1,000 taps are buckets, and are gathered by a tractor pulling a rubber-tired trailer. There are potentially 8,000 taps possible here as funds become available for further development. The King George syrup is filtered and canned at the sugar house, and is sold mainly at retail at the sugar house.

The group paused for a box lunch at the King George farm, followed by a visit to the large dairy barn and Holstein herd. They then continued by bus to the maple candy-making operations of Maple Grove, Inc. in St. Johnsbury. This firm is owned by Harold Whaley and managed by Steven Astle. The business was formerly owned by George Cary, and features the processing and packaging of high quality maple syrup and candy. It is a very efficient and sanitary plant employing 55 people. It is a popular tourist attraction with a maple museum, a maple film, and guided tours. Over 80,000 visitors are registered in an average year. Products sold nation-wide include a complete selection of maple sugar, syrup, and other delicacies such as sweet-sour salad dressing. Many souvenir-type packages are used.

The Kenneth Ward farm was next visited. It has been operated by the Ward family for over 120 years. Kenneth's son, Andrew, is the sugar maker. He hangs 4,000 buckets, and packs his syrup from a filter tank heater by gas. The sugar bush is partly thinned each year, and the wood used for boiling the sap. The farm supports 50 milking cows plus 50 other head, including replacement heifers and beef cattle.

The final stop on the first day was the roadside stand on Route 5 which is operated by Carl Lyster. Formerly owned by Elizabeth Chase, the stand features Elizabeth Chase candies, which include lollipops, cream cakes, fudge, bricks, flavored syrup, red apple syrup and granulated sugar

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maple-brittle. He has refined the original Elizabeth Chase recipes, cools products under high-pressure steam, and uses butter in most products. The stand is neat and attractive and has many visitors.

At the end of the first day a dinner was enjoyed at Lyndon State College in Lyndon Center. After dinner 15 different exhibits were viewed in the foyer of the college theater. An evening program featured musical entertainment and a talk by "Representative Gore" (Norman Lewis), plus a panel discussion on "Finding Markets for Grade B and Grade C syrup in 1970".

As the program continued on Saturday morning a pancake breakfast was enjoyed at the college. The group of over 200 then continued past Willoughby Lake to the sugar house of Warren Mitchell in Derby. Here a new sugar house was observed with a new oil-fired 6' x 18' evaporator. Four oil burners were used in a Grimm arch fitted with a Lightning pan. Sap is pumped here from 1,500 taps with a vacuum pump, including two vacuum tanks - one at the

sugar house and one at the edge of the woods about 400 feet away. Sap is also brought from an additional 3000 taps. Syrup is hot-packed with gas at the sugar house, and is sold through restaurants, gift shops, and other retail stores.

The tour continued from Derby through Newport to Albany, where the sugar house and bush of Arthur Lahar and sons were visited. A box lunch was enjoyed here, followed by demonstrations of hanging plastic tubing by Fred Laing and Dr. James Marvin of the Proctor Maple Research Farm; a sugar bush management tour led by County Forester George Buzzell and Extension Forester Raymond Foulds; and demonstrations of a home-made wood splitter, a powered trailer, and other sugaring equipment. The day ended with maple cakes and cookies served with milk and punch by local ladies. Mrs. George Young and Mrs. Albert Urie gave special assistance with the latter event.

*With assistance of County Extension Agent Roger Whitcomb of Orleans County.

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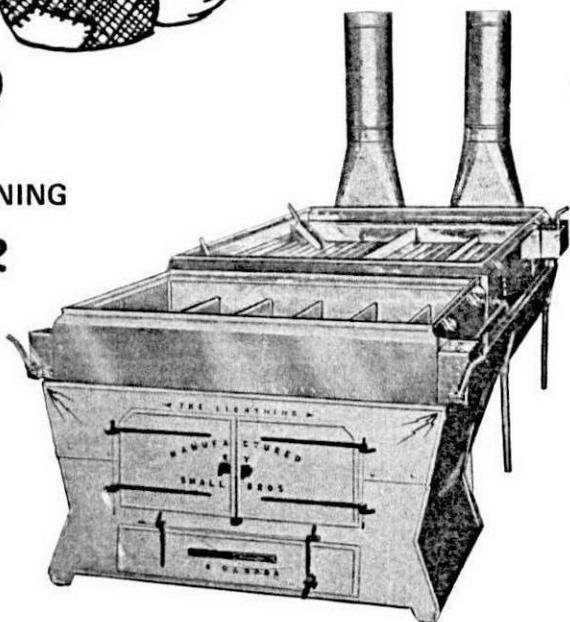
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WOMEN'S PAGE

By SHIRLEY COOMBS

As I sit looking out at a line of freshly laundered curtains blowing in the brisk November breeze, I could be dreading the task of washing windows, next on my list of "things to do". However: my thoughts are back in Honesdale, Pa., the site of the 1970 National Maple Council meeting. The weather couldn't have been nicer or the hospitality more gracious than that at Lukans farm Resort. The food was out of this world. It was expertly prepared and well served. Another good feature was the fact that all the sessions were held at the resort.

The women however; did leave Monday morning for a tour of the area. Mrs. Martha Chapman, from the Wayne County Extension Service, did a splendid job as hostess and guide for the ladies. Several women volunteered to drive. There was a large number so we divided into two groups to make the places that we visited less crowded.

The tour of Rothrocks Metalcraft Shop was really enlightening. Two brothers own

and operate this establishment, which makes articles of sterling and pewter. They also work with brass and do silver-plating. We watched as a silver item was created. The workmanship was outstanding. So outstanding, in fact, that Tiffanys & Cartier's purchase many items from this firm. The safe was opened. We saw rolls of various weights of silver. At first glance one might ask why "tin" roofing was stored in a safe. It looked much the same, but price wise, they would not be comparable.

There were many fine old items, we noticed, that had been refinished or repaired for customers. The gift shop was truly an exhibit of fine items made in this small building in this Pennsylvania town. If one were to drive by he would not notice anything outstanding or probably not even give the building a second glance. It's nice to know that this family craft is still being followed by these brothers.

A feeling of friendliness was felt from local merchants and townspeople of Honesdale. Someone, perhaps the local chamber of commerce, had done a great job of notifying shopkeepers of our visit. There were "welcome" signs in store windows and a large banner across the main street. We had time to visit a few shops in town Monday morning.

We ate lunch at Blueberry Hill in South Sterling. There were several types of stores

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in this complex. "The Old Red Barn" especially intrigued me as there were items from candy to furniture sold here. It was fun to browse on both floors.

A drive around Lake Wallenpaupack was most enjoyable in the warm October sunshine. The autumn leaves, even though local people said were past their peak, still offered us beautiful scenery.

Antique cut glass was displayed at the shop of R. S. Latournous. Mr. Latournous showed us the procedure of cutting glass today. Beautiful pieces of his work were for sale in his gift shop.

The last stop of our tour was a gift shop in Hawley, after which we returned to Lukans. Many thanks, Mrs. Chapman, for a tour well planned and carried out and enjoyed by all of us.

Tuesday morning there was free time for some of us gals. Mrs. Richard Plotts and Suzanne, wife of a county agent, offered to chauffeur us to Honesdale to look around a bit more. (May I apologize to "Suzanne" at this point. I jotted down your name and lost it somewhere between Pennsylvania and Vermont.) We know who you are and so do you - that's the important part!

The two florists shops that we visited were most interesting with their fall arrangements and ideas galore. Thanks again to both of you ladies for taking your time and cars that morning.

We joined our husbands for lunch, after which everyone visited the Wallenpaupack Dam. This was followed by a guided tour of the PP&L's hydroelectric plant. After good-bys were said we all left for our homes.

Oh yes, there are still windows to clean and there will always be chores to do, but pleasant memories of visiting with old friends and meeting new acquaintances on this trip will seem to lighten the job.



BACON'S SUGAR HOUSE

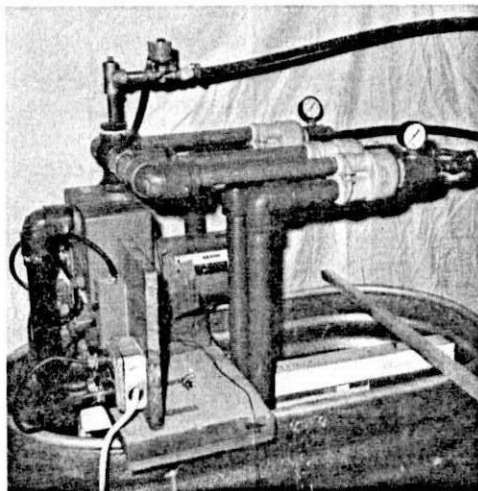
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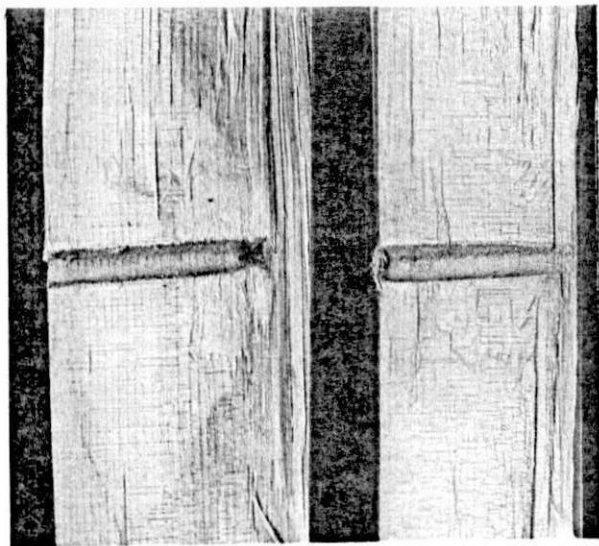


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RESULTS OF RECENT RESEARCH ON THE PELLET



- The taphole in the wood section on the left (taphole split in half) received a paraformaldehyde pellet. The light area surrounding the taphole is the area where the wood tissues have been killed. The taphole on the right did not receive a pellet, and there is only a small amount of light-colored wood around the taphole.

Northeastern Forest Experiment Station
Forest Service, U. S. Dep. Agriculture
6816 Market Street, Upper Darby, Pa.

by H. Clay Smith, E. Bradford Walker,
Alex L. Shigo, and Frederick M. Laing

Much discussion was generated by the reports that Shigo and Laing gave at the National Maple Syrup Council meeting held at Burton, Ohio, in October 1969. They raised the question that paraformaldehyde pellets, used in sugar maple tapholes, may cause damage to the trees.

Their reports were based on preliminary studies. We do not have the full answer to this question, and research on it is being continued. Meanwhile, we believe that all sugar maple producers should have the latest information available about using the 18 paraformaldehyde pellet.

Our cooperative work with paraformaldehyde began when many trees in a northern Vermont sugarbush were found to have extensive pockets of decay associated with poor taphole healing. This poor taphole healing and decay appeared to be related to the use of paraformaldehyde pellets.

Subsequently a survey of 92 sugarbushes throughout Vermont was made by the Vermont Department of Forests and Parks. More than 6,000 tapholes, both pelleted and unpelleted, were examined. Judged by the outside appearance of the tapholes, taphole healing did not appear to be affected by use of paraformaldehyde pellets.

However, to determine fully the seriousness of this problem, it was necessary to look at the woody tissues inside the tree.

So in 1969 we began a study to evaluate the effects of paraformaldehyde on the sap-producing tissues. This study

was a cooperative effort among the Vermont Department of Forests and Parks, the University of Vermont, and the U. S. Forest Service.

Results indicate that a problem exists, and that the effects of using paraformaldehyde on the wood surrounding sugar maple tapholes need further investigation. The technical results of this study have been published by the Northeastern Forest Experiment Station, Upper Darby, Pa. ("Some effects of paraformaldehyde on wood surrounding tapholes in sugar maple trees," by Alex M. Shigo and Frederick M. Laing: USDA Forest Service Research Paper NE-161, 11 pp., 1970.)

THE STUDY

The study was designed to determine:

1. The effects of paraformaldehyde pellets on the woody tissues surrounding the tapholes.
2. The identity and numbers of microorganisms present in this woody tissue.
3. The effects of paraformaldehyde pellets on the formation of amber plugs in the tissues around the taphole area.

Two sugarbushes in north-central Vermont were tapped during the second week of March. Five trees from each bush were tapped, with 10 tapholes per tree. We realize this was overtapping the trees, but from a research standpoint, it was permissible. At random, five of the 10 tapholes on each tree were assigned for treatment, and a standard 250-milligram paraformaldehyde pellet was inserted. The remaining five tapholes did not receive a pellet. All together there were 100 tapholes; 50 pelleted and 50 unpelleted.

A number of other trees were selected in each sugarbush for a study of amber plug formation. Three tapholes were drilled in each tree to a depth of 3 inches, excluding bark. Each tree had both pelleted and unpelleted tapholes.

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Except for a few three-taphole trees, all the trees were cut in mid-April, approximately 6 weeks after tapping. A 6-foot section—3 feet above and 3 feet below the tapholes—was cut from each tree. The wood surrounding the 100 tapholes was examined for staining and the presence of microorganisms. The three-taphole trees were examined for formation of amber plugs.

Each bolt from the 10-taphole trees was split to expose each taphole in cross-section. The length and width of the stained wood above and below the taphole were measured. The kinds and numbers of microorganisms that were present in the woody tissues were determined.

The general patterns and formation of amber plugs were determined by micro-

scopic observations in cross-sections of the log above and below each taphole. Amber plugs are unknown materials that plug the cells where the sap comes from. This plugging is a normal wound reaction by the tree—and a taphole is a wound. Amber plugs form a protective barrier against invading organisms that enter the wound area and advance into the tree. When the amber plugs are not present, these organisms are believed to enter the tree faster.

RESULTS

The study results indicated that more staining (dead wood) was associated with the tapholes that had paraformaldehyde pellets than with those tapholes that did not have paraformaldehyde pellets. The vertical length of the stained wood averaged 8 inches for the pelleted tapholes and less than 2 inches for the unpelleted (fig. 1).

Microorganisms present in the wood near the pelleted and unpelleted tapholes were the same in number and kinds.

Amber plugs did not form in the wood surrounding the pelleted tapholes. However, a few plugs did form on the outer extremes of the stained area. Plugs formed in all the unpelleted tapholes.

CONCLUSIONS

The study results indicated that, after a 6-week period, paraformaldehyde killed a large area of wood tissue. These tissues were more susceptible to invasion by wood-inhabiting organisms such as decay and nondecay fungi and bacteria. Since amber plugs were not formed, organisms were able to infect the wood rapidly, as indicated by the 8 inches of discolored wood at the pelleted tapholes as compared to less than 2 inches at the unpelleted tapholes.

Since microorganisms in the woody tissues from both the pelleted and unpelleted tapholes were the same in type and

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number, we concluded that the pellets apparently did not influence the presence of organisms in the wood during the 6-week period.

Tapholes usually heal in 3 years. Once the taphole heals, the growth of wood-inhabiting organisms present inside the stained wood tissue is greatly reduced because of a lack of oxygen. However, we do not know how rapidly these organisms will invade and cause rotting of the woody tissues killed by paraformaldehyde.

IMPLICATIONS

When the killing of tissue is confined to a limited area, and taphole healing is normal, the small vertical area of dead tissue may be the price that the producer must pay for the benefits of using paraformaldehyde pellets. On the other hand, if using paraformaldehyde causes poor healing and extensive damage in the taphole area, then over a long period there might be a tendency for the trees, particularly the one-and two-taphole trees, to become seriously decayed.

Examine the trees on your sugarbushes. You may have to pull the bark away from the taphole to determine if the wood surrounding the taphole is living. If you see that many tapholes are not healing in 3 to 4 years, you may have to be more careful in your method of tapping.

We recommend that, if pellets are used, only one pellet be placed in each taphole. We suggest that the spouts be driven into the taphole carefully, to avoid splitting the bark and exposing the woody tissue to further damage. The prescribed number of tapholes per tree size (Maple Syrup Producers Manual by C. O. Willits) should be followed.

The use of a 250-milligram paraformaldehyde pellet may cause damage to the sap-producing tissues of sugar maple. Whether this damage is so serious that the pellet

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should not be used is unknown. However, an intensive research program is being undertaken to determine the short-and long-term effects of paraformaldehyde.

Though we are expressing some caution about the use of paraformaldehyde, and we warn against the use of more than one pellet per taphole, we are not ready to make any definite recommendations about use of the pellet. There are several possibilities in using the pellet that must be examined before any definite conclusions can be made. It will take time to get a complete answer. Meanwhile, as our research results become available, we will keep you informed.



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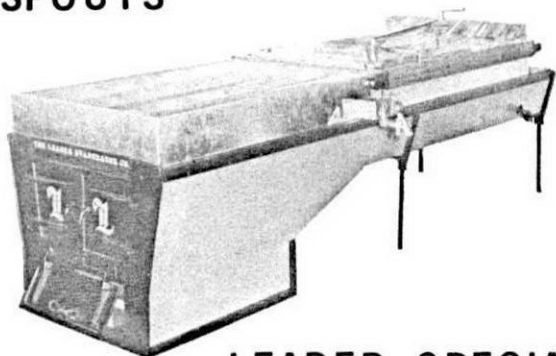
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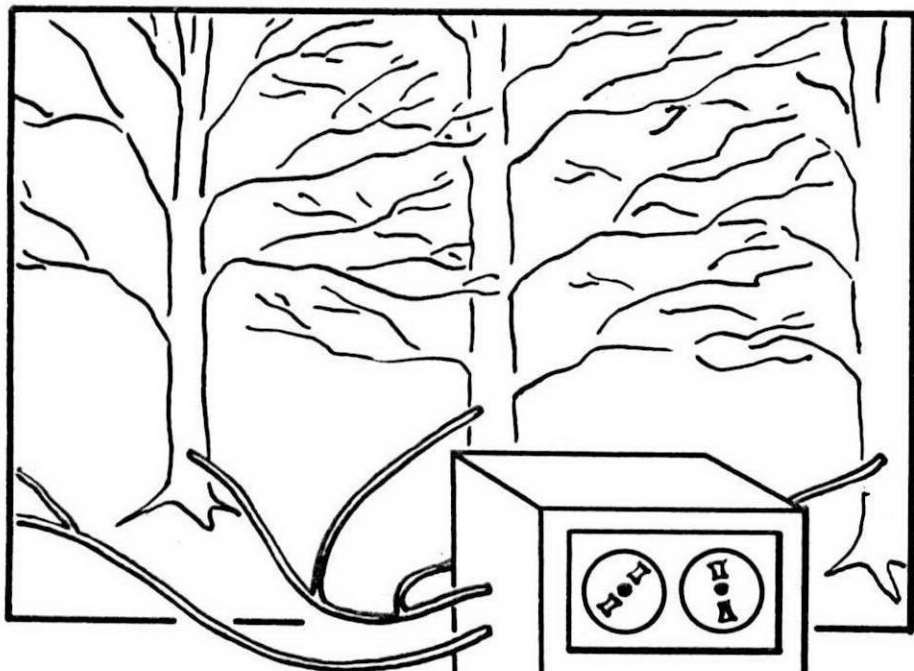
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