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THE NATIONAL CRANBERRY MAGAZINE

Vol. 45, No. 1

January, 1978

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In This Issue . . .

WASHINGTON GROWERS TAKE TAX.....	1
MASS. PESTICIDE POLLUTION.....	8
AGRICULTURE CENSUS.....	10
NEW PRODUCTS.....	13
MINIMUM WAGE EXPLAINED.....	14

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CRANBERRY GROWERS TAKE OPEN SPACE TAX

Another meeting with two committees of cranberry growers, one from the peninsula and one from the Grayland area, was held in South Bend to work out applications for the lowered property tax. Representing cranberry growers on the peninsula were Joe Schneider and Frank Glenn.

A group of 15 cranberry growers on the Long Beach, Washington peninsula met recently with Dr. Bruce Florea, Washington State University economist, and learned what they can do to apply for a property tax cut under the Open Space Taxation Act.

Meeting at the WSU Western Washington Research and Extension Office on Cranberry Road, growers found that their cranberry bogs can come under the Open Space Act, thus allowing their fields to be taxed in 1978 according to their actual use and not according to their highest and best use.

Those growers, and others, interested in applying for Open Space Act designations had until Dec. 31 to place their application with the county assessor.

Also meeting with the growers was Pacific County Assessor Art

Wood, who explained the formula for coming up with the actual use value of their land. He said to take the per acre income from fields, deduct all expenses from the profits that are used to keep the bog growing and the business operating, divide this per acre figure by .10 and you finally arrive at the value of the land the county can tax.

Those who successfully apply for the Open Space tax cut will have to stay in the program for a mandatory 10-year period. If they want to get out of the program, the land owner must inform the state Department of Revenue two years in advance. When the landowner finally leaves the Open Space Tax designation, he must pay taxes on his land for the past seven years according to their highest and best use.

IR-4 PUSHES EPA

The IR-4 is an interregional project of State Agricultural Experiment Stations created to assist in the registration of agricultural insecticides, fungicides, and herbicides. Four scientists, Richard T. Guest, Rutgers University; Ray Frank, plant pathologist at USDA's Frederick, Md. laboratory; Chuck Powell, plant pathologist, Ohio State University; and Richard Lindquist, entomologist at OARDC, Wooster, Ohio, are part of an Advisory Committee to IR-4 involved in the project to intercede with the Environmental Protection Agency (EPA) on behalf of the needs of agriculture.

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WISCONSIN CRANBERRY GROWERS ASSOCIATION HOLDS ANNUAL MEETING

The Wisconsin Cranberry Grower Association held their Annual Meeting on January 10 in the YMCA, Port Edwards, Wisconsin. The meeting opened at 10:00 A.M. with the following presenting reports: Dr. Donald Boone, Plant Pathologist, U. W.-Madison; Dr. C. F. Koval, Entomologist; U. W.-Madison; Dr. M. N. Dana, Horticulturist, U. W.-Madison; W. T. Reese, Bureau Market Development, Wis. Dept. of Agr.-Madison.

The afternoon session began at 1:30 under the direction of Jim Whitrock, President U.S.C.G.A. Following committee reports representatives from several state and federal agencies were available for comments and questions. They were: Jim Kurtz, Director, Bureau of Legal Services, DNR, Madison; Ed Brick, Chief, Water Regulatory Section, DNR, Madison; Ben Wopat, Surveillance and Enforcement Sec., U.S. Corps of Engineers, St. Paul; and Lou George, Wildlife Biologist, U.S. Fish and Wildlife Service, Green Bay.

The annual election of officers was held and we will have a report on this in the next issue.



'Acta Horticulturae #61'

Published in Europe

"Acta Horticulturae" is a 348-page compendium of 44 scientific papers dealing with highbush and lowbush blueberries, cranberries, cowberries and wild berries. The material represents experimental and research work conducted in Europe and the United States.

P. E. Marucci, H. J. Moulter of New Jersey, R. Paglietta of Italy and G. Liebster of Germany are among the many contributors to this interesting volume.

The book also details the proceedings of the Symposium on Vaccinium Culture in Europe, held in Hannover, Fed. Rep. Germany, July 22-23, 1976. The chairman, Prof. Dr. G. Liebster, in his opening speech stated that "The purpose of the symposium is to exchange mutual information concerning new trial results and experiences as well as the discussion of all relevant problems. I hope our symposium will serve these purposes. I request you to think about whether or not we would again like to engage in joint trials, and expect your suggestions throughout the conference. I, for example, am thinking of variety tests on cranberries and cowberries, fertilizing experiments, mulching experiments, chemical-analytical comparisons of significant substances contained in berries of various origins, cultivation attempts on valuable selections of lowbush blueberries, etc."

The book is carefully prepared and printed in paperback form and contains four pages of color prints. The book may be obtained from the International Society for Horticultural Science for \$28.55, including surface mail postage. Address: Ministry of Agriculture and Fisheries, Bezuidenhoutseweg 73, P.O.B. 20401, The Hague 2500 EK Netherlands.

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editorial

SENATE BILL 1883 BAD NEWS TO SMALL BUSINESS

It is urgent that you write immediately to your United States Senators (address: U.S. Senate, Washington, D.C. 20510) and urge that they vote against S. 1883, a bill which while described by some as merely an effort to "tidy up" and "modernize" federal labor law, actually tilts the power scales further in favor of increased union power to dominate business—and especially small business.

Here are just some of the objectionable features of this legislation:

1. S. 1883 would increase the National Labor Relations Board from 5 members to 7—organized labor has waited for years for a chance to "pack" the board;
2. Labor disputes will be reviewed and "affirmed" summarily by a two-man panel, without coming before the full board (now all cases must be heard by at least half the Board);
3. Union organizers would be permitted to come in and talk with your employees on your time and on your premises, if you talk with your employees on your premises;
4. Unions would be permitted to call for elections at times most favorable to them—you would have no control over this timing at all;
5. The Board would have power to file for an injunction against you should you fire any employee during an organizing campaign, even for good cause—if upheld the injunction could force you to award double back pay as punishment;
6. Under certain circumstances NLRB could even impose on you wage rates which may have no connection at all with the realities of your labor cost structure;
7. Under certain circumstances you could be barred from receiving government contracts for up to three years.

Continued on Page 6

Program Shapes Up For Farmers Week

In New Jersey, the New Year will begin in style at the State Capitol as members of the agricultural community gather here for the 63rd annual State Agricultural Convention during Farmers Week, Secretary of Agriculture Phillip Alampi said last week.

The two-day convention on Jan. 24 and 25 is the focal point for a week of farm organization meetings and other activities which begin Jan. 21.

Alampi said official convention delegates representing the county boards of agriculture, Pomona Granges, and New Jersey farm organizations, will select two names to recommend to Governor Brendan Byrne for appointment to the State Board of Agriculture, and one person to serve on the Fish and Game Council.

"Also during the Agricultural Convention, the delegates, who are farmers themselves, will act on several resolutions concerning critical agricultural issues in New Jersey," Alampi said.

The theme of the General Session Jan. 24 is "Think Green: Preserve Our Farmland."

Governor Brendan Byrne will address the convention delegates at 11 a.m. Wednesday, Jan. 25.

In addition to the official activities of the convention, the 107th New Jersey Farmers Week will be marked by annual meetings, dinners, luncheons and other activities sponsored by State agricultural organizations for various commodities and special interest groups.

If all the tillable land on earth was farmed only by organic methods, the world could feed only about two billion people. With conventional fertilization and present farming methods, we are now feeding 4 billion, 200 million people.

News from Mass. Farm Bureau

Why a numbering system for FB members in Massachusetts? This question has been raised, and deserves an answer. Mostly, it has been done to avoid confusion over similar names and addresses. The number system also makes it easier for us to make FB service programs available only to paid-up members.

* * * *

On that point of paid memberships, we remind you that FB services such as insurance and the weekly newsletter will be CANCELLED as of January 1, 1978 for those who have not paid their 1978 dues. We suggest you take care of this item, if you have not yet done so.

* * * *

Don't rush to apply to your local conservation commission with an offer to sell development rights on your land. Not yet, anyway. State funds for local purchase won't be available until next July at the earliest. And, the necessary application procedures will probably take several months to develop.

We'll keep you informed of the progress relating to this new state program. Remember, too, that under the new law the term "development rights" is not used. Instead, the term "Agricultural Preservation Restrictions" (APRs) is used.

* * * *

A bill to make farm tractors exempt from the Massachusetts sales tax has been filed in the legislature, according to MFBF Executive Secretary Phil Good. The bill, S 997, is up for action in the near future. You can help by contacting your own local Representatives and Senators urging their support for the bill.

Telegrams and phone calls to your local Representatives and Senators will help most on this particular bill, since Farm Bureau is pressing for speedy action on Beacon Hill.

* * * *

Farm Bureau is opposing big labor's push to rewrite the National Labor Relations Act in Congress. The proposed legislation will give labor bosses more monopoly power, according to the American Farm Bureau Federation. This bill has already won in the House of Representatives, and Farm Bureau is hoping to moderate or kill this labor steamroller in the U.S. Senate early in 1978.

Mass. Senators Brooke and Kennedy must hear from their own state's farm people on this issue. The purpose of the bill is to give more power to the unions, rather than to create more justice for the workers. On that basis, FB opposes it, and asks that you tell your senators about it.

Your letters will help. Both Senators Brooke and Kennedy should be contacted. Keep your letters brief and to the point. Tell them in plain language (with a reasonably civil tongue) how you feel about giving more power to the unions in America.

* * * *

Interesting to note that the Small Business Administration defines a "small farming operation" as one with annual gross sales of no more than \$1 million. That means that of the existing 2.75 million farms in America, only 5,000 are ineligible for help from SBA.

The pesticide bill died in the final hours of the Legislature in 1977. The bill was in the final enactment phase prior to the Governor's signature when it expired. Now, pesticide regulation is in the hands of the EPA. A new pesticide bill has already been filed for this year's legislature.

* * * *

Financial planning is important any time, but seems especially appropriate at the beginning of a new year. Check *insurance* policies for adequacy . . . update *wills* . . . prepare new *net worth* statement . . . plan ahead for *credit* needs.



"THAT WAS HIM . . . STILL WANNA SEE HIM?"

EDITORIAL

Continued from Page 5

Don't be fooled in the slightest. This punitive legislation is not pointed solely at "big business." It's aimed also right at the heart of small business, and official government statistics prove clearly that in organizing efforts labor unions are far more successful against small business than they are against "big business."

So please, for your own sake as well as that of your fellow independents, WRITE to both your Senators today urging that they stand fast against this union grab for more power. Tell them clearly, and in your words, your concerns. DO THIS NOW—for we are doing our part through your NFIB's Washington staff. We are counting on you to do yours.



Sermonettes

by the

Rev. Don Jennings

In the prayer Jesus taught his disciples, both aspiration and submission are illustrated. In the Garden of Gethsemane, Jesus concluded his prayer with submission and came away at peace with his Heavenly Father and himself.

Someone asked D. L. Moody, a famous evangelist of years gone by, if God answers every prayer. Mr. Moody replied, "Yes, God answers every prayer. Sometimes his answer to many of our prayers is 'not yet.'"

Jesus taught, by precept and example, the importance of prayer. Effective prayer was so evident in his life that his disciples asked him to teach them how to pray.

Paul, the apostle, said "Pray without ceasing." In the epistle of James are the words, "The effectual fervent prayer of the righteous man availeth much."

Dr. Frank Labach, missionary, was invited to speak at a Senate breakfast in Washington. He has always had great faith in prayer and so expressed himself at this breakfast. After the breakfast, a well-known senator came to Dr. Labach and said, "My legislative duties are so great I cannot face them except I face them on my knees." These could well be the words of thousands of men and women of all walks of life. Many of us can witness to the fact that prayer does change things.

FREE PUBLICATIONS ANSWER TAX QUESTIONS FOR TAXPAYERS

Almost every tax question is answered in one of the free publications issued by the Internal Revenue Service, Herbert B. Mosher, District Director for the IRS in Massachusetts said.

Moving expenses, sick pay, interest expenses, contributions, tax benefits for older Americans, medical deductions, earned income credit, as well as changes in the law for 1977 returns are some of the topics covered in IRS publications.

Any one of the free publications can be obtained by completing the handy order blank in the tax package mailed by the IRS, or from a local IRS office.

COOPERATIVE EXTENSION MEETS JAN. 26

The Plymouth County (MA) Extension Service invites interested growers and friends to their meeting on January 26, 1978 to be held at High Street, Hanson at 7:30 P.M.

The topic of discussion will be "Water Pollutants" and will be conducted by Dr. Karl Deubert, chief chemist of the Cranberry Experiment Station, East Wareham, Mass.

WHY SHOULD I PRAY?

"Why should I pray? I'm healthy, strong and capable of looking after myself." These were the words I received from a young businessman recently. It made me stop and consider, again, why we pray or do not pray.

I was talking one day with a youth group at camp, on family devotional prayers. A 14-year-old farm boy exclaimed, "We don't have family prayers at our house and nothing has ever happened to us yet."

Do we pray because we are incapable of doing things for ourselves? Is prayer a special kind of protection against calamity?

My father, during his active years, owned several farms. Following the purchase of each farm, he would immediately call the lightning-rod salesman. Each barn and house had to have rods installed. This, he felt, was good protection.

Prayer may be good protection. It protects us from over-confidence and self-sufficiency. But lightning-rod prayers are not enough.

James Montgomery, the poet, has said that prayer is the soul's sincere desire, unuttered or unexpressed, the motion of a hidden fire that trembles in the breast.

Prayer changes things. Those words are familiar to most of us and many of us have found them to be true. Prayer may not change God's plan, but it most certainly has changed man's attitude.

Surrender

Kagawa, one of the great Christians of the Orient, has said that prayer is surrender. In true praying, aspiration and submission are effective ingredients. The former cannot be realized without the latter.

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MASS. MOVES TO CONTROL PESTICIDE POLLUTION THROUGH 208 NON-POINT SOURCE PROGRAM



Group attending meeting on 208 non-point pollution at Cranberry Experiment Station.

Some conservation topics are of immediate concern and appropriate actions are planned to cope with them. One that we are hearing a lot about today and will continue to for a long time is the Section 208 non-point source pollution under Public Law 92-500.

In Massachusetts, responsibility for the 208 program has been assigned to the Department of Environmental Quality Engineering. EPA funds have been dispersed to Regional Planning Agencies in designated areas to prepare both 208 point and non-point source pollution plan reports for implementation. The reports will be submitted to the Department of Environmental Quality Engineering for their approval. Implementation plans that are prepared for designated areas will be used to develop implementation plans for non-designated areas. This makes it important that plans prepared in designated areas contain implementation plans agreeable to Districts in the state.

A method for obtaining information needed by RPA's was set up during an organization meeting this spring. Since that meeting, Elmer Raymond of the Plymouth Conservation District has taken the leadership by working with the Southeast Regional Planning and Economic Development District and the Old Colony Planning Council. The activities included organizing committees along commodity lines to work with the RPA's. A committee of cranberry growers including Ocean Spray, Inc., worked with the Cranberry Experiment Station to develop Best Management Practices to prevent pollution of cranberry bogs and streams. A forestry committee developed Best Management Practices for woodland cutting practices. A fruit and vegetable committee worked with the Extension

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Fruit Specialist provide RPA's with Best Management Practices for the application of pesticides and cultural operations to prevent pollution. Dairying BMP's were prepared by people engaged in dairy practices. The Soil Conservation Service and Extension Service provided each RPA with Standards and Specifications for each conservation practice in the state.

As RPA's prepare their implementation reports, it will further provide an opportunity for the Plymouth Conservation District to exercise its leadership to develop a unified 208 non-point pollution program.

Dr. Chester E. Cross of the Massachusetts Cranberry Experiment Station explains how the 208 non-point source program works:

I. Introduction –

During the past 20 years or more the federal government has been regulating pesticide use on the farms of U.S.A. Primarily this has been done to insure that the pesticide would do the pest control work claimed for the chemical and to insure that no harmful residue was left on the food product. Authorities in the field of nutrition like Dr. Frederick Stare of Harvard and Dr. Thomas Jukes of U. Cal. Berkeley as well as the renowned toxicologist Dr. Wayland Hayes, feel that this program has been remarkably successful.

The 208 program is designed to make not only pesticide use, but fertilizer use and all other farming operations compatible with environmental quality—especially the aquatic environment, and if possible to improve the quality of that environment.

II. Agricultural Program – Best Management Practices –

The Massachusetts Agricultural Experiment Station working with the Cooperative Extension Service and advisory groups of farmers in each of the commodity areas has drawn up for each branch of agriculture a program of best management practices designed to avoid pollution problems or to minimize

discharges of contaminants. These are set forth in the SRPEDD draft of the Wastewater Management Program.

It may be news to urban people that farmers and research workers have been developing integrated pest management systems for many years. My predecessor at the Experiment Station, Dr. H. J. Franklin, retired over 25 years ago, yet as long as he was working, he laid the foundations for combinations of flood control and minimal use of insecticides. The resanding of cranberry bogs is another case in point, and a very expensive one (it costs \$200 to \$300 an acre) but it is practically indispensable in the control of girdler insect and tip worm.

Implementation of 208 Program –

One of the most certain ways of implementing a program is to make sure at the start of things that what is best for agricultural productivity is also best for the environment. When and if this can be done, education becomes the chief element in enforcement. This is what

the Cooperative Extension service does.

Grower educational meetings are regularly held to make sure that food producers have a clear understanding of best practices. Farmers are in the process of passing examinations toward certification that they are competent to use restricted agricultural chemicals properly. Printed guides of approved uses are compiled and distributed to farmers annually.

How can we be assured that best management practices are followed? Who will do the checking and policing?

1. The Experiment Station and the Extension Service are primarily educational and advisory in their affiliation with the University—we do not and cannot serve a policing function. However, we can and will (as we have in the past) do investigative work to discover the real causes of reported environmental disturbances. What we hope and expect will happen is that the Experiment Station (rather than



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the newspapers) will receive prompt notice of an environmental upset. We propose to investigate, make analyses and studies to determine causes and to report findings to Regional Conservation District headquarters.

2. For several years now the Experiment Station has been monitoring streams, estuaries and water bodies in southeastern Massachusetts. We have made hundreds of analyses of water, silt and both fin and shell fish to determine what if any agricultural pollutants are escaping from the cultivated fields. I'm sure it will encourage all farmers to know that we have been doing this in cooperation with the Environmental Protection Agency Laboratory in Denver, Colorado. This is a continuing project, and as it continues, a mounting respect is generated between us and the E.P.A. To the best of our present knowledge, each farmer who carefully follows the best management practices and the required label directions can be assured that he has nothing to fear from these monitoring studies. If we should

discover that pollutants are escaping from crop lands using current practices, we will have to redesign our best management practices.

Let's face it, it is in the interest of all of us to preserve a high standard of water quality. We can do it if everyone cooperates sensibly in this program.

Agricultural Census In Shorter Form

A shorter and less complicated report form to be used for the 1978 Census of Agriculture is the result of farmers and farm organizations participating in meetings and test surveys throughout the country during the past 18 months to advise the Bureau of the Census.

The Bureau, part of the Department of Commerce, reports that farmers have taken part in planning the report form during nearly 20 conferences in more than a dozen States. They have participated in the first of two national sample test surveys to help determine the value of specific questions.

On the report form, each farmer will need answer only those questions that apply to his operations. The inquiry is arranged so that he can skip questions, or even entire sections, dealing with other crops, livestock, or types of farming.

"The good business records that most growers normally keep will make it easier for them to complete the report form for the 21st nationwide Census of Agriculture," a Bureau spokesman said.

The 1978 Census report forms will be mailed out the last week of December 1978. Each person receiving one will be urged to "fill it out and mail it back promptly, to give all agricultural producers and the Nation a needed, accurate measure of just what the situation is in every county in our 50 States." When farmers do not respond quickly and accurately, the Bureau must spend additional funds and time in efforts to get a complete census.

BREEZE POWER

One of the largest wind generators in the country is near completion on Cuttyhunk Island, about 14 miles off the shores of New Bedford, Massachusetts. Using three 40-foot blades on an 80-foot high tower, the machine, rated at 200 KW, is expected to produce about 400,000 KWH of electricity per year. This is nearly half the year-round needs of the island, presently produced by town-owned diesel generators.

Allen Spalding, president and co-founder of WTG, Inc., the builder, said the wind generator is patterned after a Danish-built unit that operated for about 20 years. The biggest challenge, Spalding says, aside from the logistics of the remote location, was in designing the computer operated control system. This system will run the wind generator, monitor the results, and call upon the back-up diesels when required.



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REGIONAL NEWS NOTES

Wisconsin

The first full week of December was cold and snowy. Temperatures averaged well below normal, with minimum readings below zero on most mornings. Daytime maximums were in the single digits or teens during much of the week of December 4-10. High temperatures were near zero or slightly below on the 9th and 10th. Snowfall on the 5th was heaviest in the extreme southwest at 6 inches, with 2-4 inches in other southern areas but lesser amounts in the north. A major snowstorm developed late on the 7th in the west and spread over the State on the 8th. Snowfall totals were 5 to 10 inches in the south and east, while the north and west had 1 to 4 inches. Strong winds late on the 8th and continuing on the 9th caused much blowing and drifting which made secondary roads impassable in the south.

Temperatures moderated considerably during the second week of December and averaged higher than normal. The coldest reading was 6 degrees above zero in the northwest on the morning of the 12th. Daytime maximums were above freezing all week in most areas, while overnight minimums hovered near freezing. The highest temperatures were recorded on Saturday, December 17th, as readings reached 50 degrees in the south. Precipitation was light during this time. All areas had less than a quarter inch of precipitation except the northwest where one-half to an inch fell in the form of rain, freezing rain and snow.

Mild temperatures during the week of December 12-18 melted much of Wisconsin's previously deep snow cover, according to Statistical Reporting Service. Although the snow depths reported for this survey period averaged 6 inches, there were many bare areas

after temperatures rose to 50 degrees in the south on December 17th. The average snow depth for a mid-December date from 1961-76 was 4.5 inches. Snow cover was deepest at 10.5 inches in 1961. Other years of substantial snow cover in mid-December were 1972 at 9 inches and 1969 at 7 inches. Snow depths for this survey period were shallowest at 1 inch in 1968, while 1962, 1967, and 1975 had less than 2 inches of snow on the ground at this time of the season. A year ago snow depths averaged 3 inches. With much of the snow cover now melted, more snow is needed for protection of winter grains and hay fields before cold weather returns.

Washington

All cranberry growers of Washington and Warrenton, Oregon are invited to attend the February meetings on cranberry culture.

Azmi Shawa brought an update of herbicide research information to the meetings at Coastal Washington Research & Extension Unit on January 13 and the Willapa Grange Hall, Grayland on January 17.

Dr. Pete Bristow, Pathology, Western Washington Research & Extension Center, will talk on his fungicide work, Feb. 10, Long Beach Unit, 8:00 p.m. and Willapa Grange Hall, Grayland, Feb. 21, 7:00 p.m.

December maximum temperature was 56 degrees on the 14th and minimum of 27 degrees on the 26th and 31st. Total precipitation for December was 14.19 inches, the greatest amount in 24 hours came on the 11th and preceding 24 hours, 2.96 inches. The year's total, 76.33 inches, is about 9 inches less than the average, and with the September 1976-August 1977 drought condition, the last quarter of the year brought 41.58 inches!

December brought extreme east wind conditions also, but no damage to the cranberry bogs.

A.Y.S.

Mass. Station

December temperatures were very nearly normal, averaging only 0.1 degree a day on the cold side. Maximum temperature was 53 degrees on the 15th and minimum 4 degrees on the 12th. Warmer than average days were the 1st, 2nd, 14th, 15th, 21st and 25th. Colder than average periods occurred on the 7-8th, 10-13th, and 26-29th.

Precipitation totalled 7.65 inches which is nearly 3-1/2 inches above normal. This is the fifth wettest December in our records exceeded by 1969, 1936, 1973 and 1945. There were 15 days with measurable precipitation with the largest storm of 2.13 inches on the 21-22nd. Snowfall was a total of 4.5 inches on three separate days. This is slightly below our December average.

For the year 1977, our temperature averaged 0.4 degree below normal. The only warmer than normal months were March, August and November. Colder than normal

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months were January, February, June and October. Maximum temperature for the year was 94 degrees on July 19 and minimum -5 degrees on February 9. We had five consecutive days with temperatures above 90 degrees from July 17-21 which is a record for us.

Precipitation for 1977 totalled 60.03 inches which is just over 13 inches above normal and almost 18 inches more than in 1976. This is the third wettest year in our records exceeded only by 1972 and 1953. The largest single storm was 5.44 inches on June 9-11. Months with substantially above normal precipitation were March, June, August, September, October and December. The only months that were well below normal were July and November. Snowfall was 41.0 inches total or about 50% above normal. Largest single storm was 12.5 inches on January 7. The extremely cold winter of 1976-77 was responsible for another record here in this normally snow-free area near the ocean; we had continuous snow cover from December 29, 1976 through February 27, 1977 or a total of 61 days.

I.E.D.

New Jersey

Unlike last year's severely cold weather, this past December was only moderately wintry. There were only four days in which the maximum temperature did not go above freezing while there were nine days of relatively mild temperatures above 50 degrees F. The average temperature for the month was 34.8 degrees F or only 0.7 degrees below normal. Extremes in temperature were 61 degrees on the 1st and 7 degrees on the 12th.

The rainy trend which started in October continued through December. Rain on 15 days totaled 7.05 inches or 3.97 more than normal. It rained on 31 days during November and December with a total of 15.43 inches or 8.98 inches more than

normal for the two months. For the three month period October through December there were 43 days of rain with an accumulation of 19.56 inches, which is 45% of the yearly total.

Although the year ended with excessive rainfall, from the agricultural standpoint, 1977 must be characterized as having been extremely dry. Statistically, the year will go on record as a wetter-than-normal year, with a total of 46.91 inches, which is 3.72 inches more than the norm. However, this cannot obscure the fact that the first seven months of the year were all drier than normal and caused serious consequences to agricultural crops. Throughout the growing season and especially in June and July, soil moisture was constantly well below field capacity. The drought conditions, together with 100 degree temperatures in July, accounted for the relatively poor production of cranberries in New Jersey. Prolific flowering and good bee activity were offset by the severe heat and dryness as many bog areas actually burnt up.

A review of the temperatures during 1977 shows that January, June and October were colder than normal and the others warmer than

usual. The greatest deviations from normal were the unusually warm March and the record-breaking cold weather of January. The average temperature during March was 47.0 degrees F or 5.3 degrees warmer than normal, making it the warmest March in 30 years. January, with an average temperature of 21.1 degrees F, was 11.8 degrees below normal and the coldest first month of the year in the 47-year weather recording history at Pemberton. For the entire year the average temperature was 53.4 degrees F, or 0.5 degrees F colder than normal.

P.E.M.

Nova Scotia

The weather for November was slightly warmer than the 50-year average of 3.4°C. Total precipitation amounted to 95.6 mm which was below the 50-year average of 109.2. The first two weeks of December have been quite cold and we have had quite an accumulation of snow. Growers will need to watch the oxygen concentration in the water under the ice as the winter progresses.

Wishing all a Merry Christmas and a Happy New Year.

I.V.H.

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RubbAir Door Division, Ayer, Mass., announces the availability of their new, free energy audit service of having a factory-trained representative inspect your building to determine the potential energy savings that RubbAir Doors can provide.

These computations will include the typical loading dock/receiving area for heat loss in the winter and also the newest applications for shock absorbing, insulated traffic doors: walk-in cooler boxes.

The RubbAir Door representative is trained and equipped with tables, data and an energy slide rule computer to calculate the energy consumption for heat or refrigeration for each opening, factoring important components such as humidity, air velocity and cost of fuel to provide energy consumption figures three (3) methods: millions of BTU loss per hour; cost of fuel loss; BTU loss per square foot.

Refrigeration savings are based on common box temperatures ranging from 45° to -20° F. and prove that when RubbAir Doors are used in coolers, it is one of the best temperature and money saving ideas you'll ever bump into.

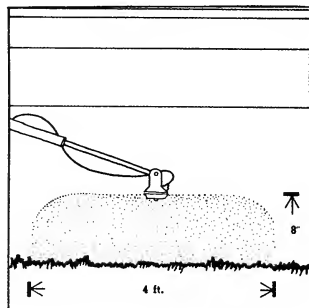
An added feature of the audit service is a noise attenuation chart for determining the effective sealing and sound absorbing characteristics of RubbAir Doors.

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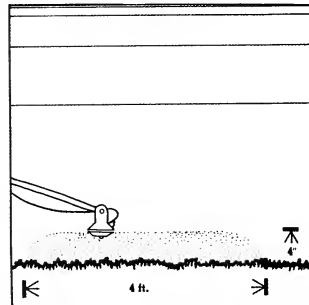
The doors and the door energy audit service are available for all types of uses from food processors to supermarkets to industry. For additional information call 617-772-0480 or write for no-obligation audit appointment at RubbAir Door, 1 Groton-Shirley Road, Ayer, MA 01432.

NEW HERBICIDE APPLICATOR

Micron West, Inc. introduces Ultra Low Volume Spraying with the HERBI. Conventional spraying methods utilize high water volumes which can, in effect, only encourage the growth of weeds. With ultra low volume (controlled droplet



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size) application, herbicides give more even, more thorough and more effective coverage with the advanced but simple and proven equipment. The HERBI sprayer is easy, versatile and startlingly economical in cost and use.

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For further information, contact Micron West Inc., 8705 Katy Fwy., Suite 400, Houston, TX 77024.

Work Force Growing

The nation's work force has been growing faster than the population as a whole, reports the American Council of Life Insurance. Since 1947, the U.S. population has increased 47.6 percent, while the number of employed people in the country has risen 48.6 percent. The 1975 civilian labor force participation rate was 61.2 percent. Prior to 1970 it was slightly below 60 percent.

Federal Minimum Wage Explained

The Federal minimum wage, now \$2.30/hr. for nonfarm workers and \$2.20/hr. for farm workers, will increase in four steps as follows: Jan. 1, 1978—\$2.65/hr.; Jan. 1, 1979—\$2.90/hr.; Jan. 1, 1980—\$3.10/hr.; and Jan. 1, 1981—\$3.35/hr. As was already provided in the law, there will be no difference between the non-farm and the farm worker minimum wage beginning on Jan. 1, 1978.

There is no change in the agricultural exemption in the Act, with the exception of some changes in the sugar beet and sugar cane processing industries. The present overtime exemption for workers in shade-grown tobacco was eliminated. The general agricultural exemption from the overtime provisions was not changed.

The small farm exemption for those who do not employ more than 500 man-days of farm labor during any quarter of the previous calendar year was retained. Please note that Massachusetts farmers who are exempt from the Federal minimum wage are still covered by the state minimum wage provisions.

RESEARCH INSTITUTE PREDICTS FARMERS WILL WIN

Look for farmers to win their strike, not now but eventually. The Administration has little choice but to return to the "parity" system unless it can find new farm markets fast, a most unlikely miracle.

Under Nixon, ex-Agriculture Sec. Butz could afford to reduce farmer dependence on subsidies because of global food shortages. Domestic prices shot up, while exports to foreign nations soared. That was the best price-support combination anyone could wish for.

But today domestic and foreign market needs have eased off. Russian grain crops, despite some reversals, are back near normal, and in December Moscow refused to make future purchase commitments. That decision shut off one escape valve for the growing surpluses.

Agricultural production, meanwhile, outstripped consumption. Farm prices fell, processing and marketing costs continued rising, farmers were outraged, and consumers will pay 7% plus for food.

Plain truth is that the farmers' complaint can't be ignored. Farm income is down a third since '75, almost a fourth since '76. There's little prospect of any significant change ahead next year. Distasteful as support payments are, they're near unavoidable now.

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**BERRY GLAZED 'N
STUFFED ACORN SQUASH**
(Serves 6)

- Squash:**
 3 acorn squash
 2 tablespoons butter or margarine
 1 onion, chopped
 1 cup whole berry cranberry sauce
 6 slices sprouted wheat bread, cut into 1/2 inch cubes
 1/3 cup orange juice
 1 carrot shredded
- Glaze:**
 1 cup cranberry apple drink
 1/2 cup honey
 2 tablespoons lemon juice

Cut acorn squash into halves and remove seeds. Remove thin slice from bottom of each squash half so they sit level. In a 1-1/2 quart saucepan melt butter and cook onion for 5 minutes. Remove from heat. Stir in cranberry sauce, bread cubes, orange juice and carrot. Use mixture to stuff squash halves. Place filled squash in a roasting pan. Cover and bake in a preheated moderate oven (350° F.) for 40 to 45 minutes or until squash is easily pierced. In bowl combine Glaze ingredients. Remove cover and spoon over squash. Continue baking for another 10 minutes or until lightly browned.

CRANBERRY RATATOUILLE
(Serves 6)

- 1/4 cup salad or olive oil
 1 large onion, chopped
 1 clove garlic, chopped
 3 zucchini, thickly sliced
 1 small eggplant, cut into 1 inch cubes
 1 teaspoon thyme
 1 can (1 pound) tomatoes
 1-1/2 cups fresh or frozen-fresh cranberries, rinsed and drained
 Salt and pepper

A well rounded dinner is truly complete with the accompaniment of a vegetable which enhances an entree greatly not only by flavor but color, too. The tangy piquancy of ruby hued cranberries whether fresh, or in relish or sauce combines with vegetables in many ways for a zestful variety of dishes. Here are four recipes that will complement, add taste pleasure and afford versatility to many a menu.

In a large saucepot, skillet or Dutch oven, heat oil and cook onion with garlic until golden, stirring occasionally. Add remaining ingredients, cover and simmer for 20-25 minutes, stirring occasionally or until vegetables are tender. Season to taste with salt and pepper, if desired.

CRANBERRY CORN PUDDING
(Serves 6)

- 3 eggs, well beaten
 1 cup (1/2 pint) heavy cream
 2 cans (1 pound each) cream style corn
 1/2 cup cranberry-orange relish
 2 tablespoons instant minced onion
 1 cup (4 ounces) grated sharp cheddar cheese

In a 1-1/2 quart casserole, beat eggs with cream. Add remaining ingredients, except cheese; stir well. Sprinkle corn mixture with cheese. Bake in a preheated moderate oven (350° F.) for 40 to 45 minutes or until puffed and golden brown. Serve at once.

**CRANBERRY CAULIFLOWER
BAKE**
(Serves 6)

- 1/4 cup butter or margarine
 1 small onion, chopped
 1-1/2 cups fresh cranberries, rinsed and drained
 1-1/2 cups seasoned dry bread crumbs
 1 head cauliflower, broken into florets, cooked and drained
 1 can (10-3/4 ounces) condensed cream of celery soup, undiluted
 1/3 cup milk
 1/3 cup chopped peanuts

In a large skillet, melt butter and cook onion until golden, stirring occasionally. Stir in cranberries and crumbs. Cook stirring over low heat, for 10 minutes. In a bowl, mix cauliflower with soup, milk and peanuts. Place cauliflower mixture in a shallow casserole. Cover top lightly with cranberry mixture. Bake in a preheated hot oven (400° F.) for 15 to 20 minutes or until bubbly. Serve at once.



FUNGICIDES: HANDLE WITH CARE

Just like everything else on the bogs, the cost of fungicides is going up. Anything the grower can do to get the most efficient use from these valuable tools for disease prevention will aid in reducing operating costs. Too often, growers do not treat fungicides with the same care they give other tools and equipment. They are kept under benches, or in damp storage sheds with labels torn or discarded.

Here are some helpful hints, given by James K. Rathmell of Penn State University, on correct storage of fungicides that will not only cut costs but aid the grower in meeting the state and federal requirements in the safe use of pesticides.

1) Store pesticides in a cool, dry place. The room should have a door that can be securely locked and plainly marked with a sign indicating it is a storage for toxic chemicals.

2) Keep materials in their original labeled containers, since labels supply important information for correct and safe use of the fungicide.

3) Keep fungicides tightly closed in original containers. Keep tops of jars and cans tightly in place. Fold tops of bags over several times to close package tightly. A clip-type clothes pin will insure that the top of the bag stays closed. Placing the opened bag in a plastic bag will help keep out moisture. Remember, the package is designed especially for the material that comes in it; use it!

4) Keep packages arranged in an orderly manner where they can be found readily when needed.

5) Do not store fungicides in the same room with 2,4-D type weed killers. Fungicides may absorb the weed killer fumes with consequent injury to plants when used. Under correct storage conditions, most fungicides will remain in good condition for several years.

EMPLOYERS SHOULD FILE QUARTERLY FEDERAL TAX RETURN SOON

Employers have until Tuesday, January 31, to report Social Security and Federal income taxes withheld for the last quarter of 1977 and pay any taxes due, Herbert B. Mosher, District Director for IRS in Massachusetts said. If the quarterly tax liability (reduced by any deposit) is \$200 or more, the unpaid balance must be deposited.

Employers who make timely deposits in Federal Reserve or Authorized Commercial banks of the full amount of the tax due are exempt from this deadline. They are allowed until February 10 to file Form 941, "Employer's Quarterly Federal Tax Return."

Any balance of Federal Unemployment Tax not over \$100 for 1977 should be paid by January 31, and Form 940 should be filed by this date. Balances of tax due over \$100 require the employer to make a deposit with FTD Form 508. As with Form 941, taxpayers who deposit the full amount of tax on time have until February 10 to file the return.

Mosher emphasized that employers who received the pre-addressed Form 940 and Form 941 in the mail should use them to file their report. Those persons who did

not receive the pre-addressed forms can obtain forms from their local IRS office.

IRS Publication 15, "Circular E-Employer's Tax Guide," provides further information on these taxes and is available from most local IRS offices.

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RPARS . . . GUILTY UNTIL PROVEN INNOCENT

The acronym known as RPAR stands for Rebuttable Presumption Against Registration. RPAR deals with pesticides, and when it was written into the Federal Environmental Protection Act in July 1975, it was meant to provide a means for a fair and impartial review of pesticides.

What has resulted, however, is a witch hunt on pesticides, where any individual, regardless of his qualifications to assess the validity of the information, can level charges against pesticide products for which there is no proof.

When a presumption is made, those favoring the pesticide products being charged must rebut with plenty of good hard proof that the situation does not exist. What this actually means is the pesticide is guilty until proven innocent. If a presumption is not rebutted, the product may be lost to agriculture unless benefits can be proven to outweigh risks.

It's a serious situation. EPA has listed 18 different pesticides for RPAR review, and 38 others were

scheduled for pre-RPAR review in November and December, with more to come.

As *Farm Chemicals* magazine recently noted, "These are not products that nobody has heard of for the last 10 years, or pesticides infrequently used in production agriculture. They are the backbone of modern pest control—some of our most widely (and safely) used insecticides, fungicides, and herbicides."

Pesticide experts foresee a dark future for fruit growers if the pesticide products on the RPAR and pre-RPAR lists are lost to them.

"If there are no alternatives," warns Dr. Ed Swift, pesticide coordinator for California, "there will be very serious economic losses. Pesticides could cost more, and there could be loss of production. To label a product this way (RPAR) and put it in sort of 'limbo,' until there are good solid studies to support the contentions that are made, is not the best science in the world."

Manufacturers are calling for growers to fight back at the RPAR list. Rohm and Haas Co. responded to RPAR procedure with an eight-chapter book of evidence showing that 30 years of widespread and intensive use of EBDC fungicides to protect fruit, vegetable, and grain crops from a wide range of plant disease has not resulted in any injury to man or the environment.

There is a lot the grower can do to keep RPAR'ed pesticides from being lost. Ed Swift says growers and grower groups should provide the RPAR assessment teams in each state with information showing that if a product is lost, growers would be in serious economic condition because they don't have good alternative measures.

Growers may also send information directly to Federal Register Section, Technical Services Division (WH 569), Room 401, East Tower, 401 M Street SW, Washington, DC 20460.

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CRANBERRY HARVEST, TIME TO MAKE NEW FRIENDS

by Idell Panter

Editor's Note: The following is an excerpt from an article appearing recently in the *Bandon (Ore.) World*. It describes some interesting events that cranberry growers can experience in the day-to-day operation of their endeavor. *Cranberries* would be pleased to hear from others who would like to share their usual or unusual experiences with the industry.

The Cranberry Harvest of 1977 is over, but for us, the Panter's, new friendships have been made. And in talking to other growers, especially those whose bogs are along the 101 highway like ours are, they say the same things about how interesting people are who are inquisitive enough to stop to find out "what on earth are you doing." Every year we have just such visitors but this year it was particularly interesting and let me say right here, that they, so far as we are concerned, are NOT a bother to us at all. We just go right ahead with our harvest, for that is what they stop to see. When possible we explain about this most interesting crop and with these people stopping by it breaks the monotony of an otherwise hard

job, besides the advertisement we get for cranberries as these people come from various parts of the U.S.

For instance, one day a couple from not so far away said they have traveled around the world a couple of times and are always interested in the agriculture of the many countries they visit, but had never before seen cranberries harvested. Another couple from Santa Rosa, Calif., have a common factor between us as they grow prunes for the Sun-Sweet Co. who have hired Ocean Spray to handle their product on the East Coast by reconstituting and bottling their prune juice. They left us a few delicious tree-ripened figs, so I showed them how to hand-pick a small bag of our produce, cranberries. And most

everybody invites us to visit them. Like one year a couple stopped by who manage the only motel that you can view Mt. Rushmore from and had invited us to visit them. We did a couple of years later, and they not only let us park our camper there without charge, but they gave us a delicious meal in their cafe and their son took us to Mt. Rushmore's night-time show, which was beautiful.

We were also honored by a visit from 43 children who are from two fourth grade classes at the Kalmiopsis Elementary School of Brookings, their teachers and three mothers chaperoning. I had hand-picked some berries so they could all have a taste and surprisingly enough, most of them came back for more, saying they were real good. They really enjoyed this field trip and we thoroughly enjoyed those well-behaved youngsters.

These are but a few of the many people we've met because of this unusual type of crop and we love every one of them. I wonder who we'll meet next year.

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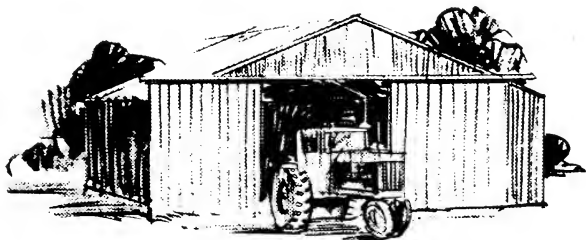


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editorial

BUSINESSMEN'S STRIKE

We've all seen the headlines about strikes called by one union after another . . . the picket lines, occasional violence, shrill statements by both parties to a labor dispute. But a strike by businessmen . . . whoever heard of such a thing?

Well, it so happens that such a strike is already in progress in these United States. No, there have been no mass meetings . . . in fact, no specific discussion of such a move among businessmen . . . and no headlines.

But sift through the news items, and you'll find the evidence . . . a slumping stock market, high levels of unemployment and low capital expenditures. It's that last item that is the key . . . business generally is laying out a relatively low level of funds for plant expansion or building new facilities. "No-growth" is a fashionable term among some people, but it's questionable whether that's what the majority wants over the long run.

When businessmen are uncertain about the economic climate of the near future . . . when they detect a "shaft-the-producers" syndrome in government . . . when "profit" is labeled a dirty word by so many consumers . . . then leaders of the production community pull in their economic horns to weather the storm. And until their strike is over, some tough times lie ahead for us all.

Gentlemen:

I am afraid some growers might think I am against Ocean Spray after reading the *Cranberries* magazine report about my testimony at the marketing order hearing in Wisconsin Rapids. (Nov. 1977, pg. 6).

I do not oppose Ocean Spray— we growers must cooperate efficiently to regulate processing and marketing if we are to get an adequate price for our berries and Ocean Spray is the organization which makes it possible.

My marsh is a member of Ocean Spray and every marsh in my family has been in Ocean Spray since the year Wisconsin growers changed from Eatmor to Ocean Spray as its cooperative organization. Ask the members who were members of Eatmor what happens when an organization is not able to assure a market for its products and you will know why I support Ocean Spray and want it to be an effective organization.

However, my testimony at the marketing order hearing did express concern over an involvement by Ocean Spray or any handler in the control of production of cranberries. It is obvious we need production control, but the appropriate place for it is within the marketing order.

The marketing order provides production control for all cranberry growers, not just members of one marketing organization. This is the only fair way to handle the problem.

I believe it is to the advantage of Ocean Spray and to the advantage of each handler to avoid becoming involved in production control so long as there is a marketing order. Production control is an emotional issue which divides big growers from small growers and divides eastern growers from growers of the midwest. Fighting over these issues can drive growers from Ocean Spray and weaken the organization. It is far better to resolve production

Continued on Page 16

FUNGICIDE TRIALS IN MASSACHUSETTS, 1977

Bert M. Zuckerman

Cranberry Experiment Station
University of Massachusetts
East Wareham

The results of 1977 fungicide trials in Massachusetts will be of interest to local growers.

One series involved a single high dosage of difolatan applied between 50 and 100 percent bloom. These tests were sponsored by the Chevron Chemical Company, and the results will be combined with those from other cranberry growing areas of the country in an attempt to obtain federal approval for this type of fungicide treatment.

The obvious advantage of the method is that only one instead of two applications is required, thus resulting in a reduction in the cost

of fungicide treatment. These trials included observations on fish and frog kill (there was none under our conditions) and extensive sampling of water and berries for residue analyses. The residue samples were shipped to the Chevron Chemical Company in December, where the analyses will proceed.

Table 1 gives the results of these tests in respect to rot control. I consider the control of field rot as excellent at all dosage levels tested, and the control of storage rot as very acceptable. The treatments did not cause a reduction of berry size or of yield.

Four fungicides or fungicide combinations were tested in 1977 in replicated plots in a latin square design. Two applications were made of each treatment. Difolatan at the recommended rate served as a standard for rot control, and an untreated series established the rate of berry breakdown in the absence of fungicides.

In these tests, difolatan and glyodin combined at one-half recommended rates gave as good disease control as did difolatan alone. There were no significant differences between yield and berry size between these treatments. The combination of glyodin and difolatan may have two advantages over difolatan alone: 1) The total cost of the two fungicides combined at one-half rate is currently about 40 percent less than that of difolatan alone at the recommended full rate and 2) the combination possibly may be less toxic to aquatic life. The results of the 1977 trials warrant further testing of the glyodin-difolatan combination.

The fungicide Topsin at 9 lbs./acre gave no rot control. Control of fruit rot was good with Funginex at 40 fluid ounces/acre, but caused a significant yield reduction. Funginex showed some promise and will be tested at lower dosages in 1978.

SEE NEXT PAGE

FOR TABLES

1 AND 2 ➡

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TABLE I
Results of Single Application Trials of Difolatan
on Early Black Cranberries, State Bog, 1977

Treatment and Rate/acre	Cup ¹ Count	At Harvest	ROT ¹	
			After 10 wks. Storage	Total
Difolatan 9 lb	94	4.6	11.3	16.1
Difolatan 12 lb	94	2.7	10.3	13.0
Difolatan 15 lb	89	4.8	11.7	16.5
Control	99	15.3	20.8	36.1

¹Figures given in Per Cent by weight

TABLE II
Results of Trials of Several Fungicides on
Early Black Cranberries, State Bog, 1977

Treatment & Rate ¹	Cup Count	Yield	At Harvest	ROT ²	
				After 5 weeks Storage	Total
Topsin 9 lbs.	99	435	18.1	7.1	25.2
Difolatan 4 qts.	96	514	6.8	5.8	12.6
Difolatan 2 qts. + 1½ qts. glyodin	91	429	5.7	4.6	10.3
Funginex 40 oz.	100	314	7.7	6.3	14.0
Control	97	529	17.3	7.0	25.3

¹ Two applications at this rate

² Figures given in % by weight

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Personals

Dr. Robert Devlin attended the Annual Meeting of the North-eastern Weed Science Society on Jan. 3-6 in New York City. Bob presented two papers on the influence of herbicides and growth regulators on cranberry culture.

Prof. Stan Norton attended the Annual Meeting of the Technical Committee of NE-93 from Jan. 9-13 at Michigan State University. Stan is the Massachusetts representative and member of the Executive Committee for this regional group that works with mechanical harvesting of fruits and vegetables.

Weather

January temperatures were warmer than in 1976 and 1977 but still averaged 2.3 degrees a day below normal. Maximum temperature was 55 degrees on both the 9th and 26th, minimum was 8 degrees on the 11th. Warmer than average days were the 8th, 9th, 18th, 25th and 26th. Colder than average periods occurred on the 1-4th, 10-12th, 15-17th, 19-21st, 23rd and 27-31st.

Precipitation totalled 9.47 inches, a record high for us, breaking the old record of 8.29 inches set in 1958. This is 5.17 inches above normal. There was measurable precipitation on 13 days with 5.10 inches the largest single storm on the 13-14th, which is also a record. Snowfall for the month was 20 inches on six days with 11.2 on the 20th the largest storm. The total is nearly three times our average snowfall for the month.

Spray Charts

The cranberry pesticide charts have been revised and will be at the printers shortly. We expect to mail them before the middle of March. There will be a revised fertilizer chart included this year. Anyone not receiving these spray charts or needing additional copies may contact the Cranberry Station.

News from Mass. Farm Bureau

FB members George Barker and Steve Verrill appeared on Boston TV in January to discuss the national farmers' strike with visiting farmers from western states. Both Barker and Verrill were guests along with Janet Christensen of the Mass. Dept. of Food and Agriculture on Ch. 5's "Good Day" show to talk about the farming situation. Despite difficult audio problems, both FB members spoke well and with a great deal of substance.

* * * * *

Up on Beacon Hill, Governor Michael Dukakis used the "pocket veto" to kill a bill which would have made farm tractors and equipment exempt from the Massachusetts sales tax. Your Farm Bureau will try again on this one in 1978.

MFBF Information Director Greg Finn is now a regular contributor to the AFBF syndicated radio series, "Insight." The series, which consists of two-minute commentaries on agricultural issues, is broadcast on a total of 231 stations across the country.

* * * * *

American food is safe, says nutritionist Dr. Gilbert A. Leveille of Michigan State University. He told FB members at the AFBF convention in Houston that our food is safer than any of its critics would have us believe. Said Dr. Leveille, "Most of the claims to the contrary . . . are based on inadequate, unproven and all too often fanciful information."

an important reminder—every vehicle powered by special fuel (including diesel) and operated over the highways of Massachusetts must display a Special Fuels User License, according to the Mass. Dept. of Corporations and Taxation. This Special Fuels User License consists of a card to be carried in the cab of the vehicle and a decal to be placed on the outside of the driver's door.

Farm Bureau checked to see whether farm vehicles with farm plates were exempt from this requirement, and the Tax Dept. tells us they ARE NOT. License will cost \$1.00 per vehicle. Applications for Special Fuels Licenses (Form MF-VA) are available by mail from: Mass. Dept. of Corporations and Taxation, 100 Cambridge St., Boston, MA 02204. Write for the application first, send in the money with the filled-out application form.

* * * * *

UMass Study Committee formed several years ago to strengthen communication between the University and the farming community met with Dean Ross Whaley at UMass on Thursday, Feb. 2. This FB committee works to provide two-way dialogue between people at the University and people on the farm.

* * * * *

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Resanding of Massachusetts Cranberry Bogs

by
Chester E. Cross
and Irving E. Demoranville

PART I

Ever since the wild American cranberry (*Vaccinium macrocarpon* Ait.) was first brought under cultivation in the early years of the nineteenth century on Cape Cod, it has been customary for growers to resand their bogs periodically. The resanding operation consists in spreading a reasonably uniform layer of coarse, gritty sand over the mature cranberry vines. The amount of sand used varies from about 35 cubic yards per acre for a quarter-inch layer to about 100 cubic yards for a layer $3/4$ " in depth. The sand is obtained from the sand hills surrounding the bogs or is hauled to the bog from nearby sand pits. Until quite recent times the sand was hand shoveled into wheelbarrows which were pushed out onto the bog on a line of 2" x 8" "wheeling" planks. The planks served to protect the cranberry vines from excessive mechanical damage, and to facilitate the pushing of the heavy barrows on the soft-bottomed bogs. Once the wheelbarrow was in position on the bog the sand was thrown over the vines with a lightweight, thin-bladed, square-point shovel. There is some trick or knack in doing this, which is immediately evident when an "old hand" and a novice are seen spreading the sand. The former, carefully avoiding an over-full shovel, throws the sand with a sweeping motion which succeeds to a large degree in dissociating the sand grains so they fall like pepper and salt through the vines to cover the bog surface without burying many of the fruiting upright

branches. It is well that the shovel used for this purpose is lightweight—it seems very heavy late in the day in this work.

But this is a description of a laborious and costly practice—why is it done and what does it accomplish? This same question has been put to many who have excelled in the art of cranberry growing.

1. Insect Control

* Head of Department and Extension Cranberry Specialist respectively, Cranberry Experiment Station, East Wareham, Mass.

The periodic resanding of a cranberry bog tends to reduce the populations of tipworm. The covering of tipworm cocoons with a layer of sand tends either to destroy the cocoon or prevent the emergence of the adult flies. Resanding is not a cure for tipworm problems, but it surely reduces the severity of tipworm infestations and thus curtails crop loss.

Cranberry girdler infestations develop into a serious threat to the cranberry vines on bogs not regularly resanded. It is an insect that finds nearly ideal growing conditions in the layer of dead cranberry leaves that accumulate on the surface of the bog. The larvae are tiny, and in August and September feed on the bark of cranberry vines at the soil level or in the "trash" layer. Resanding covers the trash, keeping it moist and unsuitable for the girdler. Again, sanding alone is scarcely a cure for the pest but it curtails its activity and makes chemical controls more effective.



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2. Resanding and Weeds

Circular No. 36 indicated that "resanding smothers many small weeds." This statement does not reflect current thinking on the subject, in fact quite the opposite. Sanding eventually stimulates cranberry vine growth, and as vines thicken they tend to shade the soil surface enough to reduce the numbers of annual weed seeds which germinate. But the first effect is that of covering surface weed seeds and insuring their moisture supply. Whenever cranberry vines are buried by the sanding operation and sunlight reaches the soil surface, conditions are made excellent for annual weed seedlings. In general, the year following a resanding shows an increased number of species and individuals of annual weeds. These include warty panic grass (*Panicum verrucosum* Muhl.), corn grass (*Panicum dichotomiflorum* Michx.), barnyard grass (*Echinochloa crusgalli* (L) Beauv.), fireweed (*Erechtites hieracifolia* (L) Raf.) and pitchforks (*Bidens* spp.)

The effect of resanding on several perennial weeds is as beneficial to the weeds as it is to the

cranberry vines. Poison ivy, which may well be regarded as the number one woody weed of Massachusetts cranberry bogs, is stimulated vigorously by resanding, and its prostrate stems sent out on the soil surface the previous season are effectively anchored and stimulated to produce large numbers of adventitious roots in the newly applied sand. Not only is the ivy growth stimulated to greater growth by the sand, but it is more difficult and disruptive to pull it out once the new roots are formed. Similar effects follow sanding of the several species of brambles, blackberries and dewberries (*Rubus* spp.) and in this case the rooted ends of looping stems and branches become firmly anchored, hampering and making pulling a very disagreeable and discouraging job. Rice cutgrass (*Leersia oryzoides* (L.), a perennial weed of wetter, poorly-drained areas of the bogs, is considerably stimulated by sanding.

Despite the above effects on some of the more bothersome weeds, resanding stimulates the development of a healthy and productive growth of cranberry

vines, and usually during the second growing season after resanding this growth is heavy enough to provide some effective competition to many weeds. It is still a cogent argument for the resanding practice that in general the regularly sanded bogs are the more thrifty and productive bogs.

3. Resanding and Cranberry False Blossom Disease

This is a virus disease which is spread by the blunt-nosed leafhopper. It causes a distortion of the flowers and results in a failure to produce berries, or at least berries of marketable size. There are now several registered pesticides which have given excellent and lasting control of the blunt-nosed leafhopper. Because of this the false blossom disease is no longer a serious threat to the cranberry industry. However, it is one thing to prevent the spread of the disease and quite another to eliminate the diseased vines. There are two practices that are primarily helpful in getting rid of false blossom diseased vines: resanding and fertilization. Both of these stimulate vine-growth and if both practices are pursued regularly and the leafhoppers are controlled, healthy vines tend to crowd and smother the diseased vines. Growers should be warned that the lush vigorous growth produced by fertilizer and resanding is especially sensitive and susceptible to the false blossom disease. So it is vitally important that the disease vector be controlled when the vine growth is stimulated to this susceptible condition.

4. Root Congestion

After long study and experience in cranberry growing, Dr. H. J. Franklin would liken the growth of cranberry roots in the sand over the peat to the roots of potted house plants that from long growth in a restricted quantity of soil have become root bound. He felt the addition of a layer of sand to the bog provided an increased layer of soil for root exploration and as such was responsible for the in-



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creased vigor and productivity of resanded bogs.

5. Soil Aeration

If resanding is done with a coarse gritty sand with only minimal amounts of clay or silty particles, good surface drainage is provided, which assures proper aeration of cranberry roots. Cranberry roots, like other organs of plants, must respire continuously to live and function. Some bog soils become so dense, compacted and waterlogged that cranberry vine roots get inadequate oxygen for respiration, and under severe conditions die. A new layer of sand, provided it can be moistened when needed, provides a soil medium that is capable of providing both the oxygen and water needed by cranberry roots for vigorous growth.

6. Sand Mulch and Drought

A layer of coarse sand on the bog surface soon dries out in warm, sunny weather. The capacity of such sand for holding moisture is rather limited, and as the surface particles dry out a mulch is provided that slows direct evaporation from the soil surface. This factor is less important when the cranberry

vine density approaches ideal and highly productive concentration, for in this case the vine growth itself provides shelter from drying winds and checks the loss of humid air from the soil surface. A uniformly well-vined bog is a good defense against short-term drought.

7. Sanding and Frost Protection

It is a matter of repeated observation and experience that regularly resanded bogs suffer less damage from frost than unsanded bogs. Careful measurements have also shown that on frosty nights the temperature at the level of the vine tips is about 2° F higher on a recently resanded bog than it is on one where the soil surface is covered with a layer of fallen cranberry leaves. It is important also to note that temperatures are higher if the new sand is wet. Such a condition provides for the regular conduction of heat to the surface, and for its continuous radiation through the night. If the surface sand is dry, or if a layer of dead cranberry leaves covers the soil surface, the heat of the sub-surface soil is retarded in reaching the surface and prevented from warming the air immediately above it.

8. Harvesting and Resanding

It is probable that resanding was more important in the days when most of the Massachusetts crop was harvested with hand scoops. The scoops often pulled hard on the root system, and a recent resanding provided considerably increased anchorage for the vines. Most of the crop is now picked by machines and these do not have nearly the same pull on the cranberry roots as the scoops. Other aspects now constitute a problem however. More than in the days of the scoops when the occasional mixture of stones in the newly-spread sand bruised the knees of scoopers, stones now cause a serious malfunction of the picking machines and it is important that they be removed, preferably before they are spread on the bog. Finally, it is difficult to manage a clean or efficient harvest the year after sanding, for there are usually many berries resting on the new sand. This is especially true if the resanding has been heavy, as it must be if it has been long postponed. It is preferable to resand rather lightly and to do it frequently. Such a problem keeps the soil surface from developing a very thick layer of "trash" and it avoids the exposure of bare-sand areas after the sanding, thus keeping vines thick enough to support the crop above the sand level.

(To be continued)



Fig. 1. Self-Propelled Mechanical Sander. Sanding on Ice.

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REGIONAL NEWS NOTES

Wisconsin

January began with seasonably cold daytime temperatures and overnight lows below zero. Temperatures moderated on the 4th and reached the mid-30's on the 6th and 7th. Bitter cold arctic air returned on January 8th as high readings were only slightly above zero, and strong northwest winds produced chill factors of 50 below. Precipitation in the first week of January was generally light. Fog, drizzle, and freezing rain prevailed from the 5th through the 7th. The precipitation changed to snow on the 7th as colder air moved in. Snowfall amounts ranged from less than an inch in the south to 3 inches in the north. Heavy snow squalls developed near Lake Superior on the 8th, with up to 12 inches of snow.

The second week of January began clear and cold except for the snow squalls in the snow belt of the extreme north. High temperatures on the 9th ranged from 5 degrees above to 5 degrees below zero. Overnight lows ranged from a minus 6 to a minus 22. Snow developed in the south on Thursday, with 1 to 4 inches falling except for locally heavier amounts of 6 to 8 inches near Lake Michigan. Northern and central areas had only an inch or less. Scattered light snow continued in the south and east on the 13th and 14th. Temperatures moderated to the mid 20's in the south on the 12th, but were in the teens over the weekend. Overnight lows fell below zero again on the morning of the 15th.

Snow depths as of January 13th averaged 8-1/2 inches, slightly more than the 8 inches of a year ago and close to the average of 9 inches for mid-January from 1962-77. Snow was deepest for this survey period at 22 inches in 1969. Other years with a heavy snow cover in mid-

January were 1971 at 16-1/2 inches and 1970 at 13-1/2 inches. The least amount of snow on the ground at this time of the winter season was 4 inches in 1963. Other years with a light snow cover were 1964, 1968, and 1975 at 4-1/2 inches. Snow depths averaged 6 inches two weeks ago, but several light snowfalls added to the total on the ground.

New Jersey

The trend of wet weather continued through the month of January. Precipitation on 11 days deposited a total of 7.11 inches. Fortunately, of this potential of 70 to 80 inches of snow, only 13 inches actually fell at Pemberton. The greatest depth at any time was only 7.5 inches. At Chatsworth, closer to the ocean, the greatest depth was only 4 inches. There was a total of 14 days of snow coverage at Pemberton and about 9 at Chatsworth.

December had a total of 22.44 inches of rain, which is more than half the normal annual total and a record for this three-month period, exceeding the previous record of October-December 1972, when 21.97 inches of rain occurred. Cranberry growers who had a shortage of water during the harvest season had to release excess water from reservoirs. On many properties the areas inundated by overflow from reservoirs was greater than had ever been observed.

The average temperature for the month was 29.30 degrees F, which is 3.4 degrees colder than normal. Although it was moderate compared to the record-breaking temperatures of last January there were some severely cold periods. The maximum temperature was 62 degrees F on the 9th and 26th and the minimum was 2 degrees F. on the 24th.

P.E.M.

LATE WINTER HINTS FROM MASS. CRANBERRY STATION

If your bog has any open water and any green scum has formed during this cold winter, be sure and treat with copper sulfate as outlined in the 1977 weed chart.

Silvex in oil is excellent for killing off small woody species around the bog such as poison ivy, maple sprouts, bull brier, scrub oak, etc. Also if sprayed on stubs and stumps of larger trees it will stop resprouting.

I.E.D.

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CRANBERRY PRODUCTS ANNOUNCES NEW 13 OZ. GLASS TABLE JAR



Cranberry Products, Inc., Eagle River, Wis., is distributing its new sauce throughout the middle west in this squat 13 oz. glass table jar. The manufacturer is relying on an attractive closure for brand and product identity and is not using a body label on the container. Heel has thumb-print decorations.

BROCHURE AVAILABLE ON WHEEL LOADER

A new descriptive brochure for the Allis-Chalmers Corp. Model 540 wheel loader is available. The 540 is a versatile, articulated unit well suited for the farm, yard work, light construction or woods work.

Through photos, text and diagrams, the features of the front end, articulated loader are detailed to demonstrate how it can outperform most skid-steer units. Some of these pluses are straight lift beam design; four-wheel drive systems; rear axle oscillation capability and an operator-designed control station.

Attachments available for the 540 are a material bucket, backhoe, pallet fork, manure bucket, grapple for the manure bucket, three point hitch, forklift, broom, feller-buncher, scrap fork and tree transplanter.

Specification measurements are listed in both U.S. customary and metric units.

To obtain a copy of the brochure, Form No. AED 526-7708, contact the Agricultural Equipment Divisions, Allis-Chalmers Corp., Box 512, Milwaukee, WI 53201.

NEW BOOKLET DESCRIBES LIGHTNING, TELLS HOW TO PROTECT AGAINST IT

A new 16-page booklet, "Lightning Protection for Home, Farm and Family," is available free from the Lightning Protection Institute, Harvard, Illinois. It describes and illustrates what lightning is, how and why it may cause loss or casualty, and how to prevent harm or damage from it.

The booklet cites a government study that shows lightning as an "underrated killer," which is responsible for 55 percent more American deaths than tornadoes and 41 percent more than floods and hurricanes combined. These are

among the booklet's other highlights:

Anatomy of a thunderbolt—How conditions that spawn a lightning bolt are built up, how lightning happens, and the forces a lightning discharge contains.

How lightning kills or injures—The booklet explains that when a person is able to tell you he was "struck" by lightning, he is reporting instead a secondary effect of lightning striking another, larger object like a house or a tree.

The 11 elements of lightning protection—When Ben Franklin invented lightning rods 225 years ago the protective system contained only two parts. The booklet describes the 11 mechanical parts and quality assurance requirements that make up a reliable system today.

Personal lightning safety—Safe and unsafe practices, activities and locations are described, and procedures for minimizing injury are explained.

For a free single copy of the booklet, write to the Lightning Protection Institute, 48 North Ayer Street, Harvard, IL 60033.

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"Environmental Regulation and Legislation" presents the non-lawyer in industry and government with essential information on the status and potential impact of environmental laws. Specific controls through standards and permits are analyzed in the context of current Federal, state and local regulations. The seminar explores actual and hypothetical case studies as vehicles for discussing both the benefits derived from environmental controls and the constraints that result, directly or indirectly, from these controls. Specific topics for the program include the National Environmental Policy Act, pollution, solid waste and resource recovery, pesticides and toxic substances, land use, population, energy and international environmental law.

The seminar leader is David B. Firestone, Professor of Law at

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Vermont Law School, where he specializes in environmental law.

For a detailed brochure and registration information, contact: Heidi E. Kaplan, Dept. 14NR, New York Management Center, 360 Lexington Ave., New York, NY 10017, or call (212) 953-7262.

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More information is available from Detecto Scales, Inc., 103-00 Foster Avenue, Brooklyn, New York 11236.

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EVITAL, a new cranberry weed killer, has now been granted a broader label. The label expansion includes a rate range, the addition of nine new weed species to the label, and a 160 pound rate for star grass, switch grass, and wool grass.

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CRANBERRY DELIGHTS FOR DEDICATED DIETERS

Now that the holidays are past with all those fabulous but incredibly fattening foods, it's time to exercise restraint. Whether simply waistline watching or serious dieting, it is possible to enjoy tasty food variety. Here are three recipes using flavorful, nutritious cranberries that will fit into a well-balanced, calorie conscious diet.

Since doctors generally consider that a reducing diet should contain about 1200 calories, each of these recipes allows a long way to go in choosing other nutritious, low calorie foods for sensible and satisfying menus.



FRUITFUL SALAD WITH CRANBERRY YOGURT DRESSING

(Makes 4 servings at 250 calories each)

Salad:

- 1 pound skim milk cottage cheese
- 1 teaspoon grated lemon rind
- 1 tablespoon powdered sugar substitute

Lettuce leaves

- 2 navel oranges, peeled and cut into thin slices
- 2 red apples, cored and cut into thin slices
- 1 cup cubed jellied cranberry sauce

Dressing:

- 1 cup (1/2 pint) plain yogurt
- 1/3 cup low calorie cranberry juice cocktail

In a bowl, mix yogurt and cranberry juice until smooth. Chill. In a bowl, mix cheese, lemon rind and sugar substitute. Line a serving platter with lettuce leaves. Spoon cheese mixture in center of platter. Arrange orange and apple slices around cottage cheese. Spoon cranberry sauce cubes over cheese. When ready to serve, spoon salad dressing over each serving of salad.

BERRY SLIMMER

(Serves 8 at 32 calories each)

- 4 cups (1 quart) low calorie cranberry juice cocktail
- 3 cups club soda, chilled
- 1 cup orange juice
- Ice cubes
- Orange slices, halved

Chill all ingredients. Combine just before serving. Serve with ice cubes in tall glasses. Garnish with halved orange slices.



CRANBERRY APPLE CLOUD PARFAIT

(Makes 4 servings at 110 calories each, or 6 servings at 75 calories each)

- 3 large cooking apples, peeled, cored and diced
- 2 cups low calorie cranberry apple drink
- 3 unbeaten egg whites
- 1/4 teaspoon ginger
- 1/2 teaspoon cinnamon
- 1/4 teaspoon nutmeg

In a large saucepan, combine apples and juice. Simmer until apples are very soft and liquid almost absorbed, stirring occasionally. Cool and then chill. When ready to serve, add egg whites and spices to apple mixture and beat with an electric mixer until fluffy. Spoon into parfait glasses and serve at once. If dessert is made ahead, stir the pudding again before spooning into parfait glasses.

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When the battles of life bring discouragement each day, when almost overcome with the strife, look up, have faith - God cares, don't faint, but pray.

The above words recently came to me early one morning. I had just been reading in the Gospel according to Luke, the words, "And he (Jesus), spake a parable to them to this end, that men ought always to pray, and not to faint" (Luke 18:1). A faint heart denotes fear and fear shows the lack of faith. Men of faith do not faint, but they pray. Prayer helps to banish fear.

Don't faint, but find victory over defeat through the prayer of recognition. This prayer, which most of us learned in childhood, begins with "Our Father."

The unjust judge, of whom Jesus was speaking in the parable Luke gives us, was not concerned for the welfare of the widow who had come to him. But God, to whom we pray, is not only just but merciful. We can say "Our Father," and know that he is concerned about our needs. The prayer of recognition helps us to pray as David, the Psalm writer: "... Thou are with me, thy rod and thy staff they comfort me" (Psalm 23:4).

Don't faint, but find consolation through the prayer of supplication: "... Avenge me of mine adversary," pleaded the troubled widow of the judge. The Psalm writer gave solemn declaration when he said, "The Lord hath heard my supplication; the Lord will receive my prayer" (Psalm 6:9).

Revival

The prayer of supplication was encouraged by Jesus. He implored his listeners to "Ask, and it shall be given you; seek, and ye shall find; knock, and it shall be opened unto you" (Matthew 7:7). George White-

field, English minister and evangelist, prayed long ago, "O God, I pray thee, give me Scotland or else I die." He did not faint, but prayed the prayer of supplication and a great revival came to Scotland.

Finally, one of the reasons so many have fainted by the wayside, is that they have not been able to pray the most difficult prayer. It is the prayer of relinquishment. Giving up and over to God is not always easy, but only by doing so does peace of mind come.

The best example of this kind of prayer is found in the account of that memorable night with Jesus in the Garden of Gethsemane. Here he relinquished his will to his Father's will by praying, "... nevertheless not my will, but thine, be done" (Luke 22:43). In that scene of long ago, none of us can picture a fainting Christ in prayer.

The apostle Paul had to learn the prayer of relinquishment. In so doing, he found that God's grace was sufficient for each day's needs. The prayer of relinquishment helps us to submit to God's will. It helps us to live each day with faith and with hope for tomorrow.

A fainting faith keeps a life in turmoil. A praying faith spells victory and peace of mind. Look up - have faith, God cares. Don't faint, but pray.

(Courtesy American Agriculturist)

LETTER TO EDITOR

Continued from Page 5

control conflict within the marketing order so Ocean Spray will be able to devote its energies to processing and marketing.

I am familiar with the voluntary two pool systems proposed by Ocean Spray and with new contracts which restrict the berries Ocean Spray will handle to those produced upon acres established under the marketing order. These provisions do not conflict with the marketing order.

My concern was to avoid implementation of any plans by Ocean Spray or any handler which would conflict with the marketing order. For instance, Ocean Spray did discuss a mandatory two pool system which would have required all growers to submit unused quotas for exchange by Ocean Spray and would have prevented them from making such a quota available to a friend or a relative. It is this kind of restriction I am talking about and this is the reason I believe the marketing order should contain language prohibiting handlers from using grower contracts as a device to take away rights which exist under the marketing order.

Sincerely yours,

Jonjak, Havens & Kase
Paul L. Jonjak
Attorney at Law

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NEW USE FOR CRANBERRY JUICE	1
BOG SANDING IN WASHINGTON	3
BOG SANDING IN MASSACHUSETTS	6

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"Angel dust" is susceptible to "ion trapping" and that is good news to overdose victims of phenacyclidine (PCP).

"Ion trapping" is a treatment technique described in "Phencyclidine Overdose: An Emergency Concept of Management," in the February issue of *JACEP*, the medical journal for emergency medicine. The authors, Regine Aronow, MD, Alan Done, MD, and Joseph N. Miceli, PhD, developed the treatment to deal with the rising incidence of "angel dust" overdoses seen at The Children's Hospital of Michigan in Detroit.

Phencyclidine is found on the street in a variety of pill forms, capsules, dust and occasionally as a liquid. It is sniffed, smoked or swallowed. Often, it is represented to buyers as mescaline, cocaine, amphetamine or LSD. Victims of overdose may suffer loss of tactile sensation, coma, convulsions and respiratory failure.

Chronic users often arrive in the emergency department with psychiatric problems including acute anxiety, severe depression and paranoid psychosis. With few references in the literature on the management of PCP, there has been little guidance available for physicians faced with a victim of PCP overdose.

The illicit use of PCP, developed in the late 1950s as an anesthetic for nonhuman primates, is fast becoming a nationwide problem. The National Institute of Drug Abuse estimates that as much as 30 percent of all admissions to mental hospitals may be PCP-related. In Michigan alone, over 360 deaths were caused by PCP overdose in the past three years.

Dr. Aronow's treatment removes the drug from the victim's body as fast as possible by washing out the stomach and increasing the acidity of the urine which facilitates "ion trapping." In ion trapping, the acid

medium forced into the patient's stomach through a tube is absorbed, and attracts the PCP ions already in the body's system like a magnet. Because acid is not reabsorbed into the body, the trapped PCP is flushed out of the body through the urine.

Dr. Aronow used ammonium chloride and ascorbic acid, dissolved in saline as the acid medium. The rate at which the patient recovers is directly related to the amount of PCP taken from the body.

Once a patient regains consciousness, ascorbic acid is continued throughout the hospital stay. The patient is also encouraged to drink several glasses of cranberry juice a day. The juice has a high acid content, and continues the acidification program.

The treatment also involves support measures and close monitoring of vital signs. While the victim

should be in a quiet, low-light environment, "talking down" is of no use in handling these patients.

In the group of patients studied, this approach to treatment was successful in all cases, including one who had been on respiratory assistance for nine days before the treatment was begun. Patients recovering from extreme overdose show a steady pattern of continued improvement, unlike the uneven progress shown by the patients who received only supportive care.

JACEP is the monthly clinical journal of the American College of Emergency Physicians and the University Association for Emergency Medicine. These organizations represent over 9,000 emergency physicians working to improve the delivery of emergency health care throughout the United States by developing standards and methods for the professional practice of emergency medicine.

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SANDING CRANBERRY BOGS IN WASHINGTON

Azmi Y. Shawa

Washington State University
Coastal Washington Research & Extension Unit
Long Beach

Sanding is the oldest practice in cranberry culture started as early as 1816 by the "Father of Sanding," Henry Hall of Dennis, Massachusetts.

The last step in preparing a bog for planting is sanding. The sand used on the bog should be free from hardpan, clay, or surface soil. Sand is spread uniformly over the peat to a depth of about three inches. The available sand in Washington cranberry areas is of fine texture and has a tendency to pack if too much is used. Sand is warmed by the sun more readily than peat, and the heat accumulated makes it an excellent medium for rooting the newly planted cranberry cuttings.

Resanding a producing bog is practiced in the Grayland area every 3-5 years: to cover falling leaves and rotting berries which may be an infestation media for fungus; to level dips and low spots for smoother dry harvesting; to rejuvenate an old bog. In the Long Beach area where water harvesting is practiced, a bog is seldom resanded.

It may be interesting to note that growers at Lulu Island, Vancouver, B.C. do not use sand in their cranberry culture. Cranberry yield on Lulu Island is one of the highest in the nation per acre. This brings us to the question, is sanding a necessary practice in growing

cranberries or an evil inherited and followed because our forefathers practiced it since 1816? Sanding is a very expensive and laborious practice. It is recognized for its merits, but the advantages have been exaggerated. Maybe our "changing times" in cultural practices should impose a limitation to resanding bogs.

It has been mentioned in national cranberry bulletins since 1924 that resanding bogs is an essential cultural practice for good production. That sanding contributes to insect control, weed control, false blossom prevention, relieves root congestion, aerates

Continued on Page 4

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Once upon a time, in the far-off land of Organized States, the leaders of the people became confused by devalued shekels, and consumed by a desire to rewrite history. And so the king appeared before the judges, taking the side of the Hiawathas who were demanding the return of the land settled by ancestors of the O.S. people some 200 years before.

Next, the ruler of Pandemia demanded the return of a canal dug by the O.S. on land which it had purchased many years before . . . and the king of O.S. agreed. Solemn vows were taken by the Pandemians, of course, to do right forevermore . . . but the record of history south of the Rio Granny did not indicate that such vows were worth very much.

Observing all this, a nation known as Big Red then demanded the return of Alooska . . . purchased by O.S. from the Reds long ago. "Look at how much Alooska is worth in gold, oil, fish, timber, and uranium," quoth the Reds. "Aren't you consumed with shame that you paid us only a lousy seven million shekels? We want it back . . . now!"

The king of Gay Paree, seeing this, was next in line . . . demanding the return of a land named for Louise and Anna . . . also purchased for a price long ago that seemed small a century later.

But the real (and cruelest) injustice of all . . . the inflation that robbed the O.S. people of purchasing power every day . . . roared on, aided and abetted by the king and his merry men. How is it, the people wondered, that ancient history can be so important to the king . . . and present problems of so little concern?

— American Agriculturist

NEW SOCIAL SECURITY LAW is a *sleeper* not many people know about. By the mid-1980's, payments will *skyrocket*, especially for self-employed persons. For instance, *maximum* that a self-employed person could pay in 1977 was \$1,303.50 . . . by 1987 it will be \$4,260!

New law *raises* amount of unpenalized earnings by retirees between ages of 65 and 72 . . . to \$4,000 in 1978 (it was \$3,000 in '77), to \$5,500 in '79, and \$5,000 in 1980.

soil, gives frost protection, etc. . . . It sounds like sanding is a "cure-all prescription for cranberry ills." Perhaps this was the answer for many cranberry problems up to the end of the 50's. Thanks to new herbicides, fungicides, and insecticides which take care of most weeds, insects, and fungus diseases infesting cranberry bogs, it is no longer the answer. Thanks to *Mr. Jim Crowley's* ingenuity to utilize water sprinkling for frost protection during the 40's, sprinkling for frost protection has become an internationally recognized practice, not just for cranberries but for other crops.

At the present time, resanding is an impractical practice and outdated for solving the above problems. Cranberry growers have at their disposal, the needed pesticides to combat such problems. However, it should be kept in mind that "rejuvenating" a bog is the only reason resanding is necessary. This does not happen every 3-5 years. It happens when the bog gets very old or is infected with certain fungus diseases which may strip the uprights or weaken the vines. Resanding in this case is the solution to anchor vines, initiate new roots and uprights, together with a sound fungicide program.

ANNUAL WASHINGTON FIELD DAY

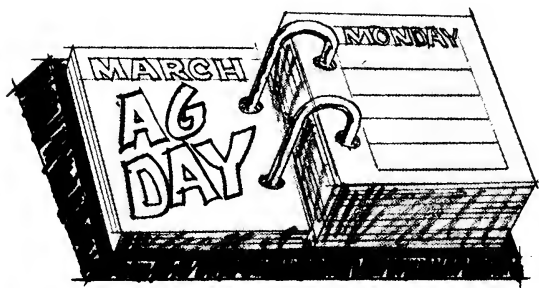
Attention: Annual Field Day
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(This is a change from Friday,
June 30 as previously stated, due
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Resanding of Massachusetts Cranberry Bogs

by
Chester E. Cross
and Irving E. Demoranville

PART II

9. The Function of Sand in Bog Management

Sanding has been called a very expensive method of pruning. While it is true that resanding vines that have become long and stringy, often with patches of naked stems, effectively shortens the length of the producing stems, this aspect is scarcely sufficient to justify the practice. Dr. Franklin's contention that resanding relieves the root-bound condition hardly seems enough to account for the invigoration produced by resanding, especially if one considers the low order of nutrients carried by the sand as used.

Several years ago a detailed study* was made of the relation of various weather factors to the productivity of cranberries in Massachusetts. Sunshine proved to be the chief factor in cranberry production, the prospect for a heavy crop being great after a year of excessive sunshine. It seems a reasonable assumption that a layer of white clean sand on the soil surface materially increases the amount of light reaching the green tissues, increasing the level of photosynthetic activity and producing an invigorated growth. The sand generally used in resanding bogs is very light-colored, especially when dry, and probably reflects much of the incident sunlight reaching it. This should materially increase life processes and it accounts, as other theories do not, for the increased growth produced by resanded cranberry vines. It needs emphasis that the vigorous growth following sanding is similar in appearance to that of newly fertilized cranberry vines, but analyses

have shown that the sand itself is markedly deficient in nitrogen, phosphorus and potash. It is also true that prolonged drought following sand prevents the development of increased vegetative growth, though a more normal rainfall pattern in the second season following sanding would show the usual vegetative response but to a lesser degree.

10. Types of Sand Used in Resanding

Most of the sand used in resanding cranberry bogs is derived from adjacent or nearby sand hills, deposits left on the retreat of the ice age glaciers. This sand varies considerably from place to place in the fineness or coarseness of its particles, the number and size of included stones, and in the nature and thickness of the soil overburden. As mentioned earlier it is usually considered best to use a coarse, gritty sand of a quality preferred by masons for concrete mixes. Such sand, with only a small

percentage of clay or loam, spreads readily without lumping, its surface dries out quickly on the bog surface, and after rainfall or bog flooding it drains quickly so that puddles of water do not remain long on the bog surface. Such sand works well, except on the higher parts of well-drained bogs where it may prove difficult or impossible to supply the relatively high water requirement of the cranberry plants. In such a case it would probably prove more helpful than detrimental to use a fine-grained sand that has a higher moisture-holding capacity.

Bogs with less than adequate drainage are often helped by a layer of coarse sand. It is hard even here to make a blanket statement, for some of the lower areas of bogs are low (and poorly drained) because of the great depth of peat under them. In such a place the addition of a layer of sand merely increases the weight of the burden on the peat, squeezes water out of the peat and is likely to settle to an even



Fig. 2. Tractor-drawn Mechanical Sander, rear view, Sanding on Dry Vines.

*Bull. 450, July 1948

lower level than before sanding. It is probably with conditions such as this in mind that Dr. Franklin wrote that bogs "with ample water supplies and heavy vines never should be resanded."*

A further complication in determining the frequency of resanding for ideal growth conditions is evident from changes in other areas of management. Two or three decades ago bogs were reflooded several times each spring for frost protection, and when possible the flood was "held-over" for a day to give workmen time to remove the floating "trash" composed largely of fallen cranberry leaves. Late in the spring frost season it was common practice to make the frost flood as deep as a winter flood to kill any build-up of damaging insects. Again this gave an opportunity for trash removal. The steady increase in fertilizer use and the current use of machine pickers instead of hand scoops, have served to increase the rate of accumulation of fallen cranberry leaves. All these items tend to increase the need for sanding and to make resanding necessary at more frequent intervals.

11. Mechanical Sanders

The shortage of labor in recent years has forced the cranberry grower to convert the resanding operation from the rubber-tired wheelbarrow and shovel, to the sanding machine with a mechanical spreader. These are usually self-propelled or tractor-drawn and carry from 3/4 to 2 cubic yards of sand per load (Figs. 1 & 2). Mechanical sanding machines cover the area much faster, and the actual spreading of the sand is less costly than the old fashioned methods, but when the mechanical injury to the vines with the resulting reduction in crop is considered, then perhaps this method is not as economical after all. However, this type of operation is popular and practical, and will probably continue in the future. To illustrate the mechanical change-over: ten years

ago about 10 percent of the cranberry acreage was sanded by mechanical sanders, today 75 to 80 percent is done this way.

12. Resanding on the Ice

Massachusetts cranberry bogs are regularly flooded in the winter. Sometimes, especially in late December or in January, thick ice forms on the winter flood without an overburden of snow. In this situation cranberry growers frequently try to catch up on their resanding program by spreading a layer of sand on the ice-covered bog. If the ice is 6 inches or more thick it will support the loaded sanding machines, small trucks and tractors, and if all goes well the work can be done with a minimum of mechanical damage to the cranberry vines.

A few notes or words of caution may be appropriate with regard to this method of resanding.

In general, somewhat thicker layers of sand should be spread on the ice than would be used in dry sanding operations. Sand spread on ice usually melts its way into the ice layer, and finally goes all the way through to sift gradually

through the vines to the soil surface. It usually buries no vines and forms a smoother and more compact layer than does dry sanding, and for this reason no less than 60 or 70 cubic yards per acre should be used.

On large bogs that are fully exposed to winds, sand which has been spread on the ice may blow around and in extreme cases may even blow off the ice. This is one of the hazards of ice sanding. Another is the possibility of thawing, heavy rains which may come to break up the ice or wash the sand into piles. This happens rather rarely and cannot reasonably be countered.

In crossing large main or lateral ditches it may be advisable to lay planks to avoid having heavy equipment break through the ice. It can be expensive and damaging to retrieve heavy equipment from a main ditch far from shore.

Finally, a layer of 3/4 inch to 1 inch of sand can effectively exclude all light from reaching the cranberry vines below the ice. When this situation prevails, it is just as dark at the cranberry vine level as it would be with a layer of 4 inches or

Continued on Page 9

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more of snow on the ice and the grower may well face damage from oxygen deficiency in the flood water beneath the ice. This can be avoided by drawing the water from under the ice. The chief hazard (a minor one) is that the ice in settling to the bog surface often breaks along ditches, dumping its sand burden into piles or ridges and often into the ditch. Only a minor portion of the whole area is affected by this. On smaller, level bogs the vines are frequently largely frozen into the ice, in which case there is no need to worry about oxygen deficiency damage.

Wherever practicable it is best to schedule deliveries of sand to the bog as the sand is being spread on the ice. This avoids the problem of breaking up frozen lumps and layers of sand, which is a regular feature of ice-sanding operations from sand previously piled around the bog.

13. Miscellaneous Observations

A late water flood should not be used in the spring following a fall or winter resanding as the crop will be considerably reduced.

Resanding within 2 to 3 weeks after either fall or spring casoron treatments greatly increases the possibility of vine injury. This combination should never be used when vines are in a weakened condition. Casoron treatments on top of sand, or resanding in the winter or spring after a fall casoron treatment, are not hazardous to the vines.

Iron sulfate in excess of 20 pounds per square rod may kill vines that have been sanded within 18 months.

Resanding as a partial control for girdler is best done in the fall; spring sanding is not as effective.

REFERENCES

Cranberry Insect Control Chart.
Issued annually.
Cranberry Weed Control Chart.
Issued annually.

SANDING TABLE

DEPTH OF SAND	Amount required for one acre CUBIC YARDS
1/4 inch	34
1/3 inch	45
1/2 inch	67
2/3 inch	90
3/4 inch	101
1 inch	134
2 inches	268
3 inches	403
4 inches	537

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FEDERAL TAXES SIMPLER TO FIGURE; FORM 1040A EASIER TO PREPARE

Taxpayers who complained last year about tax forms and tables will be glad to learn that Federal taxes will be simpler to figure this year.

Probably the biggest change for 1977 involves the new tax tables. Last year, you had to make several computations before going to the tax tables to find your tax. This year, those extra calculations will be eliminated for 96 percent of all taxpayers.

The new zero bracket amount (\$2,200 for singles and \$3,200 for married filing jointly), personal exemptions, and the general tax credit have all been built right into the tax tables. This means that after entering your adjusted gross income on your tax form, you can go straight to the tables to find your tax.

Those of you who itemize your deductions will be required to make one computation before you can go to the tax tables. You will have to subtract from your income the amount by which your itemized deductions exceed the zero bracket amount. Persons whose income exceeds the tax table amounts and those with more exemptions than the number listed will be among those also required to make additional calculations.

One thing to keep in mind with the new zero bracket amount is that it's a flat amount as opposed to the old percentage method. This change will result in lower taxes for most people.

Because several computations have been eliminated, tax forms will be simpler to prepare this year. A minimum number of entries will be required on Form 1040A before you go to the tax tables. And if the taxpayer requests, the IRS will compute his or her tax. The tax instructions contain details.

Form 1040A will be a single sheet printed only on one side, instead of the old-half-sheet printed on both sides. The type will be larger wherever possible, making the form easier to read.

INNOVATIVE OCEAN SPRAY FRESH CRANBERRY EASTER PROMOTION TO GO NATIONAL IN 1979

A highly-successful Easter test promotion, inaugurated last year to develop new seasonal markets for Ocean Spray fresh cranberries, will be resumed in 1979 on a national basis and throughout most of Canada. Bob Porter, Ocean Spray's National Sales Manager for Fresh

Fruit, who made the announcement, noted that a no-surplus short crop during the past Autumn's harvest season, caused by unusually rainy weather, ruled out re-activating the innovative program this Spring.

"Easter sales," he pointed out, "can become a major new seasonal market for fresh cranberries supplementing traditional peak periods in November and December. Ocean Spray's success in a limited test area last year convinces us that consumers everywhere will buy cranberries during Easter and that berries deserve a place in any produce department's mix during that big food shopping season."

The 1977 test promotional effort was made possible by new long-term controlled storage methods worked out by Ocean Spray's Research and Development Group over a period of two years. Heretofore, virtually the entire fresh fruit crop had to be sold during the immediate post-harvest period.

Ocean Spray also plans a significant increase in its storage facilities across the country, anticipating a bumper crop this Autumn to provide sufficient product support for both an all-out December market and growing Easter demand.

Trade buyers in the test area support Mr. Porter's belief that Easter offers great potential for cranberry sales to produce retailers. Commenting on the promotion, Jim Halloran, Director of Produce Operations for the 400-store Red Owl chain the mid-West, said: "It's a good idea—selling cranberries during Easter—with great potential. They tie in very naturally with ham and many other popular items. In fact, they're a salable ingredient for meals anytime of the year."

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Cranberries Advertising Pays

Annual Service to Sprinkler Systems Is Recommended

At the February growers' meeting at East Wareham, Mass., the subject of better use of the sprinkler systems was mentioned and later at the end of the meeting, a group stayed to further discuss the problems of sprinkler systems. It seems that the sprinkler system does not work like it did the first year. We asked the Charles Harris Company of North Dighton to comment, and these facts were brought forward.

The big problem is that when the pressure varies within the system, distribution of pesticides and fertilizers applied through the system is uneven. There are some basic reasons for this. The early SCS designs did not allow for "old age in the systems" caused by corrosion in the impeller and at metal parts of the system and slow-down of the power unit. As pressure lowers, there is an increase in rust-like material and root hairs at every connector and sprinkler feed in the lateral line. Another factor is the size of the feed outlet from the main line to the lateral. The Harris Company says that a five or more sprinkler lateral cannot be supplied from a one-inch hole.

The cure is simple but time consuming and wet. It starts with the reading and recording of pressure of each sprinkler with the pumps running at the recommended pressure for the bog. This is done with a pressure gauge and Pitot tube (costs \$2). The allowable pressure drop in a well-planned system from pump to last sprinkler is 5%. Where there is a drop in pressure between sprinklers there is an obstruction. The correction calls for replacement. It seems that yearly service of each sprinkler system is recommended.

ADHESIVES BANNED

The U.S. Consumer Product Safety Commission has placed a nationwide ban on extremely flammable contact adhesives sold in larger than one-half pint containers. Popular because they dry quickly, such products are used to bond plastic laminates to counters and tabletops, to glue tile boards to walls, to put down flooring, to repair furniture, etc.

Fifteen deaths have been reported among the 130 known burn victims of fires or explosions of these products since 1970. Average burns were severe, covering about 40% of the body and requiring an initial hospital stay of about 50 days. Reported residential property losses ranged from \$20,000 to \$75,000.

There has been a gradual movement away from such products during the past couple of years toward a newly-developed, less flammable, petroleum-solvent-based contact adhesive. In spite of that, there is still a great deal of the more dangerous adhesive in the distribution chain.

The CPSC ban will not apply to products sold exclusively for industrial or professional use, but homeowners should be aware of the extremely dangerous nature of the formerly widely-used adhesives. In

one incident, an injury occurred when the vapor train from a contact adhesive container was ignited by a pilot light one floor below.

CARTER BROTHERS RECEIVE AWARD

Lyon and Sherburne Carter of Kingston, Mass. own and harvest 38 acres of cranberry bogs. Four years ago, the brothers drew up a conservation plan which called for the installation of flumes and sprinkler systems on their bogs. Recently the pair were honored by the Plymouth Conservation District as Outstanding Cooperators for 1977.

NEW JERSEY CROP OFF 43%

Production of cranberries during 1977 dropped sharply and was 43 percent lower than the 1976 crop. Weather conditions are the main reason for this severe decline. Berry set was poor in many cases due to winter-injured vines and spring frosts. The extreme drought conditions of June, July, and August produced berries much smaller than normal. In addition, some bogs did not receive the heavy rains of late August and September.

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REGIONAL NEWS NOTES

Washington

March 10 and 21 Growers meeting in the Long Beach and Grayland area respectively, heard Dr. Charles Doughty, Horticulturist from Puyallup Center speak on the nutrition program for cranberry culture.

January maximum temperature was 56 degrees F on the 15th and 16th and the minimum of 28 degrees on the 24th. Total precipitation for January was 8.23 inches, the greatest amount occurring on the 21st with 1.54 inches. February maximum temperature was 63 degrees on the 20th and 61 degrees on the 5th. The minimum of 26 degrees came in the 24-hour period previous to 8:00 a.m. on the 11th. Sprinklers are in operation for frost protection set at 30 degrees. Precipitation total for February was 7.29 inches with the greatest amount of 1.17 tallied at 8:00 a.m. on the 25th. The drought condi-

tions of 1977 have, at this time, been overcome but precipitation is still below normal. January-February totals:

1977	9.93
1978	15.72
Average	22.97

Ground water storage for the entire Long Beach area is slowly returning to an acceptable level for use throughout the growing season.

A.Y.S.

New Jersey

The moderate winter weather of January gradually became more severe and some of the most frigid weather ever recorded in Pemberton occurred in February. The average temperature of 21.9 degrees F made it the second coldest month of February and the third coldest month in the 49 years of weather

recording history. The only colder months have been last January (1977) which was only 0.8 degrees F colder and February 1934, when the average was 18.0 degrees F.

The month lacked the brutal cold winds of January 1977. Most of the days were fair with an abundance of sunshine tempering conditions. There were nine days when the maximum temperature did not go below freezing as compared with 17 such days in January 1977. However, the average minimum temperature was actually lower, being 9.6 degrees F as compared to 10.9 last January. There were four below zero readings this February (-4 on the 9th, -4 on the 10th, -6 on the 11th and -4 on the 20th) as compared to only two such days in January 1977.

The wet trend of weather was reversed. It was the first month in the past four and the second in the past six during which the precipitation was not excessive. Only 1.67 inches of precipitation, or 1.30 inch less than normal, occurred. All of this was in the form of snow amounting to 16.8 inches for the month. This total is well below the record 24.40 inches of snow in February 1934 and the more recent 20.3 inches in February 1967. Total snowfall this winter is now 29.8 inches, well above the 18.3 average but well below the record 45.5 inches recorded in 1958.

Ice on cranberry bogs this winter has been almost as thick as it ever has been. Last winter ice was thicker than ever observed on cranberries—14 inches on January 30th. On February 27, 1968, ice on flooded bogs at Oswego and Whitesbog was 11 inches thick. Cranberry growers are taking advantage of the heavy ice and sanding operations seem to be more extensive than usual.

P.E.M.



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On Saturday, January 14, we had a heavy rain which caused much flooding and melted all our snow. The mean temperature for the month of December was -1.4 degrees C as compared with the 50-year average of -3.1. Total precipitation was 159.4mm compared with 50-year average of 106.4.

Winter is about half over at this date and we have escaped reasonably well up to this point. (February 16) The mean temperature for January was -5.3 degrees C which is slightly warmer than the 50-year average of -5.8. Our total precipitation for the month was 238.4 mm made up of 153.2 mm of rain and 91.8 cm of snow. Conditions on the bogs are reasonably good.

I.V.H.

Massachusetts

Weather

February was a persistently cold month, averaging 7.1 degrees a day below normal. This is the second coldest February in our records, exceeded only by 1934. Maximum temperature was 42 degrees on the 17th and minimum -2 degrees on the 11th. There were no days with warmer than average temperatures, which is extremely rare. Cooler

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than average periods were the 1st-6th, 8th-12th, 19th-22nd and the 28th.

Precipitation was only 1.33 inches occurring on only three days and was all in the form of snow. This is about 2/4 inches below normal for the month. The largest amount was 1.04 inches on the 7th. We are 3 inches above normal for the first two months of 1978 and about 3/2 inches ahead of 1977.

Snowfall totalled 16.4 inches, which is more than double our average. Snow fell on three days with 1 1/2 inches on the 7th as the largest storm. We were very fortunate to escape with as little snow as we did on the 7th, other areas were hit much harder. Boston measured 26 inches, and areas within 15-30 miles of us came up with three to four feet.

Charts

The 1978 Weed, Fertilizer and Insect and Disease Control Charts are being printed now and will be mailed, hopefully by the middle of March. Growers are reminded to read and follow all cautions and other recommendations on these charts. This is extremely important considering the emphasis on clean environment. Anyone not receiving charts should contact the Cranberry Station in East Wareham.

Frost Warning Service

The Cape Cod Cranberry Growers Association is again sponsoring the telephone frost warning service. Applications were mailed to all growers in early March. If a grower has not received an application he should notify Mr. Irving E. Demoranville, treasurer of the Association, Cranberry Experiment Station, East Wareham, MA 02538. There is a spot on the application for a donation to the telephone answering service which is also sponsored by the Association and is in operation during the frost season at the Cranberry Station. This is a very valuable part of the frost warning for various reasons. There is a message on the recorder every day during the frost season, whether a frost warning is sent or not. We wish to remind the growers using the answering service that the recorded message will not be available before 1:20 in the afternoon or 8:20 in the evening. The frost pad for writing down the message has proved very popular and will be mailed to growers subscribing to the service. All applications and payments should be returned by March 25 in order that the necessary arrangements can be com-

Continued on Page 16

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WISCONSIN CRANBERRY GROWERS' ASSOCIATION

The meeting was called to order by President James Whitrock at 1:30 p.m. on January 10, 1978.

Alan Morrison, from the weather service, addressed the growers on new weather stations at various points in the state.

Marge Dishlager, banker from First National Bank was introduced and told about her cranberry promotion discussion during legislation at Madison.

It was voted to continue frost warnings as previously done.

Lew George, Wildlife Biologist, U.S. Fish and Wildlife Service, Green Bay, discussed the importance of wetlands and wildlife habitat, mentioning permits, wetland maps and zoning.

Ed Brick and D.N.R. Jim Kurtz from the bureau of legal services in Madison, toured some marshes and talked of regulatory programs of the future. Water quality, rather than water quantity was stressed.

Leo Sorrenson, chairman of Water and Wetlands, discussed Bills 320 protection, 1026 on water permits, 749A on wetlands, and their activities this past year acquainting agencies with harvesting of berries.

Henry Stratska of the U.S. Army Corps of Engineers discussed Bill 404 of 1972; also the discharge of dredged materials, permits, and maintaining structures.

It was voted to adopt the following resolution:

Be it resolved: studying the present water laws as they affect cranberry culture, with a view toward possible revision of such laws consistent with cranberry culture and the public interest.

Officers for the coming year are: Robert Amundson, President; Don Laudgraf, Vice President; George Klingbeil, Secretary; Betty Laudgraf, Treasurer; Wayne Duckart, John Rezin and Richard Getsinger, Directors.

It was voted to increase membership fees to \$20 a year, associate membership to \$100, and a 2¢ voluntary per barrel assessment on 1976 crop.

The Association also voted to contribute toward the Warrens festival.

At the conclusion of the business meeting, President Robert Amundson appointed a Water Committee consisting of the following: Leo Sorrenson, Chairman and Richard Indermuhle, Charles Lewis, Richard Getzinger, David Rezin, Tom Harkner and John Roberts.

Wisconsin

Frost penetration continued to increase during the last half of February as temperatures remained below normal. Frost depths averaged 16 inches as of Feb. 24, an increase of 4 inches from two weeks earlier. This was still less than the average of 19 inches for a late February date from 1962-77. Frost was deepest at 35 inches in 1968, a winter with little snow cover. Other years of deep frost penetration for this time of the

season were 1963 and 1965 at 32 inches. A year ago frost depths averaged 30 inches. Frost penetration for a winter season is usually greatest in late February.

The deepest frost is located in the extreme northwest part of the State. Because of the high moisture content in the soils, most of the frost is much harder than a year ago. This means the frost will leave the ground slower in spring than a year ago when the dry frost dissipated rapidly during a very warm March.

The snow cover was reduced slightly in the past two weeks. Snow depths averaged 12½ inches as of Feb. 24, a decline of 1½ inches. Some settling and melting occurred during the period of warmer temperatures on Feb. 23-25. Snowfall during February was light, averaging well below the normal monthly total of 9 inches. Despite the light snowfall, snow depths changed little during the month as temperatures were consistently below freezing. Snow cover for a late February date averaged 10 inches from 1962-77. Snow was deepest at 21½ inches in 1971. Other years of heavy snow cover for this time of the winter season were 1962 at 19 inches and 1967 at 18 inches. The least amount of snow on the ground in late February was 3 inches both a year ago and in 1966.

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- 18 whole wheat bread slices
- Soft butter or margarine
- 1/3 cup cranberry-orange relish
- 1/3 cup prepared mustard
- 1/3 cup catsup
- 12 thin slices cooked ham
- 6 lettuce leaves
- 6 American cheese slices
- 6 tomato slices

Spread 12 of the bread slices with butter. In a small bowl, mix cranberry-orange relish, mustard and catsup. Spread some of the mixture on each of the 12 bread slices. Place ham slices and lettuce leaves on each of 6 of the bread slices, top with second 6 spread bread slices. Top each with cheese and tomato slice. Top with remaining bread slices and cut into halves.

**CRANBERRY CHICKEN SALAD
IN PITA BREAD**
(Serves 6)

- 2-1/2 cups diced cooked chicken
- 1/3 cup salted peanuts
- 1/2 cup thinly sliced celery
- Mayonnaise
- 6 large pita breads, about 7" across
- 12 lettuce leaves
- 1 can (1 pound) jellied cranberry sauce

In a bowl, mix chicken, peanuts and celery with enough mayonnaise to make a thick mixture. Cut pita breads into halves and open but do not separate sides. Cut jellied cranberry sauce into 12 thin slices. Place 2 lettuce leaves and 2 cranberry sauce slices into pita halves. Fill pita halves with chicken salad mixture.

**CRANBERRY OPEN FACE
SANDWICH**
(Serves 6)

- 6 whole wheat bread slices, toasted
- Soft butter or margarine
- 1/2 cup whole berry cranberry sauce
- 6 thick slices chicken or turkey
- 6 tomato slices
- 6 American cheese slices
- 6 bacon slices, cooked

Spread one side of each bread slice with butter. Spread each with cranberry sauce. Top with slices of chicken, tomato, cheese and bacon. Place under broiler and broil until bacon is hot and cheese is melted and lightly browned. Serve at once.

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INTERNATIONAL CONSTRUCTION EQUIPMENT
INTERNATIONAL HARVESTER COMPANY

Ocean Spray Cranberries, Inc., has announced the appointment of Lesley F. Franconi to the position of Home Economist with the Research and Development Department.

Ms. Franconi will be headquartered at the firm's new corporate office location in Plymouth, Massachusetts, and will be responsible for company activities in the Home Economics area.

She will also have responsibility for a demonstration kitchen located within the Cranberry World Visitors Center, a museum/pavilion constructed adjacent to the new office and open to the public eight months each year.

Prior to joining Ocean Spray, Ms. Franconi served as Home Economist for the Wm. Underwood Company and the Kenyon and Eckhardt Advertising Agency.

She received her degree in Home Economics from Drexel University. She is chairman of the Boston Group of Home Economists in Business, and is a member of the American Home Economists Association.

UFW BOYCOTT PLANNED

The United Farm Workers union (UFW) is setting up "neighborhood support organizations" in Chicago, New York and Boston in preparation for a renewal of the boycott

tables. Boycott apparatus also is being set up in the East and Midwest and in Florida by the so-called National Farm Worker Ministry.

Cesar Chavez is turning to the coercive boycotts because he is having trouble getting growers in California to sign contracts forcing their employees to join the UFW in order to work in the fields. The discriminatory union hiring hall reportedly is the striking point in the UFW's contract negotiations with six Delano area growers where the union won elections in 1975. Unable to win a compulsory union membership contract through legal bargaining, Chavez is targeting the "Delano Six" in the new boycott.

MASS. NEWS NOTES

Continued from Page 13

pleted prior to the frost season. Applications returned after this date will result in the subscriber's name being placed at the bottom of the telephone list. There were 183 subscribers last season, 10 more than in 1976. This is one of the few times when we have logged an increase in subscribers, let's keep it up. Don't forget the dues payment also.

**WISCONSIN VOTERS
OPPOSE COMPULSORY
BARGAINING**

A majority of the people of Wisconsin where public sector compulsory collective bargaining originated in 1959 now oppose it.

A statewide public opinion survey showing that 57.5 percent of Wisconsin voters oppose a state law which compels government agencies to recognize and bargain with public sector unions has been released by PSRC.

The Research Council has sent the survey results to Governor Schreiber and the members of the Wisconsin state legislature. David Y. Denholm, Executive Vice President of the Council, urged that Wisconsin's public sector bargaining law be repealed.

The study was conducted for the PSRC by Decision Making Information of Santa Ana, California, a nationally known public opinion survey research firm. It is a result of 800 telephone interviews conducted between November 20 and November 26, 1977. Those interviewed were selected by scientific sampling techniques as a representative sample.

Those interviewed were asked:


"There is a law in Wisconsin which requires elected public officials to recognize and bargain with a certified union. This law also requires public employees who do not want union representation to be represented by the union and to pay a fee to the union. Do you favor or oppose such a law?"

Favor	29%
Oppose	58%
Don't Know	13%

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CRANBERRIES

MAY 22 1978

THE NATIONAL CRANBERRY MAGAZINE

Volume 45, Number 4

April 1978

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In This Issue . . .

USDA URGES CHANGE	1
CRANBERRY POLLINATION IN NEW JERSEY	6
INVESTMENT \$COOP (New Feature)	10

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CHANGES URGED IN CRANBERRY RULES

A U.S. Department of Agriculture-recommended decision to amend the cranberry marketing order program would update producer allotments and, for the first time, include a public member on the committee which administers the program.

The program covers cranberries grown in Washington, Oregon, Massachusetts, Rhode Island, Connecticut, New Jersey, Wisconsin, Michigan, Minnesota, and Long Island, N.Y.

Barbara Lindemann Schlei, administrator of USDA's Agricultural Marketing Service, said one major change would provide for the updating of allotment bases for producers who are now under the program as well as provide for the entry of new producers. Producer allotments, she explained, provide the means for tailoring yearly cranberry marketings to market requirements.

A second major change, she said, is of interest to consumers as well as producers. This change would

PESTICIDE BILL SIGNED

A bill to more stringently control the use of pesticides in Massachusetts was signed on January 30th by Governor Michael S. Dukakis.

Passage of the legislation means that a new pesticide regulatory program will be administered by the state in accordance with federal law, rather than by the U.S. Environmental Protection Agency.

The newly reorganized and expanded pesticide board will be placed in the state Food and Agriculture Department. Its first assignment will be to develop a comprehensive plan for compliance with federal laws restricting the use of certain pesticides.

provide the authority for a public member to serve on the Cranberry Marketing Committee. The committee, now made up of seven grower members, with an alternate for each, investigates supply and demand conditions and recommends to USDA, each season, the total quantity of cranberries it considers appropriate for marketing in that season.

Recommendations in detail on the proposed changes are in the March 23 Federal Register. Comments may be filed until April 24, in four copies, to the Hearing Clerk, Room 1077-So. Bldg., USDA, Washington, D.C. 20250, where they may be reviewed by the public.

Copies of the recommended decision are available from the Director, Fruit and Vegetable Division, AMS, USDA, Washington, D.C. 20250.

CRANBERRY IRRIGATION WAS MEETING TOPIC

Practical solutions to cranberry irrigation problems was the topic of an Oregon State University Extension Service workshop held March 20 in the conference room of the Ocean Spray Cranberries Plant south of Bandon, according to Arthur Poole, Coos county extension agent.

Marvin Shearer, extension irrigation specialist, discussed problems cranberry growers encounter with the installation and operation of irrigation systems. Topics considered included (1) characteristics and limitations of pumps, their selection and fittings; (2) water hammer problems, how they develop and what can be done about them; (3) nozzle size, spacing and pressure relationships required for uniform distribution of water, and, (4) water distribution requirements for sprinkler systems used for heat and frost protection. Actual problems were illustrated and analyzed.

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BERRY GROWERS

MEET AT DINNER

A dinner meeting of the Ocean Spray Cranberries, Inc. Grower-Owners was held on the West Coast on March 12.

Director Frank O. Glenn, Jr. introduced the officials of Ocean Spray Cranberries, Inc., from Plymouth, Mass. as follows: Harold S. Thorkilsen, president and chief executive officer; Endre Endresen, Jr., senior vice president, Manufacturing; John Ropes, director of grower relations, from Aberdeen; Thomas Waggoner, West Coast area manager.

This was the annual visit of the Ocean Spray Management team from headquarters in Plymouth. The current state of the business as well as various other topics were discussed by management. Previously prepared grower questions were answered in depth as well as additional questions from the floor. With only a few exceptions all local cranberry growers as well as those

from Clatsop County, Ore. were present.

The management team had met previously with the Vancouver, Canada and the Grayland grower-owners, and at the conclusion of this meeting were headed toward a meeting with the Bandon, Ore. grower-owners of Ocean Spray Cranberries, Inc.

OCEAN SPRAY ELECTS VICE CHAIRMAN

William M. Atwood of Marion, Mass., has been elected vice chairman of the Board of Directors and chairman of the Budget and Finance Committee for Ocean Spray Cranberries, Inc.

Mr. Atwood is vice president of the A.D. Makepeace Co. of Wareham, Mass., the largest cranberry producing firm in the world.

He has been a member of Ocean Spray's Board of Directors since 1974. The company is a national marketing cooperative made up of over 800 cranberry and citrus growers.

Mr. Atwood is holder of a B.S. in Cranberry Curriculum and M.S. in Agronomy from the University of Massachusetts.

He has served as director for the Wareham Cooperative Bank and has been Chairman of the Board for the National Bank of Wareham since 1970.

Mr. Atwood is a native of Springfield, Mass. He and his wife, Nataie, have three children.



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News from Mass. Farm Bureau

State Representative Melvin King of Boston has filed three bills in the legislature which would give preference to Massachusetts farmers in the approximately \$300 million worth of food purchases made by state and municipal agencies. King's main bill (H-700) would allow official purchasers of food to accept higher bids for Massachusetts-grown products, up to 10 percent above the lowest bid to supply imported out-of-state foodstuffs.

Recommended values for farmland covered under Chapter 61-A, the Farmland Assessment Act, have been released by the Farmland Assessment Valuation Committee. These recommend values apply to the fiscal year beginning July 1, 1978 and ending June 30, 1979:

Category	Value Range (per acre)
Cranberry bog	550-850
Tobacco, Sod	500-800
Nursery	230-350
Vegetables	170-260
Orchards, Vineyards	230-350
Forage cropland	90-140
Tillable pasture	40-70
Permanent pasture	30-60
Productive woodland (includes sugarbush and wild Christmas tree stands)	20-40
Christmas tree plantations	30-60
Necessary related land: e.g., farm roads, ponds, waterways, sand and gravel pits for on-farm use exclu- sively, land under farm buildings not including land under retail sales buildings and residences	20-30
Non-productive land: e.g. wetland, scrubland, rocky land	10-20

NOTE: In valuing land classified as agricultural or horticultural land under Chapter 61-A, the Board of Assessors must consider only indicia of value which such land has for agricultural or horticultural uses.

The above ranges of value are to be used as guidelines in conjunction with Board members personal knowledge, judgment and experience as to local land types, cropping practices and values in these uses.

Farm Bureau has filed a bill to make farm tractors exempt from the Massachusetts sales tax. This bill has been reported out of committee favorably, and is coming along. Gov. Dukakis vetoed a similar bill in late 1977. But Farm Bureau doesn't give up.

We're concerned about the bill (H859) to restructure the state Conservation Commission. FB wants the power to remain within the local Conservation Districts, rather than be usurped by people at the state level.

Lots of other bills being filed, and your Farm Bureau is watching many of them with particular interest. For example, a bill was filed to require snow tires on all vehicles between November 1 and April 1. (What about farm trucks?) A bill was filed to require rest rooms in most commercial buildings. (What about farm stands?) And a bill was filed to require a no-smoking area in most food service buildings. (Again, what about farm stands?)

In Washington, the House of Representatives voted down the emergency farm bill, and AFBF president Allan Grant noted that such a bill was not really necessary. According to Grant, Secretary of Agriculture Bergland has the authority under the Food and Agriculture Act of 1977 to make acreage diversion payments on acreage set-aside under announced farm programs.

To paraphrase Farm Bureau's position, we have the mechanism to assist farmers under existing laws, and we should act on this rather than get tangled up in the complex process of developing a new law.

Farm Bureau staff is very much involved in the process of setting up the mechanism for the new Agricultural Preservation Act (purchase of development rights on farmland) in Massachusetts. Both Field Services Director Jay Slattery and Information Director Greg Finn are serving on sub-committees which touch on the legal and informational aspects of the program.

However, when farm prices go up it is often treated as a front page story, and characterized as bad news to consumers. People need to understand that high prices on everything—including food—are caused by inflation.

Environmental Protection Agency is reviewing the pesticide 2,4-D to determine whether its uses should be continued. Environmental groups are protesting the use of the chemical, and the EPA has decided to hold a review. This review process usually takes about a year, and is followed by an announcement from EPA.

Meanwhile, in Washington, the American Farm Bureau Federation has urged a Senate Committee to reject a proposal to reduce truck weight and width limits on Interstate highways. AFBF says such a provision would render millions of dollars worth of trucks and trailers obsolete, and would add further to production and marketing costs.

Massachusetts tree farm program, sponsored in this state by the Mass. Farm Bureau Federation, is growing every day. This system of assisting landowners in growing trees as a crop was first put into practice in Massachusetts in 1948. Now woodland owners are looking to the Mass. Tree Farm Committee as the primary organization for promoting woodlot management.

Growers may soon be able to have blueberries that are bluer, ripen faster, and store longer. Two new growth regulators applied as preharvest fruit sprays make the difference.

They are SADH (succinic acid-2, 2-dimethylhydrazide) and ethephon (2-chloroethyl) phosphonic acid, used singly and in combination on rabbiteye blueberry plants grown commercially in Alma, Ga. Enhanced color brought about by ethephon or SADH-ethephon advances and concentrates fruit ripening, a distinct advantage for mechanical harvesting.

Plant physiologist Elias D. Dekazos at the Russell Research Center in Athens, Ga. reports that in five treatments on rabbiteye blueberries (cultivar "T-19"), all fruit receiving ethephon treatments ripened significantly earlier.

Applications of ethephon and SADH-ethephon brought 95% of the berries to full ripeness by the harvest date while untreated bushes yielded only 36% fully ripe at the same date. The treatments advanced maturity and reduced the harvest period by one week.

The ethephon spray also accelerated fruit abscission. Multiple applications of ethephon and SADH-ethephon had no significant effect on berry size but reportedly improved quality of the fruit.

Application of SADH alone increased blue color by 7.4%, ethephon alone increased the color by 15%, and SADH-ethephon by 22.1%, compared to unsprayed plants. The effect of SADH and ethephon on fruit coloring seems to be additive. The application of SADH-ethephon affected the cell wall thickness and texture of sprayed berries, yielding fruit with the best firmness.

Importantly, the SADH-ethephon treatment drastically suppressed the rate of softening of stored berries. Dr. Dekazos also

observed that ethephon-treated berries had less mold; the effect was to extend storage life.

Another important quality characteristic—the natural waxy bloom that gives the appearance of freshly harvested blueberries—was retained after 40 days storage by the fruit sprayed with SADH and/or ethephon.

Registration by the Environmental Protection Agency for both growth regulators has been approved for apples, cherries, and blueberries.

NEW SAFETY MANUALS FOR OPERATORS AND MECHANICS

Three new safety manuals for chain and wheel trenchers, skid-steer loaders and loaders/backhoes have recently been produced by the Industrial & Construction Equipment of the Farm and Industrial Equipment Institute, Chicago, Illinois.

Easy-to-read and generously illustrated, the manuals were prepared to provide operators and mechanics with basic safety procedures and warnings for their day-to-day work with the equipment. Information in each of the manuals has been developed from the combined experience of several manufacturers of each product and is designed to be supportive to specific safety information and teachings issued by individual manufacturers and the safety community.

Production of safety manuals is another facet of a long-standing program by FIEI members to improve safety for equipment operators and mechanics. For pricing information and to order the new manuals, contact: Hubbard Publishing Co., Inc., P.O. Box 525, Windsor, WI 53598. Phone: 608/846-9293.



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Cranberry Pollination

in New Jersey

P. E. Marucci and

H. J. Moulter

*Cranberry & Blueberry Research Laboratory
New Lisbon, N. J.*

Courtesy Acta Horticulturae, 1977

The cranberry industry of the United States is now about 150 years old. It has grown to a sizeable and important economic enterprise in the states of Massachusetts, Wisconsin, New Jersey, Washington and Oregon. In New Jersey, which now ranks third in cranberry production, a record crop of 250,000 barrels was produced in 1974. Yields per acre have risen sharply from 19 bbls. per acre in 1950 to 80.7 in 1974. Prominent in the several factors which have contributed to this is the more effective pollination achieved by the more intense use of honey bees.

The cranberry flower is typically entomophilous. A good description of the anatomy of this flower is given by Chester Cross (1). This delicate, pretty, little structure, which has a hardiness which belies



its appearance, possesses the classic adaptations which make it attractive to bees. The bright white to pinkish corolla is easily seen. The tight ring of eight stamens clustered around the base of the pistil, just above the nectaries, forces the bee seeking nectar to insert its proboscis down through the ring. As a

result of this act, she is showered with pollen grains emitted through a tiny opening of a tube-like extension of the pollen sac. The fact that the blossom hangs downward facilitates transfer of pollen to the insect. The collection of pollen by the bee is enhanced by its very energy. The activity of its relatively heavy body on the very light flowers, attached to the slender light flexible uprights, sets up jarring and vibrating motions which cause dehiscing of pollen. To complete nature's scheme, the prominent pistil is centrally located well above the stemens, and the sticky stigma collects pollen from the bee as it thrusts for nectar. The fact that the stigma does not become sticky and receptive, until the stamens of the same flowers have shed all of their pollen, serves to prevent self pollination.

In the early days of cranberry culture, wild bees provided much of the pollination, and there was little reliance on honey bees. As late as 1940, Franklin (2) recognized the value of bees as necessary pollinating agents, but he considered wild bee population in Massachusetts at that time to be sufficient to produce adequate fruit set. Roberts and Struckmeyer (3), working in Wisconsin in 1941, concluded that pollination was brought about by wind borne pollen reaching the pistils. They stated that honey bees did not touch the pistil in visiting cranberry flowers but that "their jarring of blossoms during their visits would appear to be of prime importance in any aid to pollination which they render." As a result of this work, some cranberry growers in Wisconsin, in order to

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simulate pollination, actually dragged rope over vines to jar and vibrate blossoms in an attempt to help achieve pollination. A belief in wind pollination may still persist among a few cranberry growers. Chester Cross (1) in 1965 and Tomlinson (13) in 1974 refer to some obstinacy in this regard.

Cranberry pollen, unlike that of amenophilous flowers, is heavy, sticky and not easily wind borne. Positive evidence of the obligate relationship between bees and cranberry pollination is now abundant and convincing, but it was slow in developing. Cranberry growing was about 100 years old in the United States before Ray Hutson (4), working at the New Jersey Agricultural Experiment Station, first demonstrated the value of honey bees in cranberry production. In his experiments in 1926, a fruit set of 56% was obtained on vines caged with bees as compared to only 8% where bees were excluded. This work, however, was buried in a report of pollination of other fruits and was little noted except by a few New Jersey beekeepers who urged growers to use some honey bees. This use only gradually increased and by 1946 the most enthusiastic beekeepers were recommending only one hive for each five acres of bog, Stricker (5).

The research which stimulated the most interest and had the greatest impact on improving pollination practices in cranberry culture was the work of Farrar and Bain (6) in Wisconsin, reported in 1947. They showed very clearly that honey bees do work cranberry flowers in such a manner as to achieve pollination and that the lack of bees reduced yields to negligible amounts (see table 1).

Working in New Jersey in 1948 and 1949, the late Professor Robert S. Filmer (7) presented data, shown in table 1, to show that wind and the mechanical jarring of blossoms were ineffective in promoting pollination of cranberries (5). He also found that the organic fungicides, fermate and zerlate, which are necessarily applied during full

bloom, did not interfere with pollination, while DDT was definitely deleterious. He obtained an excellent set of cranberries by concentrating honey bees at the rate of one hive per 2.5 acres, which was more than was generally used at that time. He also noted that the wild bee population was inadequate and that the set of berries decreased as the distance from the hives increased.

In 1953, Filmer showed that the yield of cranberries could be increased from 12 to 34 barrels per acre by increasing the population of honey bees from one hive per two acres to one hive per acre (8). His study of a large mass of data indicated that high yields of cranberries were associated with high numbers of blossoming uprights per unit area. The wide range of blossoming uprights and blossoms per square foot, which he found in individual bogs, and from bog to bog on the same property, led him to believe that cultural and environmental factors which affected blossom concentrations were very important in cranberry production.

The relationship of the size of cranberries to the seed content was

studied in New Jersey in 1956 and 1957 by Filmer, Marucci, and Moulter (9). They found a direct relationship between size and seed count in the Champion, Howes, Early Black and Jersey varieties. Berries having only one of the four carpels with seeds were almost always small. Large berries had maximum seed counts ranging from 32 per berry in Champions to 20 in Howes. The average seed count was 12 for Early Blacks, Howes and Jerseys, and 17 for Champion. Only one berry in 8,000 examined contained no seeds. Roberts and Struckmeyer (3) found that in Wisconsin seedless cranberries were "not common."

In 1956 and 1957, Marucci and Filmer (10) studied cranberry blossom blast. Cranberry blossoms which fail to set fruit, unlike those of deciduous fruits, do not drop but dry up and remain affixed to the stem. These are called "blasts," and the fact that they almost always greatly outnumber berries is a condition which can understandably be of concern to growers. It was concluded that blasted blossoms are merely the result of natural attrition or overproduction

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of blossoms. This was evidenced by the fact that uprights, which had smaller numbers of blossoms, had a lower blasting rate (higher percentage set) than uprights with larger numbers of blossoms. Artificial pruning of blossoms from upright resulted in a higher percentage set of remaining blossoms. Blossoming and fruiting data showed that well-managed bogs had more blossoms and more berries per square foot, but they did not have more berries per blossoming upright and they actually had more blossom blast. High bee concentrations can reduce blast by enabling the cranberry plant to produce at its maximum potential, but it is only rarely possible to reduce blasting of blossoms much below 50% in New Jersey. In regard to the percentage of blossoms which form berries in Massachusetts, Bergman (11) states that "records of many years show that seldom do more than 40% of the blossoms set fruit."

Unusually high percentage sets (low blast rates) are sometimes observed in New Jersey in areas on bogs where vines of several varieties are growing intermingled. Milton Stricker (5) speculated in 1943 on the advantages of cross pollination when he noticed an unusually high percentage set of fruit (73%) in

vines containing a mixture of several "native Jersey" varieties. In preliminary tests, Marucci and Filmer (12) presented data which showed that higher percentage sets, larger berries, and higher seed counts were benefits which resulted from cross-pollination.

As it is with most fruits, the period of flowering is the most critical stage in the development of the cranberry, and the magnitude of the crop is largely dependent on favorable weather conditions for the flowers and the bees at this time. Fortunately, the cranberry does not begin to bloom until very late in the spring when the frequency of frosty nights has moderated. Nevertheless, frost damage is a big threat almost every year. The sandy peaty soil which does not retain heat well and the low lying position of bogs are conditions which bring about frosts on clear cloudless nights. Temperatures on cranberry bogs on such nights frequently will be ten to twelve degrees colder than the adjacent upland only eight to ten feet higher. Frost protection is, therefore, a vital function in cranberry production and has a direct bearing on pollination. Aside from the outright kill of blossoms, the effect of low temperatures may be an in-

hibition of pollination by causing sterile pollen and malfunctioning of nectaries and ovules.

A cause of frustration for cranberry growers during the pollinating period is the apparent disdain of the honey bees for cranberry blossoms. The pollen and nectar of other flowers in the cranberry region apparently provide better foraging for bees. In New Jersey, wild azalea (*Azelea viscosa*), privet *Andromeda* (*Xolisma ligustrina*), stagger bush (*Pteris mariana*), leucothoe (*Leucothoe racemosa*), blue-huckleberry (*Gaylussacia frondosa*), black huckleberry (*Gaylussacia baccata*) and red root (*Lachnarithes tinctoria*), an important weed of cranberries, are all competitors for the honey bees' attention. An old saying of cranberry growers in New Jersey is that "honey bees will not work a cranberry bog until after July 4th (Independence Day)." There is some truth to this adage. Honey bees are most active late in the flowering period when most of the competitive flowers have dropped.

Two characteristics of the cranberry flower fortunately balance out its unattractiveness to bees and aid in fruit setting. The cranberry pollen is divided into four cells (tetrad) and is capable of producing four functional germ tubes. This fact, discovered by Roberts and Struckmeyer (3), makes it possible to achieve good pollination with relatively fewer transfers of pollen by the pollinators. A second fortunate circumstance is the long flowering period which may extend over four weeks, which insures that sufficient blossoms will be pollinated even though the bees may not be very active during the first week of flowering. Marucci (unpublished data) manipulated small cages on a cranberry bog of the Howes variety to exclude bees in order to determine the effect of various exclusion periods on fruit set. He found that the percentage of blossoms forming fruit was not reduced when bees were excluded for one or two weeks. Surprisingly, even a three-week exclusion period

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was not harmful if an open period of one week was allowed during the peak of bloom, but a one-week open period at the beginning of blossoming greatly reduced set.

It is now generally acknowledged that the recent upsurge in cranberry production in New Jersey is the result of more efficient mechanical water, harvesting, and improved cultural methods. One of the most important of these is a more intense use of honey bees.

Table 1.
SUMMARY OF DATA COMPARING FRUIT SET
WITH AND WITHOUT BEES

	% Blossoms Set	Berries per Square Foot	Berries per Upright
Farrar and Bain (2)			
Wisconsin Data			
Bee Cage	—	171	—
Cage with no bees	—	10	—
Open pollination	—	124	—
Filmer (7) New Jersey Data			
Cage with no bees			
Blossoms jarred	7.1	15	0.26
Blossoms not jarred	5.8	14	0.21
Open pollination	52.0	116	2.00
Filmer, Marucci and Moulter (unpublished) New Jersey Data			
Bee Cage	34.4	99	1.10
Cage with no bees	1.7	5	0.06
Open pollination	35.8	106	1.09

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Investment Scoop

by Martin B. Person, Jr.
President, Gage Wiley & Co., Inc.



"Springtime — and the Pickin' Ain't Easy"

I suspect you have not been enchanted with the investment opportunities offered by the stock market in the past decade. Maybe you don't even look at the economic section of the daily paper as you check the ball scores. The general decline of investor participation has been measured by the New York Stock Exchange which recently estimated that only about 25 million individuals now own stock compared with 31 million in 1970. Have these 6 million former capitalists lost faith in American business? Maybe they have decided that banks, bonds or bogs were more likely to provide the kind of growth of income and capital they had previously looked for in the financial pages.

In particular, the market value of real estate has enjoyed a general rise over the past 10 years in

various sections of the country, leading many individuals to the assumption that values there always keep pace with or exceed the current rate of inflation. Someone who recently sold his bog for a housing development or a shopping center has had the dubious pleasure of learning all about capital gains taxes, but there have been few owners of AT&T or I.B.M. who have recently enjoyed such capital delights.

The obvious question which anyone with capital in excess of short-term and emergency needs must grapple with is where to put it to work to best advantage. Where are the best values *now*, and what are the future prospects for various investment alternatives? How much personal care and involvement must you give to make the particular investment you choose a success?

What experience have you had with various form of investment, and in whom do you have confidence to ask advice?

The key ingredient, in my opinion, is capable management. No investment management can be 100% right in their decisions, but able and experienced professionals can aid you in achieving better results than generally are obtained by most individual investors. The do-it-yourself formula of buying and holding just hasn't been the right one in recent years. The groups that have done the best, and that I feel will continue to outperform the rest of the market, are the so-called secondary issues which can be identified only through careful research. Once bought, they must be watched closely and sold when they reach specific levels. While real estate values have generally outperformed the stock market in the past 10 years, I feel some of the best investment opportunities *today* are to be found in selected common stocks. If you'd like to receive my monthly MONEY TALKS with specific recommendations, please drop a line to me at P.O. Box 507, Plymouth, Massachusetts 02360.



Muriel Stefani
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—Robert Frost

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EPA RESTRICTS 16 PESTICIDE INGREDIENTS TO TRAINED USERS

The Environmental Protection Agency has restricted the sale and use of some 2,000 pesticide products, containing 23 potentially hazardous ingredients, to farmers and commercial users who have been certified and shown competent to use the products safely.

The products include agricultural insecticides used on such crops as cotton, wheat, soybeans, and some vegetables and fruits; certain weed killing compounds; and pesticides for the control of rats and mice.

"These restrictions begin a new chapter in U.S. pesticide use," said EPA Administrator Douglas M. Costle. "Competent growers and applicators will continue to have the chemical tools they need to raise crops and control pests. The public will be protected from possible illness or environmental contamination resulting from unskilled use of these compounds."

This restriction of hazardous pesticides to certified users or persons working under their supervision is required by the 1972 federal pesticides law. The 23 ingredients were restricted because tests or actual experience showed that these compounds can poison people through excessive skin contact or inhalation or that the ingredients might harm birds, fish, and other wildlife if misused.

Costle said the Agency is considering limiting the use of 16 other ingredients to trained applicators and that more pesticides would be studied for similar action in the future. However, he added that, "the vast majority of pesticides used by backyard gardeners and homeowners will continue to be available under the same conditions that apply now."

All told, about 35,000 different pesticide products made from more than 1,400 ingredients are sold in the U.S.

Certification is required by the 1972 pesticides law. Most states have been certifying pesticide applicators for a year or more under

EPA-approved programs. In fact, to date, more than one million farmers and ranchers—or roughly two-thirds of those expected to seek certification—have been trained. More than 80 percent of the country's commercial applicators, such as household pest controllers and aerial applicators, have been certified—or more than 233,000 people.

To become certified, most applicators undergo training provided by the Cooperative Extension Service and other state agencies under joint funding from the U.S. Department of Agriculture, EPA, and the states.

Farmers most often are certified by attending a one-day classroom session on safe methods of mixing and applying pesticides, proper storage and disposal techniques, and emergency first aid measures. States may also choose to certify farmers through a home study course, a written exam, or a physical demonstration of competency. State certification programs must be approved by EPA. Thus far, all states and territories except Colorado, Nebraska, and Washington, D.C. have the local legislation needed to conduct certification.

Under the federal pesticides law, EPA requires that commercial applicators pass a written exam before being certified. Once certified, farmers and other users are usually given wallet-sized cards to present when purchasing restricted pesticides.

Makers of the 2,000 restricted products have 60 days to submit new product labels to EPA that include the phrase "Restricted Use Pesticide" and other required wording. These producers are allowed 120 days to attach the labels or supplemental labeling to new restricted products leaving their plants.

In cases where a pesticide has both restricted and unclassified uses, a manufacturer may remove it from the restricted category by dropping those uses. Otherwise it will remain restricted.

EPA said that uncertified farmers and other users may continue to buy and apply pesticides slated for restriction until they have been re-labeled at the retail level. After that point, uncertified growers could receive a simple warning or a maximum \$1,000 fine for using restricted pesticides. Commercial applicators or sellers found guilty of violations could receive a maximum \$5,000 penalty per offense.

The Agency estimated the cost to the pesticide industry of making new labels for the 2,000 restricted products at \$4 to \$4.5 million.

The 23 ingredients were proposed for restricted use on September 1. Copies of the list of restricted products may be obtained from EPA, Office of Pesticide Programs, Operations Division (WH-570), 401 M Street, S.W., Washington, D.C. 20460.

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REGIONAL NEWS NOTES

Washington

March temperatures were mild, maximum temperature was 66 degrees on the 22nd, minimum was 28 degrees on the 1st. Warmer than average days were the 18-19th, 21-22nd. Freezing and below days occurred on the 1-2nd, 5th, 10th, 14-18th, 31st.

Precipitation totalled 5.95 inches, this is 3.31 inches below normal. There was measurable precipitation on 16 days with the largest single storm on the 24-25th with 1.98 inches. The 6-7th registered 1.10 inches.

Cranberry Field Day Friday, June 23rd, Coastal Washington Research and Extension Unit, Long Beach, Washington, 10:00 A.M.

A.Y.S.

New Jersey

March was unusually cold and wet. The first half of the month was a continuation of February weather. During the first 10 days of the month the average minimum daily temperature was 14.5 degrees

F which is 9.5 degrees F colder than the February average minimum and 21.6 colder than the normal minimum for March. The daily maximum temperature averaged 35.0, 8 degrees colder than the February maximum and 17 degrees colder than the March maximum. Temperature moderated after the middle of the month and the average for the entire month was 38.6 degrees F, or 3.2 degrees colder than normal.

Snow occurred on six days with a total of 13 inches. It was the third snowiest March, exceeded by the 18 inches in 1958 as well as 1969. Total precipitation (melted down snow plus rain) was 4.53 inches or 0.74 above normal.

The winter turned out to be even more severe than that of 1976-1977. The average temperature for December through March was 33.3 degrees F in 1976-1977 as compared to 31.2 degrees in 1977-1978. Snow totaled 42.80 inches this winter compared to only 15 inches in 1976-1977. Average snowfall at Pemberton is about 18 inches.

The hard winter will undoubtedly have some influence on blueberry production this year. In a

survey of representative fields winter kill of fruit buds of the Weymouth variety was 22% compared to only 12% last year. The more serious type of damage, kill of wood, is not detectable until warm weather occurs, when canes and fruiting laterals gradually die back. As of April 10th there is already some significant damage in the form of desiccating wood in the New Lisbon area, especially on the Rancocas variety.

P.E.M.

Nova Scotia

On March 17 we experienced a heavy snowfall with 15 cm. We also had a big snowstorm on March 4. Temperatures for the most part have been seasonal. Activity on the bogs will not commence for at least another month.

I.V.H.

Massachusetts

Weather

March averaged 4.2 degrees a day below normal, the coldest since 1967 and sixth coldest in our records. The period from December to March this winter was just as cold as the same period last year which was considered an extremely cold winter. However, a very cold February and March in 1978 more than made up for a warmer December and January to keep us in the icebox.

Maximum temperature was 57 degrees on the 29th and minimum was 5 degrees on both the 3rd and 9th. Warmer than average days were the 23rd, 24th, and 27-29th. Cooler than average periods were the 1-8th, 16-18th and 25th.

Precipitation totalled 3.30 inches, or 1½ inches below normal. There was precipitation on nine days with 0.91 inch on the 14th as the largest storm. We are about 1½ inches above normal for the first

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three months and about 3/4 inch ahead of 1977.

Snowfall was 18.7 inches occurring on two days, 9.5 inches on the 16-17th was the greatest fall. This is about 2½ times the average total in March. Our total for the winter was 60.6 inches which is more than twice our normal and a record.

Using the red Persian lilacs from our phenology project as an indicator, we will have an average to late spring. The lilacs are behind 1977, 1976 and 1974, but appear to be ahead of 1972 and 1975.

Cranberry Frost Warning Service

The frost warning answering service at the Cranberry Experiment Station will soon be in operation with the same telephone number as in the past.

Station	Place	AM	FM	Afternoon	Evening
WEEI	Boston	590 k	103.3 mg	2:00	9:00
WBZ	Boston	1030 k	92.9 mg	2:30	9:00
WPLM	Plymouth	1390 k	99.1 mg	2:30	9:30
WOCB	W. Yarmouth	1240 k	94.3 mg	3:00	9:00
WBSM	New Bedford	1420 k	97.3 mg	3:30	9:00

Preliminary Keeping Quality Forecast

Elements of our weather to April 1st incline to favor both the size and the keeping quality of the Massachusetts cranberry crop in 1978. There are five of a possible 10 points in favor of GOOD quality, while a year ago we had only two points at the same date. Because of the rough winter (dark for the buried cranberry vines) we would caution growers *against* the use of the late-water flood. Late-water crops in 1978 are likely to be small. On the other hand, we urge widespread use of fruit-rot sprays to respond to the strong market demand for fresh fruit cranberries. Follow carefully the recommendations on the spray chart.

Wisconsin

Although there was more frost in the ground at the end of February 1977 than on that date this year, it is likely that the frost will leave the ground slower in the spring of 1978. Most of the frost is much harder than a year ago because of the high moisture content currently in the soils. Last year the dry frost dissipated rapidly during the warm March temperatures. Even if the frost does come out of the ground in the remainder of March, soils will probably be too wet for any field work because of melting snow and a high saturation of moisture.

Farmers have been anxious for spring to arrive after the persistent cold winter weather. Despite a lot of uncertainty yet as to planting intentions, farmers have been ordering their seed, fertilizer, herbicides, and pesticides. While waiting for spring field work, farmers have been occupied with daily chores, meetings, auctions, taxes, machinery repairs, wood cutting, and ice fishing.

Temperatures remained below normal at the end of February and into early March, but moderated during the second week of March. Highs were in the teens and 20's at the beginning of the month, but rose to the 40's by the 11th and 12th. Precipitation continued light for March, being limited to about one tenth of an inch in the south late on the 10th and early on the 11th.

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strips open; and, in this installation, the strips needed frequent replacement.

Mr. Peter McStravic, Winton's warehouse manager, said that, "after installing RubbAir doors with insulated core construction (full thickness approximately 2 inches of rubber bonded construction) with full perimeter seals and fast bump open/self-closing hardware, the heavy outside doors can be left open during loading and unloading, and still maintain temperature and humidity. RubbAir doors have helped keep our rooms to within 1° of their setting in the course of a day—saving 2-3° temperature loss previously experienced. In a zero degree freezer, that was enough energy to pay for the doors in less than a year."

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For further information, contact Mr. J. F. Pouchot, Chase Bag Co., Foot of Marshall Avenue, Newport News, Virginia 23607. Phone: (804) 247-6676.

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On a Thursday night in Sweden, dinner traditionally starts with a hearty main dish of pea soup flavored with pork—and ends with hot-from-the-griddle pancakes served with lingonberries. These tiny berries, which flourish in the forest, are only a quarter of the size of the American cranberry, produced in bogs—but the fruits share a deep garnet color and a pleasantly tart, dry taste. They can be used in similar ways. In America, whole berry cranberry sauce, combined with raspberries, adds just the delicious fillip needed to set off a dessert of Swedish pancakes. At breakfast any time of year, cranberry sauce alone provides tartness for a Swedish-style Breakfast Omelette.

The tart-sweet cranberry flavor is popular, too, in other Scandinavian countries. Get out your electric mixer for Finnish Whipped Berry Pudding—it requires sustained high-speed whipping to achieve the light-as-a-cloud texture and delicate pink color that distinguish this favorite dessert of the Northland. The Finns use the juice of wild cranberries for their pudding. In America, cranberry juice cocktail provides the tang in this dessert that makes such a delightful ending for a filling meal.

SWEDISH PANCAKES WITH CRANBERRIES

(Serves 8)

- 2 cups unsifted all-purpose flour
- 1/4 cup sugar
- 1/2 teaspoon salt
- 6 eggs, well beaten
- 4 cups (1 quart) milk
- Melted butter or margarine
- 1 can (8 ounces) whole berry cranberry sauce
- 1 package (10 ounces) frozen raspberries, thawed

preheated griddle or skillet to shape pancakes 3 inches in diameter. Brown pancakes on one side, turn and brown on the other side. Serve with cranberry raspberry sauce as detailed above.

SWEDISH BREAKFAST OMELETTE WITH CRANBERRIES

(Serves 4)

- 8 egg yolks
- 2 cups milk
- 1 cup heavy cream
- 1/3 cup all-purpose flour
- 8 egg whites, stiffly beaten
- 1/4 cup butter
- 1 cup finely chopped smoked ham
- 1 can (8 ounces) whole berry cranberry sauce

In a bowl, beat egg yolks with milk and cream until well-blended. Gradually beat in flour until smooth. Fold in egg whites. Heat butter in a large skillet. Pour in egg mixture; lightly sprinkle ham over the top of egg mixture. Cook, without stirring, until very lightly browned on the bottom. Transfer pan to a preheated moderate oven (375° F) and bake 20 to 25 minutes, or until puffed and golden. In the meantime, heat cranberry sauce in a saucepan, stirring occasionally. Fold omelette and serve topped with cranberry sauce.

FINNISH WHIPPED BERRY PUDDING

(Serves 6)

- 3 cups cranberry juice cocktail
- 1/2 cup sugar
- 1/2 cup uncooked regular cream of wheat
- Fresh orange sections

Combine cranberry juice cocktail, sugar and cream of wheat in a large saucepan. Cook, stirring constantly, over medium heat until mixture is thick. Pour hot mixture into a mixer bowl and whip at top speed for 10-15 minutes, or until mixture is very fluffy and holds peaks. Serve at once, garnished with orange sections.

In a bowl, beat flour, sugar, salt, eggs, and milk until smooth. Let stand for 1 hour and beat again. Brush inside of each section of a Swedish plaette pan (see note) with melted butter and place a tablespoon of the batter into each. Brown pancakes on one side, turn and brown on the other side. Keep pancakes hot in a 250° F oven. In a saucepan, combine cranberry sauce and raspberries and heat until bubbly. Arrange pancakes in a ring on a heated platter; sprinkle pancakes with confectioners' sugar. Serve with a bowl of the hot cranberry mixture to ladle over pancakes.

(Note:) To prepare this recipe without using a Swedish plaette pan, prepare your favorite recipe for pancakes, using a "scratch" recipe or one made from a mix. Pour just enough batter onto the



Sermonettes
by the
Rev. Don Jennings

At a crossroad in Ohio there used to be a sign on which were the words, "This is the center of the world. Start here and you can go anywhere, if you want to badly enough." Whether the sign is still there or not, the words will always be true.

Who determines my destiny? God holds the major part of our destiny in his hands. But I determine whether I accept the opportunity God gives me. It is not so much what destiny does to us that counts, but what we, by God's help, do with destiny.

As a child, Wilma Rudolph had polio, and did not walk until she was eight years old. Her mother never gave up. She kept encouraging Wilma and working with her. Wilma was just as determined as her mother. She learned to walk and then to run. She kept running.

A number of years ago, Wilma Rudolph won the Triple Olympic Gold Medal in the one-hundred-meter race in the World Olympics. She would not give up. She believed that if she started where she was she could, by God's help and her determination, go anywhere.

When I was a youngster, every

boy was told by his schoolteacher that he could grow up and become the President of the United States. Most of us, however, were willing to settle for much less. Still, the opportunity was ours if we were determined to take it.

In the Sermon on the Mount, Jesus gave many words of wisdom. In one of the Beatitudes the Master said, "Blessed are those who hunger and thirst after righteousness for they shall be filled." He was saying that if we really have a determined thirst and hunger for goodness we may become good. How determined are we that we may have the best in life, for ourselves and those around us?

We might translate the familiar verse above to read, "Happy are those whose greatest desire is to do what God requires. He will satisfy them fully." Or it might read, "Blessed are those who hunger and thirst to see right prevail, they shall be satisfied."

This is the center of the world, start here, where are we now. Where else? The man of wealth might say that the billfold is the center of the world. Purchasing power is necessary, but it cannot buy peace of mind. There are those who might say the head and mind is the center of the world. Education is necessary to any field of endeavor, but the truly educated realize that the best things in life must go deeper than the mind.

A wise man of long ago wrote, "As a man thinketh in his heart so

his he..." (Proverbs 23:7). This same man had counseled his son, "Keep thy heart with all diligence, for out of it are the issues of life" (Proverbs 4:24). This is the center of our world. Start here and we can go anywhere. A hungry and thirsty heart God will not deny.

OUTDOOR DISPLAYS OF CRANBERRIES IN WISC.

A Wisconsin merchant has used a cranberry motif in painting the exterior of his building, the local paper company has covered their leased building with large red cranberries, hand scoops and cranberry blossoms.

WISCONSIN ANNUAL MEETING HELD

The annual Ocean Spray Wisconsin Growers Meeting was held March 17 at the Holiday Inn in Stevens Point. Several members of the management staff attended including President Harold Thorkilsen.

OBITUARY

CHARLES F. ST. SURE

Services for Charles Fairfax St. Sure, 73, were held March 16 at the Bandon Chapel of Coos Mortuaries.

Mr. St. Sure was born July 12, 1904, in San Francisco Calif., and died March 14 in North Bend.

He was a cranberry farmer in Bandon for 42 years before retirement and was a member of the American Society of Metals and Bandon Lodge 130 AF&AM.

Survivors include his widow, June P.; son, Robert of Newberg; daughter, Betty E. Shultz of Selah, Wash.; stepdaughters, Caroline Hyndman of Salem, Betty Rose of Salem; six grandchildren and one great-grandchild.

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May 1978

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RECOMMENDATIONS FOR USE OF 'EVITAL' . . .	1
THE IRREPLACEABLE BEE	6
HOW TO PROTECT BEES	8

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Mass. Cranberry Station Recommendations for the Use of 'Evital' and Fertilizer

Evital has been granted a State label clearance for fall application in Massachusetts. There are a few restrictions that a grower should be aware of:

(1) The fall application should be made at least two weeks before the winter flood.

(2) Evital can be applied only once during a season—either spring or fall, but not at both times.

(3) All label directions etc., are to be followed.

(4) The label with the fall registration must be in the user's possession at the time of application. Contact your dealer for copies.

Evital has been cleared for application at rates up to 160 pounds per acre for use on areas with hard-to-control weeds such as wool grass, switch grass and spike

rush in either spring or fall. We do not generally recommend rates this high because of the increased risk of vine injury. Evital injury on a bog is more likely to occur if the following factors are present—marginal drainage where water will puddle for two or three days after rain or sprinkling, sandy or hard bottom bogs which are low in organic matter, well-kept bogs with low to moderate weed populations and bogs with sprinkler irrigation.

Fertilizer Fundamentals

The interest in using fertilizer as an aid to increasing cranberry production is as intense this year as we have ever noted before. This has been a cultural practice that has been slow to develop and only in the past 20 years has there been any wide-spread use of fertilizer at

all. However, increased yields and additional vegetation certainly need more fertility to sustain them. There is one bit of advice that needs to be emphasized and it is *caution*. We realize that multiple applications are of value in supplying a more uniform supply of nutrients to the plants, but even a good thing can be overdone and reach a point of diminishing returns. Also any nutrients, particularly nitrogen, that are not utilized for fruit production will result in plant growth and can easily cause excess runner growth. This can initiate many problems; not the least being that there is no one who knows how or wants to prune anymore, leaving the grower with options of high expense for a heavy sanding, hiring pruning equipment or living with the situation for several years.



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Apply DIFOLATAN at 10 to 14 day intervals. Avoid Accidents: For safety, read the entire label including cautions. Use all chemicals only as directed.



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**PETE HULL IS
"OUTSTANDING COOPERATOR"**

Howard "Pete" Hull, a cranberry grower from Bandon, Oregon was named Coos County's "Outstanding Cooperator for 1977" and was presented a plaque by J. J. Geaney, president of the Coos SWCD, when the Coos County Soil and Water Conservation District held their annual meeting, March 9, at the Coquille Community Building.

Paul Calverley, Area Conservationist of the Soil Conservation

Service, spoke on the importance of the Shoreline Erosion on the Oregon Coast" study being conducted by the SWCD.

Pete and his wife, Carol, who works in Western Bank in Bandon, raise cranberries on the coast where climatic conditions and soil are ideal for cranberry bogs.

Coos County is considered Oregon's cranberry capitol with 96 cranberry growers covering 886 acres of bogs.

The drought of 1976-77 caused severe hardships for the cranberry growers—36 of whom signed up for drought relief. The Coos Soil and Water Conservation Service engineers worked with the growers obtaining water most of the spring and summer. With the help of Pete and 10 of his neighbors, five miles of pipeline which was engineered by the Soil and Water Conservation Service, also mapped and water rights obtained—water was piped to

Pete and his neighbors from Chrome Reservoir with the assistance of two pumps at a total cost of \$55,000.

The figure would have been much higher had they not done their own contracting and labor. This one project took six weeks but they were successful in completing it before harvest. Had the plants been damaged from heat or frost because of no water for protection, the growers would have been without an income for four to five years.

Pete also works closely with the County Extension Office, experimenting with fertilizers. He's using a sulphur coated urea timed-release, dissolved 16% initially then 1% per day thereafter.

Pete is active in his community. He is a member of the Ocean Spray Cranberry Coop, Inc., and has served on the advisory board for two terms. He also belongs to the Cutcreek Water District and the American Legion, and served nine years on the Bandon Port Commission.

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Bandon Cranberry Festival

THE NATIONAL CRANBERRY
MAGAZINE

— Our 39th Year of Publication —

May 1978
Volume 45, No. 5

The Bandon, Oregon, Cranberry Festival Association officers, board of directors and members of the advisory committee discussed a long agenda at its regular monthly meeting on April 18.

Acting president Bob Gaines acted on each event chairman to give a progress report. It was announced that the five cranberry princesses had been selected and a drawing would be held to see who would sponsor each candidate. The group also voted to enter the cranberry float and princesses in the Coquille Gay Nineties Days, the County Fair and other parades.

The group voted to pay one third of the cost of a new roof over the city park serving shed along with one third from the Lions Club and one third from the Chamber of Commerce. The new roof has been installed.

The barbecue chairman announced that the barbecue pit was being relined with materials to be furnished by the association and work to be done by the CETA and city crews.

Volunteers will make parade winner banners so that parade viewers could get a better idea of the winners, and a new robe for the mystery king.

It was announced that Dick Handley would be in charge of the annual Light House Run Marathon and that Lynda Robertson would work to promote the beach dog sled races. Efforts are being made to have a Sunday afternoon soccer contest.

It was voted to have a grand trophy prize for the best float regardless of which category. In the past a special grand prize award was made to the best school float but it was felt that this prize should be for the overall parade winner. Cash prizes will be awarded the school floats and certain other categories.

THEME CHOSEN

Harbor Lights, Oregon student David Williams submitted the winning entry, "Cranberries Out of This World," for this year's Cranberry Festival Theme. David, who is the son of Ralph and Dolores Williams, received a \$10 prize for his winning entry.

The Cranberry Festival Association chose the theme because it goes along with the new trend in outerspace movies being made and it should provide an opportunity for people to put their imagination to work.

I. S. Cobb . . . publisher

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editorial

MEMORIAL DAY — 1978

Flying the American flag, pride in America and being an American, trust in government and respect for our President . . . these seem to be dusty phrases of a by-gone era and certainly unpopular by today's standards. Of course, many citizens are cognizant of the freedom and privileges we enjoy. Those who have immigrated from other parts of the world find the attitudes displayed here difficult to understand.

Recently a 92-year-old Russian immigrant sent President Jimmy Carter a \$35,000 certified check as a gift "for the U.S.A.," Administration officials disclosed.

The elderly donor accompanied the check with this note handwritten on scrap paper:

"Dear Mr. President: The check of \$35,000 is a gift for the USA—long live. With me it is not what the country will do for me, it is what I can do for the country. My age past 92. Come from Russia in 1906."

He signed his name and address.

It turned out the donor lives modestly in a poor section of his town. When an investigator wrote and asked to meet him, he replied that would not be necessary, adding "Why are you wasting your time and postage?"

The Treasury official then checked with the donor's bank and was assured by the teller who cosigned the check that the man "knew what he was doing."

She said he was "a very nice gentleman" and recalled she had asked him, "You mean you want this check made out to the United States?" and he replied, "Yes."

Blumenthal acknowledged the check with a note:

"As a fellow immigrant to the United States, I can fully appreciate your desire to show your appreciation for all this country has done for you.

"I came here in 1947 from Berlin by way of Shanghai, and my father, who is almost your age, still lives in San Francisco. Your generous contribution to your fellow citizens is sincerely appreciated."

He signed the typewritten note: Mike Blumenthal, adding a handwritten "many thanks."

The point? Simply this: we must not let exaggerated media coverage, militaristic, anti-capitalistic and other undermining movements tear down and take over what has taken over 200 very short years to build. When we complain about taxation,

Electrical charges picked up by honey bees in flight may influence honey production and bee communication. These charges, which have been known to measure up to 1.5 volts d.c., may also have a bearing on how well the bees can do their job of pollinating more than 100 agricultural crops.

Two scientists here are studying the electrical stimuli under a two-year \$28,000 National Science Foundation grant to gain knowledge that could help shape technological changes to improve honey production, crop pollination and control of crop pests.

Entomologists Eric H. Erickson of USDA's Science and Education Administration and Robert L. Jeanne of the University of Wisconsin at Madison will determine the effect that positive and negative electrical charges on bees and blossoms have on the food preference of bees. The scientists will also measure the flow of electricity between adult bees and hives and study its effect on the bee colonies' population growth, foraging behavior and honey production.

Dr. Erickson says the research on foraging behavior may lead to similar studies with predatory wasps. Increased understanding of foraging by these insects may point to new ways of manipulating predator and prey in biological control of insects. Also, a knowledge of the role of electrical charges in insect-plant relationships might lead researchers to develop techniques for making plants less attractive to herbivorous (plant-eating) insects.

In previous research, Dr. Erickson found that electrical charges on bees change in a daily cycle. Intensities of the charges are influenced by the distance the bees fly, solar radiation and perhaps altitude. The bees are charged up more positively on a fair summer day than on cool cloudy days. Only foraging bees carry these electrical charges.

Continued on Page 14

THE IRREPLACEABLE BEE

One of the cranberry growers' best friends has always been the bees—the subject of a wide range of research projects today.

Courtesy American Fruit Grower

Bees—one of the best “orchard management tools” a fruit grower can have—are up against some insurmountable odds today. In the past several years bees have had to contend with drought in the West, severe winters in the East, misuse of pesticides, thefts of hives, and even bears. Statistics for U.S. honey production substantiate these problems. The 1977 production of 176 million pounds was 11% below that of 1976.

Pollination is the bee's greatest contribution to the fruit grower and, contrary to what many grow-

ers might think, the honeybee is not the most efficient pollinator. The non-apis bees—those that do not make honey—are far superior. Non-apis bees not only outperform honeybees, they also outnumber them. There are only four species of honeybees in the world, while there are 20,000 species of non-apis bees.

One of these non-apis bees, *Osmia lignaria*, has been found to be an excellent orchard pollinator. In California, almond trees pollinated by this wild bee more than doubled production of similar sized

almond trees pollinated by honeybees. The size, shape, and quality of the nuts were the same, but *Osmia*-pollinated trees outyielded honeybee-pollinated trees by 251% in one test plot and 252% in another. Researchers attribute the yield difference to the fact that *Osmia* works longer hours and under more adverse weather conditions.

Osmia nests gregariously, not in hives, and readily accepts manmade nesting materials so that sufficient numbers of bees can be set up to handle any size orchard. Its emergence can be timed to coincide with bloom period of a given crop. Because of *Osmia*'s short flight season and the fact that both males and females visit blooms and nest near the floral source, maximum pollination occurs over a short period of time, and therefore between insecticide operations.

This bee adapts to a wide range of environments and does not seem to be locked into a single pollen host. At present there is no commercial source of *Osmia lignaria*, but they are found from coast to coast and are easily captured and managed.

Extensive research is being conducted at a USDA laboratory in Logan, Utah, on *Osmia*, while a USDA lab in Baton Rouge, La., is attempting to breed for honeybee resistance to diseases, to solve problems of nutrition, and to assess effect of pesticides when bees pollinate treated crops.

In line with this a unique device to individually feed bees has been developed. At one time bees were actually hand fed, one by one. Now with the new feeding chambers (shown in photo), two people can feed 200 to 300 bees an hour.



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Agricultural Research Service (ARS) research labs in Tucson, Ariz., and Laramie, Wyo., have developed a method of protecting bees before and after insecticide applications. Of 16 methods tested, the most effective one was a six-way combination of burlap covering, pollen-feeding, shade, top waterer, bottom board, and syrup feeding.

Burlap covering confines bees to the hive until 12 hours after insecticide application, while the pollen and water sustain them. Shade keeps the hive cool, while the bottom board, which gives added room at the bottom of the hive, provides a clustering space for field bees at night, during heat waves, or confinement. The syrup is optional, as the colonies tested did not take it during most of the test.

This same experiment led to another use for the top waterer on the hive. Bees in hot desert climates often spend more time gathering water to cool hives than in filling combs with honey or pollinating crops. By placing a modified hive section containing 3 gallons of water on top of the hive, bees are able to get water without leaving the hive.

This water super is coated on the inside with beeswax to be watertight. A slight opening at the bottom is fitted with spongelike material that draws water into the section where bees take up water. The sponge serves as a place for bees to ingest water without drowning, and a float board is placed in the compartment in case the sponge overflows.

Growers and researchers are always seeking ways of improving pollination. Some varieties of blueberries, for example, are less attractive to honeybees than other varieties. Some growers are compensating for this with the use of gibberellic acid to chemically pollinate blueberry bushes showing poor pollination. Berries have no seeds, ripen a few days later, and are slightly smaller than bee-pollinated berries, but quality is good.

A wild bee that specializes in

blueberries was located in studies in Connecticut and Cape Cod several years ago. The bee, *Colletes validus*, is active only when blueberries are in bloom, spending the rest of the year underground. Researchers hope to introduce the bee into more blueberry states.

A product made primarily of milk and sugar is being tested as a way of attracting bees to crops on which it is sprayed. The wettable powder can be applied simultaneously with fungicides, but not with insecticides or herbicides. Applied at mid bloom it is effective for five days and then must be applied again. Results have been promising on several fruit and vegetable crops.

Most growers, rather than resort to chemical means, will simply increase the number of hives per acre to improve pollination. Normally, one colony per acre is sufficient. Hives can be rented. While rental costs have increased in recent years, because honey is now more profitable for beekeepers than renting out their hives, Oregon researchers find that each dollar invested in bee rental fees returns \$66 to growers in yield increases.

Honeybees were so hard hit by the 1976 drought in California that honey production there dropped 42%, lowering the state from number 1 in honey production to number 4. The lack of water to produce blossoms was responsible for the reduction in pollen gathering by bees. Bees also need water to "air condition" their hives, to dilute stored honey before bees eat it, to produce royal jelly, to prevent dehydration of body tissues, and to ingest pollen grains before swallowing them.

In sharp contrast to the effects of drought on bees are the hardships of winter. Bees must get out of the hive periodically during mild winter weather to rid themselves of wastes, or they may develop Nosema, an intestinal disease. In addition, bees may freeze to death in bitter cold or not be able to find enough to eat.

Researchers recommend winter sites have a maximum of sunlight and good water and air drainage. Hives can be wrapped in black paper with straw or leaves placed over the inner cover. The black paper helps warm the hive on days

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in January through March when bees might otherwise not have a flight.

If all this weren't enough, there are two other threats to bee survival today. Reports of thefts in the top honey states of California and Florida have been growing. Authorities estimate losses up to \$500,000 annually in each of the two states. Beekeepers are branding their hives, setting up patrols, and offering cash rewards for information in efforts to combat the thefts.

And in North Carolina beekeepers face a more formidable problem—the Eastern black bear. The bears damage hives in efforts not to get at honey but at the young bees at the bottom of the hive. Beekeepers can legally shoot a robber bear only if it is caught in the act.

RECPMMENDATIONS FOR THE PROTECTION OF BEES

Do not spray while crops are in bloom: Apply insecticides to target plants or weeds when still in the bud stage, or just after flowering.

Spray when bees are not flying: Bees fly on sunny days when the air temperature is above 55-60 degrees F. Bees are most active from 8 a.m. to 5 p.m., but applicators should always check a field for bee activity immediately before spraying. Pesticides hazardous to honeybees must be applied to blooming plants when

bees are not working and preferably in the early evening. Evening applications allow decomposition time for many chemicals and new, unsprayed flowers to open overnight.

Do not contaminate the water: Bees require water to cool the hive and feed young bees. They will be killed if the water is contaminated. Never spray standing water or drain spray tank contents onto the ground to create puddles.

Use less toxic compound: Many pest control situations give the grower-applicator some choice in the compound to use. Those hazardous to honeybees must state such on the label, in which case another may be selected. Consult your county Agricultural Extension Agent for details, recommendations, and further information about the bee toxicity to specific compounds.

Use less toxic formulations: Not all compounds are the same when made into different formulations. Research and experience indicate that:

- Dusts are more hazardous to bees than liquid formulations.
- Emulsifiable concentrates have shorter killing power than wettable powders.
- Ultra-low-volume (ULV) formulations often are extremely more hazardous to bees than other liquid formulations.

Eliminate attractive weeds: Prior to insecticide treatment, mow, beat, or otherwise control flowering weeds in orchards or nurseries where insecticides are to be applied

to nonflowering plants.

Notify beekeepers: Some beekeepers will move bees from a spray area, but they need at least 48 hours notice. Others may wish to cover colonies.

Protect colonies in the area: By working with beekeepers, locate apiaries to avoid direct insecticidal spraying. Beekeepers may wish to loosely cover hives with burlap or coarse cloth to confine bees so they cannot fly, yet allowing them to cluster outside the hive, under the cloth. Repeated sprinkling with water will prevent bees from overheating.

Never advise beekeepers to screen or seal up colonies: Overheating can result in suffocation and death.

MEETING NOTICE

“SOIL & WATER RESOURCES CONSERVATION ACT 1977”

Thursday, May 25, 1978
Plymouth County Extension Service
High Street, Hanson
7:30 P.M.

Do our national programs insure that adequate soil, water and related resources will be available for future generations? Do present programs put too much emphasis on some conservation needs and not enough on others?

The recently passed Soil & Water Resources Conservation Act is addressing many of the resource management concerns of many public and private agencies and citizens.

In our effort to address the concerns of Plymouth County officials and residents, we are conducting this open meeting, during which the Act will be explained, your concerns will be recorded, and discussion regarding these concerns will be encouraged.

Information and materials will be presented with the support of the Plymouth Conservation District.

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OBITUARY

CHARLES A. NELSON

The oldest pioneer on the Long Beach Peninsula, Washington for many years and a former cranberry grower, Charles A. Nelson, 94, of Nahcotta, died April 29 while a resident of the New Seavera Convalescent Home in Long Beach. He was a life-time resident of the Nahcotta-Oysterville area and was born in Oysterville on Aug. 5, 1883.

During his many years, "Charlie," as so many knew him, was able to actually live during times that are only read about now. He was a little boy of four or five years when South Bend residents "stole" the Oysterville county seat and courthouse records by sailing across Willapa Bay.

In an interview six years ago, Charlie said his lifetime profession was varied and explained, "I've tried a little of everything."

As a boy, the Willapa Bay area, beach and woods provided an ample playground and he would play with white and Indian boys alike. He would go home with the Indian boys and listen to their grandpas tell Indian folklore, fables and legends. "We'd swallow them stories whole," he was reported to have said about those times.

In his early years he worked on Columbia River steam boats, on donkey engine logging crews and was a road foreman for Pacific County. Charles worked for a while on the local narrow gauge "Clamshell Railroad" as a fireman and up until late in the 1960's, he owned his own cranberry bog.

He also picked native oysters out of Oysterville way back then.

Charlie is remembered for his active participation in many county historical groups and activities including the county Historical Society, the old Pioneer group that met for picnics at Bay Center and many others. Because of his rich background and keen interest in local

history, he was sought as a source for many an article or historical presentation.

Those in the Nahcotta-Oysterville area remembered him as a "wonderful neighbor" and many adults remember how he would tell historical and folklore stories at the drop of a hat to them when they were children.

His wife, Deane, had been the Nahcotta postmaster for 26 years and survives him at home in Nahcotta.

Other survivors include nine nieces and nephews.

Funeral services were held Wednesday, May 3, at the Peninsula Church Center with Rev. Rick Murfin of the Ocean Beach United Presbyterian Church officiating. Vault interment followed at the Oysterville Cemetery.

BERNARD E. SHAW

Bernard E. Shaw of Tremont Street, Carver, Mass., died May 12 at his home. He was 88.

A lifelong resident of Carver, he was a retired cranberry grower and a member of the Union Church in Carver.

Mr. Shaw was a 50-year member of the South Carver Grange and of the I.O.O.F. in Wareham. In addition he was a member of the Cranberry Growers Association and a former member of the Board of Directors of the National Bank of Wareham.

Besides his wife, Jenney, he leaves a brother, Gerard F. Shaw of Milton and several nieces and nephews.

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Investment Scoop

by Martin B. Person, Jr.
President, Gage Wiley & Co., Inc.



WHERE WERE YOU WHEN THE WHISTLE BLEW?

It looked like more of the same dull stuff. The financial news revealed nothing that could possibly excite investors. Interest rates continued to climb. Inflation continued to cut notches in everyone's paycheck. Not once in 1978 had the number of shares traded on the New York Stock Exchange in a single day exceeded the 30 million share level. But for some reason, by the time the market closed on Thursday, April 13, the Dow Jones Average was up almost 9 points to a two-month high. So what? That only left it at 775. It had been at 830 at the beginning of the year, and since that time it had generally been slogging through dullsville.

Friday, April 14, looked like any other Thank-God-Friday. But some-

how that silent market alarm, like the dog whistle only heard by canine ears, seemed to send all the institutional traders to their battle stations in the early morning light along the canyons of Wall Street. The word to be ready for something special had been passed. No early liberty for the golf course would be granted this day. The famous three martinis and the lobster salads (with cranberry sauce) would have to wait for another day as the emergency rations of bagged burgers and cokes were readied. Yachts remained at their moorings.

When the final bell sounded at 4 P.M., the institutional buying stampede had exploded to a record volume of 52 million shares and the Dow industrials were up almost 20 points—the biggest rise in almost 18 months.

The euphoria over the weekend brought the traders back on Monday with a new set of orders which produced another all-time record volume. This time it was 63½ million shares as the Dow rose 15 points. In fact, as I write this on May 18, it is significant that *no* day has produced a volume less than 30 million shares since this whole new buying surge began. Just what is going on here anyway? What does it mean for the typical investor who isn't tied in to that curious Wall Street alarm system that has produced a sudden wild enthusiasm for stocks which couldn't tempt anyone for month after dreary month before the April 13 hog call brought in the flock?

To me it means the average investor either has got to have the time and the desire to make a thorough on-going study of the many factors which constantly influence stock prices, or he has got to depend on someone to do it for him. Despite all of the knowledge that professionals or amateurs bring to investment decisions, the timing of purchases and sales can be vital in providing a significant profit or in limiting losses. When the market is dominated by institutions such as the banks, mutual funds, insurance companies and pension funds that do about 75% of all the business in the stock market, the individual either needs a lot of luck or a lot of help or both. We are in business to provide the help.

Today there is a significant market momentum which hasn't been present for a long time. I think it can be used to your advantage. I'll be glad to send you MONEY TALKS with specific recommendations, if you drop me a line at P.O. Box 507, Plymouth, Massachusetts 02360.



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—John D. Rockefeller

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News from Mass. Farm Bureau

Are you near age 65? This is very important! Be sure to convert your Blue Cross/Blue Shield to Medex coverage. You must do this yourself. It is NOT done automatically. Many people keep on paying their Blue Cross beyond the expiration date. To avoid this, contact Miss Shea at the state Farm Bureau Office in Waltham (617/893-2600) at least 60 days before your 65th birthday so we can make the necessary arrangements.

* * * *

Federal 208 Water Quality Program presentation which is on slide and tape recording is now available for use by county FBs. MFBF Director of Field Services Jay Slattery, showed this presentation last week at a meeting of the Barre, Mass. Grange. If you want it for showing in your county, contact Jay Slattery at the state FB office in Waltham, 893-2600.

* * * *

Meanwhile, public hearings to obtain public opinion on the subject of government programs relating to soil, water and other resources will be held in the next month. In Franklin County, a meeting is set for Wednesday, May 17 at the Hawlemont Regional School in Charlemont. In Hampshire County, a meeting is set for Tuesday, June 6 at the Hampshire County Extension Office in Northampton. Both meetings start at 8 p.m. and provide an excellent chance for farming people to get up and tell the government how they feel about these resource programs.

Important Blue Cross Notice—new Master Medical rates effective July 1, 1978 will be \$366.34 for family and \$153.49 for individual. The alternate Major Medical rates will be \$306.49 for family and \$128.11 for individual. Medex rates will be \$60.97. These rates include the \$4.00 service charge.

* * * *

Blue Cross bills will be in the mail 10-15 days earlier than usual. This gives us time to process the group for payment to Blue Cross. We are now required to pay our quarterly Blue Cross bill at an earlier date. The increase in rates is based on anticipated inflation in hospital costs and doctors' fees.

Vegetable and fruit growers in the Fitchburg-Leominster-Gardner area might want to take another look at the Farmers Market in Gardner. They will have a meeting on Monday, June 5 at 7:30 p.m. in the Mary F. Kane building on Connors St. in Gardner, and growers are welcome to attend. The Gardner Farmers Market will operate on Thursdays from 10 a.m. to 8 p.m. once the season gets underway. You might want to check it out.

* * * *

On purchase of development rights the New Jersey Farm Bureau has asked that state to go ahead with a statewide program. New Jersey has been conducting a pilot program within a single county, and the Farm Bureau in that state has said, "enough of the testing, let's get on with a statewide farmland preservation program."

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REGIONAL NEWS NOTES

Nova Scotia

The mean temperature for the month of March was -3.9°C as compared to the 50-year average of -1.4 . The first two weeks of April have also been cold and cloudy.

On March 29 and 30 I attended a meeting of the North American lowbush blueberry workers held in Fredericton, New Brunswick. All the extension personnel were reluctant to predict this year's crop. However, they admitted that plants had gone into the winter in excellent shape.

I.V.H.

15th, 16th, 27th and 28th.

Precipitation totalled 3.29 inches or one inch below normal. This is our third month in a row with below normal precipitation with a pattern of one big storm per month. Fortunately, January was record wet or we would be short of water for the spring frost season. There were measurable amounts of precipitation on 10 days with 2.64 inches on the 20th as the largest storm, leaving only about one-half inch for the rest of the month. We are still nearly one-half inch above normal for the year to date and about 0.4 inch ahead of 1977.

Water supplies are good this year but the bogs are behind in development because of a cold February, March and April. Not much, if any, winterkill, but some oxygen deficiency showing up; more than recent years, but probably not too serious. The bud is good everywhere.

The Frost Warning Service has 172 subscribers, a drop of 10 from last year but the same as 1976. There has been one warning on April 30 with temperatures gen-

erally ranging from 14 to 22 degrees and no injury reported.

Tips for Late Spring and Early Summer

1. Keep a sharp watch for cutworms after the late water flood is drawn.

2. Put in flume planks and impound drainage water for 24 hours after using any pesticide. Drainage water must be held 7 days after using Guthion or Difolitan.

3. This is a good time to treat brush, poison ivy and brambles on the uplands using silvex. It should be mixed with water rather than oil at this time of year because of damage to turf.

4. Stoddard solvent or stoddard kerosene treatments following late water should be completed within 5 days after the flood has been withdrawn or within 8 days if kerosene is used alone. Less damage will occur to the vines if temperatures are below 65° when these oils are applied.

5. Casoron, alanap, Chloro-IPC, simazine and molcran should *not* be applied after withdrawal of the late water flood as vine and crop injury will result.

6. Many bogs will benefit from an application of fertilizer, especially where heavy crops were harvested. Some bogs that have had casoron treatments either last fall or this spring may look "hungry" and should be fertilized. Don't forget to touch up the thin or weak spots by going around with a bucket of fertilizer and using it.

7. Do not use Guthion or malathion after hook stage.

I.E.D.

Massachusetts

Weather

April continued our cold spring averaging 2.2 degrees a day below normal. Maximum temperature was 68 degrees on the 29th and minimum 24 degrees on the 3rd. The only warmer than average days were the 23rd, 24th and 29th. Cool periods were 2-4th, 7th, 8th, 11th,

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New Jersey

April, "the coolest month," had some mild periods but was more wintry for most of the time. It started off with a record high temperature of 82 degrees F and ended with a record-breaking low

temperature. On the night of April 30th, actually the morning of May 1st, the thermometer in the weather shelter at Whitesbog went down to 22½ degrees F and a cranberry bog reading of 9½ degrees F was recorded.

The average temperature for the month was 50.0 degrees F or about 1.7 degrees F below normal. The extremes in temperature were 82 degrees F on the first and 26 degrees F on the third.

Rainfall totalled only 1.83 inches or about 1.57 inches below normal. Accumulated precipitation for the year is 15.24 inches, 1.95 inches above normal.

It is too early to assess the frost injury caused by the severe frost of May 1st. Some light damage occurred to flower buds on cranberries and a few bogs which were drawn in March. Extensive damage is feared on peaches, strawberries and apples and moderate losses are estimated in blueberries.

P.E.M.

Wisconsin

Rain, snow, and below normal temperatures continued to delay spring field work, according to farm reporters and county agricultural agents throughout Wisconsin.

Temperatures averaged about 5 degrees below normal during April

16-23. Rain and snow spread across Wisconsin Monday through Thursday. Precipitation amounts were heaviest in the west and south. Some heavy thunderstorms with hail occurred in the south on Tuesday. Temperatures were mostly in the 30's and 40's until skies cleared on the 21st. Cloudiness developed again the next day, with light rain on the 23rd. Temperatures on the 23rd ranged from the 30's in the north to the 60's in the south.

The only significant weather activity in the last week of April occurred on the 24th when showers and a few thunderstorms covered western and southern areas. Rainfall amounts ranged from a tenth to a half inch. Sunny and pleasant conditions prevailed on the 25th through the 28th, with high temperatures in the 60's and 70's. Cloudiness increased the next day as a cold front pushed through the State. However, no measurable precipitation fell. Temperatures turned much cooler on Sunday, the 30th, as highs were in the 40's and 50's.

Washington

The CSRS Pacific Northwest Small Fruits Review was held April 3-7 at the Southwestern Washington Research Unit, Vancouver,

Washington. All small fruits researchers from Idaho, Oregon, Washington and British Columbia are involved. Those interested in blueberry and cranberry research were: Dr. George Eaton and Dr. Pepin from University of B.C., Dr. Ralph Garren and Dr. Lloyd Martin from Oregon State University, and Dr. Charles C. Doughty, Dr. Carl Shanks, Dr. Peter Bristow, and Azmi Shawa representing Washington State University.

April precipitation totalled 7.57 inches, almost 2 inches above average for April. There were only six days with no measurable precipitation. The largest single storm occurred on the 21st and 22nd with 1.20 inches measured. Six other days registered .50 inches or more.

There was a record high set for April 25th when the temperature climbed to 70 degrees F. A minimum of 31 degrees F was recorded for the 6th. Warmer than average days were the 10th, 11th, 24th, 25th and 28th.

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A new NIOSH/MESA-approved (TC-23C-197) respirator for protection of agricultural workers against the hazards of pesticides is now available from Glendale. Such pesticides are used regularly and their damaging sprays and residues pose a constant threat to the farmer. The respirator, the Glenaire GAR-2025, employs a complete filtration system that uses factory-sealed cartridges. These cartridges cannot be altered by the user so there is little risk of loss of protection due to improper handling by inexperienced workers who may try to adjust the filters in the field.

The Glenaire GAR-2015 double-cartridge respirator assures maximum protection and low breathing resistance. The respirator masks are molded of flexible materials which provide a secure seal and



LIGHTWEIGHT SOIL MOISTURE BRIDGE FROM BECKMAN

Research quality field measurement of soil moisture is provided by the lightweight Model SMB-1 Soil Moisture Bridge manufactured by Beckman Instruments, Inc.

The instrument is portable and battery operated and measures 25 ohms to 4 megohms in five overlapping ranges. It is provided with a built-in adjustable capacitance decade to insure an overall accuracy of 2% of reading. A center reading meter is used as the null indicator and solid state circuitry is featured throughout to insure low battery drain.

Housed in a rugged, cast aluminum case with a removable plastic cover, the new soil moisture bridge weighs 6.5 lbs. (2.9kg) and measures 6.75"H x 11"W x 4.75"D (171mm x 279mm x 121mm).

For additional technical information, write Beckman Instruments, Inc., Cedar Grove Operation, 89 Commerce Road, Cedar Grove, NJ 07009.

MEMORIAL DAY—1978

Continued from Page 5

and ineffective government and general apathy, we are exercising our God-given freedom and this is as it should be. However, let us remember the many advantages our nation provides us and do what we can to preserve the USA. Memorial Day is a fine time to reflect on what we can do for our country.

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Glendale Optical Co., Inc., is a major manufacturer of personal-protection equipment for the farm, for the home and for industry for more than a quarter of a century. The company is a subsidiary of the American Cyanamid Company, also a specialist in the field of agriculture.

For further details on the above product, contact Mr. Richard Miller, Glendale Optical Co., Inc., 130 Crossways Park Drive, Woodbury, N.Y. 11797 or phone (516) 921-5800.

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BOX UP SOME BERRY GOOD LUNCHES

Although the little red school house is something of the past, it's not old-fashioned to make certain your kids get good nutrition when school bells ring. Surely the best way is to personally pack up those lunch boxes or brown bags with food that you know is not only tasteful but healthful, too! Whatever their age, whether tot or teen, a wholesome lunch with that special homemade goodness is bound to satisfy the big noontime appetites of growing, active youngsters.

Here are a variety of delectable lunch box ideas created with flavorful cranberries that will be great favorites in the school year.



CRANBERRY BRAN BREAD

(Makes 1 - 10x5x3 inch loaf)

- 1 cup unsifted all-purpose flour
- 2 cups unsifted whole wheat flour
- 1/2 cup all-bran
- 3/4 cup firmly packed brown sugar
- 1 teaspoon baking powder
- 1 teaspoon baking soda
- 1 cup chopped nuts
- 1 egg
- 1 cup milk
- 1/2 cup melted butter or margarine
- 1/2 cup cranberry-orange relish

In a large bowl, mix flours, bran, sugar, baking powder, baking soda and nuts. Stir in egg, milk, butter and relish all at once, stirring just until mixed. Pour mixture into a greased 10x5x3 inch loaf pan. Bake in a pre-heated moderate oven (350° F) for 60 to 70 minutes or until bread feels firm in the center. Cool bread in pan 10 minutes, remove to wire rack, cool on rack thoroughly on a long side before cutting into slices.



BERRY PEANUT BUTTER SPREAD

(Makes 6 sandwiches)

- 1 cup peanut butter
- 1/3 cup honey
- 1/2 cup finely shredded raw carrots
- 1/3 cup cranberry-orange relish
- 1/4 cup raisins

In a bowl, combine all ingredients and stir until well blended. Cover and chill until ready to serve.

CRANBERRY HAM 'N CHEESE SPREAD

(Makes 6 sandwiches)

- 1/2 cup whole berry cranberry sauce
- 1 can (4-1/2 ounces) deviled ham
- 1 package (8 ounces) cream cheese
- 1 tablespoon instant minced onion

In a bowl, mix cranberry sauce and deviled ham. In another bowl, mash cream cheese until fluffy; gradually beat in ham mixture. Stir in onion. Cover and chill until ready to use.

CRANAPPLE HONEY DRINK

(Serves 1)

- 1 cup cranberry apple drink
- 1/2 cinnamon stick
- Strip of orange peel
- 1 tablespoon honey

Combine all ingredients and serve cold with ice cubes or heat in a saucepan until bubbly. Pour into thermos and seal.

CRANBERRY PEANUT DROP COOKIES

(Makes about 4 doz. cookies)

- 3/4 cup butter or margarine
- 1 cup firmly packed brown sugar
- 2 eggs
- 1 cup (1 8-ounce can) sieved jellied cranberry sauce
- 2 cups unsifted all-purpose flour
- 1 teaspoon baking soda
- 1/2 teaspoon salt
- 1 teaspoon cinnamon
- 1 teaspoon nutmeg
- 1 cup chopped peanuts
- 1 cup oatmeal
- 1 cup raisins

In a bowl, cream butter until fluffy. Beat in sugar and eggs. Stir in cranberry sauce, flour, baking soda, salt, and spices. When well blended, stir in peanuts, oatmeal and raisins. Drop mixture by heaping teaspoonfuls onto greased large cookie sheets. Bake in a preheated moderate oven (375° F) for 10 to 12 minutes or until lightly browned. Remove from cookie sheets at once to wire racks to cool.


CRANBERRY TUNA SPREAD

(Makes 7 sandwiches)

- 1 can (6-1/2 ounces) tuna, drained
- 1/2 cup finely chopped celery
- 1/3 cup finely chopped salted peanuts
- Mayonnaise

- 1 can (8 ounces) jellied cranberry sauce, cut into 6 slices
- Lettuce leaves

In a bowl, mix tuna, celery and peanuts with enough mayonnaise to make a spreadable mixture. Cover and chill when making sandwiches, spread bread with tuna mixture and top with a slice of cranberry sauce, a lettuce leaf and second slice of bread.



Sermonettes by the Rev. Don Jennings

You are what you do

Little Sara was proud of her new playhouse. She was pleased with its furnishings, but her greatest pride and joy was a brightly-colored alarm clock. There it sat on a little table, merrily ticking away the time. The only thing wrong with the clock was that the glass on the front was broken and both of its hands were gone.

That little clock without hands was a parable of life. It is significant that we be alive, but more so that we are doing something about it. You are what you do.

Ralph Waldo Emerson, American philosopher and poet, once wrote, "Action is the breathing of the soul, it is the interpreting of our thoughts." It would be interesting to see what lies out there in the future, but it is far more important to do what is clearly at hand. Our value is in our actions, and not alone in our vision.

Jesus was talking about religion in action, and not alone in words, when he said, "Ye shall know them by their fruits ..." (Matthew 7:16). He used the tree to express

his lesson on fruitfulness. They knew, as we know today, that one does not gather "grapes from thorns, or figs of thistles." Every good tree produces fruit as it is supposed to do.

Elton Trueblood, eminent Quaker professor, once said in my hearing, "Some people make pretty lamps but poor lights." A lamp that is supposed to give forth light is only an ornament until it sheds its light about it. We are what we do.

Faith is an adventure. It only grows by starting. I know something (not enough, though) about electricity, but I do not sit in the dark when I know that all I need to do is press the light switch to bring light to the room.

The desperate woman who had been ill for 12 years, and had found no relief, heard that Jesus was to pass her way. She had tried almost everything she had heard of, now she believed that Jesus could heal her. In her desperation, yet with courageous faith, she said to herself, "If I may but touch his garment I shall be whole" (Matthew 9:21).

The miracle was not in the garment, but in her faith and action and the Master's compassion for her. Jesus said to her, "... thy faith hath made thee whole ..." (Matthew 9:22). This woman, who acted upon the impulse of her heart, was healed, body and soul.

One of life's most proven axioms is that our true character is known

by the fruits we produce. We are what we think. We are what we believe. But our whole future's failure or success depends upon what we do about our thoughts and beliefs.

PEDERSEN BOARD CHAIRMAN

Ocean Spray Cranberries, Inc., has announced the election of Stuart Pedersen of Warrens, Wisconsin, as Chairman of the Board of Directors.

Mr. Pedersen is owner and operator of Pedersen Farms, a cranberry growing operation located in the Warrens area. He will preside over a nationwide farmer cooperative consisting of more than 800 cranberry and citrus growers from six U.S. states and Canada.

Mr. Pedersen has served as a member of the firm's Board of Directors since 1970. This past year he functioned as Board Vice Chairman and Chairman of the Budget and Finance Committee.

He is President of S.F.K. Campgrounds, Inc., and the Great Rivers Irrigation Company, both of Warrens.

He has also served as a Director and President for the Wisconsin State Fruit Growers Association and the Wisconsin State Cranberry Growers Association.

Mr. Pedersen is a native of Warrens, and he and his wife Faye have a daughter, Kim.

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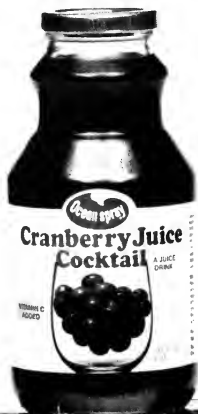
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1271a	Seed Germination in Cranberry	1.25
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372a	Recent Tests with Fertilizer Supplements	1.50
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772	Surface Water Quality in Drainage Areas of Cranberry Bogs	1.25
872	Cranberry Production and Water Quality	1.25
1172	Development of a New Cranberry Harvester	2.00
1272	Gel Power Index of Cranberries	1.75
173	An Evaluation of Difolatan in Massachusetts	1.25
273	Effects of Continued Casoron Treatments	1.25
573	Insecticide Toxicity to Honey Bees	1.25
673	Prolonging the Life of Harvested "McFarlin" Cranberries	1.50
773	Tolerance of Cranberries to the Experimental Herbicide San-9789	1.50
1073a	An Analysis of the DDT Controversy	3.00
369b	Growth of Cranberry Plants in Pure Sands and in Weedy Areas under Nova Scotia Conditions	1.75
769	Pesticide Use in Massachusetts Cranberries	1.25
1069	Resanding of Massachusetts Bogs (Parts I & II)	2.50
1269a	Malathion Hastens Maturity of Highbush Blueberry Fruit	1.50
270	Reduced Chilling Requirement of McFarlin Cranberry Buds	1.25
370a	Photo Period Effect on Plant Growth in Cranberry	1.50
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570b	Cranberry Pollination	1.25
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1170a	Nova Scotia Cranberry Insects	1.75
1270a	Progress in Controlling Bird Damage to Crops	1.50
171	Cranberry Bog Microclimate	2.00
371a	Oxygen Deficiency Kills Cranberry Insects	1.50
371b	Summer Spray Application of Phosphorus	1.50
471a	Biological and Integrated Control of Cranberry Insects	1.50
274	Effect of Light on Cranberry Seed Germination	1.25
374	Effect of Temperature on Germination of Cranberry Seeds	1.25
674	2,4,5-T Story	1.50
874	Timing Cranberry Herbicide Application	1.25
175	Control of Fairy Ring—Progress Report	1.25
275	Analyses of Cranberry Marsh Discharge Waters—Progress Report	1.75
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THE NATIONAL CRANBERRY MAGAZINE

Volume 45, Number 6-7 June-July 1978

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SB
383
C7
P22



In This Issue . . .

WASHINGTON ELECTRIC RATES . . .	4
CHANGES IN OSHA	5
FOLIAR FEEDING OF CRANBERRIES	8

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MASS. ANNUAL MEETING

The 91st Annual Meeting of the Cape Cod Cranberry Growers Association will be held at the Cranberry Station on Tuesday, August 29 beginning at 10 A.M. The program will consist of the usual equipment displays, exhibits and tour of the research plots with a chicken barbecue lunch. In the afternoon there will be a business meeting, committee reports, industry reports and the official crop forecast by Alvin Potter of the Crop Reporting Service who has replaced Byron Peterson who had retired at the beginning of the year. The guest speaker will be Massachusetts Commissioner of Agriculture, Frederick Winthrop.

INSECTS AND WEEDS

Sparganothis moth flights are very heavy. This pest can cause a lot of grief later on and should be treated. Guthion and Sevin or Sevinal is best.

Lots of girdler moths again this year. Diazinon 14G has been

granted a State Clearance under Chapter 24-C for treatment of the larvae. Application should be made toward the end of bloom or about the last week of July.

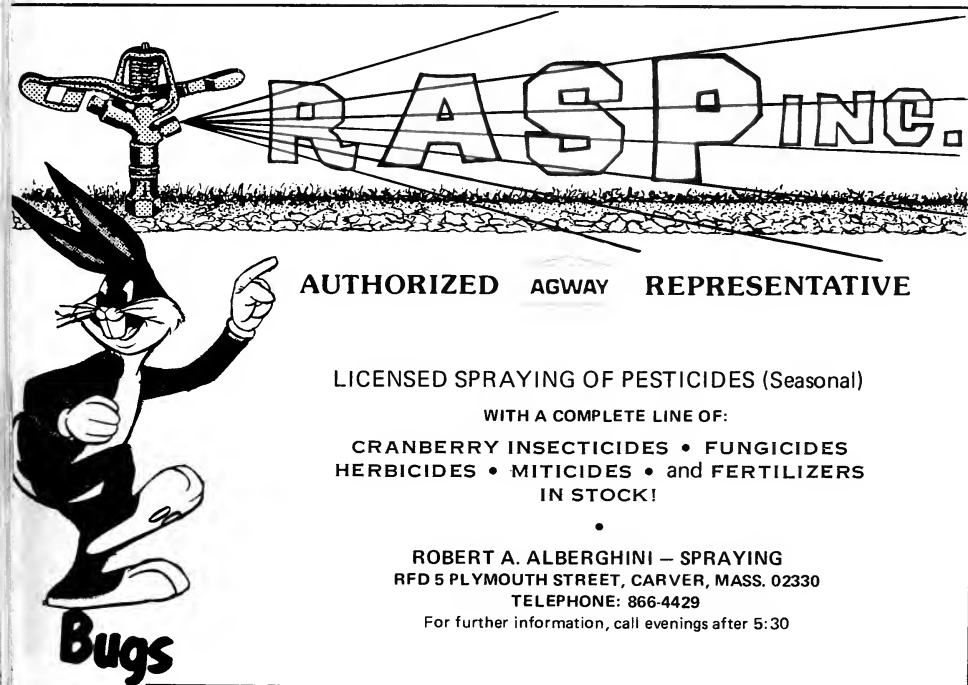
Bogs infected with fairy ring disease will show the effects to a greater extent when the bog is dry. Affected areas should be fertilized and kept moist to minimize the damage and then treated with Sub-Po-Mag from mid-August through October as recommended on the Fertilizer Chart or ferbam after harvest as recommended on the Insect and Disease Control Chart.

Shores and dikes may be sprayed with a solution of silvex and water to control broad leaved weeds; this is especially good on poison ivy. Salt solution, one pound of salt to a gallon of water applied as a fine spray at not over 200 gallons per acre, will burn off wild bean and other tender weeds. Sulfate of ammonia or nitrate of soda at about three to four pounds per square rod applied to patches of haircap moss will burn it and give

weak vines in these spots a real boost. Nitrate of soda with a little spreader-sticker in water and sprayed as a fine mist will do as well as anything in burning off dodder. Do not use before the end of July.

MASS. CROP PROSPECTS

Reports and observations indicate a very heavy bloom on just about everything this year. Winter-kill injury is practically non-existent; however, there is probably a little more oxygen deficiency injury around than most people think at this time. There may be a little spotty frost injury from the frosts of June 14-16 but more from negligence than anything else. Pollination weather has been excellent and setting appears to be good but we are about a week behind so this is hard to judge. We have been very dry up to July 4 and there is some spotty drought injury also. Prospects appear quite good for one of our better crops.



The advertisement features Bugs Bunny on the left, pointing towards a large, stylized word "RASPBING." in the center. Above the word is a diagram of a spraying machine with lines radiating from it, suggesting the spray pattern. Below the word, the text reads "AUTHORIZED AGWAY REPRESENTATIVE" and "LICENSED SPRAYING OF PESTICIDES (Seasonal) WITH A COMPLETE LINE OF: CRANBERRY INSECTICIDES • FUNGICIDES HERBICIDES • MITICIDES • and FERTILIZERS IN STOCK!". At the bottom, contact information for Robert A. Alberghini is provided, including the address "RFD 5 PLYMOUTH STREET, CARVER, MASS. 02330", telephone number "866-4429", and a note to call evenings after 5:30. The word "Bugs" is written in a stylized font at the bottom left.

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Bugs

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USDA PROPOSED REVISION OF GRADE STANDARDS FOR GRAPEFRUIT JUICE

Grapefruit juice will no longer have to look as good as it tastes if a revision of the U.S. grade standards for the product proposed by the U.S. Department of Agriculture (USDA) is adopted. The proposal would eliminate color as a quality factor in determining the grade of juice.

According to Carol Tucker Foreman, assistant secretary of agriculture for food and consumer services, a natural color change occurs in fully-ripened grapefruit which produces juice that is amber color and lacks brightness. The current standards assign a lower quality grade to juice that does not have bright color, even though the flavor is at its peak. Grapefruit juice is graded on the basis of its natural color because Food and Drug Administration regulations prohibit the use of color additives.

Under the proposed revision, quality evaluation would be based

on chemical analyses, flavor, and visual defects such as juice, cells, pulp, seeds, and peel. U.S. Grade A juice would be required to have good flavor with only slight defects. U.S. Grade B would have reasonably good flavor with only slight bitterness and would be permitted more defects than Grade A juice.

Last October officials of USDA's Food Safety and Quality Service (FSQS) asked for public comment on an advance notice of the proposal. All but two of the 100 comments received urged that color be removed as a factor in the quality grade of grapefruit juice.

The proposal was scheduled to be published in the June 30 Federal Register. Copies of the proposal may be obtained from the Fruit and Vegetable Quality Division, FSQS, USDA, Washington, D.C. 20250.

Comments on the proposal are invited until Aug. 28. Written comments should be sent in duplicate to the Hearing Clerk, Room 1077-s, USDA, Washington, D.C. 20250,

where available for public inspection during regular business hours.

FSQS established grade standards and provides official grading services for many food products. Use of the standards or grading services is voluntary and paid for by the user.

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WASHINGTON CRANBERRY GROWERS TOLD WHY RATES ARE HIGH

Eight peninsula cranberry growers attended the Pacific County Public Utility District No. 2 (PUD) meeting in Ilwaco, Wash. on May 30 to find out why their electrical service standby charges have increased, in some cases, as high as 47 and 51 percent.

PUD commissioners, meeting at the PUD office, discussed with the cranberry growers for about an hour and a half and explained that the local PUD must receive adequate return for services and that they are constrained to make all classes of customers "pay their own way" for those services.

Commissioners said all rates and service charges were raised April 1 after wide publicity on the increase was published. The rate for standby service was increased from \$6 per year per horse power (of the electric irrigation pump) to \$7.50 per year per horse power. The basic service charge of \$35 per year was not changed, according to PUD Manager John Dunsmoor.

After the meeting, Commissioner Hal Norman said the PUD had to raise the standby rate because there was no way to get adequate return for services through charges on the actual power used. Cranberry growers are using 7.4 percent of the electrical load factor. Average load factor for all classes is 47 percent.

"The problem we were faced with," said Norman, "was that the rate of returned funds from in-

vested funds was the poorest of all classes when it came to irrigation. In fact, we ran into a deficit."

Overall rates were increased April 1 in the PUD by 32 percent, but individual cranberry growers, depending on the horse power of their pump, were getting much higher increases in the standby rate.

Commissioners explained that the rate increase was substantial for the standby rate, but that the actual dollar increase was not as much compared to commercial or residential rate increases.

Because so little power is used by cranberry growers on a standby basis, the PUD commissioners determined that they had to get a return for services from somewhere other than actual power sold.

"We have to get adequate revenue back for the cost of the services," said Norman. "Each user class has to pay its own way. We can't subsidize any class in our system."

Norman said he felt the cranberry growers left the meeting with a better understanding about PUD problems, and that the PUD commissioners found out about grower problems. The commissioners appreciated the growers taking time out to come to the meeting.

PUD commissioners said they would investigate claims that large electrical pumps are not drawing the total amount of power that their rate has been classified as. Commissioners said they would make adjustments in billing if they have been overcharged.

Courtesy of Chinook Observer

CRANBERRIES

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— Our 39th Year of Publication —

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CHANGES IN OSHA

The National Institute for Occupational Safety and Health (NIOSH), a research agency within the Department of Health, Education and Welfare, lists between 1,600 and 2,000 substances as suspected carcinogens. But the Occupational Safety and Health Administration (OSHA), the responsible regulatory agency, has set health standards for only sixteen of these substances. This discrepancy has prompted a move to reorient OSHA from pre-occupation with safety standards toward a stronger emphasis on health standards.

The new OSHA policies, reported in "Environmental Science and Technology," include more frequent inspections of high risk industries (e.g., construction, manufacturing, petrochemicals), development of generic health standards to cover broad categories of potentially dangerous substances, expansion of state consultative services, and development of worker education programs. The plan also

provides for the hiring and training of more health-compliance officers, as well as increased cooperation with NIOSH, the Environmental Protection Agency, the Food and Drug Administration, and the Department of Agriculture.

Occupational exposure to dangerous substances is widespread. Some 880,000 workers, about one percent of the work force, may be exposed to an OSHA-regulated carcinogen; twenty-two million (25 percent of the work force of 93 million) may come into contact with an OSHA-regulated substance that can cause disease or death.

The Center for Disease Control (CDC) together with NIOSH and the National Research Council for Prevention of Occupational Cancer (NRC) all affirm the right of workers to know the extent and nature of their exposure to toxic substances. However, NIOSH claims it does not have the authority to alert some 74,000 workers which its studies indicate have a better than average chance of developing cancers due to on-the-job exposure to harmful substances. Between

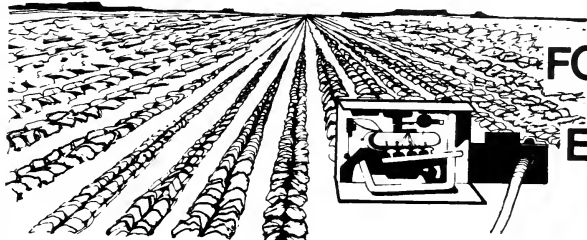
seven and fifteen million workers are exposed to toxic substances contained in products which are sold by trade name, without listing ingredients. Up to seventy percent of the substances found in work-sites are identified by trade name only. NIOSH has contacted the ten thousand manufacturers of these substances, seeking disclosure of the chemical compositions of these products. Compositions for 50,000 of some 86,000 substances have been obtained, and NIOSH's Hazard Surveillance Group plans to publish a complete trade name index by October 1978.

OSHA is currently establishing health standards for many chemicals. The emergency temporary standard (ETS) set for benzene was overturned in court by the American Petroleum Institute; the permanent standard, promulgated in November 1977 is expected to generate more litigation. Those permanent standards set permissible worker exposure levels at one part per million, averaged over an eight-hour period. This is the lowest level

Continued on Page 7



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2,4,5-T PESTICIDE

BEING REVIEWED BY EPA

A weed and brush killing pesticide commonly used on forests, rangeland, rice paddies, and rights-of-way areas such as highways and electric lines is being reviewed by the Environmental Protection Agency to determine whether these uses should continue, be restricted, or stopped altogether.

The pesticide is 2,4,5-T herbicide, produced in the U.S. since 1948 but the subject of controversy in recent years. Environmentalists contend the compound may cause birth defects and cancer. EPA recently received some 450 letters from citizens and environmental groups, such as the Citizens Against Toxic Sprays, protesting use of the chemical.

On the other hand, many pesticide, agriculture, and forestry officials argue the weed killer is not a serious hazard but the only effective, economical weapon for controlling unwanted plant life.

Of special concern is a chemical contaminant sometimes found in 2,4,5-T products called "dioxin" or "TCDD." This is one of the most toxic chemicals known, capable of killing laboratory animals in extremely small (parts per billion) amounts. Dioxin is created as a by-product during the 2,4,5-T manufacturing process.

Producers of the herbicide have reduced dioxin levels from 30 to 40 parts per million (ppm) in the late 1960's to less than the current EPA requirement of 0.1 ppm, greatly reducing the potential hazard.

"EPA's investigation of 2,4,5-T and dioxin mainly will concern their potential for causing cancer or birth defects in people over long periods of time," said EPA Deputy Administrator Barbara Blum. "The Agency does not think current use of the chemical poses an imminent or emergency threat to people or the environment."

EPA's review of the chemical is technically called a "rebuttable presumption against registration." This means that the Agency has found scientific evidence of a potential health hazard from the pesticide but that it is giving producers and users of the vegetation killer the chance to rebut this evidence and argue economic benefits. After this has occurred, the Agency will decide whether the compound is reasonably safe as used, whether additional limitations are needed, or whether it should be removed from the market.

This process of commenting upon the chemical and reviewing information received may take a year. In the meantime, 2,4,5-T may continue to be sold and used.

EPA began the review of the herbicide's risks and benefits for the following reasons:

—The pesticide and its dioxin contaminant have killed fetuses or

caused birth defects such as cleft palate among laboratory mice, rats, hamsters, and birds in tests by the National Institutes of Health, Dow Chemical, and others.

—2,4,5-T and dioxin have caused leukemia and lung, liver, and other tumors among mice and rats in studies conducted by the National Institutes of Health, Dow Chemical and others.

—EPA calculations show that "an ample margin of safety" may not exist for persons applying the pesticide or people exposed to aircraft spraying of it.

"Findings of birth defects and cancerous tumors among laboratory animals exposed to 2,4,5-T indicate that it may cause the same problems among people," noted Blum. "We're thrashing out the pros and cons of the compound in a public review before deciding whether regulatory action is called for."

EPA estimated that some five million pounds of 2,4,5-T were applied in the U.S. in 1976, principally for brush control on livestock grazing land and on rights-of-way areas such as highway ground, utility lines, and railroad tracks.

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The principal makers of 2,4,5-T are Dow Chemical, Midland, Michigan; Thompson-Hayward Chemical Co., Kansas City, Kansas; and Transvaal, Inc., Jacksonville, Arkansas.

In 1970, the U.S. Department of Agriculture stopped the use of 2,4,5-T around homes, parks, and other recreational areas, and in lakes and waterways primarily to protect women of child-bearing age from a possible birth defects threat.

In 1974, EPA cancelled hearings on whether remaining uses of the herbicide should be stopped because of problems in measuring dioxin residues in people, wildlife, and the environment. Since then the Agency has found parts-per-trillion levels of dioxin in a few samples of beef cattle, birds, and other wildlife. The Agency intends to analyze women's breast milk, rice, and fish for residues.

Persons interested in commenting on the risks or benefits of 2,4,5-T should submit their views to EPA, Office of Pesticide Programs, Technical Services Division (WH-569), 401 M Street, S.W., Washington, D.C. 20460.

POISONING BEES HOW TO CONTROL NOSEMA DISEASE IN HONEY BEES

Information on how to control a serious disease of honey bees that retards colony development is available in a new publication from the U.S. Department of Agriculture.

Nosema disease, which affects the life span of adult honey bees, also decreases honey, packaged bees and queen production, and crop pollination says research entomologist Floyd E. Moeller of the Bee Management and Entomology Research Laboratory, Madison, Wis.

Some sources and causes of nosema infection, most prevalent in the spring, include contaminated combs, food stores, and shipping cages; prolonged winter confinement; and disrupted emergence of young healthy bees during brood rearing.

A copy of Technical Bulletin 1569, "Nosema Disease—Its Control in Honey Bee Colonies," may be obtained from the Office of Governmental and Public Affairs, U.S. Department of Agriculture, Washington, D.C. 20250.

OSHA
Continued from Page 5
attainable with current technology and analytical expertise. The standards also require medical surveillance of workers exposed to benzene.

In 1978 OSHA will set standards for beryllium, nickel, chromates and acrylonitrile. The agency will also create a generic standard for all pesticides containing dibromochloropropane (DBCP), which causes sterility in humans and cancer in rats and mice. Standards mandate labelling, skin exposure levels, medical surveillance, and overall engineering controls. Under the new policy OSHA expects that basic medical and scientific issues can be resolved and fundamental policy issues established to classify and regulate compounds, so it will no longer be necessary to review the same scientific questions with each new substance.

BOSTON FIRM GETS OCEAN SPRAY JUICE ACCOUNT

Kenyon & Eckhardt, Boston, has landed advertising for Ocean Spray's newly introduced line of bottled grapefruit juice products.

Harold Thorkilsen, president of the 48-year-old producer of cranberry products, initiated an agency search for the new line last May. Nine agencies made presentations, and the field was cut to three.

In early June, the official word came that Kenyon and Eckhardt would direct the budget no one's willing to discuss, but which trade sources report to be in the \$1 million range.

Ted Bates and Kelly Nason, Univas, N.Y., continue to manage the remainder of the Ocean Spray business, with only the grapefruit products—both existing and future—going to Kenyon & Eckhardt.

Kenyon & Eckhardt vice-president Dick Smith will manage the account, with Joyce Gravlee, vice president account supervisor, acting as account person. Louis Popp, senior writer at Kenyon & Eckhardt, is responsible for the creative approach which led to the agency appointment.

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FOLIAR FEEDING OF CRANBERRIES

by Charles C. Doughty
Horticulturist

The main purpose of feeding plants through their leaves is to alleviate shortages of nutrient elements that develop during the growing season. Principal elements needed are nitrogen, iron, zinc, boron, and at times phosphorus and potassium.

Foliar feeding is only to supplement a well balanced soil fertilizer program. No attempt should be made to supply all fertilizer requirements through foliar feeding. Shortages in the supply of the various elements develop during the growing season when the rate of growth is highest. This would be during the time when vegetation, blossoms and young fruit are all growing rapidly. Especially this is true with nitrogen. Shortages of zinc and iron have appeared at times in late summer or the fall and continued throughout the winter and the following spring months. This occurs when the soil levels are just above the deficiency point. During rapid growth the soil supplies are used up more rapidly than microorganisms in the soil can make more available from decaying organic matter. Very little microorganism activity occurs during the

winter months. Therefore the shortages persist until the soil warms up the following spring. If sufficient natural supply is present in the soil, the deficiency symptoms may disappear; if not, then the symptoms will persist into the growing season. When conditions and symptoms such as these appear, applications of the appropriate minor element(s) should be made.

Applications of nutrient elements have been successfully made by sprinkler systems and by spraying. Enough liquid should be applied to thoroughly wet the vines, but not so much that it runs off. If sprinkler systems are used, they should be operated just long enough to get the material distributed and then be turned off. The most efficient method is by spray application. These materials are most readily absorbed by the younger leaves during periods when the spray remains fluid for some time.

A number of formulations of the various nutrient elements are available. Chelated materials are available for zinc, iron, copper and manganese and may be used effectively. Urea is the best source of

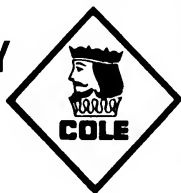
nitrogen for leaf feeding. Various non-chelated special formulations made from inorganic chemicals are also available to supply the various nutrient elements. These materials also are satisfactory if directions are followed. Some of the special formulations contain more than one element. Care should be used to follow directions closely as some of the chemicals containing zinc, copper or boron, for example, can burn the leaves if applied too strongly. Formulations, such as Es-Min-EI (made for foliar feeding) which contain manganese, zinc and copper; Nutra-Phos or Sorba Spray formulations, which contain various combinations of elements (such as zinc, manganese, iron or copper), as well as others, are available for use. Boron is generally applied alone in the form of borax, solubor or borate although some mixtures include boron. Boron compounds can be used at high rates as herbicides; at low rates they are used as boron fertilizers.

Under certain conditions leaf feeding is the only way to get micronutrients into the plants. Some soil conditions make several of the micronutrients unavailable. Elements such as zinc or copper may become tied up in the soil so the plants cannot extract them. In such cases foliar feeding is the easiest way to supply the needed nutrients.

It is advisable to apply micronutrients only when the plants show a need for them. These elements, that is, iron, zinc, manganese, copper boron and molybdenum, are used by the plant in very small amounts; and for this reason, when they are applied in excess, they become toxic. Iron is the element of this group that is used in largest quantities and will probably be the one, along with zinc, that is needed most.

Nitrogen, phosphorus and potassium are absorbed in relatively large amounts and if an excess is absorbed it is either stored or used in new growth. This is especially true with nitrogen. Excessive amounts

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Continued on Page 14

OBITUARY

DANIEL "JIM" CROWLEY

Daniel James "Jim" Crowley, 88, of the Long Beach, Wash. area, died June 9 at the Ocean Beach Hospital. He was born Sept. 13, 1889 in Dunmanway, Ireland and came to the United States in 1909.

The well-known cranberry plant specialist and grower became a naturalized citizen while in the army on June 1, 1918.

Crowley attended Washington State College (now University) at Pullman in October 1919 and later graduated in 1923 with a degree in plant pathology. He married Ruth Lindsey on August 27, 1920 while they both were students at the college.

During his years on the peninsula since 1923, Crowley was superintendent of the Coastal Washington Research and Extension Unit at Long Beach from 1923 to 1954. His work included research on

problems involving weeds, insects and plant diseases.

Crowley is known to have saved the cranberry industry for the state of Washington through his research dealing with sprinkling for frost protection. His experiments began shortly after he became superintendent and the method has since become standard procedure for cranberry growers.

In 1970, Washington State University officials announced that a cranberry selection had been officially designated in his honor by calling it "Crowley" as a reflection of appreciation from cranberry growers for his assistance given to the cranberry industry of the Pacific Northwest and for his leadership of the research station.

Between 1954 and 1960, Crowley acted as a cranberry consultant and was involved in the development of a family cranberry bog.

Following the 1959 "cranberry chemical scare," Crowley was called out of retirement by Ocean Spray Cranberries, Inc. to act as a field

representative to obtain complete accounts of chemicals used by the growers in the growing areas of the state of Washington.

He was a charter member of the Ocean Beach Presbyterian Church, past president of the Long Beach Kiwanis Club, past master and district deputy of the Masonic Lodge, past master and 56-year member of the Long Beach Grange No. 667, past commander of the local American Legion post, member of the Veterans of Foreign Wars and Disabled American Veterans, first president of the Long Beach PTA.

Survivors include his wife Ruth at home; four sons, Eugene James of Calusa, Calif., Lee Paul of Long Beach, James Noel of Tacoma and David Neil of Kirkland; four daughters, Eileen (Mrs. John D.) Dawson of Tacoma, Rosanne (Mrs. Ralph A.) Sallee of Bellevue; Eva Jean (Mrs. Ray W.) Nordstrom of Walnut Creek, Calif. and Donella Crowley-Sawin of North Bend; 12 grandchildren and five great-grandchildren.

More Obits Pg. 14



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Investment Scoop

by Martin B. Person, Jr.
President, Gage Wiley & Co., Inc.



*"Good Morning. We are conducting a survey.
Would you mind answering?"*

It shouldn't surprise a stock-broker these days to learn that another survey has proven that the household "financial decision makers" don't think of common stocks as the primary path to financial security. This time it was the New York Stock Exchange itself that spent \$200,000 for a five-month survey of 2,740 households with incomes of more than \$10,000 to arrive at this discouraging conclusion. As a result of this news, I expect a few more sad souls jumped figuratively through the high Exchange windows to the harsh reality of the Wall Street pavement below. When the Exchange spends that kind of money to learn something every broker could have told them from personal

experience, it makes me wonder about their financial acumen. I believe survival today in this industry demands street-level offices to prevent fatal flights of despair beyond a simple stumble from the curb.

Where does this same survey say the public *does* plan to put its money? Ahead of common stock comes passbook savings account, real estate other than home, ownership of home/apartment, savings certificate, life insurance, United States "E" and "H" savings bonds and employee savings plan in that order.

Did you know that even today we are not far from one of the market depths, as indicated by price/earnings ratios, that have only

been reached a couple of times in the past 100 years? Did you ever wonder why the stock market, based on most valuation measurements continues to be historically very, very cheap?

The basic bad-boys that have always terrorized the market have been fear, apathy and inflation. That terrible triumvirate has been responsible for every cheap stock period we have had in the past, but today we don't have the depths of a war scare fear, nor the apathy that dries up volume on the stock exchanges to a mere trickle. We just set the record all-time high for volume in April. What we *do* have is inflation. This time there is only one of the three horrors to blame. A mean one, yes, but should inflation alone produce such low valuations?

At this juncture fear of continuing inflation has not only depressed stock prices, but bond prices as well, which is an unusual combination. Take a careful look at their present levels and compare them with values in those other alternatives we mentioned above. A careful review should reveal there certainly is merit for every family in each category, but I believe a particularly favorable case can be made for stocks and bonds today by the perceptive investor. When the next New York Stock Exchange survey indicates that everyone loves stockbrokers and stocks, it will be time to sell all your securities and look into buying more cranberry bogs.

If you'd like to know what stocks I think represent good values today, please write me at P.O. Box 507, Plymouth, Massachusetts 02360.



Muriel Stefani
Representative



Martin B. Person, Jr.
President

*"Never underestimate the power of
patient persistence."*

... Arnold Glasow



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News from Mass. Farm Bureau

On Beacon Hill Governor Dukakis has once again used his pocket veto to kill a bill which would have made farm tractors exempt from the Massachusetts sales tax. Farm Bureau tried to save this bill with a host of last-minute maneuvers, but in vain.

* * * *

We're still trying to convince

Gov. Dukakis to veto the real estate tax classification bill (H-6054). MFBF Executive Secretary Phil Good is very concerned over possible effects on valuations of farm buildings, roadside stands and the like. Good is also deeply concerned over what classification could do to farmland values under the Farmland Assessment Act (Ch. 61-A).

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A new program of forest management has been announced by the American Forest Institute (AFI). In cooperation with the Massachusetts Tree Farm Committee, this program will encourage forest land owners to get into a forest management program, with a goal of eventually being qualified as an official Tree Farm. It serves as a kind of beginner's program. Forest land owners are urged to learn more from local inspecting foresters.

* * * *

Consumers ask "why do prices keep going up?" Consider this—last year pesticide industry spent over \$15 million to defend against various directives known as "RPAR's (Rebuttal Presumption Against Registration)." During 1978 state and federal agencies will spend some \$20 million against RPAR with the U.S. Department of Agriculture spending nearly \$8 million and EPA itself spending \$7.5 million.

* * * *

Also in the nation's capitol—the House appropriated \$15.9 million more than the President's request for the Agricultural Research Service and the Cooperative State Research Service. They also included a \$21 million budget for the human nutrition research center at Tufts University. The House added \$14.7 million to the President's request for a direct farmer-to-consumer marketing program.

* * * *

USDA Secretary Bergland has called for public comments on the government's decision regarding what to do with the 62 million acres of land in the National Forest System. The so-called "RARE II" (Roadless Area Review and Evaluation) statement would allocate the majority of the 62 million acres to non-wilderness uses. Forestry industry people are concerned about this, fearful that environmental pressure groups will prevent the removal of forest products from this massive land area.

REGIONAL NEWS NOTES

Nova Scotia

The weather was cool during April and the first week of May. However, things took a turn for the better about the 10th and at the time of writing, May 17, we find that plant development is what we normally expect for this time of year.

Recently we received a reprint of an article of interest to those working on cranberries:

Eaton, G. W. and E. A. MacPherson. 1978. *Morphological Components of Yield in Cranberry*. Hort. Res. 17: 73-82.

Growing conditions to date in 1978 have been favorable for cranberry production in Nova Scotia. On July 18 I visited one of our cranberry bogs along with Mr. Charles Fox and Dr. Albert MacPhee. They were looking for insects but fortunately did not find any of significance. I was more interested in the bloom and the small berries which had formed on some shoots. We are hopeful at this

time.

A recent report from British Columbia states that they have had some damage from frost and Cottonball diseases.

We are experiencing a cold windy day today, June 15, and there is a risk of frost this evening. Cranberry vines came through the winter reasonably well and we expect full bloom about July 1. A moderately good crop is expected based on the number of flowers per shoot.

I. V. Hall

New Jersey

May was cool and very wet. The average temperature was 58.9° F or 3 degrees below normal. Rain occurred on 15 days and totaled 7.66 inches which made it the third rainiest May in the 49-year weather recording history at Pemberton.

The accumulated rainfall through May 31st was 22.80 inches or 5.86 inches above normal. Cran-

berry reservoirs are swelled to capacity.

On the 1st of May an unusual low temperature reading was recorded on a bog at Whitesbog. The temperature was 9-1/2° F on the bog and 22° F in the weather shelter. In the memory of Lou Grant (Whitesbog foreman) the lowest previous bog temperature in May which did not harm cranberries was a 14° F reading. It is interesting to note that the 9 degree temperature caused no visible damage to uprights on bogs which were drawn on April 20 and which were still quite dormant. A reading of 25-1/2° on May 22, when some uprights were in the "candle" stage, also did not cause any apparent injury.

The May 1st frost caused some damage to blueberries in the Pemberton area. In this locality severe damage resulting from two successive winters of extremely sub-normal temperatures had already reduced crop prospects. Blueberry production is expected to be considerably below normal in the Burlington County region, but in Atlantic County a good crop is anticipated.

June was cooler and wetter than normal. The average temperature was 69.1°F., which is 1.5 degrees cooler than normal. Precipitation occurred on 12 days and totaled 4.58 inches or .71 above normal.

Since the first of the year the accumulated rainfall is 27.38 inches, which is 6.82 inches above normal. Cranberry reservoirs are filled to capacity.

Unusual late spring frosts threatened the New Jersey cranberry crop. On June 15th and June 16th temperatures at Whitesbog descended to 27 and 28. In the weather shelter, record minimum temperatures of 40 and 43 were recorded at Pemberton. Cranberries were in the tender, frost-susceptible hook stage. However, very little damage was sustained, as growers

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were alerted and a abundance of water was available for flooding. Actually most of the negligible damage which resulted was caused by the water rather than frost.

Flowering of cranberries is excellent. Flowering is prolific in most bogs. At this time there appears to be no discernible differences on bogs which had the ice dropped and those where the heavy ice and snow cover remained all winter.

P.E.M.

Massachusetts

Personals

Dr. Robert Devlin attended the Annual Meeting of the Northeastern Section of the American Society of Plant Physiologists at Smith College, Northampton, Mass. on May 5-6. Bob also is a member of the Executive Committee of the group.

Weather

May was slightly cold and very wet. The temperature averaged 1/2 degree a day below normal. Maximum temperature was 80 degrees on both the 21st and 30th and minimum was 32 degrees on the 1st. Warmer than average periods were the 20-23rd and 28-31st.

Cooler than average periods were the 1-6th, 9th, 15-16th and 25-26th.

Rainfall totaled 6.06 inches or about 2.6 inches above normal. There was measurable precipitation on 10 days with 1.87 inch on the 25th as the largest storm. We are a little over 3 inches above normal for the year to date and about 2-2/3 inches ahead of 1977.

Frost

We have had a remarkable spring frost season with only one warning to date and this came on April 30. May without frost warnings is a rare occurrence and has happened only twice before in 30 years, in 1960 and 1975. For comparison there were 15 warnings in 1977, 24 in 1976, none in 1975, 7 in 1974 and 6 in 1973.

The season has been late, generally 10 days to two weeks. However, Bill Tomlinson trapped the first fruitworm moth in the black light trap on May 31, only five days later than last year.

Final Keeping Quality Forecast

As of June 1, 1978, we have six of a possible 16 points favoring good keeping quality. Historically, six points is sufficient to produce a crop rating of "good." We have already, in the Preliminary Forecast, warned against late-holding because of the severe winter. Now

we are urging fungicide control of fruit rots to make "good" better in view of heavier than usual fertilizer applications, the need for increased quantities of fresh fruit, and because it makes good economic sense at a time of improved market prospects. Follow carefully the suggestions on the Insect and Disease Control Chart.

Personals

Dr. Robert Devlin attended the combined Annual Meetings of the Plant Growth Regulator Working Group and the American Society for Plant Physiology at Virginia Polytechnic Institute from June 25-30. Bob gave an invited talk on "The Future of Plant Growth Regulators in Agriculture" and also presented a research paper on the effects of Norflurazon (Evail) on the physiology of plants.

Frost

There were a total of only four frost warnings released during the spring of 1978. The first was on April 30 and then nothing until June 14, 15 and 16. This compares with 15 in 1977, 25 in 1976, 4 in 1975 and 8 in 1974. There were some readings of 27 and 28 degrees on both the 15th and 16th.

Weather

June was just slightly on the warm side averaging 0.2 degree a

Continued on Page 14

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FOILAR FEEDING OF CRANBERRIES

Continued from Page 8

of nitrogen turn the plants into vegetative growth until the excess is used up.

Rates of micronutrients recommended foliar treatments are: for iron (Fe) use ferrous sulfate, ferrous ammonium sulfate or chelated irons at 1 to 3 lb. of any per acre. For boron (B) use borax (36%), borate (46%) or tronabor (46%) or solubor at 1 lb. of any one per acre. For manganese use manganese sulfate, manganese oxides or manganese chelates at 1 to 3 lb. per acre. For zinc use zinc sulfate or zinc chelates at 1-4 lb. per acre. For the specially mixed formulations, apply according to directions for that particular material.

MASSACHUSETTS

Continued from Page 13

day above normal. Maximum temperature was 89 degrees on the 28th and minimum 44 degrees on the 17th. Warmer than average periods were the 1st, 19-20th, 25-26th and 28-30th. The only

cooler than average days occurred on the 8th and 14th. Generally the first half of the month was cool and the last third of the month warm.

Rainfall was very deficient, totalling only 1.19 inches, which was more than two inches below normal. There was measurable precipitation on nine days with 0.50 inches on the 8th as the largest amount. This is the driest June since 1971 and 7th driest in our records. Actually there was only about 1/3 inch of rain for the last three weeks and sunshine was recorded in Boston as the most in 25 years. We are one inch above normal for the 6-month period and about 4 1/2 inches behind 1977.

JOHN M. CONRAD

Funeral services were held July 11 in the Bandon Chapel of Coos Mortuaries for 72-year-old John Milton Conrad, a long-time resident of the Bandon area, who died July 7.

Mr. Conrad, a retired plumber and cranberry grower, was born July 14, 1905, in Langlois.

He was married June 17, 1934, to Gladys M. Kent at Napa, Calif., who served for many years as office nurse for the late Dr. E. F. Lucas.

Mr. Conrad lived for 30 years in the San Francisco Bay area, and the remainder of his life in the Bandon area.

He is survived by his wife, Gladys, Bandon, and one son, John M., Jr., who is with the sports department of the Eugene, Ore., Register Guard.

ANTONE T. LENARI

Antone T. Lenari, 82, of 17 Main St., Kingston, Mass., husband of the late Marion L. (Hathaway) Lenari, died June 17 in Jordan Hospital, Plymouth.

Born in Brazil, son of the late John and Angelina (Eseugatto) Lenari, he came to Plymouth as a child and attended Plymouth schools. He was a World War I veteran of the U.S. Army.

Mr. Lenari had resided in Kingston for 55 years, and had once been

employed at the Plymouth Cordage Company, after which he was chief engineer at the Puritan Woolen Mills. He was later employed as an engineer at Ocean Spray Cranberry Company, and after his retirement became an active cranberry grower.

He was a member of the American Legion Post #40 in Plymouth and of many cranberry organizations.

Survivors include a daughter, Mrs. Wilfred S. (Geraldine) Galletti of Kingston; a grandson and four great-grandchildren; three sisters, Miss Edith Lenari and Mrs. Alice DiMarzio of Plymouth and Mrs. Julia Santheson of Duxbury.

WILLIAM J. HARKNER

Services for William J. Harkner, 74, of Millston, Wis., prominent Jackson County cranberry grower, were held recently in Tomah. He died at a La Crosse hospital after surgery.

Harkner operated the Harkner & Sons cranberry marsh here since 1933. He was a Jackson County Board member for 22 years and a member of the County Highway Committee for 20 years. Harkner also served as president of the Trinity Lutheran Congregation here from the time of its start in 1961 to 1977.

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Sometime soon your family and everyone else's will tire of the same old barbecue menus. Hamburger and hot dog enthusiasts notwithstanding—it's time to add some variations to summer barbecue menus before boredom sets in.

One of the best ways to add variety to meats and poultry is to develop a repertoire of basting sauces and marinades that keep meats succulent and juicy—and can be heated and spooned over each serving.

Our trio of sauces do not require a lot of exotic ingredients. The base for these recipes, processed cranberry sauce, may already be on your kitchen shelf. Experiment a little and you'll find that cranberry sauce and cranberry-orange relish are very handy ingredients for year-round use in many different ways.





CRANBERRY HAM OR TURKEY KABOBS

(Serves 6)

Kabobs:

- 2-1/2 pounds canned ham or frozen turkey roll
- 12 whole mushrooms, trimmed
- 2 green peppers, cut into 1-inch squares
- 3 large onions, cut into quarters
- 2 navel oranges, cut into unpeeled wedges

Basting Sauce:

- 1 8-ounce can jellied cranberry sauce
- 1/2 cup pineapple juice
- 1/4 cup cider vinegar
- 2 tablespoons soy sauce
- 1 small onion, grated
- 1/2 teaspoon garlic salt

Cut ham into 1-1/2 inch cubes. If using turkey, cut roll into 1/2 inch cubes. Spear ham or turkey, mushrooms, peppers, onions and oranges onto heatproof skewers. Place skewers on grill rack 8 inches above gray coals. Combine Basting Sauce

ingredients and beat with a rotary egg beater until smooth. Brush sauce mixture over kabobs, grill 5 minutes, turn and brush again. Repeat until kabobs have grilled for 15 minutes and onions and peppers are cooked.

BARBECUED CRANBERRY RIBS

(Serves 6)

- 6 pounds pork spareribs
- 2 cloves garlic, minced
- 1 tablespoon salt
- 1 cup cranberry-orange relish
- 1/3 cup orange juice
- 1/3 cup wine or cider vinegar
- 1/3 cup soy sauce

Trim excess fat from ribs and place into a shallow glass or enamel pan. Mix remaining ingredients in a bowl and pour evenly over ribs. Refrigerate and marinate for at least 12 hours, or overnight turning ribs occasionally. Drain ribs and place 8 inches above gray coals and grill for 1 hour, turning ribs every 10 minutes with tongs. Cut ribs into 2 rib sections and serve topped with hot marinade.

BARBECUED CRANBERRY CHICKEN

(Serves 6)

- 2 broiler-fryer chickens, about 3 pounds each, quartered
- Salt and pepper
- 1 can (16 ounces) whole berry cranberry sauce
- 1 cup chili sauce
- 1/2 cup chicken broth or 1 bouillon cube
- Juice of 1 lemon
- 1 tablespoon Worcestershire sauce
- 1 tablespoon instant minced onion
- 1 teaspoon dry mustard

Sprinkle chicken on all sides with salt and pepper. Combine remaining ingredients in a blender and whirl until smooth. Place chicken 8 inches above gray coals and grill for 30 minutes turning chicken every 10 minutes. Brush chicken with some cranberry mixture and continue grilling for another 20 minutes brushing with cranberry mixture every 10 minutes.



Sermonettes

by the

Rev. Don Jennings

HE RESTORETH MY SOUL

He was a farm boy of ten. He was full of the adventure that can be found by any boy whose life is spent in the country. That hot summer day, he lazily trudged up the lane from the woods. In one hand he carried a straw hat, battered and torn from doing battle with a bumblebee nest. The day was hot, and his thirst had driven him to the house.

As he pumped cool, clear water from the well in the yard, he lifted the cup and drank eagerly. He felt refreshed; his thirst was quenched. He lay down upon the grass nearby in peaceful reverie. Little did he know of the many times in his life ahead when he would be driven to seek out that which would quench the thirst of his soul as well as his body.

It is a wise man who, knowing the source of supply, seeks out the restoring power for both body and soul. It has been said that a pocketful of gold is of little value to a man dying of thirst.

Success

It is not work that kills so many these days, but rather the strain of trying to reach the next rung on the ladder of success. Someone in my presence recently said that some of us spend half our lives trying to keep up with the Joneses, and the other half paying for it. The terrific pace of these days can rob us of the soul-restoring moments. These we all need.

David, the Psalm writer, sought out that sanctuary of restoring power many times. He found it in the symbol of the still waters when he said, "He leadeth me beside the still waters, he restoreth my soul." You may find it as you look upon a waterfall, a mountain, or a spring of cool water. You may find this

restoring power if you take time to think of Him who created all of these natural and physical blessings for man.

With a group of 50 young people, I recently visited the Chapel of the Sky at Chicago Temple. There, high above the busy streets, we found a place of quietness and devotion. Any vacation that does not include some time for quiet meditation has failed to do all that a vacation is supposed to do.

Restoration

I know a busy mother of five children. She confessed to me that there were times when the cares of the family and household would drive her to the brink of distraction. "When these times come," she confided, "I go to my room and shut the door. There I spend some moments in quietness with Him who has never failed to restore that calmness of soul that every mother needs at times."

Our Lord set the example. Countless times he felt the need of solitary hours alone in the mountains with his Heavenly Father.

When we face problems too great to solve alone, we may rest assured that we can find that restoring power with him. Jesus said when he walked on earth, and he says to us today, "Come unto me all ye that labor and are heavy laden, and I will give you rest."

DR. ZUCKERMAN TO ATTEND TOKYO CONGRESS

Dr. Bert Zuckerman will attend the 11th International Gerontology Congress in Tokyo from Aug. 15-30, 1978. He will be a symposium speaker on changes in enzyme regulation, deliver papers on nematode-lectin binding experiments and effects of centrophozine; guest speaker, Japanese Society of Plant Nematologists, Tokyo; Fujisawa Pharmaceutical Co., Tokyo; Osaka Pharmaceutical Co., Osaka. The trip will be paid for by: The Promonta Pharmaceutical Co., Hamburg, Germany, Osaka Pharmaceutical Co., Osaka, Japanese Society of Plant Nematologists and the Fujisawa Pharmaceutical Co., Tokyo.

JOHNS-MANVILLE INTRODUCES NEW SPRINKLER BROCHURE

The features, specifications and performance characteristics of the 180 series Buckner® full circle brass impact sprinkler are described in a new brochure issued by Johns-Manville.

Performance capabilities for each model, relative to nozzle size, are shown in tabular form. Pressure at sprinkler base, flow rate, sprinkler radius, maximum rectangular spacing and precipitation per hour are the criteria covered.

Sprinkler design features are provided and applications in solid set, hand move, side roll and pivot systems are detailed.

The brochure (IR-175) is available from Johns-Manville, 909 W. Nielson, Fresno, Calif. 93708.



BROCHURE ON COMPLETE PIPE LINE

A new 36-page brochure from Johns-Manville describes the features, advantages, properties and applications of its various lines of pipe, including Transite® asbestos cement, PVC, Permastran® fiberglass composite, and the five pre-insulated types in the Thermo-pipe™ series. The different versions within each line are detailed in individual sections.

The booklet also describes the pipe used for water and sewer systems. This segment, subdivided into pipe used in pressure applications (water distribution and transmission and force sewer mains), and those used for gravity sewer systems, is followed by other sections covering pipe used for thermal and industrial fluid transmission, respectively.

A copy of the brochure (TR-820) is available from Johns-Manville, Pipe Division, Ken-Caryl Ranch, Denver, Colorado 80217.

HAVE YOU MISSED THESE ARTICLES?

Cranberry Magazine's Reader's Service makes available copies of the articles listed below which have appeared in past issues. Order the articles you want to update your library. Please send cash or check with each article requested. ORDER BY NUMBER. (Revised 12/77)

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CRANBERRIES

THE NATIONAL CRANBERRY MAGAZINE

Volume 45, Number 8 August 1978



In This Issue . . .

RUTGERS IR-4 PROJECT	
WISCONSIN CRANBERRY FIELD DAY	4
NEW BOOM TOWING TUG	7

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CRANBERRY MARKETING ORDER AMENDED

Cranberry growers and processors have approved an amendment to their federal marketing order program which will provide for updating the allotment bases for producers now under the program and for the entry of new producers into the program.

They also authorized a public member seat on the Cranberry Marketing Committee for the first time. This committee works with the U.S. Department of Agriculture (USDA) in administering the federal marketing order program.

Assistant Secretary of Agriculture P. R. Smith said the amendment, effective Aug. 15, was favored by more than 75 percent of the growers voting in a referendum. These growers accounted for 86 percent of the volume of production that was represented in the voting. In addition, processors of more than 90 percent of the processed cranberries represented in

the referendum favored the amendment.

Handlers of more than 88 percent of the total volume of cranberries handled during Sept. 1, 1977, through April 30, 1978, signed a companion amended marketing agreement.

The federal cranberry marketing order program regulates the handling of cranberries grown in Massachusetts, Rhode Island, Connecticut, New Jersey, Wisconsin, Michigan, Minnesota, Oregon, Washington, and Long Island, N.Y.

BLUEBERRY PRODUCTION IN NEW JERSEY

The New Jersey Crop Reporting Service indicates the State's blueberry production for 1978 at 2,262,000 flats. Each flat contains 12 pints or approximately 11 pounds. This figure is up 9 percent from last year's crop and harvested acreage is at 7,800 acres. Many growers reported serious winter damage over the past two winters.

A hard freeze on May 1 caused some spotty but significant crop losses. This year's crop harvest got underway two weeks later than the normal due to the cool spring weather.

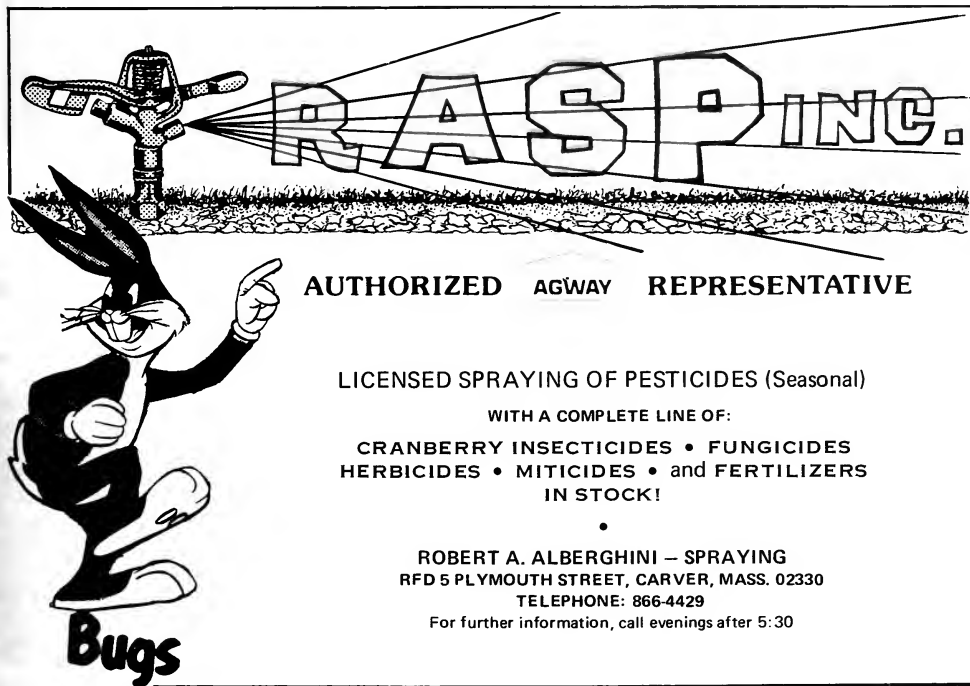
WISCONSIN FIELD DAY

The 1978 Summer Field Day of the Wisconsin State Cranberry Growers Association was held at the U.W. Hancock Experimental Station, Hancock, Wisconsin on August 10.

The program planning committee and officers of the Association felt that everyone enjoyed the day "off the marsh" at a location where all crops are grown under irrigation. There were many interesting trials and experiments with field, forest and horticultural crops, and experts were on hand to explain what was going on.

The hosts were the University of Wisconsin Experimental Farms Department and the resident staff at the station.

More details Page 4



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Bugs

Rutgers project helps keep fruits, vegetables available

Lettuce selling at \$5 a head? Strawberries at \$10 a quart, and no more asparagus or cranberries or much of anything else except soybeans, corn and wheat?

That's not the current situation, but it wouldn't miss by much in a couple of years were it not for a little-known national project called IR-4, which has its headquarters at Rutgers University's Cook College in New Jersey.

Now IR-4 may sound at first like the name of a robot in some yet-to-be-made sequel to "Star Wars," but it actually stands for Interregional Research Project Number Four, a group of scientists working diligently to keep most of what people eat available and reasonably priced.

The head of IR-4 is Dr. Robert Kupelian of Denville, a research chemist who grew up in Vineland, where agriculture might not be called "king," but is at least still a "prince."

Dr. Kupelian explained that when companies which make pesticides found the process of registering a pesticide for use on a crop was becoming increasingly more complicated and expensive, they were forced by economics to concentrate their work in areas in which they could expect to make a reasonable profit.

Therefore, he said, it was determined that in terms of acres produced each year, the major crops were cotton, corn, small grains, soybeans and livestock. Everything else involved too few acres for their purposes, and became lumped together under the easily misunderstood label 'minor crops.'

"These crops are in no way 'minor' in terms of their importance to the customer, because, by that standard, almost all of what we eat is a 'minor crop,'" said Dr. Kupelian. Most people don't realize



PEPPERY RESEARCHER Dr. Robert Kupelian, national director of the IR-4 project at Rutgers University, examines a pepper plant in a Cook College greenhouse. IR-4 helps keep many of the foods we eat available and reasonably priced.

that all fruits and vegetables are included in this category, he explained.

"As industry began spending less time and money on minor crop pesticides and registrations, IR-4 was created (in 1964) to clear pesticides for minor crop uses, and is fully supported and funded by the USDA and the fifty state agricultural experiment stations," said Dr. Kupelian.

"Without such clearances, the quality and quantity of fruits and vegetables, for example, would be reduced and the prices increased dramatically in just about all cases. The logical extension of that is that

some crops would in effect become extinct," he said.

"IR-4 serves essentially as a coordinator for registration activities. We originate protocols required to register with the Environmental Protection Agency (EPA) the various pesticides that growers feel they need and that Cooperative Extension Service experts have found to be useful. We make our decisions based on the effectiveness of a product and on the safety parameters of the residues we find in a crop."

In order to do the necessary field work, IR-4 works closely with every state agricultural experiment

station in the land-grant college system.

Many of the chemicals with which IR-4 works come from industry, which develops them for major crop uses. IR-4 looks for minor crop uses of the same chemicals, and can occasionally group crops for which the same chemical may be safely used.

"The demands are constantly

changing," said Dr. Kupelian.

"In weeds, for example, if you have twenty weed species in a field and you rank them, one, two, three, and so on, and you have a pesticide that controls number one and number two, then number three and number four eventually dominate and then they represent primary problems which have to be controlled, too.

"Among insects you sometimes find resistance developing to insecticides, which means that a chemical that kills them when it's introduced might not even affect them twenty generations later. With house flies, for example, it is only a matter of weeks between generations, so IR-4's task is constantly changing in some of these areas."

"Minor use programs have to be protected," he said. "If they're not, economics will force us to wind up with, for example, a soybean monoculture and we'll extract soybean protein from the beans and we'll make a meat substitute out of that, and we'll add strawberry flavoring to some other matrix and we'll end

up with a strawberry substitute and so forth and so on."

It's not difficult to see that Dr. Kupelian and the rest of the IR-4 staff, both at Rutgers and across the country, would not be pleased at all if that is what eventually happened. For that matter, they do not think that the American consumer would be pleased either.

Courtesy of the Times-Advertiser

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FIELD DAY — 1978

THE NATIONAL CRANBERRY
MAGAZINE

— Our 45th Year of Publication —

August 1978
Volume 45, No. 8

I. S. Cobb . . . *publisher*

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drawdown of the water table in that area. This appears to be the perfect example of recycling for the benefit of man.

Tod Planer, University Extension, Wood County served as chairman for the day's events and field tours aboard hay wagons guided by Professor Gavin Weis, Superintendent and Dr. David Curwen, resident extension horticulturist. A noontime chicken barbeque served under the oaks was enjoyed by those in attendance. The Wood County Bank served refreshments throughout the day.

An interesting and exciting event was the pesticide application demonstration during the tours provided by the Noble Helicopter Service.

A short meeting of the Association was held to discuss present concerns of the cranberry industry. Tod Planer announced that the Wisconsin Cranberry School will be held at the usual time in March. Final plans and program will be announced at the annual meeting early in January, 1979.

G. C. Klingbeil
Executive Secretary

The 1978 summer field day of the Wisconsin State Cranberry Growers Association was a break from tradition for it was the first time in memory that this event was held "off the marsh" and miles from the nearest cranberry farm.

Three hundred growers and their families and friends met on August 10 for this annual summer event at the University of Wisconsin's Hancock Experiment Station near Hancock, Wisconsin. Hancock is located in the so-called "golden sands" of central Wisconsin. The area was formerly the bed of glacial Lake Wisconsin, a most interesting geological phenomena. The Hancock Experiment Station provides research and extension support for the rapidly expanding agronomic and horticultural industries of this multi-county area. Irrigation of all types and sizes has brought new economic life to this area once known for its blow sand and sand burrs. It was reported that from a few irrigated acres in the mid-forties that nearly 140,000 acres are presently under irrigation. Even with the millions of gallons pumped during dry periods, records show there has been no measurable

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INTERNATIONAL CONSTRUCTION EQUIPMENT

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More than 1000 acres of cranberry crops were damaged by 11 inches of rain that fell on a six-mile radius of Wareham, Mass. early in August, according to John Ropes, director of grower relations at Ocean Spray Co.

Ropes estimated about 300 acres of cranberry bogs would be severely damaged, while much of the remaining crops would have a reduction in quality.

"I can't remember anything like this happening in the 31 years I've been in the business. It probably means a total crop loss for those of us on the Weweantic River," said Jean Gibbs of Wareham. She started growing cranberries when she married her husband, Phillip, a third generation cranberry grower.

She said they and her husband's family own about 50 acres of bogs that were two feet under water for six days. They don't expect to save much of their crop.

Normally at this time, the berries would be getting their color and becoming firm, said Gibbs. Instead the berries became water-

logged and "scalded" from the sun heating the water that covered the vines. The result, she said, will be undersized, mushy, green cranberries.

Gibbs said before the storm she was expecting an above average yield of over 1600 barrels of cranberries this fall. Each barrel usually nets \$16.

"If it's wiped out," she said, "it means every penny we've put in the bog since last harvest time (September) will be for nothing."

She said she won't know for certain whether any cranberries will be saved until later in August.

The Gibbs had a particularly hard time trying to save their crops because of drainage problems. Had they been able to drain their bogs in 72 hours, they might have been able to save more of their crop, Ropes said.

Unfortunately, they live at the southern end of Weweantic River and Crane Brook, into which more than 3000 acres of local bogs drain. The rainwater plus the runoff from

everyone's bog caused the river to overflow and they had to contend with the gallons of water that poured into their bogs for days after the storm.

More than one foot of water covered Route 58 in front of their home near the border of South Carver and Wareham.

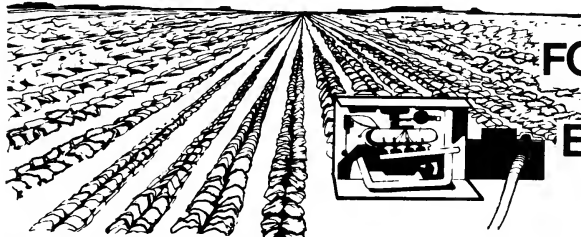
Gibbs said she hoped if there is much damage it will be a 100 percent loss. That way they won't have to waste money on a costly harvest, especially since they use the time-consuming, dry picking method of gathering the berries. But, even if they avoid harvesting, money will still have to be spent to flood the bogs to rid the vines of the rotted berries.

Ropes said, despite the losses suffered by many farmers, he does not anticipate a cranberry shortage or subsequent price increase. He said the remaining 11,000 acres of bogs in the state will produce a sufficient yield, though of a lesser quality.

Courtesy South Shore News



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OCEAN SPRAY DONATES CONSERVATION AREA IN MASSACHUSETTS

A 10-acre plot of land has been donated to the Town of Middleborough by Ocean Spray Cranberries, Inc., for conservation purposes and the recreation of area residents.

The wooded site adjoins Ocean Spray's 480,000 square foot processing plant location in Middleborough and is adjacent to the Merle A. Washburn Conservation Area off Bridge Street.

It has been designated the "Town of Middleborough-Ocean Spray Conservation Area," with a sign at the entrance and a bronze plaque on site dedicating the property to current and future generations within the town.

JOHN W. GOODMAN

John W. Goodman, 72, of Browns Mills Rd., Pemberton, N.J., died at Burlington County Memorial Hospital, Mount Holly on May 6.

Born in Orange County, N.Y., Mr. Goodman was a graduate of Rutgers University and held a masters degree. He began his career with the state Department of Agriculture in 1927 and worked in various agricultural fields including sales, adult education and Rutgers University 4-H Club extension service until 1942.

Mr. Goodman taught vocational agriculture for 17 years at the old Pemberton High School and also taught general science in Middletown and Bristol, Pa. middle schools until his retirement in 1970.

The last 35 years, he was engaged in the production and marketing of his own and cooperative blueberries. He and his wife, Dorothy, started the first "pick your own" blueberry business in the area.

Burial was in IOOF Cemetery, Pemberton.



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I am sure that most cranberry harvest workers who have pulled the berry collection booms across the bogs, will attest to the fact that it is an arduous task. Many of those who have lasted a week or more at the job have no doubt been immersed in a ditch at least once. It was probably this type experience that led one of the Ashley families to develop a motorized tug to tow their boom. After observing their tug in operation in October 1977, I decided to build one and demonstrate it to the growers which I did before the end of the 1977 harvest season. Figure 1 is a photograph of our tug. Using this tug we were able to corral 1000 barrels of berries with a 500-ft. boom and tow them across the bog to the loading area in about one hour. A load of corralled berries can be seen in Figure 1.

Our tug consisted of a small riding lawn mower, with the blade removed, mounted on a 4'x10' styrofoam float. The styrofoam was encased in 28 gage, galvanized sheet metal. The tug was propelled by a pair of 2-foot diameter, cleated wheels, which were driven off the mower axles. In Figure 2, the top view shows the lawn mower axle extended on both ends to drive the wheels of the tug.

The drive-wheel frames are constructed from 2"x2" x 1/8" thick, square aluminum tubing. The space between the side rails of the wheel frame is just sufficient to accommodate the wheel and drive sprockets.

The drive-wheel frames should be long enough for the wheels to reach bottom without swinging below a 60° angle with the horizontal. Therefore, the distance from the tractor axle to the bottom of the wheel should be 15% greater than the deepest water plus the height of the axle above the water. For example, if the axle is 8" above the float and the float is 8" thick, the axle will be from 12" to 16"

above the water surface. Then, if the deepest water to be traversed is 5' deep, the distance from the axle to the bottom will be about 6'-4". So the distance between the extension of the tractor axle and the bottom of the drive-wheel should

be 7'-4", which will make the center distance between the tractor axle and the drive-wheel axle 6'-6". Some provision should be made to restrain the drive-wheel frame from swinging beyond the 60° angle. Otherwise, it may capsize the tug



Figure 1.

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by lifting it from the water as the wheel passes under the point of suspension of the frame.

The wheel frame must be suspended so that the wheel can rise and fall to follow the contour of the bog, including the bottoms of the ditches. This suspension is shown most clearly in the top view of Figure 3. The wheel-frame is shown attached to the axle by a pair of bearings. The axle is supported by bearings mounted on a pair of arms extending from a beam, which is attached to the float. The beam extends all the way across the float to provide support for the right-hand wheel-frame also:

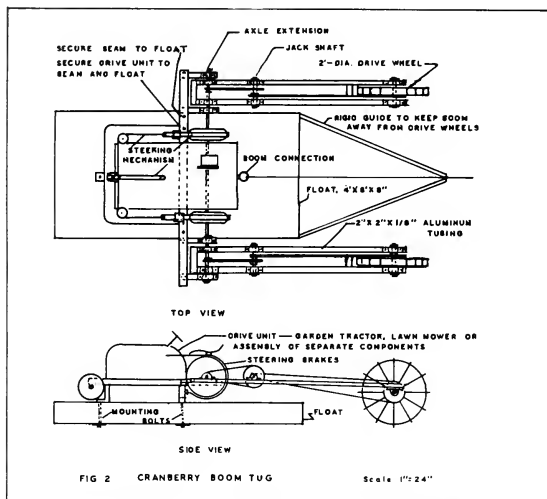
This beam is attached to the lawn mower so as to maintain the proper relationship between the axle and the beam. It is also attached to the float to maintain proper orientation of the float under the mower.

Although we used a riding lawn mower to drive our tug, we did so because it was a convenient assembly of engine, clutch, transmission and differential, all of which are necessary in the power train. There is no reason that separate components may not be assembled on a framework to accomplish the same purpose. In considering the assembly of separate components for a power unit, the cost of labor and

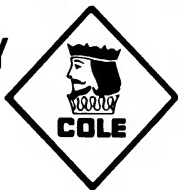
materials to construct the framework and mount the components must be included. This might well exceed the cost of a small garden tractor or riding lawn mower, which would then be available, outside the harvest season, for the use for which it was designed.

The operating speed of the tug should, ideally, range from about 1/3 mph to 3 mph. The slower speed would permit careful booming along the shore and the starting of heavy loads, while the faster speed would permit rapid traversing of the bog without a load. To achieve this range in speeds it will be necessary to have a transmission with a 4½:1 ratio between high and low speeds and an engine speed range of 2:1 from full throttle to idle speed. Aircooled, one or two cylinder, 4-cycle engines, normally have the 2:1 range. However, the lawnmower or tractor that is available may not have the 4½:1 range. In that case the sacrifice in speed should be made at the higher speed. It is necessary to be able to operate at the slow speed to prevent overrunning of the berries by the boom.

Figure 4 is a photograph of the assembled drive components of the tug before they were mounted on the 4' x 10' float. The construction of the drive-wheels and their framework is quite clearly visible. The drive-wheels should have 1½" square cleats to provide traction. The method devised for steering the barge is also relatively apparent. A metal band is shown wrapped around each rear wheel of the lawnmower. The band is anchored to the framework just in front of the wheel. From the point of anchorage, the band passes around under the wheel and then up over the top toward the front of the mower. The band passes through a fixed guide just forward of the wheel to keep it from slipping off the edge of the tire. A cable is attached to the end of the strap and passes around a guide and is then attached to the steering rod. As the steering arm is turned, the band on the side toward which the turn is being made tightens around the



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wheel, stalling it and permitting the drive wheel on the opposite side to drive the tug in the desired direction.

In Figure 1, a board extends diagonally across the front of the tug. It extends forward and to the right in the photograph a sufficient distance for the tip of the board to touch the shore without the drive-wheel getting in the shore ditch when the tug is traveling parallel to the shore. The purpose of the board is to plow the berries away from the shore and shunt them into the boom as it is being towed by the tug. The framework attaching the board to the tug is easily reversed to permit booming in either direction along the shore. The pipe above the plow-board is no longer included in the design. It was used in an unsuccessful attempt to move the berries a few inches away from the shore with a blast of air, to reduce the number of berries missed on the first pass.

The cost of constructing the tug could vary widely. A rough estimate, hopefully on the high side, of the cost of materials to construct the tug, using all new materials, except possibly the wheels, is as follows:

Power unit (tractor or lawnmower)—\$600, sheet metal—\$25, aluminum framework—\$80, power transmission components (chain, sprockets, bearing & wheels)—\$200.

I shall not attempt to estimate the cost of assembly of the components.

A little creativity may produce a tug for considerably less than the above costs. One grower mounted a small, used garden tractor on a plywood bed and attached it to a 16' boat. All that he purchased, was the aluminum for the framework and the chain, sprockets and bearings to drive the wheels. This kind of ingenuity should make construction of a relatively low-cost tug possible.

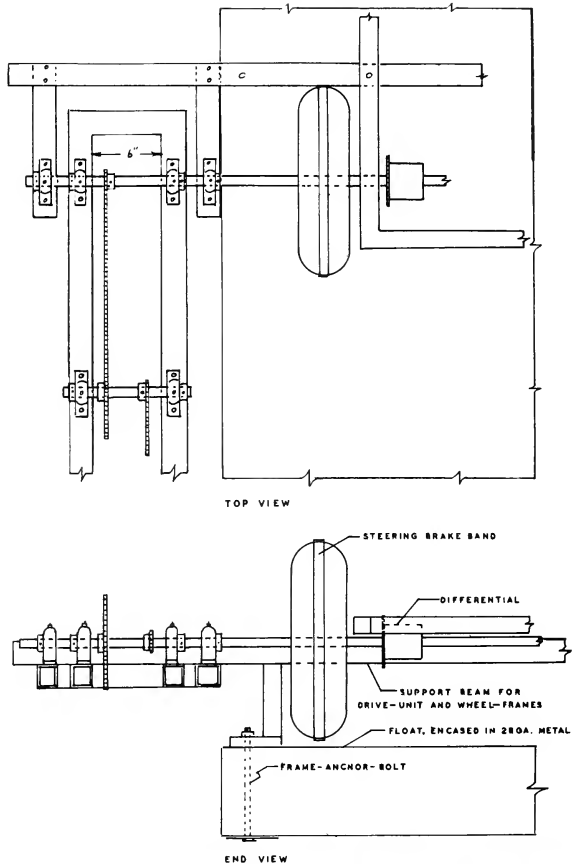


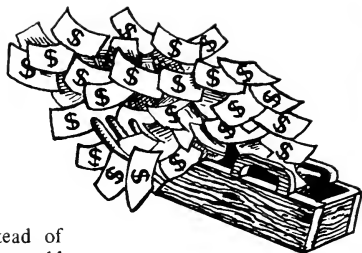
FIG 3 BOOM-TUG WHEEL-FRAME-SUSPENSION Scale: 1"=6"



Fig. 4. Cranberry-Boom-Tug minus float, showing power unit drive-wheels and drive-wheel frames.

Investment Scoop

by Martin B. Person, Jr.
President, Gage Wiley & Co., Inc.



§ DOLLAR SIGNS §

Bucking the trend . . .

"Spend these quickly! They will be worth 10% less if you wait until next year."

"Warning! The Secretary of the Treasury has determined that continuing inflation can be hazardous to your financial health."

"Do *not* store in a cool dry place. Spend um."

"Caution. This product will spoil unless used up quickly."

"Top secret! Only recognized authorities are allowed to understand this mess, and they can't agree."

I think one of these statements should be added to every new package of dollar bills that rolls off those high-speed U.S. Treasury presses. Either that or maybe we should consider making the official

currency THE MINT, instead of THE DOLLAR. At least it would be more honest since no one expects A MINT to keep its value. They are designed to disappear quickly and have a constant tendency to melt away if you try to hold on to them too long.

Despite the continuing pressure for a reasonable answer to the inflation dilemma, it appears the best alternative for most folks has been to keep an eye out for investment values that will increase gradually in some reasonable relationship with the inflation cycle. During the past 10 years I'm the first to admit that very few people found the stock market could provide them with the rising trend they wanted. Neither did bonds

yield an interest rate that could keep the pace. Real estate in that period turned out to be the best inflation fighter.

What is happening in this value search right now? Where are the best inflation hedges today? And what type of investment offers the best outlook for the next 10 years when you may have to come up with the big bucks for college expenses? If you expect to be reaching retirement age within that period, you've got to face the decision soon as to where you should be putting your money now that will provide you with the gradually growing capital values and the growing current income for those years when you aren't working.

It can be a confusing problem. For instance, just recently a highly regarded stock brokerage firm projected a market decline later this year accompanied by rising expectations for a recession in early 1979. Certainly that scenario would expand just the kind of stock market fear that many small investors have had for years. On the other hand, it could also provide exactly the kind of situation which forms the basis for excellent results for those who can "look beyond the valley" to the favorable beginning of a major up-trend in the business cycle.

I suggest you keep in touch with the changing values offered in the stock/bond area in the months ahead through my Plymouth office. For my free monthly letter, *Money Talks*, write P.O. Box 507, Plymouth, Massachusetts 02360.



Muriel Stefani
Representative



Martin B. Person, Jr.
President

"Everyone goes to the forest; some go for a walk to be inspired, and others go to cut down trees."

—Vladimir Horowitz



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REGIONAL NEWS NOTES

Wisconsin

The first week of July was very warm and humid, with temperatures averaging about 3 degrees above normal. High readings were in the 80's and 90's until the weekend when clouds and rain kept temperatures in the 60's and 70's. Rainfall was heavy as showers and thunderstorms developed Thursday evening and continued through the weekend. The heaviest rains of 4-6 inches fell in west central and southern areas south of a line from LaCrosse to Madison. Some local areas had up to 8 inches of rain.

Temperatures averaged near normal during the second week. High readings were in the 70's and 80's but reached 90 degrees at one point. Lowest temperatures were in the 50's. Scattered showers and thunderstorms occurred on most days. Rainfall varied, with heaviest amounts of more than 2 inches falling in the northwest. Eastern and southern areas received about a half inch of rain during the week.

Temperatures were cooler during

the middle of the month with highs in the 60's-70's and lows in the 40's-50's. Readings warmed to the 80's and a few 90's. Moisture occurred in scattered showers and thunderstorms. All areas received some rainfall, but amounts were less than a half inch except in the west and north.

Temperatures during the third week averaged above normal in the south but below normal in the north. High readings were in the 70's and 80's. Overnight lows were in the 60's and 70's. Rainfall was heavy again with periodic showers and thunderstorms most days. Weekly rainfall amounts ranged from an inch and a half in the northwest to 3 inches in the southeast. Isolated areas in the southeast reported over 5 inches of rain.

Washington

The second quarter of 1978 showed 7.8 inches more precipitation than the same period of 1977,

a drought year. Mean temperature has been higher compared to the same months of 1977. June '78 mean temperature rose 7.7 degrees over the previous month and 4.8 degrees higher than the same period of 1977. Such exceptionally warm temperature with some moisture enhanced physiological activities and initiated an early and short bloom period. Peak bloom was June 12, eight days earlier than 1977. Warm and, in general, dry weather in June made it possible for the bees to do a good pollination job.

July precipitation totalled .86 inches, there were 21 days with no measurable precipitation. The high occurred on the 22nd with 83 degrees, and a low of 44 degrees on the 12th. The area experienced thunder and lightning storms on the 25th and 26th, with minor damage, none to the cranberry crop.

The author attended the 75th Anniversary meeting of the American Society for Horticultural Science July 15-20 in Boston. "IBDU, A Slow-acting N Fertilizer for Cranberries" was the title of the paper presented.

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New Jersey

Temperatures in July averaged 72.3° F, or 2.6 degrees cooler than normal. However, a short heat wave which occurred during the pollinating period caused some concern. From July 21st through July 24th maximum temperatures were in the high nineties in the weather shelter and close to 100° F on the bogs. It was feared that there would be a repeat of last year's excessive blossom blasting but only very light damage has been observed in a few localized areas.

Rainfall was again excessive. A total of 5.04 inches occurred on six rainy days at the Pemberton sta-

tion. This was the fourth month in the past five of above normal precipitation.

In Southern Burlington County, in the heart of the cranberry growing region, rainfall was much more intense. One of the heaviest downpours ever seen in this area occurred near Green Bank on July 3rd when about 6-1/4 inches of rain fell in about five hours. Water remained on some bogs for four to five days and caused severe losses. On one property in this area there was a wipeout of the crop, while on another at least half of the potential harvest has been lost. In the Chatsworth area about five inches of rain caused less extensive damage but losses were appreciable.

Despite the attrition of weather, the cranberry crop is progressing very well. Losses to spring frosts were very light. Flowering on most bogs was prolific and pollinating conditions were good. As a result

there is a better than normal set. Plentiful rainfall is promoting good size. As of August first the prospect for the cranberry crop in New Jersey is exceptionally good. P.E.M

Massachusetts

Dr. Cross attended the Annual Meeting of Commissioners of Agriculture for the Northeastern U.S. in Boston from the 9th-11th.

Drs. Cross and Devlin and the author attended the 75th Annual Meeting of the American Society for Horticultural Science in Boston from the 15th to the 18th. We were all involved as tour leaders for the southeastern tour which included a commercial cranberry bog and the Ocean Spray Cranberry Museum among other attractions.

Weather

July was considerably below

normal in temperature averaging 2.3 degrees a day below normal. This was the coolest since 1962 and fifth coolest in our records. Maximum temperature was 92 degrees on the 23rd and minimum 47 degrees on the 2nd. The only warmer than average days were the 22nd and 23rd. Cooler than average days were the 4th, 5th, 14th, 15th, 17th, 24th and 30th.

Rainfall totalled 3.98 inches or 1.1 inches above normal. This was a strange month for precipitation with an above normal amount, but 2.66 inches came on July 4-5 and the rest on the 15-17th. Actually we have had a rather droughty summer with only 0.4 inch from June 9 to July 3, nothing from July 6 to 14th and nothing from July 17 through 31. We are 2.1 inches above normal for the seven months to date, but about 2-1/3 inches below 1977 for the same period.

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News from Mass. Farm Bureau

FIRST, TWO REMINDERS OF LAND ASSESSMENT FOR TAX PURPOSES:

Forest land 10 or more contiguous acres in size, valued at not more than \$400.00 per acre may be placed under Chapter 61, the Forestry Act. Land owners must receive a certificate from the State Forester that such land is being

managed under a planned program to improve the quantity and quality of a continuous forest crop. This certification must be submitted to the Assessors before September 1st in any year. Suggest you contact the State Forester for your region right away.

Also—land five acres or more that generates a yearly value of at

least \$500.00 in agricultural/horticultural products is eligible for coverage under Chapter 61-A, the Farmland Assessment Act. Application forms are available from local assessors and must be filed each year prior to October 1st.

* * * *

We bring this information to your attention at this time because there is a great deal of publicity being given to the concept of 100 percent valuation across the state. Many cities and towns are moving toward full valuation, and land which is used for agriculture is eligible for assessment according to its use.

* * * *

If you'd like to know more about these two laws which pertain to land used for forest products and/or agriculture, contact the state Farm Bureau in Waltham at 617-893-2600.

* * * *

Employment of U.S. Farms is down 11 percent from last year, USDA reports. Farm operators and unpaid family members total just over two and one-half million, and hired workers numbered 1,095,100 for a total farm work force of 3,678,000 during the April survey period. Farm wage rates for all methods of pay averaged \$3.09 per hour. Combined field and livestock workers were paid an average of \$2.84 per hour, up 22 cents per hour from last April.

* * * *

On the subject of forest products, your Massachusetts Tree Farm Committee reminds you that thinning relieves overcrowding. A crowded stand of trees find too many trees competing for water, sunlight and soil nutrients. The result: poor overall quality. Thinning increases the growth of the "crop" trees left in the residual stand.

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Industrial Size Pesticide Mask

NEW "ROCKER GUN" IMPACT SPRINKLER

A combination of brass, stainless steel and aluminum components for long life and minimum weight, the new 5910 "Rocker Gun" impact sprinkler from Johns-Manville provides constant rotation speed in forward and reverse directions with no hazardous fast reverse motion.

Another sprinkler feature is a positive trip mechanism that permits adjustments from approximately 40° to full circle operation in 22½° increments. The mechanism, a stainless steel trip bearing pin, provides the trip lever bearing surface with a spring loaded brass trip arm to enable part or full circle sprinkler operation. The brass bear-

ing is tapped at 22½° increments to accept stainless steel pins which act as positive arc stops. A stainless steel lever pin, located in the brass sprinkler head, provides the bearing pivot for the aluminum rocker arm.

Designed for single nozzle operation, the sprinkler has a standard trajectory of 22° and is well suited for solid set, hand move, slide roll and pivot irrigation systems.

The tapered nozzle, available in sizes from .5" (#32) to .9" (#58), provides maximum sprinkling diameter, a characteristic enhanced by an anti-clog stream straightener located behind the nozzle.

Further information on the 5910 sprinkler is available from Johns-Manville, P. O. Box 232, Fresno, CA 93708.

PESTICIDE RESPIRATORS AND GAS MASKS

A new illustrated data sheet on pesticide respirators and gas masks is available from Mine Safety Appliances Company (MSA), Pittsburgh, Pa.

Pesticide respirators and gas masks are designed to provide

respiratory protection to wearers who handle and spray pesticides and certain fumigants.

The Comfo II Pesticide Respirator is recommended for respiratory protection against pesticides having less than 0.1% organic vapors. It should be used in atmospheres containing more than 19.5% oxygen. The combination chemical cartridges and particulate filters are replaceable, and a snug, lightweight Comfo II facepiece with a soft, intumed lip construction provides an efficient face seal.

The MSA Industrial Size Pesticide Mask, equipped with a larger canister than the Chin Style Mask, is recommended for concentrations up to 2% by volume. Internal baffles control gas flow, while a seamless canister body minimizes the possibility of leakage. The canister is held in place by a universal harness. Like the Chin Style masks, the Industrial Size Pesticide Mask features the Ultravue facepiece. A plastic carrying case provides easy storage of the mask.

For more complete and detailed information on Pesticide Respirators and Gas Masks, request Data Sheet 10-00-06 from MSA, 600 Penn Center Blvd., Pittsburgh, PA 15235.



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"Tea for two" may be romantic—but creating appealing dinners for two, night after night, is a challenge.

But autumn is in the air and you're feeling just a bit romantic—so express yourself by planning a romantic dinner for two one night this week.

Here are two elegant main dishes, easy to prepare, that are based on those small family stand-bys—chicken breasts and pork chops. Cranberry sauce, which is available in supermarkets year round, adds a special tart-sweet flavor to both dishes.

CRANBERRY CHICKEN AND HAM IN MUSHROOM SAUCE
(Serves 2)

- 2 whole chicken breasts, skinned and boned
- Salt and pepper
- 2 slices boiled ham
- 2 slices Swiss cheese
- 1/4 cup whole berry cranberry sauce
- 1 egg, well beaten
- Flour
- 2 tablespoons butter or margarine
- 1 small onion, minced
- 1 can (2-1/2 ounces) sliced mushrooms, drained
- 1/2 cup condensed cream of chicken soup, undiluted
- 1 tablespoon dry white wine, optional

Pound whole chicken breasts between 2 sheets of wax paper until 1/4-inch thick. Sprinkle them with salt and pepper. Place 1 ham and 1 cheese slice on each chicken breast. Spoon 2 tablespoons cranberry sauce on each cheese slice. Fold in sides of chicken breast and roll up. Dip rolls in egg, then into flour. Heat butter in a skillet and brown chicken rolls seam side down first and then on all sides. Add onion, mushrooms, soup and wine. Stir to blend and cover. Simmer over low heat for 20 to 25 minutes, stirring occasionally.

CRANBERRY GLAZED PORK CHOPS
(Serves 2)

- 2 pork chops, 1 inch thick
- 1 small clove garlic, mashed
- Salt and pepper
- 1 tablespoon butter or margarine
- 1/2 cup apple juice
- 1/3 cup jellied cranberry sauce
- 1/3 cup applesauce
- Dash ground cloves

Rub chops with garlic and sprinkle with salt and pepper. Heat butter in a skillet and brown chops well on both sides. Add apple juice and cover tightly. Simmer for 1 hour or until pork is fork-tender. Drain pan juices into a bowl, stir in cranberry sauce and applesauce. Beat until well blended. Stir in cloves. Spoon mixture over chops. Place chops under broiler and broil until mixture is bubbly.

GRAPEFRUIT MOLD
(Serves 2)

- 1 envelope unflavored gelatin
- 2 tablespoons sugar
- 1-1/2 cups grapefruit juice
- 2 tablespoons cream sherry or sherry flavoring
- 1 can (8 ounces) fruit cocktail, drained
- Garnish with orange slices and halved strawberries

In a small saucepan, mix gelatin, sugar and 1/2 cup of the juice. Stir over low heat until gelatin is completely dissolved. Stir in remaining grapefruit juice and sherry. Chill until mixture becomes syrupy. Fold in fruit cocktail. Pour mixture into a 1-pint mold and chill until firm. To unmold, dip mold into lukewarm water, tap to loosen and invert onto a platter. Chill until ready to serve.





Sermonettes
by the
Rev. Don Jennings

Evening Glories

"They say that I am growing old . . . but I'm not growing old. This frail old shell is growing old, I know full well; but I am not the shell." These words were spoken by a little lady of more than a hundred winters. The spirit of this silver-haired woman, and the thought in those inspired words, is the true picture of so many whose later years are as evening glories.

It is to those who are older but still growing that I want to dedicate these thoughts.

Someone has said that people are funny; most of us want to live a long while, but we never want to grow old. Many of us think of the days of our youth as the days of our glory. But God did not intend that to be so. The wise man of Proverbs was inspired by God to write, "The hoary head is a crown of glory, if it be found in the way of righteousness" (Proverbs 16:32).

The fragrant blossoms on the tree in springtime are beautiful. We know, however, that the fruit on the tree is the advancement of the blossoms. We often hear someone say, "I hate to think that I am growing old." But in the wisdom of God, "The hoary head is a crown of glory."

One of the glories of age is a ripened faith. Beneath the red plum tree back on the farm, Mother used to grow beautiful hydrangeas in an old tub. Many people passing by would stop to admire them. Mother was already ready with some rooted starts of her favorite plant to give them.

In youth we hold our faith much as Mother held those young plants in her hands. Youth holds its faith, but age is held steady by its faith. God knows the hopes of youth and He knows the faith of age. The

glory of age is a ripened faith.

Tolerance

Another glory of age is its tolerance. As one grows older, he becomes, or should become, more sympathetic with others' failures than when he was younger. I suppose that it might be because we have suffered, somewhat, with our own mistakes. More than this, age has gained much wisdom and wisdom makes for tolerance.

For instance, the disciple John in his youth wanted to call down fire upon some of the enemies of Jesus. In his age, it is said that John's greatest thought was in forgiving those who had despitefully used him.

Throughout the Bible we can find examples of youth's impatience and the tolerance of age. It is true that "The hoary head is a crown of glory, if it be found in the ways of righteousness."

Age has its compensations. One compensation is a clearer understanding of God's purpose in our lives. We may not fully understand that purpose in our youthful days. In our youth we think of "What we are, and what we can become." In age we are consoled by "What He is and what He has done."

We have confidence in youth. We respect and revere those declining years, and pray that those years may truly be as Evening Glories.

MASSACHUSETTS PROVIDES FOR PURCHASE OF LAND-DEVELOPMENT RIGHTS

Massachusetts Governor Michael S. Dukakis signed into law legislation providing for state purchase of land-development rights.

Flanked by Bay State farm leaders, the governor noted that since the end of World War II, the state has seen its number of farms dwindle from 35,000 to fewer than 5,000. Acres devoted to agricultural production in Massachusetts decreased from more than 2,000,000 to about 600,000 during that same time period.

State leaders hope the new law will slow the spread of cities and suburbs, as well as provide needed property-tax relief to farmers.

The development rights legislation authorizes a \$5-million bond issue to help local communities purchase development rights for farmland. Farmers will receive payment for the development rights, the difference between total commercial value of farmland and its value as productive agricultural land. Farmers who participate in the program sign a restriction upon their deeds which prohibits commercial, industrial or residential development of the land.

Assessment of the land for its agricultural value, not the full market value, will provide tax relief for participating farmers.

The bond issue legislation also provides for an Agricultural Land Preservation Commission to supervise the program statewide, and approve all development rights purchases.

A reminder that the Social Security Act has been amended to allow those persons who are already age 65, or will attain age 65 this year, to earn up to \$4 thousand this year without penalty. Persons under age 65 on Social Security may earn up to \$3,240 without penalty.

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MASS. CROP POTENTIAL	3
WEST COAST TOUR	5
STUDENTS INSTALL PVC PIPE	8

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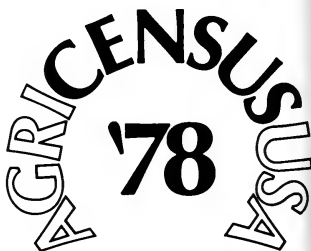
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Value of Mass. Crops Rises 97% in 25 Years

While the number of farms and the amount of farmland declined during 1949-74, farmers in Massachusetts increased the value of crops sold, including nursery products and hay, by 97 percent during the quarter century, according to an analysis by the Bureau of the Census, U.S. Department of Commerce.

These changes are reflected in a comparison of already published data from the five-year farm censuses conducted by the Bureau for 1949 and 1974. The review, offering a significant long range perspective of trends in farm methods, products, and income is to be updated with the 21st Census of Agriculture in January 1979.

The review shows that the number of farms decreased 80 percent to only 4,500 in 1974, while the average size increased 79 percent to 134 acres. Total farmland dropped 64 percent to 602,000 acres, with

harvested cropland falling 50 percent to 188,000 acres.

Other highlights of the 25-year Massachusetts review include the following:

The average value of land and buildings per acre in Massachusetts rose 406 percent to \$961 in 1974; the market value of farm products rose 33 percent to \$180 million, and the value of livestock, poultry, and their products held stable at \$92 million.

All categories of livestock showed declines except beef cows, which rose 123 percent to 7,700 head. Cattle and calves dropped 42 percent to 104,000 head; milk cows, 51 percent to 5,000; and sheep and lambs, 39 percent to 6,000.

Corn cut for silage was up 45 percent to 34,000 acres in 1974; alfalfa acreage was up from 16,000 to 20,000; vegetables were up from 14,000 to 15,000 acres; production

of cranberries and sweet corn crops also increased.

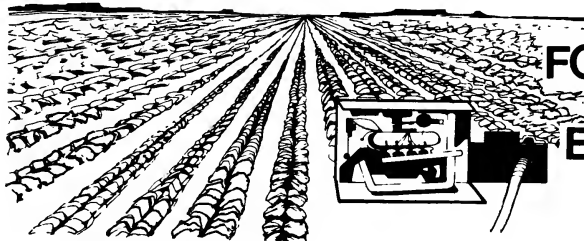
Declines were registered in the 25 years by hay, off 58 percent to 110,000 acres; field corn, 34 percent to 3,000 acres; tobacco, 81 percent to 2,000 acres; and Irish potatoes, 56 percent to 4,000 acres.

The farm census, which today provides the only U.S. set of uniform agricultural data at the county level, covers 17 principal items of information ranging from acreage and machinery to fertilizer and fuel storage.

Because of agriculture's importance to the national economy, the census data since 1920 have been compiled and published every five years, for years ending in 4 and 9. Beginning in 1982 the agricultural census will be conducted in years ending in 2 and 7 so as to coincide with the Bureau's economic censuses.



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CRANBERRY BOGS HARD HIT BY HAIL STORM

Cranberry bogs in the Rosa Road, Bandon, Oregon area, representing about 20 Ocean Spray growers, were hard hit by an early morning hail storm on Sept. 8 which showered larger-than-usual hail stones on the area. One grower discovered hail stones measuring 5/8ths of an inch still on the ground hours after the 2 a.m. storm. The hail dislodged and bruised an estimated 10 to 20% of the crops on the affected bogs, and many of the growers expressed the hope that Ocean Spray's receiving warehouse might be able to open earlier than usual so that they could go ahead and pick their crops. However, Pam McGinty, manager of the plant, said that much of the equipment wasn't ready for operation yet. "I'm doing everything I can to get it open as soon as possible," said Mrs. McGinty, "but right now we plan to be open on Oct. 2, or maybe a few days before that if we possibly can."

A WORD FROM CHESTER E. CROSS

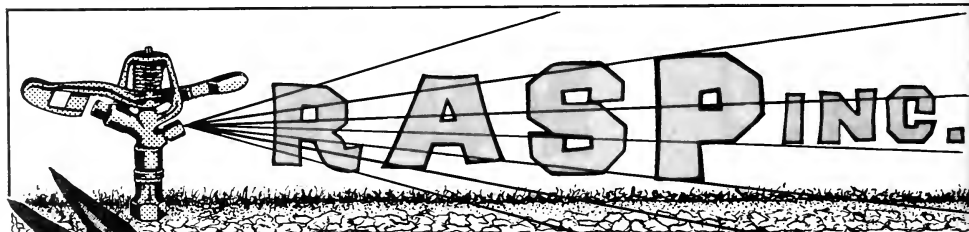
*Director, Mass. Cranberry
Experiment Station*

Many growers will remember my enthusiasm for the cranberry situation as I saw it at the club meetings last February. Now, at the beginning of the harvest, I would like to make a few suggestions. Because the market appears larger than the crop, do your best (and encourage your workers) to pick and handle the crop carefully. Well-adjusted and lubricated machines operated slowly and alertly will reduce field losses. Pick dry where crop quality is good—the fresh-fruit market is strong and the supply of fruit is limited.

Keep a pencil and notebook in your pocket and make notes of

which sections or which bogs have asters, loosestrife, nutgrass and cutgrass. Future decisions on which weed killers to use after harvest or next spring will be easier to make if you have such notes.

If the crop and the price is as good as I think it is, many will have more money than in recent years. During this next year, it is my hope that our growers will put some of this wealth into improved frost protection, increased water supply, and the correction of any flaws in the bog that have been cutting crops. The time is *now* to get the average production in Massachusetts up to 125 barrels per acre. It would pay off nicely if you did.



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The Massachusetts Cranberry Crop Potential For 1978

by John S. Norton

The cranberry crop forecast, based on weather conditions from June 15 through July 20 (the bloom period) was for 1,066,000 bbls. to be produced in 1978. This value results from use of the formula devised by the author and first used to predict the 1973 crop. The derivation of the formula was described in detail in the August and September 1973 issues of *Cranberries*. A review of the 1973 forecast was presented on page 13 of the February 1974 issue of *Cranberries*.

Figure 1 is the graph from which the potential crop was determined. This is not the same graph used in the forecasts issued in 1973 through 1977. That graph was established by crops preceding the extensive practice of water-harvest. Consequently in making the forecast an upward adjustment was made in those years to compensate

for the increased yields on water-harvested bogs. The new graph is based on the crops since 1969 and therefore includes the effect of water-harvest.

In effect, sunshine and daytime temperatures and precipitation during the bloom period are boiled down to a value which I call "penalty-points." This value, 33 penalty-points, is located along the base line of the graph. A vertical line is drawn from the base line to the curve. From the intersection of the vertical line and the curve, a horizontal line is drawn to the left hand margin labeled "Potential Crop," in the present case, using 33 penalty points it is 1,000,000 bbls. This is the crop that would be expected if there were no unusual losses to frost, flood, scald, etc. and if the spring frost season had the typical number of nights with

"borderline" temperatures. However, the frost season was not quite typical. Until the nights of June 14, 15 and 16, it was as mild as the spring seasons of 1960, '71, '73 and '75. Therefore, I am predicting that the effect of the mild spring-frost-season will add 75,000 bbls. to the crop, above the amount that would be expected in a normal season.

The crops for 1960 and 1971 were records up till those years. The 1971 crop is still the all-time record. The 1973 crop is exceeded in earlier years only by 1970 and 1971 but it suffered from wet weather during bloom and scald in the summer. The 1975 crop had a very good potential on July 20 but suffered severe scald during the summer and the early blacks were about 10% under normal size. The quality was also very poor. All of these factors in 1975 were probably

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date or the forecast, then the forecast will be in error by at least the amount of these losses.

Table 1 presents a brief recapitulation of the past four years' forecasts.

The losses to weather and other causes that are shown in Table 1 are estimates made by members of the Cranberry Station staff, other than myself, these estimates were arrived at by personal observations and consultation with growers who experienced or observed the losses. The figures in the "other" column represent flood and insect losses that completely destroyed the crops on the effected bogs.

If the estimates of unusual losses are reasonably accurate, then the July estimates of the potential crops were reasonably accurate for four of the five years. The 1975 estimate was grossly in error. I offer no explanation for this.

partially attributable to the record high temperatures in early August. At any rate, the 1975 crop was the smallest since 1969. In spite of the 1975 experience I will continue the practice of making an upward adjustment above the curve when the early spring is exceptionally warm and free of damaging temperatures.

There have been several small losses reported that will effect the 1978 crop. These are estimated at 2,000 bbl. to brown span worm, 2,000 bbl. to drought and 5,000 bbl. to frost on the nights of June 14, 15 and 16. Therefore, 9,000 bbls. will be deducted and 75,000 bbls. added to the "Potential Crop" at this time, making my estimate of the 1978 Massachusetts crop, as of July 23, 1978, 1,066,000 bbls. Obviously, if there are losses to drought, scald, frost, etc. after the

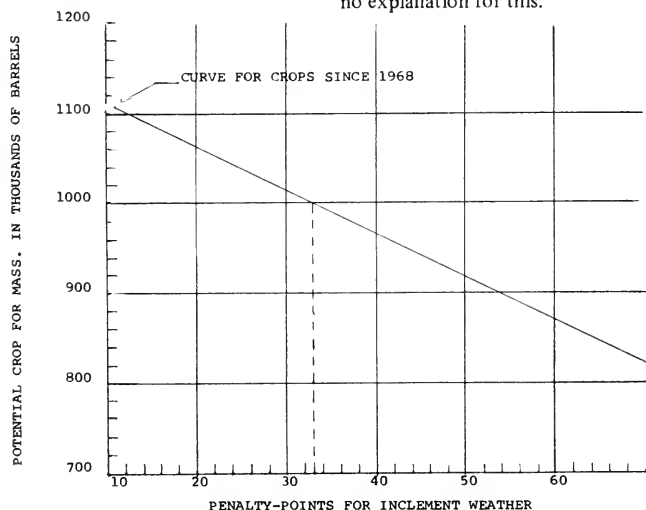


Figure 1. Relationship between weather during bloom period of June 15 through July 20 and the "Potential" cranberry crop for Massachusetts during a 9-year period. The diagonal line represents the crop actually harvested plus an estimate of the losses to frost, flood, drought, scald, etc.

Recapitulation of Crop Forecasts, 1973-1977.
Figures are in thousands of bbls.

Year	Actual Harvest	ESTIMATED LOSSES					Actual Harvest Plus Estimated Losses	July Estimate of Potential Crop	Error	
		Winter Losses	Frost Spring and Fall	Scald	Drought	Other			Bbl	%
1973	901	0	0	60	0	15	976	1,000	24	2.4
1974	935	0	11	0	5	0	951	970	21	2.1
1975	784	0	6	100	0	10	900	1,160	260	28.0
1976	935	0	1	50	0	0	986	1,700	714	72.4
1977	872	105	5	0	0	0	982	1,030	48	4.8
1978			5		2	2		1,075		

RESEARCH PERSONNEL TOUR WEST COAST CRANBERRY AREAS

The third week in August 1978, research and extension people interested in cranberries, rendezvoused at Bandon, Oregon for a one-week tour of the cranberry industry in the Pacific Northwest. Our sympathy to Dr. Chester Cross of the Massachusetts Station who had a fall just prior to the meeting and was unable to attend. It was actually the second such meeting and workshop to take place. The first one had been held in Massachusetts in 1975. At that time, workers from the Pacific Northwest, Wisconsin, and New Jersey met in Massachusetts to survey the work going on there and to discuss items of mutual interest. That meeting, hosted by the people at the East Wareham Station, was such a success that a second one was planned for this year.

The second meeting was spearheaded by Azmi Shawa of the Coastal Washington State Research and Extension Center at Long Beach, Washington. Also joining him in this effort was Chuck Doughty of the Western Washington State Research and Extension Center at Puyallup, and Art Poole, Extension Agent in Oregon. This second meeting was an extremely complex one because 29 people were involved, arriving from different points at different times. They then had to be housed and transported for a distance of 1400 miles over a period of 6 days which meant several motel reservations and meal arrangements. The fact that this operation came off as smoothly as it did is due in no small part to the considerable efforts of the people mentioned just previously.

On August 14, we drove from Portland Airport to Bandon, Oregon, where Art Poole had furnished us with a very helpful description of cranberry production in this area. Of interest on the trip down

was the dense smoke rising into the air from the burning fields where grass seed had been produced. Later, we heard that 22 cars had been involved in an accident due to smoke blowing across the highway.

Tuesday, we arose and toured several bogs in the Bandon area. All of these bogs have sprinklers for irrigation and frost protection. They harvest by water in this area, which is somewhat surprising, since several of the bogs we saw at Fred and Pat Richer's farm, are actually built on a terraced hillside. At Ray and Donna Hopper's farm, they use boards for dikes to contain the water for the water harvest.

The soils have low pH, sand, but very little, if any, organic matter. The phrase "cranberry field" was coined on this trip because there is no sign of a bog or marsh! In general, they are growing mostly McFarlins with Stevens and Crowleys coming on fast. Yields of 400 barrels to the acre have been recorded at JimPat Cranberries, Inc.

Items of interest on the trip included the construction of several new bogs for cranberry production. Also, a new type of fungicide sprayer being evolved from a design by Jim Olson, a grower in the area. It consists of a large solo sprayer mounted on a chassis with big diameter, thin iron wheels. This gives good coverage and good penetration with minimum damage to the vines. We also met on this trip a banker who had turned cranberry grower to get away from the frustrations of the banking industry. Cranberry growers in this area are plagued by two problems:

1. a disease called *Lophodermium oxycocci*, and
2. an insect known as black vine weevil. These two items are currently under research by the cranberry specialists in Oregon and Washington. This part of the tour, hosted by Art Poole, was covered by local newspapers

and TV reporters. We also had a chance to visit the brand new Ocean Spray Cranberry Receiving Plant at Bandon.

That afternoon, we drove up the Coast from Bandon to Long Beach, Washington. It was a long ride but extremely scenic.

Wednesday, we spent the day at Azmi's station in a session devoted to reports from the various cranberry workers. Azmi will report on these in a future issue of *Cranberries*. That evening, the group met as guests of Ocean Spray for dinner.

Thursday morning, we resumed meetings at the Station. And incidentally, I should mention that Mrs. Edie Shire, Azmi's girl Friday, did a magnificent job of room arrangements and furnishing coffee and refreshments for the group. That afternoon, after lunching sumptuously at the Ark, we visited one of the largest cranberry growers in the area at the Cranguyma Plantation. These folks have given up their railroads which was something I had never seen in a cranberry bog, and had converted to large equipment with wide flotation tires. They had very few weeds in their cranberry bogs but did have some problems with the *Lophodermium oxycocci* disease. We then returned to the Station and observed Azmi's plots and physical facilities. They have collected several pieces of equipment dealing with early production of cranberries and have established a cranberry museum containing tools of the trade, as well as photographs of the beginning of the station.

Azmi and Chuck are conducting research at the Station on various phases of cranberry production. These include pH adjustment, fertility, minor elements, varieties, and weed control.

On Friday, we left Long Beach and traveled to Grayland. This area apparently was settled by the

Fins, who have immaculate bogs. The group was treated to a railroad ride to the weed control plots by engineers Shawa and Doughty. For those of you who are not familiar with this operation, they run a small railroad track out into the bogs and then run their picking and spraying operations from the cars on the tracks. These people feel very strongly that no one should drive or walk on the bogs. Consequently, all operations, as far as possible, take place from the railroad. The return trip was powered by Welker and Stretch of New Jersey.

As we stood observing Chuck Doughty's minor element plots on the King Huggins bog, one of the local growers drove up and asked if he could have a plot plan of the treatments to study because he felt that there had been a considerable response from the minor elements and he was very interested in finding the proper treatments.

In the Grayland area, we also visited the bogs of Robert Quinby, who was kind enough to turn on the irrigation system so that we could observe this operation in practice. Professor Demoranville of the Massachusetts Station exclaimed that the fellow standing at the edge of the bog looked like Clark Griffin from Massachusetts, and indeed, it turned out to be Clark Griffin, who was visiting Mr. Quinby to observe his operation.

On the way to the Markham Plant of Ocean Spray, we were unable to pass up the restaurant which advertised ten cent coffee and, sure enough, that's all it cost. Everyone enjoyed it immensely. At the Ocean Spray Markham Plant, Tom Wagner, the plant manager, and Jim Richards greeted us and gave us an inclusive tour of the plant. This plant processes all of the West Coast berries, including Canada. They take in some 400 thousand barrels for processing and 40 thousand for fresh market. The two most asked questions were, what are the rice hulls for? And, the answer, these prevent packing in the press. Also, why do you have

these large stacks of urea around? It turns out that the urea is necessary for the proper operation of their sewerage processing plant.

We decided that the weather schedule in this part of the country was sun for 45 minutes, rain for 25, sun for 45, and so on through the day. You might get wet but you had time to dry off.

We left the Markham Plant and after lunch traveled to the Center at Puyallup. Dr. Doughty's wife and some of the staff were on hand to greet us with coffee and blueberry cake and cranberry nut cake. The director of the station, Dr. Ernie Bay, made us welcome and we were also able to meet Azmi's Extension Supervisor, Mary Kohli. The station has a very attractive physical plant with many fine offices and very efficient labs. The grounds, incidentally, are very nicely landscaped and decorated with flower beds and shrubbery. Chuck Doughty made a special trip into his blueberry plantings so that we could observe the quality of West Coast blueberries.

Saturday morning, we left early for Vancouver, B.C., Canada. We

arrived at lunch time and met Jim Thomas and Fred Shaw of the Big Red Bogs on Lulu Island. They took us to the Green Acres Golf Course (Arnie Palmer was playing there that day) where Heinz Knoedler of Bell Farms, Ltd. served lunch. Then we visited bogs owned by the Extension Entomology Specialist at Washington State. He was in the process of dividing a 12-acre bog into six 2-acre pieces for easier handling. It soon became apparent, as Jim and Fred had told us, that these bogs were built on a deep layer of peat. He was scraping off some of the dams and you could see that the peat was extremely deep. Of interest is the fact that they cover these dikes with wood chips so that they are able to drive on them.

Besides cranberry bogs, they build 14-story hotels on the deep peat with, as you might guess, problems of settling. Azmi was restricted to his room by a stuck door caused by that settling!

We then visited the Big Red Bog which was previously owned by Fred Shaw and is now being managed by Jim Thomas. They are

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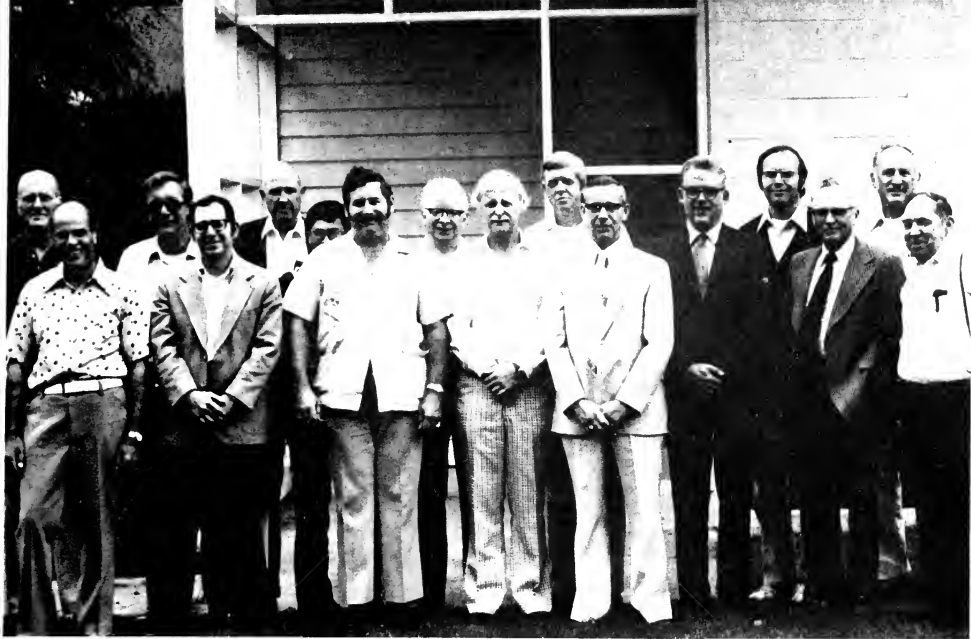
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growing Bergmans, which are a very early variety. They will harvest these at the end of August and ship them to the Ocean Spray plant at Markham for fresh processing. In addition, they also grow varieties BD, McFarlin, Pilgrim, and Stevens, as well as some others.

They have two problems in their cranberries. One of them is a weed, cotton top, and the other is a fungus, cotton ball. They dry harvest all of these with the Darlington machine. We also found that these people use a helicopter to deliver bins to the field, as well as lifting the full ones to the processing area. Fortunately, we were there on a moist day since Jim Thomas tells us that the catalytic converters on new cars often set fire to the wood chips and the peat on the dikes.

This operation also grows blueberries with the varieties Blue Ray, Blue Crop, Jersey, and Berkeley being the primary ones. All of the people on the tour can attest to the fine flavor, color, and size of the B.C. blueberries.

A final tip of the hat to the ladies (Mmes. Demoranville, Norton, Dana, and Miss Devlin)

who endured the entire trip with nary a complaint.

The Pacific Northwest growers are doing a fine job of growing cranberries and we appreciated our interesting, educational trip.

John A. Meade
Specialist in Weed Science

From left to right: Bill Tomlinson, Mass.; Azmi Shawa, Wash.; Al Stretch, N.J.; Martin Starr, Ocean Spray, Mass.; John A. Meade, N.J.; John Wang, Wash.; Eric Stone, USDA, SEA, N.J.; Chuck Doughty, Wash.; Bob Devlin, Mass.; John Ropes, Ocean Spray, Mass.; Stan Norton, Mass.; Louis Massey, N.Y.; Art Poole, County Agent, Ore.; Don Boone, Wis.; Bill Welker, N.J.; Irv DeMoranville, Mass.; not in photo: Malcolm Dana, Wis.

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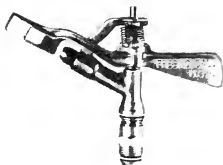
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Divided into four-man teams, two students removed the 20-foot pipe lengths from a truck and carried them to the trench. Here the pipe was strung for subsequent joining to the preceding section by the other two men. Joint production was fast, easy and did not require any special skills. All that was needed to form J-M's exclusive watertight Ring-Tite(R) joint was a simple "push-together" motion. After the lengths were in proper alignment, the lubricated spigot end was pushed into the bell end of the preceding length, where a rubber ring had been previously inserted into the ring groove. Completion of the joint could be discerned visually—when the reference mark on the spigot end was flush with the end of the bell. No welding or field mixing and application of cement was necessary.

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There are still some people who think USO is no longer needed. That the unique problems and needs of today's servicemen and women stationed worldwide have diminished. Well, nothing could be further from the truth. The fact is, over two million Americans and their three million dependents rely more than ever on the vital services provided by USO. Let's back that up with some facts.

Fact One

USO is the only civilian agency exclusively serving to meet the needs of today's military community. That's a pretty big responsibility. And that's why USO has some 100 facilities operating around the world



providing needed services like informal counseling, recreation and information and referral. Services you may take for granted in your community,



but which would not be available to military personnel without USO.

Fact Two

It's a *new era, new service* and a *"new" USO*. We've modernized and streamlined our operations to meet the constantly changing needs of today's all volunteer military. For instance, many of today's young servicemen are married and have children. USO has created innovative methods of dealing with the problems these young families face . . . housing assistance, day care, cultural orientation and more. It's all part of the "new" USO.

Fact Three

USO is the most efficient and effective means of providing these needed services to servicemen, women and their

families. And the need for more services is increasing, not decreasing. Today USO has requests from the military for over a dozen new centers overseas. But these requests cannot be filled due to lack of funds. That's where you can help.

Your Support is Needed

The "new" USO receives no government funds. USO is an independent, non-profit organization depending solely on you for financial support. Please, give generously to your United Way or local USO campaign.

It's a new service,
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REGIONAL NEWS NOTES

Wisconsin

Temperatures averaged near normal during the second week in August. Highs were mostly in the 80's. A cold front earlier in the week brought less humid air and some rain to the southeast. Rainfall amounts in the areas were little or none. Low temperatures fell into the 40's during the middle of the week with a low of 36 reported in the north central area. A gradual increase of temperatures and humidity occurred later in the week as 90's were recorded on Sunday.

Warm humid showery weather occurred during much of the third week and rainfall totals were heavy. Heavy thunderstorms produced rains in excess of 3 inches across much of the north and northeast around Tuesday. Other areas of the State reported weekly totals from half up to 3 inches of rain from thunderstorms mainly on Tuesday and Friday.

As of August 28 the cranberry crop looked good and harvest was about a month away.

The end of August was warm, humid and wet. High temperatures ranged from the 60's and 70's in the north to the 70's and 80's in the south, with some 90's in the middle of the week. Minocqua reported 11 inches of rain for the week. Cooler and drier air returned late in the week.

inches. The high temperature for the period was 93 degrees on the 7-8th, and the low of 43 degrees on the 17th.

A.Y.S.

Washington

Washington State University Agricultural Research Center, the Cooperative Extension Service, and Ocean Spray Cranberries, Inc. sponsored the second cranberry research and extension workers workshop August 14th through the 20th. The Coastal Washington Research & Extension Unit, Long Beach, Washington was the main location, with a tour of the West Coast cranberry areas included. Azmi Shawa, Dr. C. C. Doughty and Art Poole handled arrangements.

August precipitation totaled 3.06 inches with the largest storm on the 23rd and 24th with 1.38

New Jersey

August was very wet and warm. There was rainfall on 13 days with a total of 11.39 inches. This was the third rainiest August and the third most rainy of all months. (The heaviest rains are usually in August). On August 27th, 5.27 inches of rain fell in four hours at Pemberton. At the nearby village of New Egypt more than 8 inches caused flooding and an estimated damage of more than \$2.5 million.

The average temperature for the month was 75.3 degrees F which is 1.9 degrees above normal. There were six days in the 90 degree range. Extremes in temperature were 92 on the 19th and 58 on the 22nd.

The warm weather and excessive water on bogs is causing a rot problem. Lack of cool nights together with excessive vine growth stimulated by the rain is militating against good color of berries and may reduce harvest efficiency. However, a very good crop is in prospect.

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Nova Scotia

As of August 21 the weather has been warm and dry.

During the first two weeks of August I was on vacation in Prince Edward Island. I believe we had only one rainy day. There were light showers during at least two nights. At this time things are shaping up for a good crop of cranberries in this area.

The hot dry weather continued

Continued on Page 16

Personals

Four members of the Cranberry Station staff—Professors Tomlinson and Norton, Dr. Devlin and the author—attended the Second International Conference of Cranberry Research and Extension Workers held on the West Coast from the 14th through the 19th. The group also included cranberry research and extension people from New Jersey, New York and Wisconsin as well as the host group. We visited bogs and growers in Bandon, Oregon, Long Beach and Grayland, Washington, the Western Washington Research and Extension Unit at Puyallup, Washington and the area in and around Vancouver, British Columbia. The Ocean Spray Cranberries Inc. Markham plant, the receiving station at Bandon and the Blueberry Co-op plant in British Columbia were other stops.

This meeting was certainly a great success from every standpoint; it was interesting, informative and allowed us to visit the growing areas and some of the growers. Most important of all was the opportunity to discuss various cranberry cultural practices and exchange ideas with other research and extension personnel. I would like to thank everyone who helped make this conference so enjoyable and particularly Azmi Shawa, Charles Doughty, Art Poole, Ralph Garren, Jim Chandler, Heinz Knoedler and Jim Thomas.

Dr. Bert Zuckerman attended the 11th International Gerontology Congress in Tokyo, Japan from August 14 through 27. Bert gave a talk on enzyme regulation and was also guest speaker at the meeting of the Japanese Society of Plant Nematologists.

Weather

August temperatures averaged .2 degrees a day above normal. Maxi-

mum temperature was 88 degrees on both the 14th and 15th and minimum was 54 degrees on both the 24th and 27th. The only warmer than average days were the 14th and 15th. Cooler than average days were the 1st, 2nd, 5th, 12th, 21st, 24-26th, 28th and 31st. The reason the month averaged out a little on the warm side was the high nighttime temperatures.

Rainfall totalled 4.85 inches or slightly over 1/2 inch above normal. There was measurable rain on 11 days with 2.06 inches on the 7th as the largest storm. Actually, about 90 percent of the month's rain came in the first week.

Some areas nearby were not so fortunate as we were during the rainy period in early August. Much of the Carver area as well as some spots in Plymouth and Lakeville were inundated with from 10 to 14 inches of rain in a 24 to 48 hour period. Bogs in these areas were flooded for periods up to five or six days and a great amount of injury

Continued on Page 16



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News from Mass. Farm Bureau

Several things are happening at the national level which are of interest to Massachusetts Farm Bureau members.

First, it appears that a report was prepared by the Small Business Administration back in January which has been withheld from release, at least for several months.

This SBA report was critical of the so-called "Labor Law Act" claiming it would mitigate against the small business owner. Now, AFBF president Allan Grant wants to know why U.S. Labor Department apparently held up release of this critical report until it had time to issue a rebuttal statement.

Second, U.S. Agriculture Secretary Bergland is telling reporters he is not inclined at this point to either eliminate or lower beef import restrictions. The Carter Administration is under pressure to put more imported beef into the market because of higher beef prices at home. Bergland reminded the press that imported beef is for the most part hamburger quality and not sirloin steak. He also reminded them that it will take time for U.S. beef producers to get back into full production.

Third, a letter from a farmer's wife appeared recently in Ann Landers' nationally syndicated column. The letter was well written, but left the impression that the outlook is hopeless for farmers and that "no young person in his right mind wants to make farming his life's work." MFBF Information Director sent copies of the Ann Landers column to a list of Massachusetts farm women across the state, asking if they agree that the situation is all that bad. You might watch the Ann Landers column in the next few weeks to see what happens.

* * * *

Farm Bureau has filed a statement with the Mass. Department of Food and Agriculture relative to the regulations under which the purchase of agricultural preservation rights will operate. Farm Bureau is most concerned with protecting the rights of property owners and with equitable implementation of the programs.

* * * *

Farm Bureau challenged to take a more active role in solving farmers' problems. MFBF Information Director Greg Finn reports that a speaker at an AFBF Information conference in Michigan offered the opinion that Farm Bureau must become more activist or lose its traditional role among the "movers and shakers" in agriculture.

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Fungicide and Insecticide Recommendations from Washington

Applying fungicides through the sprinkler system is an easy, fast, and inexpensive practice. The question is, did it do the job effectively and economically? Fungicides are applied to cranberry foliage and fruit for the sole purpose of protection against fungus diseases. Complete "coating" is the key word for a successful result. Sprinklers may offer a good surface coverage, but fungicides are diluted at least by triple, the amount of water required for application through a conventional spray rig. Sprinkler droplets are large and fall on bog surface, while a spray rig will force small atomized droplets through uprights and deep into the vines coating all surfaces.

You may get by applying fungicides through the sprinkler system for a few years, but be aware of fungus buildup. It may be a signal for adopting another method with a low volume application.

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Recent visits to several bogs revealed a heavy infestation of *Lophodermium oxycocci* known as "twig blight" or "tip blight." It may cause serious loss of uprights and crop, and eventually vines where the build-up of the fungus has been permitted. Infection takes place on the new growth from late July to late September. Peak period of sporulation is normally July and August. Twig blight cannot be seen until the winter following infection. Usually about February, leaves of infected uprights die and turn from a dark red to a bleached tan color. The uprights die back to the vines and the fungus fruiting bodies start to develop on the killed leaves which remain attached to the upright. Black, glossy, football-shaped fruiting structures are produced on the lower leaf surface in late winter and early spring. As they mature, they open with a median slit from which spores are released. Control of the disease is based upon protection of the new growth during the period of spore discharge.

A fungicide program for protection can be started at popcorn stage with a copper compound. Bordeaux mixture at the rate of 8-8-100 will last longer than other fungicides by adhering to uprights and vines. The product is also a moss killer and supplies foliar nutrient, calcium and copper, which if deficient, may cause monkey faced berries. Another choice is Kocide 101 (83% W.P.). It is recommended for application at the rate of 8 lb/A. A second spray of your choice can be applied at hook stage.

Three fungicides of your choice after fruit set are essential to protect fruit and foliage. Apply at three week intervals, the first about July 15, the second about Aug. 10, and the third about Sept. 1st.

Insecticides

In case you notice an area in your bog with weak vines, wilted or

turning brown, start digging around the roots. The problem may be caused by the black vine weevil *Otiorhynchus sulcatus*. You may find half-moon shaped white larva with brownish head feeding on the roots and bark. It is possible that they may completely girdle the roots or the bark up to the crown of the plants.

For the second year, the Dept. of Agriculture, Olympia, has requested from EPA an emergency exemption from registration requirements for the use of furadan against root weevil in cranberries in western Washington. You will be notified as soon as the exemption is issued with the restrictions and recommendation for use.

Cut worms may show up again and may cause severe damage to buds. Check suspected areas at night when the worms are feeding on top of vines. Guthion 50% WP 2 lb/A can be used up to 21 days before harvest. Parathion is another effective insecticide and can be applied up to 15 days before harvest.

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As a base for your sauce, use a fruit that has a distinctive flavor. The rich, tangy taste of cranberries—fresh, processed or in juices, for example, is an excellent flavor booster—good in combination with all fruits. And cranberries give you a bonus—beautiful color to enhance nature’s blander-looking fruits.



CRANBERRY RASPBERRY PUREE
 (Makes 2-1/4 cups)

- 1 can (8 ounces) jellied cranberry sauce
- 1 package (10 ounces) frozen raspberries, thawed

Place ingredients into a blender and whirl until smooth. Chill until ready to serve. Puree can be spooned over peach halves, berries, seedless grapes, pineapple slices, slices of cake, lady fingers, pear halves.

CREAMY CRANBERRY ORANGE DRESSING
 (Makes 1-1/2 cups)

- 1 package (3 ounces) cream cheese, softened
- 1/2 cup dairy sour cream or yogurt
- 2/3 cup cranberry-orange relish

In a bowl, mix together cream cheese and sour cream; beat until smooth. Stir in cranberry-orange relish. Chill. Serve on fruit salads (grapefruit sections, apples, oranges, grapes) or as a dip with fresh fruit.

POACHED PEARS WITH CRANBERRY SPICE SAUCE
 (Serves 4)

- 4 large firm pears
- 1 quart cranberry juice cocktail
- 1 cinnamon stick
- 6 whole cloves
- 1/3 cup honey
- 2 tablespoons cornstarch mixed with 2 tablespoons water

Peel pears and leave whole with stem attached. Place into saucepan and pour cranberry juice cocktail over them. Add spices and honey. Simmer, turning pears occasionally until pears are tender but still hold their shape, about 15 to 20 minutes. Remove pears and bring syrup to a boil. Boil until there are 2 cups left. Remove spices. Stir in cornstarch mixture. Stir over moderate heat until sauce thickens. Spoon sauce over pears and serve warm. Garnish with mint leaves.





Sermonettes
by the
Rev. Don Jennings

Why Suffering?

"What have I done that this trouble has come upon me?" Those were the words of a woman who had reared a large family. As I had observed her through the years, she had been a good mother and a faithful wife. Many, many others have, likewise, asked this question.

Why does sorrow and suffering come to us? Is God punishing us for some wrongdoing of the past? Have we failed? Is evil in control?

Suffering and heartache comes to almost everyone, eventually. Many are not prepared for it and it takes its toll. Others are like the willow in our garden; it bends with the storm but comes back straight and stalwart after each blast of wind. Suffering and trouble changes us. It makes some bitter, but others better.

Paul, the apostle, certainly could witness to the experiences of suffering. He once said, "For we know that in all things God works for good to those who love Him, and are called according to His purpose" (Romans 8:28).

The author of Hebrews also wrote, "... for He hath said, I will never leave thee, nor forsake thee. So that we may confidently say, the Lord is my helper. I will not fear what men shall do to me" (Hebrews 13:4-5).

Seven hundred years before Christ was born, the prophet Isaiah foretold that Christ would be "a man of sorrows and acquainted with grief" (Isaiah 53:3). Many a person who has walked through the valley of suffering has experienced the presence of God's hand upon him. The hymn writer, C. Austin Miles, has expressed the feeling of many of us in the comforting words, "And He walks with me and He talks with me; and He tells me I am his own."

Suffered

Many have suffered because of their unwavering faith in God. They remember that Jesus said, "Blessed are you when men revile you and persecute you and say all manner of evil against you falsely, for my sake. Rejoice and be exceeding glad; for great is your reward in heaven; for so persecuted they the prophets which were before you" (Matthew 5:11-12).

There are those who have been made bitter because of the suffering they or their loved ones have experienced. Others have discovered that God was permitting this suffering, but through it all He was helping them to come out victoriously through discipline and refinement.

We have all known those who, through sickness, disappointment, physical or material loss, have experienced a turning point in their lives. For, rather than blaming God or themselves, they looked to God for strength to make life really worth the living. Someone has observed that God proves people to improve them. Is this not often the outcome of suffering?

Continued from Page 12

MASS.
to the berries resulted. Estimates range from very little to perhaps as high as 75 percent spoiled fruit from one bog to another. The total loss will probably never be known but we suspect in the neighborhood of 50,000 barrels.

The total precipitation through August is about 2-2/3 inches above normal and about 4 inches behind 1977.

Annual Meeting

The 91st annual meeting of the Cape Cod Cranberry Growers Association was held at the Cranberry Station on August 29th. The crowd was estimated at slightly over 200. Guest speaker was Frederic Winthrop, Jr., Commissioner of Food and Agriculture for the Commonwealth. Officers of the Association re-elected for the coming year were: David Mann, President; John C. Decas, 1st Vice-President; Clark Griffith, 2nd Vice President and the

author, Secretary-Treasurer.

Crop Estimate

The official crop estimate released by the New England Crop Reporting Service indicates Massachusetts with a prospective crop of 950,000 barrels, up 9 percent from last year. Water supplies are in good shape, berry size is average or less than average and color is slow developing. We will be starting harvest late this year. There may be some quality problems on bogs that were not treated with fungicides. The estimate looks good at this time.

For the other areas, New Jersey at 240,000 barrels is up 53 percent from a poor 1977 crop; Oregon at 92,000 barrels is up 15 percent, Washington at 140,000 barrels, up 3 percent and Wisconsin at 860,000 barrels, up 1 percent. The national crop is estimated at 2,282,000 barrels, up 9 percent and the second largest on record. [E.D.]

Continued from Page 12

until the Labor Day weekend. Since then we have had at least two substantial rains with cool temperatures. A widespread frost occurred on the morning of Sept. 14. Bob Murray reports that a good crop of berries is expected and harvesting will commence by Sept. 15.

A report from British Columbia states that harvesting will commence earlier than usual.

CRANBERRY GROWERS REALTY

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HERBICIDES	2
DISEASES & FUNGICIDES	5
WISCONSIN GROWERS	11

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POST-HARVEST CULTURAL PRACTICES

Cultural practices are as important as fungicide sprays to combat fungus diseases. Post-harvest is the time to have a good look at *your* bog and check vine condition. If you notice, on inspection that vines are easy to lift, have defoliated uprights, are standing in water in certain areas, are stripped—caused by harvest equipment, these areas are the first target for unwanted fungus infestation. *Sanding* is the answer, up to one inch thick or enough sand to cover vines. This will help initiate new roots, shooting of new uprights, in one word—rejuvenate.

Soil Test

A good soil sampling practice is a must. Soil samples are not better than the care used in obtaining them. A sample drawn from the edge of your bog, from a wet or poorly drained area, from the top two inches of the surface, or from some other peculiar area is not a representative sample of the entire bog. You wouldn't record the yield of either the best or poorest section of your bog to determine your bog average production. By the same token, a soil sample taken from one of the abnormal spots in the bog to determine fertilizer requirements is misleading.

To get a good representative sample, the following points are suggested: 1) draw a map of bog sections and label; 2) use clean tools for taking sample; 3) get separate samples from sections of same color and vigor, crop history and fertilizer practices. Mix composite samples using these criteria; 4) take at least one soil sample from each area.

Cartons and sampling instructions are available at the County Extension Office, Courthouse, South Bend or Coastal Washington Research & Extension Unit, Long Beach.

Azmi Y. Shawa

MASSACHUSETTS HARVEST

The Massachusetts cranberry harvest was at least 90-95 percent complete by the end of October (actually practically everything was in by Nov. 7). The season got off to a late start about September 16 because of poor color early in the month, but when the coloring started—came with a rush and we had better, darker color than for many years. The weather was mostly sunny with not too much rain and some water supplies for water harvest were low early in the season. The season was fairly cold with 13 nights with frost warnings from September 26 on. There were a total of 22 warnings for the fall. This compares with 11 in 1977, 22 in 1976, 11 in 1975 and 34 in 1974.

Some harvesting started as early as the first week of September, but general harvesting did not begin until the 16th. Berry size was generally about average with a few growers reporting small berries. Quality appears very good so far and color is excellent; however, as late as Labor Day it appeared that color was very poor. A few successive cold nights changed all that, in fact, color developed quicker than can be remembered. Early Blacks about 80 percent harvested and a few Howes being picked. More water harvest than ever this year, perhaps over 500,000 barrels by this method. Three frost warnings up to Oct. 6 on Sept. 9, 26 and 29, also numerous close shaves. From all indications, there will very probably be a record crop in

Continued on Page 13

WANTED

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and older type machine
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WILLIAM E. TOMLINSON RETIRES FROM MASS. STATION

The end of September marked the official end of a career, as Prof. William E. Tomlinson, Jr. retired after 26 years of work at the Cranberry Station. He also worked at the Suburban (Waltham) Field Station as a shade tree entomologist for many years and spent several years at the Cranberry-Blueberry Station in New Jersey. Bill worked far beyond his ordinary duties for the cranberry growers not only in insect control but also the Frost Warning Service and has their trust and friendship. He has worked for the blueberry and strawberry growers and there is not a better identifier of general household and forest insects. Bill has been a personal friend, co-worker and sharer of an office for many years and will be sorely missed. We wish he and Mrs. Tomlinson a long and happy retirement, but hope he will keep his ties to us strong and his visits long and often.

*— Irving E. Demoranville
Mass. Cranberry Experiment Station*

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Appraisals

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HERBICIDES Cultural Practices, Weed Identity, Control

Azmi Y. Shawa
Associate Horticulturist and County Extension Agent
in Horticulture,
Coast Washington Research & Extension Center,
Long Beach

Cranberry growers are fortunate to have a large number of very effective selective herbicides registered for use in the production of cranberries. Until now, no one has found a single herbicide that effectively controls all weed species found infesting the cranberry bog. To use herbicides effectively and economically it is essential to know, and keep records of, the weed infestation in each section of the bog.

Because of the large spectrum of weeds that infect the bog, it was found that applications of combina-

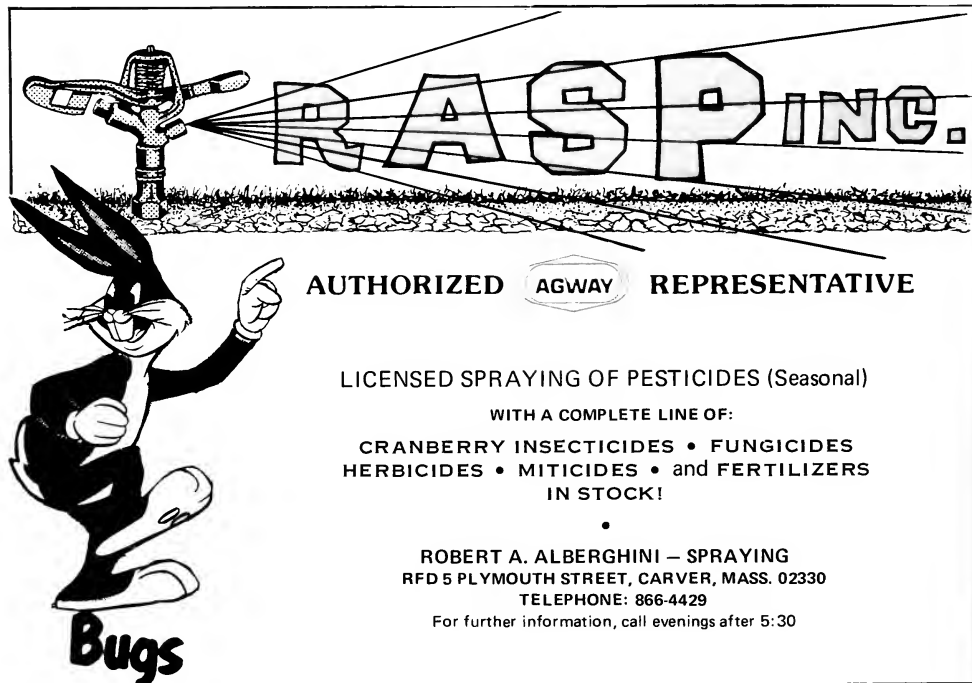
tions of herbicides such as casoron, simazine, and 2,4-D granular or dalapon and simazine wetttable powder, or these chemicals in sequence will provide the most effective weed control. Without the knowledge of the identity of the weed infestation, it would be impossible for anyone to make the right decision in using the proper selective herbicide.

Identity of weeds is not the only step that will lead to control. Applying the herbicide at the infant stage of the weed and while it is susceptible to control is very im-


portant

Good sanitation in and around cranberry bogs is essential. *Resistant weeds*, to presently used herbicides, *should be pulled out by hand*. Sanitation *around* the bog can prevent the buildup of insect and disease organisms on weeds that may infest cranberry bogs.

A vigorously growing vine can enhance the effectiveness of presently available herbicides. The importance of a healthy bog for the safe use of herbicides cannot be over-emphasized. The shock from herbicide application is transitory



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Bugs

in vigorously growing vines, whereas a poorly growing bog will be more severely damaged and the recovery period longer.

Therefore, a vigorously growing bog, adequately fertilized, properly irrigated, in which insects and diseases are controlled, is an important and essential part of a good weed control program.

In summary, in order to minimize weed control costs, it is advisable to:

- 1) Monitor and keep records of weed infestation.
- 2) Rotate the use of herbicides to prevent the increase of the number of resistant species.
- 3) Prevent the spread of weed seeds through harvesting methods.
- 4) Keep an observing eye on resistant weeds or a new weed species, they should be pulled out before they seed.
- 5) The combination or sequential applications of herbicides can be effectively used to control and prevent the buildup of weed populations resistant to herbicides.

Herbicides that can be applied in November through January are: CIPC (Chlorpropham)—100 lb/A—Bent grass, annual and other perennial. Evital—Up to 160 lb/A—Sheep Sorral (sourgrass). Dalapon—10 lb. plus simazine 2 lb. W.P./A—Tussocks, cutgrass, cottontop, and grasses in general. Prilled soil sulfur (granular)—1500 lb/A—Lily-of-the-valley.

THE NATION'S SOIL WASHING AND BLOWING AWAY

Very subtly and without much public concern, the nation's soil resource is washing and blowing away, according to the Wildlife Management Institute. That means less food, less fiber, and less wildlife in the future.

Soil is being washed away on the nation's cropland at an average rate of nine tons per acre per year. That is nearly twice the rate considered "acceptable" by soil conservationists.

Continued on Page 11

1978 CROP SET AT 2,396,000

The latest U.S.D.A. crop report has Massachusetts at just over 1 million barrels, but all reports indicate that this is low by perhaps 100,000 barrels or more. This would give a new record and our second million barrel-plus crop. The report indicated New Jersey at 230,000 barrels down 10,000 from August, Oregon 91,000 barrels off 1,000, Washington 135,000 barrels down 5,000 and Wisconsin 930,000 barrels up 70,000. The national total at 2,396,000 barrels up over 100,000. Late rumors indicate that Wisconsin may be considerably down from this figure.



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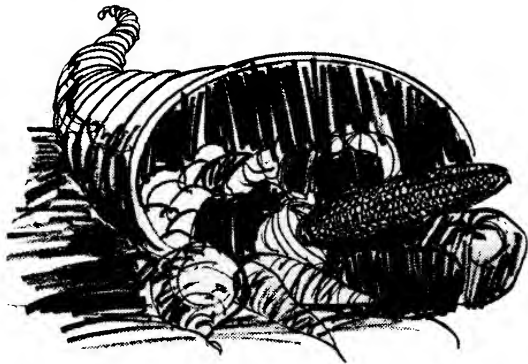


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**Straight-talk
from PCA**

Thanksgiving...brought to you for more than 300 years by American agriculture.

Thanksgiving means seeing friends and relatives...having a good time. And the most tangible part of Thanksgiving—*food*. After all, *bountiful harvests* and the *blessings of food and shelter* were the very inspiration of the first Thanksgiving over 300 years ago. □ Today Thanksgiving is a time to thank *everyone* associated with the marketing and processing of food and fiber...farmers, ranchers, teachers, ag scientists, and others. □ PCA encourages *everyone* to be thankful for this land of plenty.



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CRANBERRIES



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MAGAZINE

— Our 45th Year of Publication —

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DISEASES AND FUNGICIDES

by Peter R. Bristow
Western Washington Research
and Extension Center

Rose Bloom

The rose bloom disease was first reported in Washington in the 1920's, probably having been introduced to this area on infected vines from the east coast. The fungus, *Exobasidium oxycocci* causes this disease, and although it is generally considered to be of minor importance when abundant, it can reduce vine vigor and yield.

The disease first appears in the spring from infections that occurred the previous year. Infected buds in the axils of leaves on one-year old wood are stimulated to grow. Healthy axillary buds usually remain dormant. Occasionally terminal buds and buds on older wood are attacked. Abnormal lateral shoots develop with large fleshy rose-colored leaves. The internal structure of rose bloom leaves is not at all like that of healthy leaves. After formation the surface of the blooms become covered with spores of the fungus imparting a whitish color to the bloom. These spores are wind blown and those landing on young newly-formed leaves can germinate

and cause new infections. By mid-June the blooms have dried, shriveled, turned dark grey in color, and dropped from the vine. After the dried blooms have dropped it is difficult to tell a diseased vine from a healthy one. There is no indication that the fungus survives in old blooms.

Because blooms contain little or no chlorophyll, they depend on the rest of the vine for the energy to grow, energy that could otherwise have been used for flower formation and new vine growth. Measurements taken in early June 1977 showed that this disease not only reduces vine growth, but also lowers the number of flowers per upright and retards flower development (Table 1). Thus, damage to the crop is proportional to the abundance of blooms present.

Rose bloom is frequently associated with bogs where vine growth is excessive. Dense vines restrict air drainage and increase shading. A heavy fertilizer program may encourage this situation. On the east coast the disease was most common in bogs with poor water drainage.

Cultural practices which reduce shading and allow for drainage of both air and water should lessen the likelihood of this disease being a problem. Protecting tender new growth with a protective fungicide has also been beneficial, but the timing of the application is important. A spray application should be made when blooms first begin to appear; shortly after bud break. One of the goals of current research efforts is to determine the best time to spray for control of the rose bloom disease.

AGRICULTURE
USA
1978

TABLE 1.
Effect of the rose bloom disease in new vine growth
and flower development¹

Measurement	Diseased	Healthy
Average no. of flowers per upright	2.3	3.6
% flowers full opened	9.5	42.8
Length of new vine growth, cm	2.9	4.2

¹ Data collected 6/9/77, Grayland, WA

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The Massachusetts Cranberry Station has been successful in obtaining a Special Local Need state label adding cranberry weevil to the Guthion 2S label. This is for Massachusetts use only.

Growers or applicators that use this material for this new use must be in possession of the Special Local Needs label at time of application. Your Cooperative Extension newsletter will fulfill the requirement of your having the new label in your possession. Hold on to it! The label has the following information:

This labeling must be in the possession of the user at time of pesticide application.

IMPORTANT: Before using the product, read and carefully observe directions, cautionary statements and other information appearing on the EPA registered product label. This product is sold subject to the Conditions of Sale, set forth on the container label.

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PROPOSING CONTROL OF CRANBERRY WEEVIL ON CRANBERRIES
GUTHION 2S
(EPA Reg. No. 3125-123)
FOR DISTRIBUTION AND USE ONLY WITHIN MASSACHUSETTS
DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

CRAP	INSECT	Pints GUTHION 2S	REMARKS
Cranberries	Cranberry Weevil	2 to 4	Apply specified dosage per acre, using approximately 200 gallons of water for good coverage. Where ground conditions dictate an air application, use specified rate in a minimum of 1 gallon of water per acre. Repeat as necessary. Do not apply within 21 days of harvest.
	Cranberry fruitworm		
	<i>Sparganothis sulfureana</i>		
	Tipworm		
	Fireworms	4	

Obituary

MARION GRIFFITH

Marion E. Griffith, 78, of 82 Cedar St., Middleboro, Mass., the widow of Horace G. Griffith, died Dec. 26 at her home. She had owned and managed cranberry bogs since the death of her husband in 1961.

A lifelong resident of the town, she was a daughter of the late Charles and Katherine (Walliston) Soule, and attended local schools. Mrs. Griffith was a member of the First Congregational Church and the Putnam Women of the Green, and also the Hannah Shaw Chapter of the Order of Eastern Star.

She leaves a son, Sherwood B. Griffith of East Bridgewater; two sisters, Mildred Badger and Alberta Soule, both of Middleboro; two grandchildren and two great-grandchildren.

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New Products

STRATOTHERM HEAT SYPHON AVAILABLE IN TANDEM MODEL

The StratoTherm Heat Syphon, a warm air circulator which is suspended from the ceiling and redistributes upper-level warm air through a vinyl tube to floor level, is now available in a tandem model, according to Rusth Industries, Beaverton, Oregon, manufacturers of the product.

The original design, which has been on the domestic and international market for two years, includes a 6-inch diameter inflatable vinyl tube which hangs vertically from the small fan housing suspended from the ceiling.

The tandem model, designed for use in extra-high-ceilinged areas, contains two identical electric motors and fans, one mounted above the other. Whereas the single-motor unit is effective for distances up to 40 feet, the tandem unit is designed to overcome normal static pressure and push the same volume of air a distance of up to 100 feet—vertically and/or laterally, through the same type of ducting as is used in the single-motor unit.

The tandem unit is powered by two fractional horsepower electric motors, each drawing .85 amps and 78 watts. Total power draw when operating is 1.7 amps and 156 watts; voltage is 110/120 AC current. One of the motors is enclosed in the single-unit housing assembly; the other motor is located below the first in an elongated sheet metal housing. The air is forced through the inflatable vinyl ducting by two fan blades at the minimum flow of 120 cubic feet per minute.

According to Dave Martin, Rusth's vice president of engineering, the StratoTherm takes advantage of the basic phenomenon that hot air rises. "Most buildings suffer from heat stratification," he stated.

"Users can save up to 24 percent or more on their heating costs; normally the units pay for themselves in heat savings within one year," he said.

Through simple air convection, the StratoTherm devices will raise floor temperatures from 7 degrees to 15 degrees, while actually lowering heating costs.

One StratoTherm unit will de-stratify an area up to 1500 square feet. In multiple installations, each unit will de-stratify 2000 square feet of floor area.

For further information on the StratoTherm Heat Syphons, including dealer or distributor arrangements, write Rusth Industries, P.O. Box 1519, Beaverton, OR 97005.

PESTICIDE RESPIRATORS

A new illustrated data sheet on Pesticide Respirators and Gas Masks is available from Mine Safety Appliances Company (MSA) Pittsburgh, PA.

Pesticide Respirators and Gas Masks are designed to provide

respiratory protection to wearers who handle and spray pesticides and certain fumigants.

The Comfo II Pesticide Respirator is recommended for respiratory protection against pesticides having less than 0.1% organic vapors. It should be used in atmospheres containing more than 19.5% oxygen. The combination chemical cartridges and particulate filters are replaceable, and a snug, lightweight Comfo II facepiece with a soft, intumed lip construction provides an efficient face seal.

The MSA Chin Style Pesticide Mask is recommended for use with higher concentrations of pesticides, such as those encountered in greenhouse spraying. Concentrations up to 0.5% can be handled by this mask, which features a seamless aluminum canister with a Type H Ultra Filter^R element and appropriate sorbents to protect against toxic gases, vapors and particulate matter. An Ultravue^R Facepiece with a wide vision polycarbonate lens forms an efficient facial seal. Clear short-range communication is permitted by a speaking diaphragm.

The MSA Industrial Size Pesticide Mask, equipped with a larger canister than the Chin Style Mask, is recommended for concentrations

Continued on Page 13

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REGIONAL NEWS NOTES

Massachusetts

September was 4.7 degrees a day below normal, breaking a record set in 1963. Maximum temperature was 79 degrees on the 2nd, 5th and 12th and minimum 36 degrees on the 27th. The only warmer than average days were the 2nd, 5th and 12th. Cooler than average periods were the 8-10th, 13-15th, 17-19th, 22-24th, 26-27th and 29-30th.

Rainfall was very light, totalling 2.56 inches on 8 days, but 1.01 inches came on the 1st leaving very little for the other 29 days. This total was about 1½ inches below normal. We are about 1.5 inches below normal for the year to date and about 7 inches behind 1977 for the same period.

October was cold, the temperature averaged 2.8 degrees a day below normal. Maximum tempera-

ture was 76 degrees on the 22nd and minimum 29 degrees on the 16th, 18th and 30th. Warmer than average days were the 1st, 12th, 13th, 22nd and 23rd. Cooler than average days were the 3rd, 8-9th, 16-18th, 20th, 24-25th and 29-30th.

Rainfall totalled 3.41 inches which is just about normal. There was measurable precipitation on 8 days with 1.75 inches on the 14th as the greatest storm. We are about 1-3/8 inches above normal for the year, but 11 inches behind 1977.

November was cool but not unseasonable. We were 1.6 degrees a day below normal for the month. Maximum temperature was 64 degrees on the 18th and minimum 17 degrees on the 27th. Warmer than average days occurred on the 2-4th, 7th, 9th, 14th and 18th. Cooler than average periods were the 13th, 16th, 20-23rd and 25-29th. Gen-

erally the first half of the month was warm, the second half cold.

Precipitation totalled 3.17 inches or nearly 1-1/2 inches below normal. There was measurable precipitation on 10 days with 0.76 inches on the 24th as the greatest amount. There was no precipitation until the 16th, but the last two weeks helped bring reservoirs back to near normal levels. We are now almost exactly normal for the year to date, but nearly 10 inches behind 1977 for the same period. There was 2.2 inches of snow recorded, which is not unusual, but it melted quickly. Some bogs are being flooded for the winter at the end of the 1st week of December.

Personals

Prof. William Tomlinson (ret.) attended the Annual Meeting of the Entomological Society of America in Houston, Texas in late November. He and Mrs. Tomlinson will



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take a side trip to Mexico after the meetings.

Dr. Robert Devlin and the author attended an Academic Seminar for New England on the herbicides Lasso and Roundup held by Monsanto Chemical Co. in Enfield, Conn. on the 29th.

Crop Report

The official crop estimate for mid-November makes it official that Massachusetts raised a record crop in 1978, breaking its old record set in 1971 by just over 100,000 barrels. The official total is 1,175,000 barrels and some unofficial reports indicate that this may be a little low.

Other areas fell off slightly or held the same from the October estimate. Wisconsin was off 50,000 barrels from the October estimate but close to the original August estimate. The national crop will be a record at 2,494,000 barrels.

Speculation has begun as to why Massachusetts raised such a monstrous crop (remember, at least 50,000 barrels were lost in flooding from heavy rains in early August). My two cents worth, a frost free spring, a sunny, relatively dry pollination period—especially the first half, better management in

general and more acres water-harvested.

I.E.D.

Nova Scotia

On October 12, Dr. Craig and I visited the Chase and Bezanson bog and found that harvesting was completed. A large portion of the berries were sold for the Thanksgiving trade and the remainder will be held for Christmas.

A note from British Columbia dated Sept. 14 stated that harvesting was in full wing. They expect a small reduction in crop due to frost damage and cotton ball disease.

A big event this past month was the North American Blueberry Council meetings which were held in Halifax the second week in November. The meetings were interesting and brought many people from British Columbia, and several other states including Washington, Oregon, Michigan, New Jersey, Maine, Massachusetts, New York and North Carolina. The weather was ideal and visitors arrived and departed without snow. We are now experiencing cold weather but the snow has not yet arrived as of this date (Nov. 23).

Our first appreciable snowfall came on December 11 and considerable frost has now entered the soil. The mean temperature for the month of November was 1.3 degrees Celsius which was slightly lower than the 50-year average of 3.4.

I.V.H.

New Jersey

Excellent weather for cranberry harvest persisted throughout the month of October. Sunny, mild days and cool nights prevailed and there was a complete absence of the blustery, chilly days which often occur at this time of year.

Temperatures were in the seventies on 13 days and in the high sixties on most of the other days. The minimum daytime temperature was 58 degrees. Extremes of temperature were 82 degrees F on Oct. 13th and 28 degrees F (weather shelter) on Oct. 30th. The clear radiational nights, promoted frosty conditions on cranberry bogs where below freezing temperatures were recorded on 18 nights. However, none of the frosts caused appreciable damage to the crop as abundant water from the summer's excessive rains was available for flooding.

After the copious rains of summer it has steadily become much drier. The 11.39 inches of rain in August was followed by 0.95 in September (2.81 below normal) and 1.28 (1.96 inches below normal) in October. This total of 2.23 inches for the two-month period is second only to the record of only 2.09 inch total for September and October of 1941. Despite this extremely dry spell the total precipitation for the first ten months of 1978 now stands at 46.00, or 8.86 inches more than normal and about 2 inches above the normal rainfall for an entire year.

As of November 4th, harvest is about complete. It was a very good crop on most bogs but the excessive

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summer rains caused great losses on many properties. Cranberry fruit rots were far more prevalent than normal, further reducing the yield. The final statistics on New Jersey in production are not yet in but it is apparent that the potential record crop of early summer has not been attained.

November was dry and rather mild. The average temperature was 47.2 degrees F, which is 1.2 degrees above normal. Most of the days were in the 50's and 60's with night time temperatures in the 30's and 40's. Only one spell of cold weather occurred, from the 26th through the 29th, when it averaged 41 degrees in the day and 31 degrees at night. The average temperature for the month was 47.2, or 1.2 above normal.

The dry autumn was extended for another month. After extremely heavy rainfall in the summer it has become very dry. For the third consecutive month precipitation was below normal. In the month of November only 2.31 inches, or 1.15 less than normal rainfall occurred. For the three-month period, September through November, a total of only 4.54 inches occurred, or about 45% of normal. However, this very dry period is more than balanced out by the copious rains of summer. The accumulated rainfall for 1978, as of the end of November, is 48.31 inches, already

about four inches above the normal annual rainfall.

About 1-1/4 inches of rain the last week in November and about an inch the first week in December relieved a worrisome condition in blueberry fields in Burlington and Atlantic counties. Growers fear going into a winter with very dry soil. Experience has shown that when the soil freezes before there is near optimum field capacity of moisture at the lower root level, severe winter injury may occur. The amount of winter injury could be significant even in relatively mild winters when soil is frozen at the surface and dry underneath.

P.E.M.

Wisconsin

The annual meeting of the Wisconsin State Cranberry Growers Association will be held January 9, 1979 beginning at 10:00 a.m. at the YMCA, Port Edwards, Wisconsin. A full day of business and other items have been planned.

Several important items of business will require your attention, among them: (1) Water and Wetlands Committee report, (2) Report of your registered lobbyist, (3) Membership to Wisconsin Taxpayers Alliance Legislative Service, (4) Land and equipment assessments, and (5) Election of officers.

You will have the opportunity to meet Dr. Elden Stang, the new Extension Horticulturist who has already been working with the industry in educational and research programs.

The 1979 Wisconsin Cranberry School has been scheduled for March 13, 14, 15, 1979. Tod Planer, U.W. Extension, Wood County; Dr. Stang and yours truly along with the Association and Advisory Committee have an interesting school planned. Professor Azmi Shawa is one of the instructors.

George C. Klingbeil

Washington

There have been two records broken—precipitation for the month of September totalled 10.74 inches, the highest ever recorded during September on record. October reversed the record with 1.44 inches, the lowest October precipitation recorded at this Unit, records back to 1945.

Harvest is completed in Washington. The high temperature for September was 79 degrees F on the 25th and 26th. The low 37 degrees came on 17-18th. October dropped below 32 degrees on the 25th, 26th, 30th, and 31st with 28 degrees the low on the 31st. The high for October was 81 degrees on the 15th and 80 degrees on the 19th came close. There were two days with temperatures in the 70's. Indian Summer is evident throughout the area.

November was below average where precipitation was concerned, with a total of 8.24 inches compared to the average for the month of 11.31 inches. The temperature remained mild for this time of the year, with a high of 64 degrees on the 1st and a low of 19 degrees on the 14th. The greatest rainfall came on the 19th with 1.25 inches, but the 4th, 16th, and 17th recorded more than 1 inch each with 1.10, 1.15, and 1.22 respectively. We are about 6 inches below average for

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Continued on Page 13

NATION'S SOIL

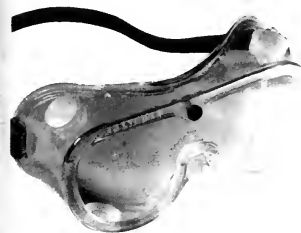
Continued from Page 3

The soil loss rate was discovered by the Soil Conservation Service in a new study of erosion and sedimentation.

In 1975, when data were collected, U.S. soil losses on cropland totaled 2.8 billion tons.

More than 1.4 million acres of land were damaged by wind erosion in the Great Plains during the last two months of 1977, according to R.M. Davis, administrator of SCS. And more than 10.3 million acres may be damaged by wind erosion in the next few months, SCS says.

Obviously, what the nation is doing to control soil erosion is not working. But the only solutions offered so far is "more of the same."



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Protective goggles for agricultural workers, which feature replaceable anti-fog lenses, are available from Glendale Optical Co., Inc. The anti-fog qualities are especially important to maintain good visibility when the worker moves between warm and cold environments, such as when he goes from indoors to outdoors and back again.

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The Series 4015 Softie fog-ban goggles protect workers' eyes against the hazards of flying objects and chemicals such as toxic pesticides. The goggles employ special baffled ports to protect their user from liquid or spray splashing. Other models have regular perforations for average conditions, screened ports for extreme dust and no ventilation for vapor conditions. The goggles fit snugly and comfortably and are a perfect match for the Glenaire NIOSH-MESA approved agricultural respirator. The goggles meet all requirements of ANSI Z-87.1-1968 and conform to OSHA requirements.

Glendale Optical Co., Inc. is a major manufacturer of personal-protection equipment for the farm, for the home and for industry for more than a quarter of a century. The company is a subsidiary of the American Cyanamid Company, also a specialist in the field of agriculture.

For further details on the above product, contact Mr. Richard Miller, Glendale Optical Co., Inc., 130 Crossways Park Drive, Woodbury, N.Y. 11797 or phone (516) 921-5800.

MORE CRANBERRIES HARVESTED IN 1978 IN WASHINGTON

Although this year's cranberry harvest was not as good as initially expected, it was quite a bit better than last year, according to Mrs. Joe Schneider of Ocean Spray, Inc.

This year, area growers brought in 38,000 barrels of the berries compared to 33,600 barrels last year. Each barrel contains 100 pounds of the fruit.

"We had some small berries but most were average size," Mrs. Schneider said. "The quality of the fruit was not as good as sometimes, however. We had some rotten berries."

She said growers had brought in over 40,000 barrels early in this decade and hoped this year's output signaled an upward trend.

"We had about the same number of cranberry growers as in previous years," Mrs. Schneider said. "We gain some but then there are growers who are letting their bogs go."

The Ocean Spray station in Long Beach receives berries from 35 farmers, which includes three from the Warrenton area. The last portion of the harvest was delivered Nov. 3.

From Long Beach, the cranberries move to freezers in Forest Grove where they are kept until needed by the Ocean Spray processing plant in Markham, Ore.

Pacific Tribune

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(Wisconsin-Michigan Growers)

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Available year-round in processed form, the fresh, bright red berries are harvested from September through late fall. And they're a delightfully versatile ingredient giving unique, tangy flavor to a great variety of recipes—like these three made with equally versatile sweetened condensed milk. Because it's preblended and precooked, this popular convenience food provides a creamy base for desserts as well as other dishes that are quick and simple to prepare.

CRANBERRY PARTY PARFAITS (Makes 8 servings)

- 1 (14 ounce) can sweetened condensed milk
- 1 (16 ounce) can frozen limeade concentrate, thawed
- 1 (8 ounce) container lemon-flavored yogurt
- 2 teaspoons grated lime rind (1 lime)
- 1 (16 ounce) can whole berry cranberry sauce

1/2 cup chopped toasted almonds
Fresh lime slices or twists, optional

In medium bowl, mix together sweetened condensed milk and limeade concentrate; stir in yogurt and rind. Chill 1 hour. Stir together cranberry sauce and almonds. In parfait glasses, layer about 1 rounded tablespoon cranberry sauce and 2 tablespoons lime mixture, beginning with cranberry sauce and ending with lime mixture. Chill. Garnish with lime slices.

CRANBERRY-APRICOT DESSERT SQUARES (Makes 12-15 servings)

- 1/2 cup butter or margarine
- 1-1/2 cups graham cracker crumbs
- 1/2 cup slivered almonds
- 1 tablespoon grated lemon rind
- 1 (14 ounce) can sweetened condensed milk
- 1-1/2 cups chopped cranberries
- 1/2 cup snipped dried apricots
- 1 (3-1/2 ounce) can flaked coconut

Preheat oven to 350° (325° for glass dish). In 11x7-inch baking pan, melt butter. Sprinkle crumbs, almonds and peel evenly over butter; drizzle sweetened condensed milk evenly over crumbs. Top evenly with cranberries, apricots and coconut; press down gently. Bake 25 to 30 minutes or until lightly browned. Cool thoroughly before cutting. Loosely cover leftovers.

CRANBERRY COTTAGE MOLD (Makes one 10-inch mold)

- 1 (3 ounce) package red raspberry-flavored gelatin
- 1-1/2 cups boiling water
- 1 (14 ounce) jar cranberry-orange relish
- 1/2 cup chopped celery
- 1/2 cup chopped walnuts
- 2 envelopes unflavored gelatin
- 1-1/2 cups cold water
- 1 (16 ounce) container small curd cottage cheese
- 1 (14 ounce) can sweetened condensed milk
- 1 cup flaked coconut
- Leaf lettuce
- Frosted green grapes, optional

Lightly oil a 10-inch bundt pan or 10-cup salad mold. In medium bowl, combine raspberry gelatin and boiling water; stir until gelatin is dissolved. Fold in relish, celery and nuts. Pour into mold. Chill 2 hours or until set. In medium saucepan, sprinkle unflavored gelatin over cold water to soften; stir over low heat until gelatin dissolves. Cool. Add cottage cheese, sweetened condensed milk and coconut; mix well. Pour over cranberry layer. Chill until set, about 4 hours or overnight. To unmold, quickly dip mold into warm water; turn onto lettuce-lined plate. Garnish with frosted green grapes, if desired. Refrigerate leftovers.

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Sermonettes

by the

Rev. Don Jennings

Love never fails

Any worthy cause guided by an honest motive and propelled by sincere love will always succeed in the end. There may be many obstacles in the way, but love never fails.

Thomas Carlyle, British philosopher, once said that the block of granite which was an obstacle in the path of the weak becomes a stepping stone in the pathway of the strong. Life's highways are strewn with hazards and blessed with opportunities. Courage and determination propelled by love will never fail.

The poet Shelley, referring to love as the most misused word, wrote: "It is one word too often profaned." Love is too often expressed to get what we want, but not to give. Someone has said that cheap love is soft soap, and soft soap is eighty-five percent lye. This is the kind of love that is always asking but never giving.

One of the most familiar chapters in the New Testament is the thirteenth chapter of First Corinthians. From this choice piece of gospel we learn that charity, or love, never fails.

Paul, the apostle who wrote the words, says that material things fail, we may give all that we have, but only when the gift is shared in the spirit of love does it profit the giver as well as the one who receives it. The gift without the giver is bare.

We learn from this chapter on love that knowledge shall fail, for knowledge is folly unless it is guided by wisdom. Wisdom is understanding, and understanding produces love.

As I look back on my first days as a child in public school, I am sure that the reason my first teacher succeeded with her pupils

was not just because she had the knowledge, but because she possessed wisdom and loved children. She taught the child, not just the lesson.

Jesus, meeting with his disciples in the Upper Room before his trial and death, said many things to them as his parting words. Love was foremost in all he said and did. At one point, he said, "Greater love hath no man than this, that he lay down his life for his friends" (John 15:13). The love motive had ruled his life from the beginning of his teachings, through all of the miracles he had performed, and now in the supreme test, love would not fail.

There is no greater need in our world today than that our actions might be controlled by the love motive. Problems insurmountable by other means would be solved, for love never fails.

WASHINGTON

Continued from Page 10

precipitation total at this point of the year.

Several days of no precipitation have allowed the growers to clean up their bogs following harvest and to get their pruning accomplished. Clear cold days and nights have dropped the temperature below freezing on 17 days during the month.

A.Y.S.

MASS. HARVEST

Continued from Page 1

Massachusetts this year in spite of the 50,000 barrels lost to water injury in August.

Once again, we are grateful to many individuals for their cooperation in making the Frost Warning Service successful. The telephone distributors, local radio station, cooperative observers, forecasters of the National Weather Service are all necessary in making us look good. However, a special tip of the hat goes to Prof. William Tomlinson who officially retired on Sept. 30 and continued his attendance at the frost sessions during October to help us out.

RESPIRATORS

Continued from Page 7

baffles control gas flow, while a seamless canister body minimizes the possibility of leakage. The canister is held in place by a universal harness. Like the Chin Style masks, the Industrial Size Pesticide Mask features the Ultra-vue facepiece. A plastic carrying case provides easy storage of the mask.

For more complete and detailed information on Pesticide Respirators and Gas Masks, request Data Sheet 10-00-06 from MSA, 600 Penn Center Blvd., Pittsburgh, PA 15235.

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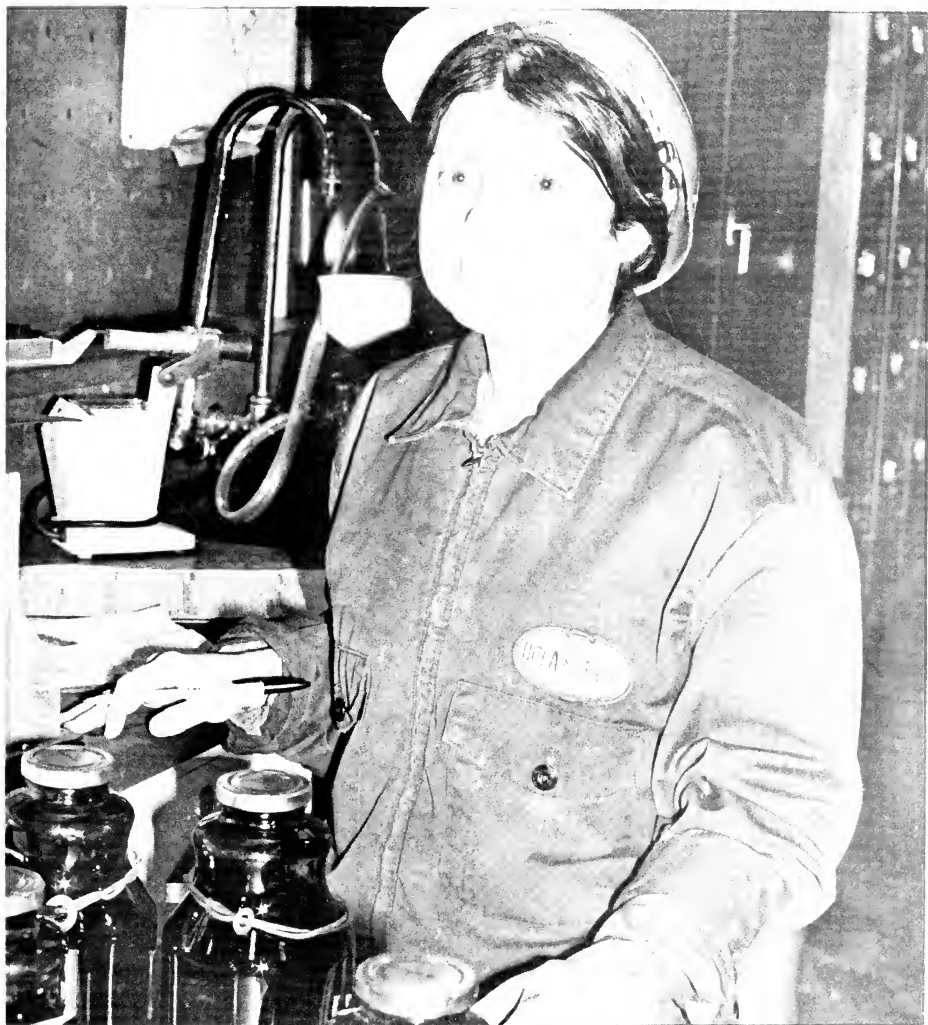
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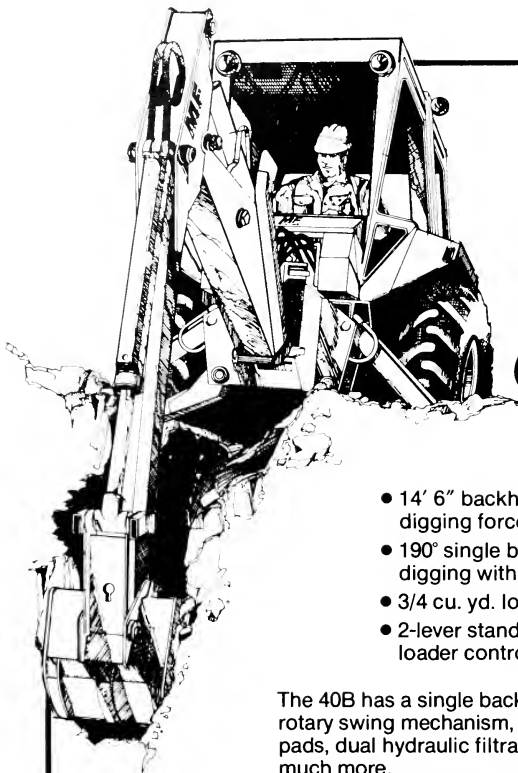
Vol. 43, No. 1

January-February 1979



**That '78 Record Crop
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Crop busts record

It's official.

The 1978 cranberry crop was a record busting, all time high of 2,494,000 barrels nationwide.

So reports Alvin K. Potter, statistician for the U.S. Department of Agriculture's crop reporting service in Concord, N.H.

The '78 yield smashed the previous record year set in 1976. The crop that year totaled 2,407,000 bbls.

The crop figure in '77 was 2,102,000 bbls.

Despite flood damage last August, Massachusetts led the cranberry growing states with a yield of 1,175,000 bbls.

Potter gave these figures for the other states: Wisconsin—870,000 bbls.; New Jersey, 220,000; Washington, 138,000, and Oregon, 91,000.

Naturally, weather was the major factor in the huge yield.

"Generally," Potter said, "there was a lack of damaging spring frost and there were favorable temperatures and rainfall.

"The size and quality of the berries were excellent. Cold nights and occasional showers



COVER PHOTO

PAULA Gregory makes a check of whether the quantity is consistent in the bottles of Ocean Spray Cranberry Juice Cocktail that come through the assembly line at the Middleborough, Mass., plant. For a photo spread on the Middleborough facility, see pages 8 and 9.

(CRANBERRIES Photo)

aided the colors of the early blacks."

Massachusetts broke its record of 1971, when the Bay State yield was 1,072,000 bbls.

Wisconsin actually was down from the 1,004,000 bbls. grown in that state in 1976. August temperatures benefitted berry sizing but heavy spring rains reduced the fruit set in some areas, Potter explained.

The record would have gone even higher had it not been for a wet late summer and early fall in Oregon and Washington.

Cranberry growers tell CRANBERRIES magazine that they've been doubly blessed this season by both a high yield and what they describe as a "good" price.

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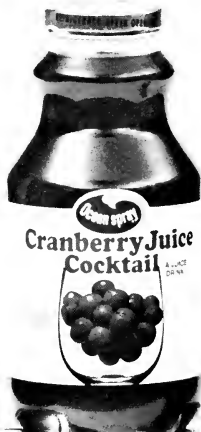
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has new owner

CRANBERRIES



THE NATIONAL CRANBERRY
MAGAZINE

—Our 43rd Year of Publication—

Volume 43^o—No. 1
January—February 1979

The Taylor Publishing Co. is proud to announce the purchase of CRANBERRIES, the nation's only periodical devoted to the cranberry industry.

We pledge to carry on the high standards established by Clarence Hall, who founded the magazine in 1936, and, later, by I. Stanley Cobb, who ran the publication for the past 13 years. And we look forward to making our own contributions, based on a lengthy and diverse experience in magazine, book and newspaper publishing.

In short, there will be a changing of the guard in what, we anticipate, will be an orderly, traditional manner. Familiar, trusted friends will continue to be present—Dr. Chester E. Cross, Irving DeMoranville, Vernon Goldsworthy, I.V. Hall, Philip E. Marucci, Azmi Y. Shawa—and we plan to introduce some new departments, writers and photographers.

Hard news about the cranberry industry will be our foremost concern. We are committed to keeping you up-to-date on all information pertaining to the industry, from production to legislation.

Secondly, we will strive to keep you abreast of anything happening in agriculture that could have an impact on you, the cranberry grower. We will be concerned about technology relating to the industry and about the economy in general. On the lighter side, we plan a heavy dose of features and photos on everything from profiles on growers to cranberry festivals.

And, remember, CRANBERRIES is your magazine. If you have a beef, voice it in our letters column. Or perhaps you have a valuable idea to contribute. We—and CRANBERRIES readers—would like to read about it.

Taylor Publishing is conveniently located between the bogs of Massachusetts and New Jersey. We'll cover those places and Wisconsin, Washington, Oregon, Nova Scotia, British Columbia and overseas—everywhere cranberries are grown, marketed, processed and talked about.

Here at CRANBERRIES, everything should be uphill from now on. The day after we moved files, back copies and other materials from Pilgrim Publishers to Taylor Publishing, our offices became flooded, in what old-timers and the Weather Bureau claim was the worst havoc caused by rain in these parts ever. A couple of days later, the offices were awash again.

Weather aside, the inevitable problems posed by a transition of ownership have necessitated a combined January-February issue this time. However, from now on you will receive CRANBERRIES monthly, right around the beginning of the month of publication.

After you've looked over the new *old* CRANBERRIES—and should you get a moment—let us know what you think. We'd like to hear from you.



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"There was never yet a truly great man that was not at the same time truly virtuous."

—Poor Richard's Almanac

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What caused record crop?

By DR. CHESTER E. CROSS

The record breaking cranberry crop in Massachusetts in '78 is already in the record books.

It is important to determine— if we can—how the crop came to be so large.

We know that a wet October tends to help us toward a large crop the following year, probably by minimizing the damage to pulled roots and vines during the harvest.

October of '77 was the wettest October in our records. Sunshine was well above normal in '77, favoring a large crop. But the winter of '77-'78 was cold, long and snowy, not favoring a large crop.

Probably the most important factor in the all-time record crop of '78 was the virtual absence of spring frost damage.

Growers probably remember that a first spring warning was issued the last night of April and that it proved to be a very long, cold night. By midnight temperatures were at or below 20 degrees F and by dawn some reports showed minimums in the single numbers.

Many sprinkler systems were used that night for the first time in 1978. However, we were blessed by a long interval before dangerously low temperatures threatened again on June 14, 15 and 16. By then the days were long and the nights short and protection was readily provided.

Subsequent bloom and crop showed that the cold night of April 30—May 1 did little or no

damage, even where protection was not provided. March had been a colder than normal month and April had nearly normal temperatures. The "greening up" of the vines was delayed and under present day management bogs would not need frost protection under these conditions in April, despite Dr. Franklin's historic warning: "When temperatures threaten to fall below 20 degrees F the last week in April, it is best to protect."

It now seems clear that the major factor in producing our "largest ever" crop was the absence of spring frost damage. It follows that if we are to produce more million barrel crops, the surest way to do it is to protect the flower buds from spring frost damage.

The increased dollar returns from the '78 crop should be used *first* to assure an adequate and clean water supply, a sprinkler system that is as free of break-

(continued on page 10)

CRANBERRY GROWERS REALTY

Listings of buyers and sellers welcomed on cranberry acreage and upland.

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from accounting to cranberrying

A certified public accountant, with an MBA from the University of Wisconsin, Jay Normington had his own successful practice.

But the lure of the cranberry bog proved stronger.

About 10 years ago, at the age of 44, he entered the cranberry business part time, fashioning 32 acres of bog from wilderness in the City Point, Wisc., area.

At age 50, he closed the door of his accountant office behind him for the last time and launched himself into the Saddle Mound Cranberry Co., Inc., on a full time basis.

"Cranberrying always had appealed to me," said the good natured Normington. "It's a totally different way of farming. And I enjoy working very hard in the summer, not as hard in the

winter, and I love being outside."

The most dramatic change he has seen in his decade in the industry, he says, is the widespread use of sprinklers.

"They protect against frost and you can use them for herbicides, pesticides, fertilizers and irrigation," he noted enthusiastically.

Normington's yield per acre has grown from 19 barrels to, this year, 156 barrels, and, in 1975, he hit 200 barrels.

But, financially, this will be his best year because of the increase in the price per barrel for the 1978 crop to about \$21.50.

"I'll tell you," Normington said, "we're dancing in the streets in Wisconsin because of the \$20 barrel."

This harsh winter is posing problems though, notes the owner-operator of Saddle Mound. Heavy snows and temperatures of 40 below zero have made icing and sanding operations difficult.

"The machines won't operate in that cold. What we're trying to do is get ice on the marsh. We've scalped peat from two new beds comprising about 6 acres. We'll spread 10 inches of sand, which, as you know, will sink to the bottom when the ice melts and we'll plant in sand instead of peat. That helps to control the weeds."

Another problem Normington has found lately is deer.

"Why, we went out lately and found 129 deer on 30 acres. We figure we're losing about 30 barrels an acre to the deer. And they not only eat the plants. They bed down on them, walk on them."

While he prefers cranberrying, Normington is pleased that he has an accounting background. It helps

him with his own bookkeeping and he has been able to give advice to fellow cranberry growers.

"And, having been relatively new in the business, I don't think I would have been elected a director of Ocean Spray if it hadn't been for my accounting background," he says.

Normington and his wife, Norma, reside in Wisconsin Rapids. They have one son and two daughters.

"Hopefully, after all the children have completed college, I'll move out to the marsh," he says.

Normington's son, 25, helps out on the marsh during the summer.

"He's had an interesting career

(continued on page 10)

CRANBERRY VINES FOR SALE

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AT THE LEFT, Everett Weatherby and Allison Washington dump berries into bulk receiving bin. ABOVE, Chip Rovatti checks giant berry press.

No. 1 Cranberry Plant

It's billed as the largest cranberry processing plant in the world and the superlative strikes home when you take a tour of the ultra-modern, automated, streamlined Ocean Spray facility in Middleborough, Mass.

The 475,000 square foot plant has the capability of turning out 4.5 million cases a year.

This high production rate is made possible because of modern engineering and technology.

However, despite the precise automation of the many processes involved in preparation, bottling and canning, people still are needed on the line. In large part, their function is to catch up with the occasional mistakes the uncanny machinery makes but is not aware of.

So, CRANBERRIES thought it would show you some of the people who process the berries you grow. They're the people who make certain quality goods arrive at the supermarket shelf and supper table.

(Photos by CRANBERRIES)



FRED Cappella keeps eye on bottle filling operation.

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ABOVE, Floyd Lakin oversees the labeling process near the end of the run. TO THE RIGHT, Ron Burke piles cases in the warehouse for shipment to various points throughout the U.S.



RAIN DAMAGE VICTIMS TO GET ASSISTANCE

FARMERS in the Massachusetts County of Plymouth who suffered losses resulting from devastating rainfall on Aug. 6 and 7, 1978, may apply to the local Farmers Home Administration (FmHA) offices for financial assistance.

The announcement was made by William E. Curry, state director of the FmHA for Massachusetts, Rhode Island and Connecticut.

Farmers reported heavy damage to both cranberry and vegetable crops because of the torrential rains. Many cranberry growers suffered damage to their dikes, dams, flumes, sprinkler and pump systems. Also, the actual flooding of the bogs and subsequent hot weather caused substantial scald damage to the cranberries.

As a result of this Disaster Designation declared effective Oct. 20, 1978, the U.S. Department of Agriculture—through the FmHA offices in Bourne and Raynham, Mass.—has set in motion the procedures for accepting applications and making loan funds available. Applications will be accepted for physical losses through July 16, 1979 and for production losses through Oct. 18, 1979.

According to Curry, individual farmers, partnerships and corporations

may be eligible for assistance. An applicant must be unable to obtain credit elsewhere; be a U.S. citizen, or in the case of a corporation or partnership, the members and principal stockholders must be citizens; be an established farm operation; and show an intent to continue farming with a reasonable prospect for success after the loan is made.

CURRY went on to say that the interest rates are 3 per cent on the actual loss portion of a loan up to \$250,000 and 8.5 per cent for other qualifying purposes above \$250,000. Repayment terms will be consistent

with the applicant's reasonable ability to pay, and will vary from one year to seven years for operating-type loans, with a possible maximum of 20 years.

Loans for real estate purposes may not exceed 40 years.

For further information, farmers living in the towns of Carver, Wareham, Plymouth, Lakeville, Middleboro, Rochester, Marion and Mattapoisett should contact the FmHA County Office located at:

160 MacArthur Blvd.

(continued on page 10)

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NORMINGTON . . .

(continued from page 7)

turn," the Wisconsin grower said. "He took a degree in economics at the University of Wisconsin. Then, probably my influence, he decided he didn't want to sit behind a desk and he went on to study fish biology."

Harsh winters, hungry deer, inflation, price fluctuations, all add up to a more tranquil life than Normington had more than 30 years ago. A 2nd lieutenant with the Flying Tigers in World War 2, the B-24 he was piloting was shot down over China in 1945. He lived with Chinese guerrillas for five weeks before being returned to his unit. The guerrillas who returned him were rewarded with 40 gold coins.

"I guess that showed what I was worth," Normington said with a chuckle, "40 gold coins."

RAIN DAMAGE . . .

(continued from page 9)

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Farmers living in the towns of Brockton, Abington, Rockland, Hanover, Norwell, Scituate, Bridgewater, East and West Bridgewater, Whitman, Hanson, Pembroke, Marshfield, Halifax, Duxbury, Plympton and Kingston should contact the FmHA County Office located at:

153 Broadway, Rte. 138
Raynham MA 02767
(617) 822-7141

RECORD CROP . . .

(continued from page 6)

down problems as possible and probably thermostatic controls should be investigated.

It seems certain now that spring frost damage usually takes a much larger toll of our Massachusetts cranberry crop than we have credited it with taking. Those

growers who consistently raise 150 barrels per acre are growers who are consistently ready to protect their bogs whenever spring frost threatens to damage or kill their flower buds.

Growers are already rebuilding some bogs, others are already

clearing swamp to plant new bogs, but—in my opinion—the surest way of turning a profit from the present happy market situation is to invest *first* in a no-fail frost protection system. For too long, we have tried to compete without sure-fire frost control.

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Antitrust proposal hit by farm coops

The National Council of Farmer Cooperatives—of which Ocean Spray Cranberries is a member—recently attacked a proposal that would subject all cooperative mergers and marketing activities to review by the Justice Department and Federal Trade Commission.

Kenneth D. Naden, president of NCFC, said the move would cripple the family farm system and hike food prices.

The proposal was made by the National Commission for the Review of Antitrust Laws and Procedures. It was part of a set of recommendations made to President Carter.

“The antitrust commission has dealt the family farm system a low blow by attacking cooperatives, the farmer’s main alternative to weak bargaining power,” Naden said.

OREGON CROP 15% OVER 1977

The official count for the 1978 cranberry crop in Oregon is 92,756.34 bbls., Mrs. Pam McGinty, Ocean Spray plant manager in Bandon, Ore., told CRANBERRIES.

The figure is up 15 per cent from last year’s 78,670 bbls.

A total of 94 growers brought berries this past season to the Bandon plant, where they are cleaned and shipped out for freezing to Eugene, Ore., and points east.

“All of our berries go into sauces and juices,” Mrs. McGinty, plant manager for the past five years, told CRANBERRIES.

Of the 94 growers, the largest
(continued on page 12)

He added: “We have the most productive agricultural system in the world but, instead of leaving success alone, the Justice Department is threatening it by weakening farmers’ ability to meet buyers with some degree of market power.”

Naden accused the Justice

Department of railroading its recommendations through the review commission.

“It was loaded against agriculture from the start,” he said. “The support staff was from the Justice Department, commission members weren’t familiar with

(continued on page 12)



Look ahead this Winter

Though growing season is over and the land is at rest, the cold winter months can be the most productive on your farm.

Use them for planning, for setting goals for the future, and the return on your winter months may surprise you.

Top managers plan ahead. They decide, sometimes with the aid of a lender or other advisor, how things should happen. They shape events rather than letting events shape them.

Goals will help you shape events. Make your goals realistic. Make them for the short run and the long run. Some will be large and some will be small. Make them specific and measurable, so you'll know when you've met them.

Look ahead this winter by setting goals for your year ahead. Need someone to talk to about goal setting? Try us, we're good listeners. Chances are that we can help when it comes to your financial goals and a line of credit to meet them.

Production Credit Associations of Wisconsin



Farming is
everybody's bread
& butter.

FARM COOPS . . .

(continued from page 11)

agricultural production or marketing, and most of the witnesses called to testify before the commission were from Justice. It would seem we are witnessing a blatant power play that is more self-serving to the Justice Department than to the welfare of the nation."

At the center of the dispute, Naden said, is the Capper-Volstead Act of 1922, which exempts family farmers from antitrust law provisions when forming a cooperative to market their products.

The Justice Department maintains that cooperatives have become too powerful and now lessen competition.

Arguing against this position, Naden said farmer cooperatives have the only vehicle with the financial ability and marketing strength to challenge the largest

food companies.

"The Capper-Volstead Act correctly maintained that the interests of the family farmer are different from that of big business," Naden stated. "But now, the Justice Department wants to treat the family farmer as though he were an industrial conglomerate."

The NCFC head said farmer cooperatives have the only vehicle with the financial ability and marketing strength to challenge the largest food companies.

The NCFC head charged that the review commission proposal amounts to "lawyers trying to tell farmers how to market their products."

OREGON . . .

(continued from page 11)

has 45 acres while the smallest has less than half an acre.

The Bandon plant is 24,000

square feet, with another 1,500 square feet for storage. During the harvesting season, the plant employs about 25 people.

The driest October in the history of Oregon slowed up the harvesting this year.

"Almost all the Oregon bogs are water picked," Mrs. McGinty explained.

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2. No waiting for fog to lift—also can work in the dark of night if necessary.
3. Spray is released near the crop for the most effective results.
4. No need to worry about added health insurance of employees.
5. No disposal problems of empty poison containers.
6. Consideration given to large acreage.
7. All billing done in September.

I am licensed by the Department of Public Health for this service. Call BOB ALBERGHINI, Wareham, Mass., at 295-9092. Leave a message with answering service if I am not at home.

DISEASES AND FUNGICIDES

By AZMI Y. SHAWA

Extended cold weather has been keeping cranberry vines dormant longer than usual.

This will give growers a better chance to sand those weak spots in their bogs. You still have a few weeks before other activities start in early March.

Fungus diseases, especially *Guignardia vaccinii*, thrive on weak areas and may kill the vines. This can be stopped if you will give the vines a chance to initiate new roots and form healthy uprights by sanding.

Healthy, strong vines resist any fungus infestation with the help of protective fungicides. A sound program can be started with a copper compound in March. There is a choice between bordeaux-mixture at the rate of 8-8-100 or kocide-101 at the rate of 8 lb/A.

Apply a second fungicide at popcorn stage (April) and a third at

hook stage (May), thus protecting all the new growth from any fungus infestation prior to fruit set.

One of the advantages of having extended cold weather is the killing of grasses or, at least, restricting their growth.

With a fast inspection through the vines in areas you remember or mapped as weed infested, you will be surprised to find purple aster, sheep sorral (sourgrass) and louse grass (poverty grass) are sprouting and ready to take off when a warm trend comes.

These can be controlled by a split application of 50 lb. casoron, 35 lb. simazine and 15 lb. 2,4-D per acre, half applied in February and half in March.

Cutgrass and lotus were found to be affected by an application of 20 lb. 2,4-D granular per acre in early February.

Perennial weeds such as bog rush, bull rush, young tussock and salt-grass

can be controlled with evital in February at the rate of 160 lb. per acre.

Lily-of-the-valley can be slowed down by an application of 1,500 lb. of any formulation of elemental sulphur not later than the end of February.

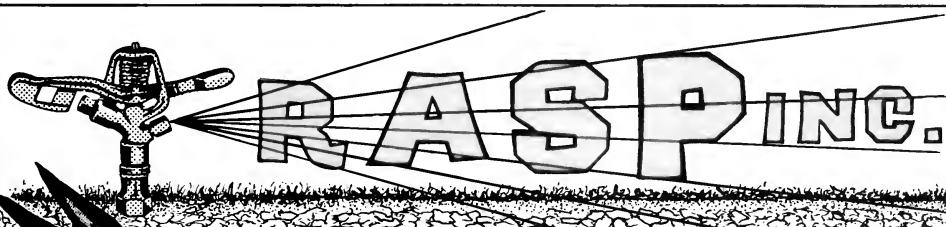
weather watch


MASSACHUSETTS

December averaged 1.1 degrees a day above normal, ending a series of cool months that began in September.

Maximum temperature was 59 degrees on the 4th and the minimum was 13 degrees on the 12th. Warmer than average days occurred on the 2nd, 4th,

(continued on page 14)



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Bugs

WEATHER WATCH . . .

(continued from page 13)

9th and 16th. Colder than average were the 10th, 11th, 18th, 20th and 29th.

Precipitation totaled 4.47 inches or about $\frac{1}{4}$ inch above normal. There were only eight days with measurable precipitation, with the greatest storm on the 8th and 9th, when 2.11 inches were recorded.

For the year 1978, the temperature averaged a frigid 2.1 degrees below normal. This was the coldest year since 1967 and the 4th coldest in our records, exceeded only by 1967, 1940 and 1926. The only warmer than normal month was December.

Months that were much below normal were January, February, March, April, July, September (record cold at East Wareham), October and November.

Maximum temperature for the year was 92 degrees on July 23 and the minimum was minus 2 degrees on Feb. 11.

Precipitation for 1978 totaled 47.08, less than $\frac{1}{4}$ inch above normal and about 13 inches less than in 1977. The largest total precipitation from one storm was 5.10 inches on Jan. 13-14.

The months with substantially above normal precipitation were January (a record at East Wareham), May, July and August. Months with substantially below normal precipitation were February, March, April, June, September and November.

The storm of Aug. 6-8 that brought rain amounting to 10-14 inches in parts of southeastern Massachusetts and flooded many cranberry bogs in Carver, Lakeville and Plymouth amounted to only 3.48 inches in East Wareham.

Snowfall for the year totaled 58.8 inches (a record at East Wareham). The largest storm was 16.2 inches on Feb. 6-7. This was the notorious "Blizzard of '78," when towns within 15 to 20 miles of East Wareham measured from 26 inches to 4 feet.

While only emergency travel was allowed in the hard hit areas, we were driving on dry roads.

I.E.D.

NEW JERSEY

December was quite mild and wet in the cranberry region of New Jersey. Temperatures were in the 50's on eight days, in the 60's on two days and in the 70's twice.

The daily maximum temperature of 71 degrees F on the 4th was a record high for that date but the 70 degree F reading on the 8th was second to the record of 73 degrees on that date in 1948.

The extreme low for the month was 14 degrees on the 29th and 30th.

The weather has been so mild that by the end of December, soil temperatures were still in the low forties and water on the cranberry bogs was still unfrozen.

Precipitation, none in the form of snow, totaled 5.58 inches, or 2.07

trend of three consecutive months of below normal precipitation.

The total for the year was 53.93 inches, which is 9.82 inches above normal. This made 1978 the fourth rainiest year in the 50 year weather recording history at Pemberton. Wetter years were the 60.01 inches in 1958, 56.25 inches in 1972 and 55.85 inches in 1975.

A review of the weather of 1978 shows that nine months were colder and three (August, November and December) were warmer than normal. The annual average temperature was 51.7 degrees F, or 2.1 degrees below normal.

Seven months (January, March, May, June, July, August and December) were rainier than normal and five (February, April, September, October and November) were drier than normal.

Unusual features were the extremely cold February, the excessive precipitation in January, May and August, the cool summer and the very dry autumn. February, with an average temperature of 21.9 degrees F, or 12.1 degrees below normal, was the second coldest month ever recorded.

From January through July, a seven month period, the monthly temperatures were well below normal. The July average of 72.3 degrees F, or 2.6 degrees below normal, made it the third coolest July.

Particularly heavy rainfall occurred in January (7.11 inches), May (7.66 inches) and August (11.39 inches). Subnormal rainfall occurred from September through November, during which the accumulated deficiency was 5.92 inches.

P.E.M.

NOVA SCOTIA

Our first appreciable snowfall came on Dec. 11 and considerable frost has now entered the soil. The mean temperature for November was 1.3 degrees C, which was slightly lower than the 50 year average of 3.4. We have been experiencing widely variable temperatures with several rains followed by cold periods. This has resulted in practically no snowfall accumulation and we will probably

(continued on page 15)

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WEATHER WATCH . . .

(continued from page 14)

have winter injury to many perennial plants come next spring.

I. V. H.

WASHINGTON

Precipitation continued light for the month of December with a total of only 6.81 inches. The average is 14.89.

The total for the year was 69.99. The average is 85.30.

The greatest storm for December brought 1.25 inches in a 24 hour period prior to 8 a.m. on the 9th.

The records at the Coastal Washington Research and Extension Unit record only one December with less precipitation and that was in 1976—a drought year.

Basically, the temperature remained mild also, with a high of 53 degrees registered at 8 a.m. on the 14th. The low for the month was 12 degrees on the 31st.

A. Y. S.

regional news notes

Massachusetts

By IRVING DEMORANVILLE

The cranberry insect, disease, weed and fertilizer charts have been revised and will be at the printer's shortly.

The Massachusetts Cranberry Station will mail them by the middle of March. The state labels for Guthion and Diazinon 14G will be included with the charts. Anyone not receiving these materials or needing additional copies may contact the Cranberry Station.

Bogs with green scum in the flood should be treated with copper sulfate as outlined in the 1978 weed chart. Silvex in oil is excellent for controlling small woody species around the bog, such as poison ivy, maple sprouts, bull brier, scrub oak, pitch pine, etc.

Also, if sprayed on stubs and stumps of larger trees, it will stop re-sprouting.

Dr. Robert Devlin and this author attended the annual meeting of the Northeastern Weed Science Society in Boston on Jan. 3-5. Bob presented two papers at the meeting.

Prof. Stan Norton attended the annual meeting of the Technical Committee of NE-93 in Morgantown, W. Va., Jan. 8-10. This is a north-eastern regional project on mechanical harvesting of fruits and vegetables. Stan is the Massachusetts representative and senior executive committee member.

Nova Scotia

By IVAN V. HALL

The British Columbia Department of Agriculture reports that production of cranberries in that province was down in '78. A major factor was cottonball disease.

Production in Nova Scotia in '78 was up slightly over '77.

Washington

By AZMI Y. SHAWA

The Cooperative Extension Service of Washington State University plans two estate planning sessions for area cranberry growers on Mar. 9 and 20 at 8 p.m. and 7 .m. respectively.

Conducting the meetings will be Dr. Bruce Florea.

OBITUARY

WILLIAM BJON

Except for a brief period in the logging and timber business, William Bjon, who died Jan. 8 in Long Beach, Wash., had been a cranberry grower since 1930.

Bjon was born in Finland and came to the U.S. in 1913.

He was a member of Vasa and the Runaberg Lodge of Hoquiam.

Surviving are his wife, Selma, and a son, Ralph.

Graveside funeral services were held, with the Rev. Paul Bodin officiating.



Looking for a delicious soup with an unusual combination of ingredients? Beetberry Soup may be your answer. Fresh tasting beets and tangy cranberries give this soup an unforgettable flavor—and a beautiful red color. Then, too, this soup is filling without being too heavy and can be served hot or cold.

BETTBERRY SOUP

(Serves 6 to 8, Makes 2 quarts)

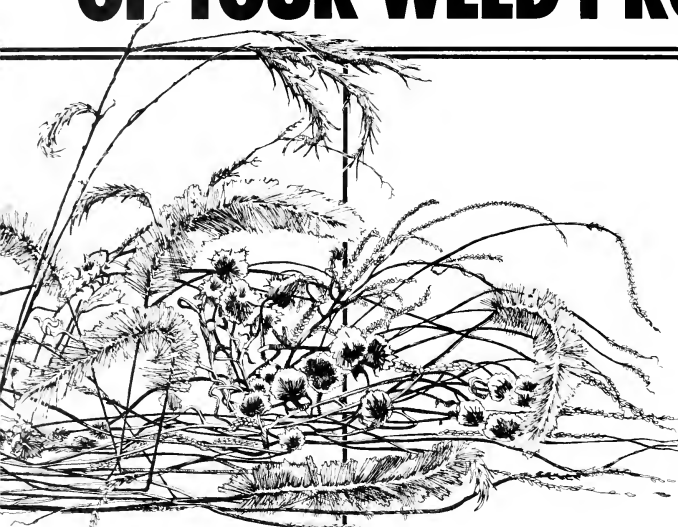
- 1 3/4 cups whole berry cranberry sauce
- 2 cans (1 lb. each) shoestring beets, undrained
- 3/4 cup chopped onions
- 3 cups cranberry juice cocktail
- 2 cans (10½ oz. each) condensed beef broth
- 2 tablespoons cider vinegar
- 1 tablespoon lemon juice
- Salt and Pepper
- Boiled potatoes, sour cream

Combine all ingredients except salt, pepper, potatoes and sour cream. Simmer until cranberries are tender, about 30 minutes. Season to taste with salt and pepper. Serve hot with peeled boiled potatoes and spoons of sour cream. (If soup is served cold, remove fat from surface before spoon-into dish.)

DEVELOPMENT RIGHTS

Application forms with respect to the Massachusetts purchase of development rights program (Ch. 780, Farmland Preservation Act) should be in the hands of local conservation commissions by now.

IT TAKES JUST ONE HERBICIDE, USED ONCE A YEAR, TO GET TO THE ROOT OF YOUR WEED PROBLEMS.



CASORON® G-4 herbicide, by itself, controls more than 40 weeds, including ferns, rushes and sedges that can cut your cranberry yields. And CASORON gets them all with just one pre-season application.

CASORON strikes weeds where they're most vulnerable: at their roots. It stops even the hardest perennials before they have a chance to rob precious nutrients from your crop.

Just apply CASORON granules to bogs in early spring and relax. CASORON goes to work immediately, to

kill problem weeds the first time around. And the following spring, it will save you expensive man-hours normally spent spraying or hand-weeding stragglers.

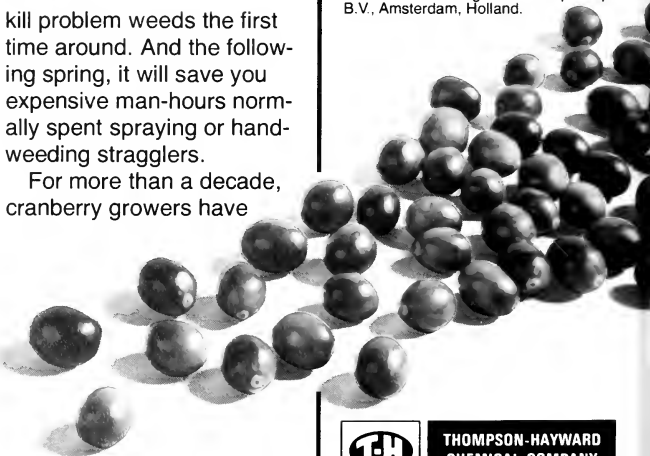
For more than a decade, cranberry growers have

proved to themselves that CASORON gives the most effective control possible. Control that makes good economic sense.

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CRANBERRIES

THE NATIONAL CRANBERRY MAGAZINE

Vol. 43, No. 2

46

January-February 1979

MARCH



Report on fertilizer study

Twenty five years ago

Difolatan - the cranberry fungicide with a plus.

— cranberry fungi-
— cide that controls
— fruit rot, but at
the same time slows rip-
ening and color develop-
ment is a product you
can't afford.

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tightly, resists washing
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Insect expert shares in words only



COVER PHOTO

PROF. William E. Tomlinson Jr. where he likes to be most—out-of-doors. The story on Tomlinson, who retired recently from the Massachusetts Cranberry Experiment Station in East Wareham, starts on this page.

(CRANBERRIES Photo)



the stall, biking and tending 200 blueberry bushes.

“Anywhere we can go,” he said of his travel plans, a point on which his radiant wife, Barbara, quickly concurred. “We just got back from Mexico. We drove to Colorado to see our oldest daughter, attended entomology meetings in Houston and flew to Mexico City and Alcapulco.”

(continued on page 12)

PROFESSOR Tomlinson reflects on agriculture, government and the environment as he discusses his long career in entomology.

Bill Tomlinson interrupted his burning of blueberry brush and strode up the hillside, his long legs carrying his lean, hard frame at a good pace. He glanced at the family horse, looked out over Cape Cod Bay and stepped into the house for his “retirement” interview.

When it was over, he got up, stretched his legs, flexed his fingers and started pacing. One gets the distinct impression that this is a man who doesn’t like to sit still.

“Fishing? I’ve lived here in Sagamore Beach since 1952 and I haven’t been fishing once,” he said. “The ocean’s right there. But I’m not one to just stand there, throw in a line and wait for a bite.”

“Do?” he asked, a little incredulous that someone should ask him what he was going to do in his retirement years when obviously

there was so much that needed doing. “Why, there are all kinds of things. Keep this house up. Travel some. I like to grow things. . .fruits, vegetables.”

Then there are wood splitting, walks on the beach, shoveling out



BARBARA Tomlinson enjoys a good laugh over a quip by her husband.

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Just apply CASORON granules to bogs in early spring and relax. CASORON goes to work immediately, to

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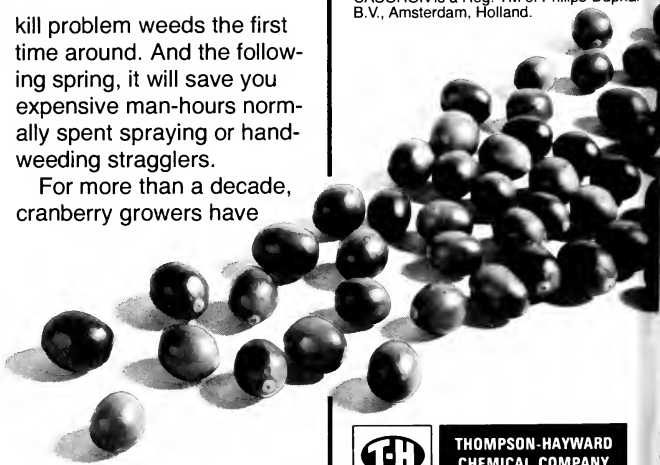
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Mandarins and cranberries

The *Japan Agriculture and Food Report* discloses that the average Japanese household is spending more each year for fruits. Part of the rise is due to the inflation that besets everybody but the increase also reflects a growing appetite among the Japanese for fruit.

The report doesn't show what is happening to cranberry sales but if it did, it would reveal that cranberry imports also are rising.

Somehow, this is only fitting. Since Americans continue to consume reasonably large quantities of a fruit—mandarin oranges—that is as Japanese as kimonos and tatami mats, it seems suitable that the Japanese devour respectable amounts of a fruit—the cranberry—that is as American as the Thanksgiving feast and July 4th Parades.

Cranberry festival

That gala annual Bandon, Ore., event, the Cranberry Festival, is slated this year for Sept. 14-16.

One of the ingredients that makes the festival such a success is early planning. Only a few months after the celebration is over, the residents of the Cranberry Capital of Oregon start making preparations for the next one.

The new president of the Cranberry Festival Assn. is grower Bob Gaines. Other officers are: Bud Neet, vice president; Claudie Neet, secretary; Floyd Gohn, treasurer; Merrillyn Knox, Cary Cox, Phelps Elbon and Ray Hallinan, directors.

Western World, the fine weekly newspaper that serves Bandon-by-the-Sea, is accepting entries for the student theme contest out of which the theme for the festival is selected.

CRANBERRIES



THE NATIONAL CRANBERRY
MAGAZINE

—Our 43rd Year of Publication—

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Pinchurst Dr.

Wareham, Mass.



Merits of new herbicide cited

By IRVING E. DEMORANVILLE
and ROBERT M. DEVLIN

Editor's Note: The authors are
with the Massachusetts Cranberry
Experiment Station.

Cranberry bogs in southeastern
Massachusetts have many weed
problems, two of the most common
of which are *Cyperus dentatus*
(nutsedge) and *Leersia oryzoides*
(cutgrass).

Nutsedge and cutgrass—found
in about 80 per cent of the
Massachusetts cranberry acreage—
cause some reduction in yield.
There is no accurate data on the
precise percentage of yield
reduction where these two weeds
are present, but it could range from
less than 1 per cent to possibly
50 per cent or more in heavy
infestations of cutgrass. A
reasonable average might be about

20 per cent.

Since the Massachusetts growers
are expected to receive a gross
return in excess of 20 million
dollars for their 1978 crop, a 20
per cent reduction in yield
represents a potential loss to the
grower of 4 million dollars.
Obviously, good control of these
two weeds would have important
economic significance.

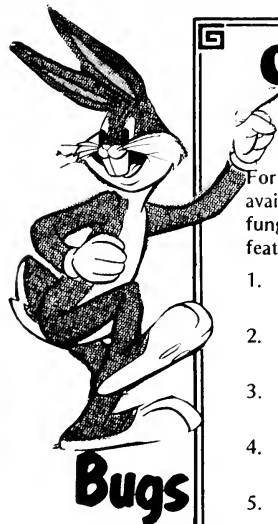
GROWERS manage to control
nutsedge and cutgrass through the
use of Casoron and Evital.
However, the use of these herb-
icides presents some problems.

Casoron does not eradicate
nutsedge or cutgrass but only
suppresses growth for most of the
growing season. This is not
sufficient because by the time the
berries are beginning to increase
in size and color, these weeds are
generally tall and abundant enough

to compete with the cranberry
vines for water, nutrients and
light. This may result in smaller
and inadequately colored berries.
Also, since the weeds are not
eradicated, annual applications
of Casoron are necessary.

Since cranberry vines are only
slightly more tolerant of Casoron
than nutsedge or cutgrass, the
grower must guard against vine
injury. For example, the gradual
buildup of Casoron residues in
the soil as a result of several
annual applications—or an
uneven application of the
herbicide—can damage vines or
hinder vine growth. Continued
annual applications over a
period of many years can cause
injury to the cranberry root
system, making the vines more
susceptible to drought. Also, the

(continued on page 14)



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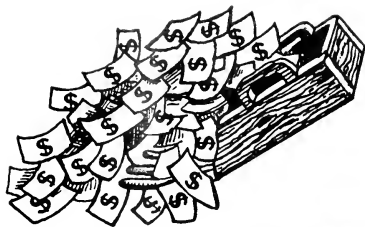
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Investment Scoop

Keeping Up

By MARTIN B. PERSON JR.
President, Gage Wiley & Co. Inc.



These days the most popular investment strategy seems to be to sit back smugly with high interest short term bonds or certificates of deposit and await the recession—the recession that has already won the award as the most universally predicted phenomenon in the annals of economic prognostication.

EVERYONE seems agreed that it is coming. Isn't the only question just **WHEN** and **HOW BAD**?

Meanwhile, with inflation hitting us mercilessly, the familiar dodge is to go for the safest storm cellar. Take advantage and buy three-month Treasury bills and certificates of deposit that come close to equaling inflation's pace, goes the scenario.

With all of the uncertainty there is in the world today and a general lack of confidence in things American, it's not easy to make a case for anything that's not guaranteed. Buying stocks today just isn't as popular as when stock prices are higher.

Risk investments (common stocks) are once again unpopular as they are in all periods of economic uncertainty. Only the confirmed contrarian could love an equity as interest rates soar.

But, as we depend on history to provide clues to the future, it is important to remember that it was just such times of seeming hopelessness in the past that provided the watchful investor with exceptional opportunities. Today the general public and the "big boys" are staying away from stocks, but should this be the time to turn away and forget them?

KEEPING in mind that vast amounts of capital today are managed by professionals who have a remarkable way of having lunch together (with or without martinis), be

prepared for the surprising day when you discover that the shift into equities is already well underway. The bond holdings of those who have unusual courage and have been down this path before will have vanished and been replaced by potentially rewarding stocks.

When the news gets to Mr. Average Investor, it is likely that the major portfolio shifts will already have been made. The volume on the New York Stock Exchange will have soared to new heights.

At that point, owners of those short term high yield bonds will be reminded of the embarrassing time when they held tickets for the train that had already left the station.

STRIKING FARMERS

Government supports and subsidies aren't the answer, says the Massachusetts Farm Bureau Federation about the tractor riding, farmer strike in Washington, D.C.

The Farm Bureau said it "favors government assistance in emergency situations but believes the answer to the basic economic problems of the farmer lies in expanding markets for farm commodities."

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25 ***** years ***** ago

The big news in March 1954 was that the New England Cranberry Sales Co., organized in 1907 and the largest unit of Eatmor Cranberries, voted to dissolve and to sell its assets to National Cranberry Assn.

Mrs. Roberta Mullin of Daytona Beach, Fla., won a cranberry red Cadillac for winning an Eatmor Cranberries contest to name the cranberry girl.

Oregon members of the National Cranberry Assn. elected Mrs. Arthur Randall to go to the annual meeting in Massachusetts. Frank Zorn, Mrs. L.M. Kranick and Clarence Lunwalt were elected to the advisory committee. Bill Dufort spoke about the Bandon grading plant.

Lewis Kcones, owner of the Busy Bee Farm in South Weymouth, Mass., once again pulls his stunt of wearing a "beard" of bees, a total of 25,000 bees clustered about his face, neck, shoulders and chest. Only one stung when they were removed. "Be gentle with bees and they will be gentle with you," said the unflappable Mr. Kcones.

weather watch

MASSACHUSETTS

January temperatures averaged exactly one degree above normal. The past three Januaries have been very cold and, in the past 21 years, this is only the seventh above normal.

January.

Maximum temperature was 55 degrees on the 2nd and 21st, minimum was 2 degrees on the 19th. Warmer than average days were the 1st, 3rd, 7th, 8th, 14th, 21st and 25th. Cooler than normal periods occurred on Jan. 4, 4-6, 9-12, 15 and 18-20.

Precipitation totaled 10.40 inches, a record which broke the one set last January at 9.47 inches. The new record is 6.1 inches above normal. There was measurable precipitation on 17 days with 2.52 inches on the 25th to 27th as the largest single storm. Snowfall fell in very small quantities on four days and totaled 6.2 inches, which is less than average.

I.E.D.

NOVA SCOTIA

In contrast to the mild weather of January, the weather of February has been cold with desiccating winds. The rainfall at Kentville for the month of January was 177.2 mm compared with the 50 year average of 57.9.

I.V.H.

WASHINGTON

January temperatures averaged 5.6 degrees cooler than normal. Maximum temperature was 50 degrees

on the 21st and minimum was 15 degrees on the 1st and 31st. The average high was 44.6 degrees, the average minimum was 28.5. This compares with the temperature in 1969, just 10 years ago, when a lower overall average of 35.7 degrees was reached, compared to the 1979 January average of 36.5 degrees.

Rainfall totaled 4.98 inches, which is 8.25 inches below normal. There was measurable rain on 16 days with 1.57 inches on the 10th as the largest storm. Some areas nearby suffered extreme periods of glaze ice and heavy ice buildup, causing severe power outages. Cranberry area in Long Beach had only one glaze ice day—with several heavy frost periods. Bogs have had ample hours of 40 degrees and below to be in dormant period, following harvest.

A.Y.S.

WISCONSIN

The Wisconsin Agriculture Reporting Service notes that temperatures for the first 11 days of January were extremely cold, with daily highs not reaching the teens and overnight lows well below zero.

(continued on page 9)



Muriel Stefani
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Martin B. Person, Jr.
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"The time to buy straw hats is in winter."

... Joseph M. DeGrazia

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WEATHER WATCH . . .

(continued from page 8)

Snow and frost depths showed little change during the past two weeks, according to cemetery officials reporting to the Wisconsin Agriculture Reporting Service. The heavy snow cover has limited frost penetration even though temperatures continued much below normal. Frost depths averaged

7½ inches as of February 9th, an increase of only a half inch from two weeks earlier. This is considerably less than the average

of 19 inches for a mid-February date from 1961-78. Frost penetration was greatest at 38 inches in '61, the year the frost survey began.

MASSACHUSETTS GROWERS

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TOMLINSON . . .

(continued from page 3)

BORN William E. Tomlinson Jr. 65 years ago in Newton, Mass., Professor Tomlinson retired recently after 26 years at the Massachusetts Cranberry Experiment Station in East Wareham. Before that, he had served at the Cranberry-Blueberry Station in Pemberton, N.J., for five years and at the Waltham, Mass., Field Station for almost 10.

He received a BS from Tufts University and an MS in entomology from the University of Massachusetts in 1938. He has been involved with shade tree entomology and so-called suburban horticulture and his colleagues say there is not a better identifier of general household and forest insects but most of his attention has been devoted to pests that trouble *vaccinium*.

Of this latter phase of his life's work, he says: "I've enjoyed it thoroughly, really. Farmers in general are a great group to work with. They're all interested in growing things and they're interested in learning."

Tomlinson notes that he has witnessed a revolution in cranberry growing during his career.

Mechanization, sprinklers, insect control have more than doubled the 40 bbls. per acre that were being produced when he first started working with cranberries in New Jersey in 1945, he observed.

On insecticides, he thinks a sense of balance between agricultural needs and environmental concerns has been lost.

"**THE PENDULUM** has swung too far in the direction of the extremely restrictive," he said. "To feed the population the way it's used to being fed, we've got to use pesticides. The excesses attributed to their use have not been nearly as bad as they've been painted.

"All the talk now is about



THE TOMLINSONS, grandson Michael and one of three family cats.

integrated pest management but that doesn't do away with the need for pesticides. Actually, cranberry growers—through flooding, sanding, sweeping bogs, making egg counts—have been practicing integrated pest management long before I got into the field.

"The trouble is that there are too many lawyers down in Washington making up laws. When it got to the point where somebody born after I got started, somebody trained in, let's say, economics, insists on coming down and watching me put chemicals on a plot, I figured it was time for me to get out.

"There are too many instant experts around, trying to tell people how to conduct their business. What they're doing is taking the initiative out of the free enterprise system."

Tomlinson not only has told other people what to do about cranberry weevils and girdlers but he has fought those pests and others on his own bog. When he returned to Waltham from New Jersey in the early fifties, he bought a bog in Holliston, Mass.

"It was an original Centennial bog, with great big, round, red berries," he said, a note of happy recollection in his voice.

Tomlinson continues to indulge his interest in *vaccinium* through the care and cultivation of his blueberry bushes.

In part, the entomologist attributes his yen for bustle to having seven children.

"Having a bunch of kids keeps you active," he said, with a smile. "You age in some ways, keep young in others."

The seven children have provided Bill and Barbara with seven grandchildren, one of whom, Michael, is becoming interested in pursuing his grandfather's vocation.

As if seven children, seven grandchildren, three cats, one dog and one horse aren't enough for the Tomlinson's, they recently played host to two foreign exchange students, one from Brazil, the other from West Germany.

COOP ELECTION HELD

Frank Glenn III and Norman Brateng were reelected to the board of directors at a recent meeting of the Long Beach, Wash., Cranberry Coop. Newly elected to the board were Emil Caruthers, Dave Thissell and Chuck Win. Pete Bristow of the Puyallup Extension Service gave a talk on fungicides. The Cranberry Club gave a farewell party for Mr. and Mrs. Ralph Tidrick.

Protect berries against frost

By CHARLES C. DOUGHTY

Editor's Note: The author is with the Western Washington Research and Extension Center.

Cranberry buds at present are in the late dormant stage of development. During this period, physiological activity in the bud tissue is proceeding at an increased rate so that by mid-April to May 1st the bud tissue will be quite susceptible to freeze injury.

RESEARCH during the past years has shown that 25 per cent of cranberry buds in the white-bud stage, may be killed by temperatures of 28 degrees F.

During periods of radiation frosts—those which occur on clear, still nights—heat is lost rapidly from the plants, cooling the tissue to the air temperature. The loss of heat and moisture from the buds to the air sometimes cools the temperature 5 to 10 degrees below the ambient

air temperature. This can account for the increase in injury that sometimes occurs at a given temperature.

After buds enlarge to the popcorn stage and beyond, entire buds or parts of buds may be killed by temperatures of 31 degrees F or lower. The actual amount of injury depends on the stage of bud development, the health of the vines, the rate of temperature fall and the duration of the freeze. If temperatures drop rapidly after a period of relatively warm weather, injury is more apt to occur.

The flower parts that can be injured are the ovary in whole or in part, ovules (potential seeds), the style, anther tubes and pollen grains and the nectaries. Any one or all of these may be partially or completely injured and result in a deformed berry or in a failure of the berry to set and grow.

INJURY to the ovary wall may result in a deformed berry (caffacing).

Killing of the vegetative tip in the buds will result in "umbrella" formation. Killing of the ovules will result in fewer seeds in the berry and can reduce berry size.

If all ovules are killed, the berry will fail to grow. If the anthers and pollen are killed, then pollen from another flower is required for fruit set. If nectaries are injured, the blossoms fail to attract bees and pollination may fail to occur. When anther tubes are injured during development so they twist and curl, pollen is discharged very poorly.

The amount of water required for protection at a given temperature depends on the rotation speed of the sprinklers and wind speed among other things. Best protection is obtained under low wind, radiation type frost conditions.

Michigan State University published data in 1959 showing that with a 60 second sprinkler rotation 0.11 inch of water per hour would protect

(continued on page 15)

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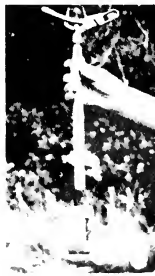
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MERITS . . .

(continued from page 6)

vines become brittle, resulting in more breakage during harvest operations.

IN CONTRAST to Casoron, Evital does appear to kill or severely inhibit nutsedge and cutgrass growth. One application, in most cases, will give a full two years' control of these weeds. However, Evital can also cause damage to the cranberry vine.

It is readily translocated in the vine and, if enough of it reaches the cranberry leaves, chlorophyll loss followed by death of the leaves will take place. This happens when a bog has low areas where water collects.

Evital is carried along with the water to the low areas and accumulates in an amount sufficient to damage cranberry vines. Also, uneven application of Evital will cause vine damage. This happens most frequently as the result of overlapping of applications.

STARTING with the 1979 growing season, the Massachusetts cranberry grower will have another herbicide to use in his weed control program. The name of the herbicide is Devrinol and state clearance (24-C) for its use on cranberry bogs has just been approved. The grower should be happy with the performance of Devrinol because not only does the herbicide give excellent control of nutsedge and cutgrass, but in our tests it was very safe on cranberry vines.

In our field studies, we have shown that 60 lbs. per acre of Devrinol (10 per cent granules), applied in the spring or fall, will give good control of nutsedge and cutgrass. If an unusually high concentration of the weeds is present, 90 lbs. per acre will do the job.

From each application, the grower can expect two years' control. In other words, Devrinol is a herbicide that will control two troublesome weeds for two years with one application and do so without damaging vines. Tests using Devrinol for two years on the same areas have shown no adverse effect on yields.

"I think I could turn and live with animals, they are so placid and self-contained."

—Walt Whitman

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PROTECT . . .

(continued from page 13)

to 21 degrees F and 0.21 inch of water would protect down to 17 degrees F under conditions of no wind.

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IF WATER is in short supply, intermittent operation may be used. However, not longer than 15 to 20 minutes in the off period should be used. Operation during times of lower temperatures will require shorter off periods as the free water on the buds will freeze faster.

RECIPE

Fresh, plump and tangy cranberries are the perfect ingredient for a variety of delectable pies. One, Cranberry Pecan Pie, is a tantalizing, sweet treat that is as good when served warm as when it has been chilled. Have a bowl of whipped cream standing by so that everyone can top his or her own serving.

CRANBERRY PECAN PIE

(Makes one 9 inch pie)

3 cups fresh cranberries, rinsed and drained

1½ cups sugar

½ cup water

1/3 melted butter or margarine
4 eggs, well beaten
1 can (8 ounces) pecans
1 unbaked 9 inch pie shell with a high fluted edge

In a bowl mix cranberries, sugar, water, butter and eggs. Stir until well blended. Stir in pecans. Pour mixture into pie shell. Bake in a preheated moderate oven (375 degrees F) for 45 to 50 minutes or until firm to the touch in the center. Serve warm or cold. Can be served with whipped cream, if desired.

The annual Cranberry School will be held this year on March 13, 14 and 15 in the Wood County Courthouse Auditorium in Wisconsin Rapids, Wisc.

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468	Nitrogen Fertilization and Cranberries	1.75



THE FERTILIZER experiments were carried out in Long Beach, Wash., site of such cranberry farms as the Wilson Blair bog above.

By AZMI Y. SHAWA

Editor's Note: The author is associate horticulturist and extension agent in horticulture for the Coastal Washington Research and Extension Unit in Long Beach, Washington.

Nitrogen can be considered a limiting factor in cranberry growth and fruit development. The amount of this element to be applied is indicated by vine growth and leaf color. Strong growth with large, dark green leaves indicate a high N status. Pale green, small leaves with red pigmentation at the margins indicate a low N status (1,4,7).

CRANBERRIES respond best to ammonium and urea forms of

nitrate and when it is applied in small amounts throughout the growing season (2). Growing cranberries in the Pacific Northwest requires up to 40 lb N/acre. Applying this amount in a single application causes excessive vegetative growth and reduction in berry yields (1). Average rainfall in the cranberry area of Washington State is 79 inches per year, which causes a leaching problem for soluble N such as urea or ammonium sulfate (5).

Cranberry growers in Washington apply up to 40 lb. of N/acre annually, divided into four equal applications in May, June, July and August. Several applications minimize leaching and satisfy vine demand for N during certain growth stages and fruit development. However, walking on the bog late in summer may cause some vine injury and damage fruit. In order to reduce the number of crossings and avoid

vine and fruit injury, it is necessary to find a formulation that will dissolve slowly and release an adequate amount of N for vine growth and fruit growth and development (6).

ISOBUTYLIDENE diurea (IBDU) 31-0-0 is a controlled-release nitrogen fertilizer being developed by Swift Agricultural Chemical Corp. for certain potential advantages over soluble N sources. It is manufactured by combining isobutyraldehyde and urea. Unlike urea from sources, IBDU is not substantially affected by variations in temperature or bacterial activity, and depends almost entirely upon hydrolysis (water) for its release to the soil (3).

In April 1976, 1977, and 1978, five IBDU formulations (size .7-2mm, 2mm, 4mm, 2.4-4.8mm, and 3.5-5mm) and standard urea were topdressed at (continued on page 18)

IBDU . . .

(continued from page 17)

the rates 0, 10, 20, 30, and 40 lb. N/acre on the same plots each year. The IBDU was all applied in April, while the urea was applied in April, May, June, and July at the rate of 10 lb. N/A each application. Plots of McFarlin cranberry vines at the Coastal Washington Research and Extension Unit, Long Beach, Wash., were replicated five times and arranged in a randomized block design.

Number of fruit buds/ft², number of flowers/upright, number of berries/upright, and length of upright were recorded.

All plots were harvested at physiological maturity (when daily respiration rates reached a minimum level) with a cranberry scoop, and berries were screened by hand to remove trash and soft fruit. Samples of sound fruit were placed in mesh bags and stored at 3 degrees C for 12 weeks.

At the end of the storage period, all soft berries were sorted out and percentage breakdown calculated. Samples of sound berries were analyzed for soluble solids using a refractometer, and for acidity with a pH meter. Berry volume was measured using a pycnometer and individual berry weight calculated. Anthocyanin pigment in berries was measured by using a spectrophotometer. Leaf samples from all plots were collected and analyzed for major (N, P, K, Ca, Mg, S) and minor (Cu, Zn, Mn, Fe, B) elements. Soil samples were analyzed for major elements (P, K, Ca, Mg) and Ph value.

Yields in all years were put on the basis of 100 for the control plots. Yields from 1976, 1977, and 1978 for each N source were combined and averaged. All four rates of each fertilizer were averaged. Table 1 contains the average yields by year and by three year data. In all but the bottom line, the control yields were set at a relative value of 100. In the final line of Table 1 the average yield from urea was set at 100. Over these three years IBDU (coarse) size .7-2mm performed better than urea, providing yields exceeding those from the control plots. IBDU .7-2mm produced 8 per cent higher yield than urea treated plots and

14 per cent higher than the control. Higher yield plus the labor and injury saving single application places IBDU (coarse) .7-2mm in an economically competitive situation compared to urea.

Berry volume and weight, percentage breakdown firmness, soluble solids, acidity and color apparently were not differently affected by treatment during the 12-week storage period in 1976, 1977, and 1978. Leaf and berry analysis showed no correlation between element content and yield as affected by treatment.

The slow and continuous release of N from IBDU during blossom, bud, and fruit development supplemented and satisfied the demand for N and may also have improved the utilization of other major and minor elements otherwise lacking in concentration ideal for fruit set, growth, and development of berries.

In conclusion, a single application of IBDU (coarse) .7-2mm at a rate of 40 lb. N/A replaced multiple applica-

tions of urea economically, and increased yield without causing excessive cranberry vegetative growth.

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Table 1. Relative Yield of McFarlin Cranberries as Affected by N Source

Year	Control	Urea	N Source				
			IBDU (coarse) .7-2mm	IBDU 2mm	IBDU 4mm	IBDU 2.4-4.8 mm	IBDU 3.5-5 mm
1976	100	93	106	94	102	102	92
1977	100	117	127	110	115	113	119
1978	100	107	109	107	103	101	121
3 yr avg	100	106	114	104	107	105	111
3 yr avg	---	100	108	98	101	99	105

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INTERNATIONAL CONSTRUCTION EQUIPMENT

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Ocean Spray gets plant in Texas

Acquisition of a new 17.4 acre plant site in Sulphur Springs, Texas, 80 miles northeast of Dallas, has been approved by Ocean Spray Cranberries, Inc.

The 154,000 square foot facility will become a processing plant for cranberry drinks and grapefruit juice and will supply the area's needs for cranberry sauce.

The Sulphur Springs plant is expected to be in operation in early 1980. Ocean Spray engineers will shortly develop a plant layout and begin installation of processing machinery.

Harold Thorkilsen, Ocean Spray president, noted that Sulphur Springs was selected as the site for the new processing operation because of its central location and "excellent" transportation facilities, both motor and rail.

He praised the community's business and civic leaders for being "extremely helpful and cooperative," singling out particularly Dave Jackson, executive director of the Hopkins County Chamber of Commerce.

Ocean Spray, marketing

cooperative for more than 700 cranberry farmers and 100 grapefruit growers, currently operates major processing plants in Middleborough, Mass., Bordentown, N.J., Kenosha, Wisc., and Markham, Wash., as well as a citrus concentrating facility in Vero Beach, Fla.

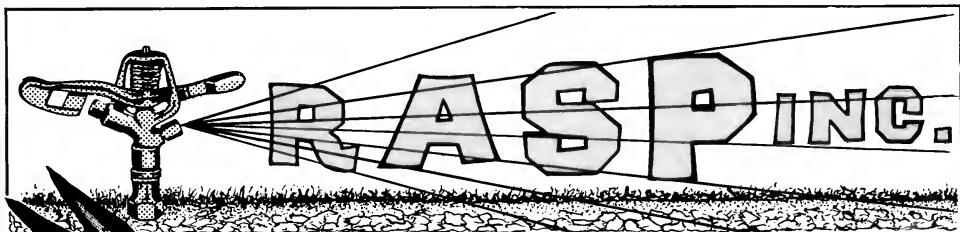
NEW PRODUCT INFORMATION

Monsanto Co. has published a second edition of "The Chemical Facts of Life," a 16 page booklet that looks at the benefits and risks of chemicals in everyday life. The new edition also examines the history, use and misuse and testing procedures involving chemicals. In addition it reflects the comments and opinions of environmentalists, labor unions and other groups. The booklet is available free of charge

by writing to the News Bureau, Monsanto Co., 800 N. Lindbergh Blvd., St. Louis, Mo., 63166.

.....

Allis-Chalmers has introduced what it claims is the "quietest two wheel drive in the industry" in its 106 PTO hp Model 7,000 tractor. The 7,000, says the company, has tested at 76.5 decibels at 100 per cent load.



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THE NATIONAL CRANBERRY MAGAZINE

Vol. 43, No. 3

April 1979

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FTC probe 7 years old

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Begun almost seven years ago, a Federal Trade Commission investigation of whether Ocean Spray Cranberries Inc. has engaged in monopoly practices still is going on with no definite end in sight.

An FTC spokesperson queried by *CRANBERRIES* said that a termination date for the investigation is "indefinite" and "will relate to how we're doing with it."

Probes that last longer than five years are not unique in the history of the FTC, an agency some social critics believe is handicapped by small staffs, low budgets, shifting political sentiments and a complex set of regulations and conflicting precedents.

THE INVESTIGATION still is in what the FTC spokesperson described as the "non-public stage," where records and other data are being checked and people are being queried, to find

out whether there is possible cause for complaint by the agency. Should a complaint be made by the FTC, "we're into public information," the source said.

Likely, the cranberry industry probe is stickier than the ordinary antitrust exploration because of the 1922 Capper-Volstead Act, which exempts farmer cooperatives, of which Ocean Spray is one, from certain antitrust law provisions.



THE IMPOSING

classical facade of Federal Trade Commission headquarters in Washington, D.C. The FTC is conducting an investigation into whether antitrust violations exist in the cranberry industry.

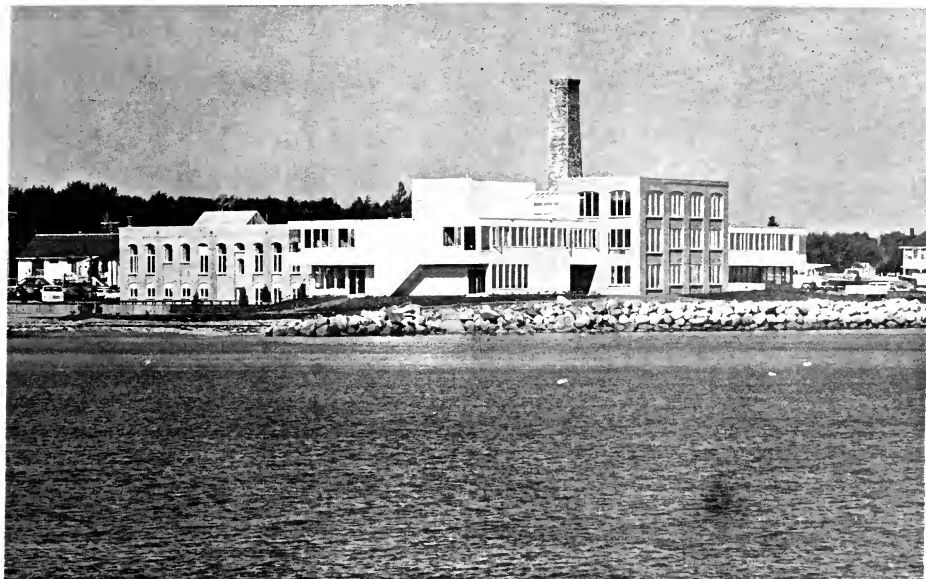


The FTC source was highly reluctant to talk about the investigation, being concerned that the impression might be given that the agency was seeking publicity on the subject. He would only talk about such probes in hypothetical terms.

As in at least half of investigations, he said, it could be found that there has been no violation of law and the case would be dropped. He hastened to add that he was not suggesting one way or the other what the outcome would be in this particular case.

THE OTHER POSSIBILITY would be a formal complaint by the FTC, at which time the company can reply and settle. Most do. If not, there is a hearing before an administrative law judge within the FTC adjudicative system. He or she will find no

(continued on page 7)



OCEAN SPRAY headquarters in Plymouth, Mass., faces Plymouth Bay.

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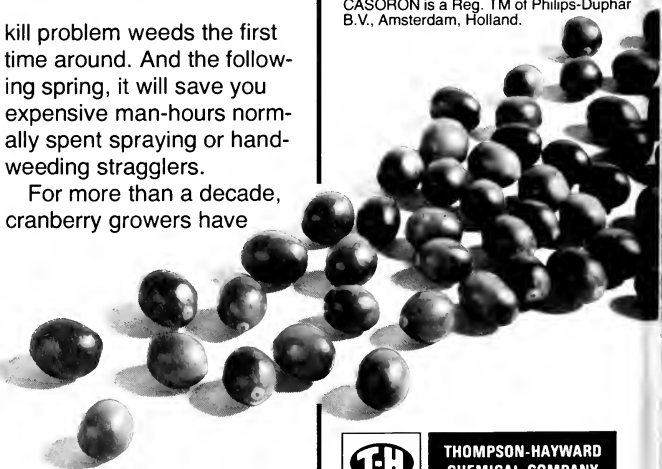
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editorial



CRANBERRIES

THE NATIONAL CRANBERRY
MAGAZINE

—Our 43rd Year of Publication—

Volume 43—No. 2

March 1979

Wars come and go. People are born, people die. The passing seasons unfold ever new wonders. And, in the meantime, Federal Trade Commission investigations seem to go on and on.

Complex are the issues the FTC probes. Except for obviously blatant cases, the agency spends a lot of its time searching for thin lines. Where is the line between clever marketing and the throat cutting of competitors? What is cooperation and what is conspiracy? How big a share of the market is too big? And so on.

The issues bare a dilemma in the American economic consciousness. We prize smallness, we admire bigness. We have a nice, homey, trusting feeling about the former, we respect the stability and efficiency—imagined or otherwise—of the latter.

Bring in agriculture and you complicate the matter. Historically, no other segment of the economy has had more ups and downs, more of a ride on the roller coaster of mixed fortune. Certainly, the Capper-Volstead Act of 1922, which exempts farmer cooperatives from certain aspects of antitrust legislation, was passed in part with an eye to smoothing out some of the hills and valleys of the farmer's existence.

And so you have the ongoing probe of the cranberry industry. The target—if you will—is Ocean Spray, whose name has become synonymous with cranberry sauce and other cranberry products. We didn't make that up. Ask the average consumer. Most of the cranberry growers in the U.S. belong to the cooperative.

Did Ocean Spray get that way through the survival of the fittest game? Through smart marketing and promotion? Or through violation of the Federal Trade Commission Act? Or through some of both? In part, the answers to those questions will be provided by the current investigation. In part, those answers will depend—for you—on which ox is being gored and what your personal value judgment is about the issues at stake.

Granted that such probes cannot be handled in haste, with every additional year that goes by complainants fail to get any relief, if they are legitimately and morally due relief. And the alleged offending company suffers the bad publicity that inevitably becomes attached to any firm accused of monopoly behavior.

At the risk of appearing to be making an ostentatious show of sanctity, let it be said that *CRANBERRIES* will cover all the news about the investigation and its outcome with the greatest degree of objectivity it can summon. As you can see from the story that begins on page 3, there isn't much "fresh" news right now. The investigation is still in the nonpublic stage, which means nobody ain't saying very much about nothing.

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Handle pesticide wastes with care, UMass warns

Rinse out empty pesticide containers before disposing of them at a dump, advises the Massachusetts Pesticide News.

Metal, glass and plastic pesticide containers should be triple rinsed when they are emptied, the publication says, and the rinsings added to the spray tank

The Pesticide News adds this advice: Return the empty containers to your pesticide storage area and keep them locked up until they can be taken to a landfill. The containers should be crushed and placed in a metal drum with a lid.

It adds: Paper bags should be emptied as thoroughly as possible and placed in the same waste storage drum.

THE NEWS, which is issued by the

University of Massachusetts, notes that there are three types of pesticide wastes that concern the applicator:

1. the aforementioned empty containers.
2. left over spray.
3. old or unwanted pesticide.

Try to avoid having leftover spray, the publication says. If it can't all be used up, save it in the tank for the next day if the spray still will be effective.

If it must be disposed of, the News advises, collect it in a metal drum and transport it to an area where it can be poured out and buried safely.

"Use an area under your control where surface water will not be contaminated by runoff or rapid leaching through the soil," the News says.

"Pick an area where the soil is organic rather than sandy and where no food crops are likely to be grown. Do not overuse one area. Move around

from year to year. You are using the soil's capacity to absorb, hold and break down chemicals."

The soil can become overloaded "if you continue to dump spray in the same spot. Do not leave any exposed puddles of spray. Cover with several inches of soil.

"Adding charcoal and lye will also help hold the chemical in place and break it down.

"Do not pour leftover spray down sinks, drains or into roadside storm runoff basins. This places the chemical directly into water and is the least desirable place for disposal."

ABOUT OLD or unwanted pesticides, the News says they "must be disposed of by collection and incineration. They should not be buried because they will eventually contaminate the ground water. Do not take such materials to your local landfill. It is not in your best interest or that of your community to do so."

Says the News: "Call a licensed hauler of hazardous waste. He will come and pick up the waste for a fee."

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FTC PROBE . . .

(continued from page 3)

violations or will issue a cease and desist order.

Should the company appeal, a hearing is held before the full commission. If the initial judgment is upheld, the firm can appeal through the federal courts all the way up to the Supreme Court, which reverses the FTC only on issues of fact.

At Ocean Spray headquarters in Plymouth, Mass., there was a similar disposition toward circumspection, probably on the theory that it's best to let sleeping dogs lie. No, said an Ocean Spray spokesperson, there haven't been lots of people hired and monies spent assembling records and supportive data. Several years ago, the copying machines operated a little longer than usual, but that was all, she said.

Charles P. Goldsworthy, president of Cranberry Products Inc. of Eagle River, Wisc., and one of the small marketers who complained about the dominance of Ocean Spray in the past, was reluctant to discuss "such a delicate situation" over the telephone and only made a few remarks, such as that he thought Ocean Spray is a "typical, monopolistic textbook case."

"THEY CONTROL 82 per cent of the tonnage," he said. "How do you beat a situation like that?"

Several years ago, the *New York Times* carried a lengthy story on the cranberry industry by Steven Greenhouse, in which Goldsworthy was quoted as charging that Ocean Spray had engaged in price undercutting, offering giveaways, putting out a lower priced line under another name and making different sales arrangements with different

food chains in the same area.

Harold Thorkilsen, president of Ocean Spray, was quoted in the same article as saying that the cooperative periodically engages in the legitimate marketing practice of lowering prices in certain markets to increase sales. Both secondary labels and send-in-the-label giveaways are common practice, he added. And he denied that Ocean Spray had made different deals with food chains in the same area.

All told, only two things are clear at this point. The investigation will go on for awhile yet. The initial outcome will be a clean bill of health for Ocean Spray or a finding that—in the eyes of the FTC—the cooperative has been guilty of violation of provisions of the Federal Trade Commission Act.

"Plough deep while sluggards sleep."

—Ben Franklin

GET PROMOTIONS

Steven M. Abelman has been promoted to product manager, sauce products of Ocean Spray Cranberries in Plymouth, Mass.

John Tarsa, former consumer research analyst with the nationwide cooperative, was named to assume Abelman's prior post as manager, market research.

Abelman, who holds a BA from Brandeis University and an MBA from Boston University, began his career with Ocean Spray in 1974 as a market research analyst. The following year, he was named manager, sales analysis/administration and later, manager, market research. He lives in East Weymouth, Mass.

Tarsa, who earned his BA at American International College and an MA in mathematics at the University of Michigan, joined Ocean Spray in 1976 as a specialist in defining and assessing current and emerging consumer trends and needs. In his new position, he will direct all marketing research for Ocean Spray. Tarsa lives in Duxbury, Mass.

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Test soil for fertility

By AZMI Y. SHAWA

Soil fertility is a major factor contributing to normal growth of cranberry bogs and high production.

The best way to determine if low soil fertility is a problem is to have a sample tested. With the help of a soil test, the right kind and amount of fertilizer may be recommended to bring

the fertility to a high productive level for cranberries.

In some cases, poor bog growth may be due to an extremely acid soil condition. In others, it may be due to a high concentration of soluble salts in the soil.

A soil test can determine if any of these conditions exist. If they do, corrective measures can be prescribed in accordance

with the severity of the condition.

Only a very few crops besides cranberries grow well in acid soils. This is because most plants require significant amounts of calcium and magnesium, which are replaced by systematic applications of agricultural limestone.

Calcium not only corrects the condition of soil acidity, if it is too high, but it also supplies the plants with the much-needed calcium, and, in many cases, magnesium.

weather watch

MASSACHUSETTS

February was extremely cold, averaging 8.7 degrees a day below zero. This was the second coldest February in Cranberry Station records, beating out February 1978 by about 2 degrees and exceeded only by 1934.

Maximum temperature was 50 degrees on the 28th and the minimum minus 8 on the 12th. Cooler than average periods were 1-2nd and 5-19th. In fact, the middle part of the month, from the 9th to 19th, was the most persistently cold period in our records.

Precipitation totaled 5.42 inches, nearly 2 inches above normal. Precipitation occurred on nine days, with 4.73 inches in the period from the 24th-27th. The last week of the month was nearly continuous rain, with nearly 90 percent of the total occurring at that time. We are over 8 inches above normal for the two month period and over 5 inches ahead of 1978 for the period. This was the wettest February since 1972 and the wettest January-February period in our records.

Snowfall amounted to 7.5 inches, which is normal for us.

I.E.D.

(continued on page 12)

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Henry Ahlgren is honored by FCIB



HENRY L. AHLGREN, left, receives the FCIB medallion from **Howard C. Richards**, right, FCIB president. In the center is **Everett G. Hove**, FCIB vice president and master of ceremonies.

For his contributions to agriculture, Henry L. Ahlgren was presented a medallion recently by the Federal Intermediate Credit Bank of St. Paul in St. Paul, Minn.

Ahlgren was chancellor of the University of Wisconsin's Cooperative Extension Service until his retirement in 1974.

Making the presentation of the FCIB medallion were FCIB president Howard C. Richards and Everett G. Hove, FCIB vice president and program master of ceremonies.

The 6-inch, solid bronze medallion presented to Dr. Ahlgren was designed by Stillwater, Minn., sculptor Wally Shoop and cast in limited edition for the bank. Titled "A New Horizon," it shows in relief a plowman facing the rising sun and a soaring eagle depicting strength and freedom.

The FCIB of St. Paul is owned by and supplies loan funds to farmer-owned Production Credit associations of the Seventh Farm Credit District, which embraces Michigan, Minnesota, North Dakota and Wisconsin.

CARRYOVER RULE

The American Farm Bureau Federation has urged repeal of the carryover rule on capital gains taxes on inherited property.

The farm organization called the rule unfair because it makes an heir selling inherited property liable for capital gains from the time the property was acquired by the deceased person instead of from the time the property was inherited.

THE PRESENTATION was made at the stockholders' meeting of the bank in Bloomington, Minn.

Ahlgren was cited especially for his work in developing the organizational structure of Wisconsin Farm Progress Days more than 25 years ago. The event has become the largest single state outdoor farm show in the nation.

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WEATHER . . .

(continued from page 10)

NEW JERSEY

February was in sharp contrast to January, which was very wet but not too wintry in the cranberry region of New Jersey. One of the most severe spells of frigid weather ever experienced occurred in this month.

Below zero readings have been recorded at Pemberton in only 14 out of 50 years and—up until this year—there had been a total of only 25 such readings, or one every two years. This year there were eight sub-zero nights, including a minus 10, minus 11 and minus 12. This was a record for any month, as were the five consecutive nights with below zero readings from the 10th through the 14th.

The average temperature for the month was 22.6 degrees F or 11.4 degrees below normal. This made it the third coldest February, next to the all time low month of 18.0 in 1934 and the 21.9 just last February. It was the fourth coldest of all months, with only one January month—that of 1977 (average 21 degrees F)—being colder.

Rainfall totaled 5.77 inches or more than twice the norm of 2.97 inches. There were four snowfalls totaling 20.7 inches, with the greatest—12 inches—occurring on the 19th. The month's total was 15 inches above normal. So far this year, rainfall, at 15.18 inches, is 9.0 inches above normal. Snowfall totaling 29.7 inches is about 19 inches more than normal.

P.E.M.

NOVA SCOTIA

Our weather of late has been deadly for plants with periods of mild weather followed by cold, desiccating winds. We have had little snow cover all winter.

I.V.H.

WASHINGTON

February was basically mild and very wet in the cranberry areas of Washington. Temperatures were in

the 50's on seven days. The daily maximum temperature was 54 degrees F on the 12th. The extreme low for the month was 16 degrees on the 1st.

Precipitation totaled 14.97 inches or 5.99 inches above normal. This reversed a trend of four consecutive months of below normal precipitation.

A.Y.S.

WISCONSIN

Temperatures continued below normal until Feb. 20 when readings went above freezing for the first time since Dec. 17 in the north and Dec. 30 in the south. Some weather stations set records for the number of consecutive days with temperatures below 32 degrees. Wausau and Eau Claire had 65 days of below freezing temperatures, while Madison with 51 days was only two days short of its record established in the winter of 1892-93.

Below zero temperatures occurred on several mornings following a snowstorm on Feb. 15. Precipitation was light to moderate during the week of Feb. 11-17. The heaviest snowfalls came on the 12th when the south had 2 to 5 inches, and on the 15th when the north received 4 to 7 inches.

EXTENSION FOREMAN IS HONORED AT DINNER

T.W. Angus Sayles, farm foreman at the Coastal Washington Research & Extension Unit, Long Beach, Wash., was given a retirement dinner March 8 at the Ark Restaurant in Nahcotta. Sayles had been employed 25 years at the Washington State University unit. As foreman, he maintained the experimental bog area, buildings and grounds.

He came to Washington in 1949 from Sheffield, England.

He and his wife, Florence, will retire at their home in Sequim, where Mr. Sayles plans to get a large garden going and to build a greenhouse.

"Mr. Sayles will be missed at the Long Beach unit and is wished many happy years ahead," said Azmi Y. Shawa, county extension agent.

SHAWA TO SPEAK

Azmi Y. Shawa of the Coastal Washington Research & Extension Unit in Long Beach, Wash., will give a talk titled "Fresh Fruit Keeping Quality Study" on April 10 at 7 p.m. in the North Willapa Harbor Grange Hall in Grayland, Wash.

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regional news notes

Massachusetts

By IRVING DEMORANVILLE

Dr. Robert Devlin presented a paper at the Weed Society of America annual meeting recently in San Francisco. He also served as a member of the minor use committee for herbicides.

New Jersey

By PHILIP E. MARUCCI

Stephen Lee Jr. spoke about the impact on cranberry growers of government plans to preserve

the Pine Barrens during the annual winter meeting of the American Cranberry Growers Assn. recently at the New Hedger House in Chatsworth, N.J.

Other speakers were: Jack St. Pierre, New Jersey Crop Reporting Service; Ray Samulis, Burlington County Agricultural Agent; Fred Mahn, Soil Conservation Service; M.J. Ceponis and A.W. Stretch, USDA; Phil Marucci, Cranberry and Blueberry Research Center; Eric Stone, USDA; Edward Lipman, delegate to State Agricultural Convention.

Washington

By AZMI Y. SHAWA

The author spoke on "The Effect of Slow-Release Nitrogen on 'McFarlin' Cranberry Yield" at the recent Ocean Spray annual growers meeting in Vero Beach, Fla.

Mr. and Mrs. Frank Glenn Jr., Mr. and Mrs. Elmer Roloff, Mr. and Mrs.

Azmi Shawa and Mr. and Mrs. Harry Simmons attended the annual meeting of Ocean Spray growers in Vero Beach, Fla., recently.

The Cranberry Insect and Disease Control Program, EM 2463, has been revised and will be available for growers by April 1.

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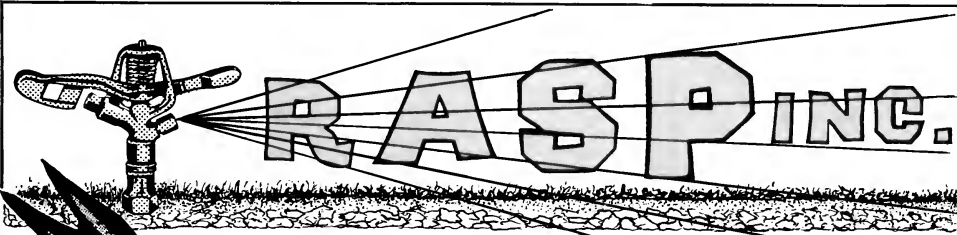
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Oregon notes

Thirteen Oregonians attended Ocean Spray's annual meeting in Vero Beach, Fla., recently. They included Melvin and Marge Boak, Don and Ruby Fraser, Charles and Idell and Charlene Panter, Roy and Barbara Peters, Terry and Sara Panter, and Wayne and Sandy Scherer.

•••••

Among the speakers at a hearing on herbicide spraying in Coos County recently was Bandon, Ore., cranberryman L.A. Willett.

FARM RESEARCH WILL SUFFER, AGENT SAYS

A proposed 15 per cent cut in the governor's proposed budget for the New Jersey Agricultural Experiment Station and Cooperative Extension Service will mean serious reductions in research and extension

programs for farmers and consumers, says senior county agent Richard L. Washer.

This cut, added to previous cuts, will mean a 36 per cent reduction in buying power over the past 10 years, Washer explains.

If approved, the cuts will mean reduction or elimination of all publications and closing of some of the research farms and facilities, he adds.

IRS INDICTS

Overstating your business expenses can get you into lots

of trouble.

That's the message of a recent release by the Internal Revenue Service, which cites the indictment of a Springfield, Mass., retail and wholesale fireplace shop owner and his wife. The alleged overstated amount for 1972 was \$7,160, for 1973, \$8,090, and for 1974, \$6,017.

U.S. Atty. Edward F. Harrington said the maximum penalty for filing false returns on each count is a \$5,000 fine, three years in jail or both.

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After jogging

On a weekend, invite people to drop over right after jogging or, preferably, right after running mates have had a chance to take a cooling shower. For your Jogger's Brunch, serve refreshing juice drinks and light and healthful food. Easy to prepare Cranana Shake combines cranberry juice cocktail, plain yogurt, a banana and an ice cube. Cranberry Apple Bounce is a blending of cranberry apple drink, eggs, wheat germ and apple yogurt. Curried Cranberry Spread is a combination of whole cranberry sauce, cottage cheese, curry powder and sliced almonds. Runner's Spread, a more substantial snack for both joggers and lazy spouses, is simply toasted whole wheat bread spread with whole berry cranberry sauce that's been mixed with honey and wheat germ. Garnish with celery and carrot sticks.

CRANANA SHAKE

(serves one)

- ½ cup cranberry juice cocktail
- ½ cup plain yogurt
- 1 small banana
- 1 ice cube

Place all ingredients in a blender on blend for 20 seconds. Serve at once.

CRANBERRY APPLE BOUNCE

(serves two)

- 1 cup apple yogurt
- 1 cup cranberry apple drink, chilled
- 2 eggs
- ½ tablespoon cinnamon
- 2 tablespoons wheat germ
- 1 tablespoon brewer's yeast (optional)

Place all ingredients in a blender and blend for 20 seconds. Sprinkle cinnamon on top.

CURRIED CRANBERRY SPREAD

(serves six)

- 2 cups cottage cheese
- 1 teaspoon curry powder
- ½ teaspoon garlic salt
- 8 oz. whole berry cranberry sauce
- 1 small apple, peeled and chopped fine
- 1/8 cup sliced almonds

Blend cottage cheese until well blended with spices. Mix in whole berry cranberry sauce, apple and nuts. Serve with crackers, toast or melba toast.

RUNNER'S SPREAD

(serves four)

- 4 slices whole wheat bread
- ¼ cup whole berry cranberry sauce
- 1/8 cup honey
- 2 tablespoons wheat germ sesame seeds

Toast bread in toaster. While it is toasting, mix whole berry cranberry



INVITE fellow joggers over for brunch and serve easy to prepare cranberry drinks and light snacks.

sauce, honey and wheat germ. Spread mixture on toast. Sprinkle with sesame seeds.

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Vol. 43, No. 4

May 1979



Berry growing costs

Wetlands case resolved

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Cost study issued

The first comprehensive study ever of cranberry production costs in Massachusetts has been turned out by the Department of Food and Natural Resources at the University of Massachusetts.

The authors are graduate research assistant William S. Ames and professor Robert L. Christensen. Members of the Cranberry Experiment Station assisted with data organization and questionnaire planning.

The study is based on inter-

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views with 56 growers—10 per cent of the estimated 560 growers in Massachusetts—that were collected during the summer of 1977. Costs are based largely on 1976 prices.

AMONG the key findings:

1) Just under \$10 to produce a barrel of cranberries “is the best approximation for the industry as a whole.”

2) Major costs are labor, 26.1 per cent; property taxes, 13.1 per cent, and repairs, 8.3 per cent.

3) Wet harvesting appears to be less costly and produces higher yields than dry harvesting.

The authors issue the *caveat* that “a sample, by definition, is not definitive” and that the cost figures “are only approximate for the entire grower population.”

In their summary, Ames and Christensen state:

“The reported cost figures reveal a labor and mechanization cost inefficiency in the acreage class range 16-50. Approximately 45 per cent of Commonwealth growers operate bogs of this size, and this size range is typical of the traditional family operation. It is expected that marginal operators will fall by the wayside. Unfortunately, this study suggests that it is the typical grower who is the highest cost producer, and thus in greatest jeopardy.”

BOTH VARIABLE and fixed costs are considered in the 27-page report. Variable costs include labor, management salaries, supplies, gasoline, fertilizer, professional services,



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“The time to buy straw hats is in winter.”

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repairs, outside hire, pesticides, herbicides and fungicides, sanding, electricity, telephone, packaging supplies, miscellaneous.

Fixed costs are depreciation, interest, taxes, insurance.

Except for interest, capital investment and land cost were not included in the study. Based on interviews, however, the authors estimate that capital investment would have added another \$1.60 to per barrel costs.

FOR COMPARISON

purposes, throughout most of the report, Ames and Christensen divided the farms owned by the interviewees into seven categories: 0-5, 6-10, 11-15, 16-25, 26-50, 51-100 and 101 or more acres.

A further classification according to yield of barrels per acre also is made. Cross class-

ification tables are presented, showing average yield per acre, average hired labor cost and average property taxes per acre, according to acreage class and yield class.

Extreme variances in property taxes per acre appear, from \$13.76 to \$265 per acre.

There also was a wide range in costs of production. One grower reported costs per barrel below \$6. Another gave a figure of more than \$30. The latter had

lost most of his crop to bad weather.

One set of figures shows average labor costs increasing 52 per cent, average maintenance and repair of equipment increasing 110 per cent and average interest expense increasing 25 per cent between acreage classes 16-25 and 26-50, among the growers interviewed. Average yield, however, increased only 3 per cent.

The report is titled "A Preliminary Evaluation of Cranberry Production Costs in Massachusetts."

All of the growers interviewed were promised complete anonymity.

The 56 growers interviewed work a total of 1,759 acres of bog, about 16.7 per cent of the

(continued on page 6)

COVER PHOTO

WILLIAM S. Ames, left, and Robert L. Christensen are the authors of "A Preliminary Evaluation of Cranberry Production Costs in Massachusetts."

Photo by Stephen Long,
UMass Photo Center



WET HARVESTING, the report says, is more economical than dry harvesting.

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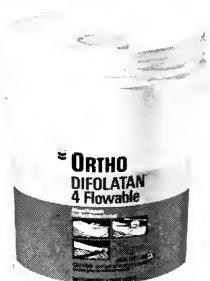
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Taxachusetts

Everyone involved in the cranberry industry ought to obtain a copy of the recent study of cranberry production costs in Massachusetts. You can find out how to obtain the report elsewhere in these pages.

Irving E. Demoranville, cranberry expert at the Massachusetts Cranberry Experiment Station, notes sadly that for the first time a fee—65 cents a copy—is being charged for a UMass agricultural report. But given the high cost of printing—and everything else these days—and the valuable information contained in the report, the price is a bargain.

William S. Ames and Robert L. Christensen, the authors, are to be congratulated.

Fortunately, the present price of a barrel of cranberries makes the fortune of the 16-50 acre cranberry farmer look less grim today than during the summer of '77 when the study was being made.

Aside from hoping that the price holds up, the hope must be expressed that more of a rein is placed on costs. One of those costs—property taxes—comes across awesomely in the report. Get this! For every dollar it cost the average grower in Massachusetts to grow a barrel of cranberries in 1976-77, 13.1 cents went into property taxes.

Is that confiscatory or isn't that confiscatory? Massachusetts, home of the Boston Tea Party, has the highest agricultural taxes per acre in the country. No wonder the state has been dubbed "Taxachusetts."

There is here the seeds of a Jarvis-like Proposition 13 movement that should dwarf the zeal shown in California. Outrageous, simply outrageous.

One is reminded of the words of Adam Smith in *The Wealth of Nations*:

Great nations are never impoverished by private, though they sometimes are by public prodigality and misconduct. The whole, or almost the whole public revenue, is in most countries employed in maintaining unproductive hands....Such people, as they themselves produce nothing, are all maintained by the produce of other men's labor.



Bob Taylor, Publisher/Editor

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COST STUDY . . .

(continued from page 3)

cranberry acreage in the state.

"A strong argument can be made," Ames and Christensen say, "that at the present state of the art of growing, the traditional 'family' cranberry farm of, say, 30 acres, is becoming the least economically efficient given the fact that general input factor prices rise equally among all growers of all sizes."

CRANBERRY products, the report says, "are the largest dollar volume agricultural export commodity in the Commonwealth."

Massachusetts, the report notes, accounts for about 45 per cent of national production in cranberries.

Average per acre production in Massachusetts from 1969-78 was 81.5 barrels, the report states, while Wisconsin production was 127 barrels.

The report was stimulated in part by a belief among Massachusetts growers that production costs in the Bay State are higher than elsewhere.

In more than 75 per cent of the cases, the costs of labor, property taxes, insurance, etc., were taken directly from IRS Schedule F's willingly supplied by the growers.

About the authors

William S. Ames, 45, is a research assistant and a candidate for an MS degree in the Department of Food and Resource Economics, University of Massachusetts. He has owned and operated Ames-Alderbrook Farm, a hay production farm, in West

Boxford, Mass., since 1974.

Ames had been an investment banker with Bacon, Whipple and Co., Chicago, from 1961-66, and Bosworth, Sullivan and Co., Colorado, '68-70. He also has done market research for I.G.S. Research in Cambridge, served as sporting goods manager for Sears Roebuck, Chicago, and owned and operated the Dutch Henry Ranch in Basalt, Colo.

The former investment banker holds a BA in history from Princeton University, 1955, and attended the University of North Carolina Law School and the University of Chicago School of Business.

In 1961 he lived and studied in the Soviet Union and Poland under the Harvard Fellowship Legal Studies Program.

He was a captain in the Air Force from '55-59 and served as a corporate pilot from '59-60.

He is married and has three children.

"My election to farm and return to school after 12 years as an investment banker has been an adventure I would not trade," he says.

Ames' thesis for his master's is the development of optimal

strategies for vegetable producers in Massachusetts.

Dr. Robert L. Christensen,

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43, is a professor in the Department of Food and Resource Economics, University of Massachusetts, where he has taught and done research for the past 10 years.

Before coming to UMass, he taught at the University of New Hampshire for five years.

Last year he received the Northeastern Agricultural Economics Council's Distinguished Member Award. He has served as president of the NAEC and was founding editor of the Journal of the NAEC.

Many of his extension and research efforts have resulted in practical application by farmers and government officials.

Christensen, a native of Michigan, was a senior research fellow in the Canadian Department of Agriculture and a visiting professor at the University of Nevada.

He holds a BS in agricultural economics from Michigan State University, an MS in agricultural economics from the University of Delaware and a PhD in economics from North Carolina State University.

A member of the Sunderland, Mass., Zoning Board of Appeals, where he resides, he also has served on the town planning board and permanent building committee and was chairman of the Massachusetts Task Force on Agricultural Land Applications of Sewage Sludge.

He is married and has two children.

FARM EXPORTS HIT RECORD HIGH

Exports of U.S. farm products last year reached an unprecedented \$29.4 billion—mostly by increased volume rather than higher prices.

How to get the report

Research Bulletin No. 656, September 1978, titled "A Preliminary Evaluation of Cranberry Production Costs in Massachusetts," can be obtained by writing to:

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The cost of the bulletin
is 65 cents per copy.

According to the 1978 U.S. Census Bureau report on agriculture, corporations operate less than 2 per cent of the farms in the country.

Seventy nine per cent of those corporations are family firms.

Corporations account for 18 per cent of the value of farm products sold in the U.S., the bureau reports.



JOSEPH A. FLANNIGAN FLANNIGAN PROMOTED

The newly created position of sales planning/promotional manager at Ocean Spray Cranberries has been filled with the appointment of Joseph A. Flannigan. He was formerly the company's North Central sales manager.

Flannigan, who received a bachelors degree in marketing,
(continued on page 10)

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How to prevent them

By K. H. DEUBERT
Massachusetts Cranberry Station

There is only one way to avoid fishkills:

PREVENT THE CHEMICALS FROM LEAVING THE BOG.

The following suggestions are the results of field observations and studies:

1—Do not spray on running water.

In 1973 it was shown in the Coonamessett River case that part-circle sprinkler heads effectively reduced the amounts of a chemical leaving the bog—even with a stream carrying a large volume of water running through the bog. No fishkills have been observed in this area since the new sprinkler heads were installed.

2—Sometimes the water can be impounded for a few days.

If the danger of flood arises after a heavy rainfall, raise the top plank to release only as much water as is necessary to keep the water level steady until the emergency is over.

3—Pesticide residues in ditch water will break down or will be absorbed on sediments within several days, depending on weather conditions.

Ditch water is stagnant only if its level is so low that there is no connection with the water in FLANNIGAN . . .

(continued from page 7)

... holder of business administration degree from Loyola University, joined Ocean Spray in June 1977. Prior to that he served as a buyer for Chicago-based Topco Associates.

The new manager will be based at the company's headquarters in Plymouth, Mass., and he and his wife will reside in Duxbury.

drainage canals, streams or ponds. If the water level in the ditches is slightly higher than in other areas around the bog, it may run at a very low velocity, say 2 or 3 feet per hour. The water may look as if it is stagnant, but it may carry enough of a chemical to cause trouble. Planks in the flumes

slow down the water flow and reduce the chances that residues will leave the bog.

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Wetlands case dries up

The highly publicized Jackson County (Wisconsin) wetlands controversy—which pitted potato farmers against cranberry growers—won't wind up in court because the potato farmers involved are leaving the area.

The row began when brothers Roland and William Huebner, who own Pettenwell Potato Farms, started draining 7,600 acres they control in Jackson County. Their plan was to start an extensive farming operation, similar to ones they own in Wood and Juneau counties.

The problem? The Huebners' action would cause a neighboring cranberry grower to lose water he collected and stored for the irrigation of his cranberry crop.

State cranberry growers jumped into the fray to protect a brother grower. Also stepping in were the

state Department of Natural Resources, an ecology group called Environmental Decade, the Army Corps of Engineers and an assistant attorney general with responsibility on environmental issues.

A lawyer for the brothers said they do not have the financial means to carry on a likely costly and lengthy court battle and have decided reluctantly to leave the area.

MS. FREEMAN PROMOTED

Tina E. Freeman of Brookline, Mass., has been promoted by Ocean

Spray Cranberries Inc. to the post of product manager, cranberry drinks.

Ms. Freeman first joined the

Massachusetts-based company in May 1978 as associate product manager, blended drink products. Prior to her association with Ocean Spray, she served as manager of product research and development at the Shawmut Bank of Boston and as a research analyst with Boston's Housing Innovation Inc. and the Boston Redevelopment Authority.

She earned her bachelor's degree at Mount Holyoke College and an MBA at Suffolk University, Boston.

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Frost can hit in June

By IRVING E. DEMORANVILLE
Massachusetts Cranberry Station

Don't be lulled into thinking that the frost season is over when Memorial Day has passed.

In the last nine years, there has been at least one frost warning in June. The latest warning was June 20 in 1970 and the nights of June 15 and 16 were nasty last year.

Six of the last 10 years have had June nights when damaging temperatures occurred, usually 26 to 28 degrees. However, on June 11, 1972 there were temperatures of 23 and 24 degrees reported in Carver.

There has never been a spring without frost warnings, the minimum number being two in 1975. As recently as 1976, there were warnings on eight successive nights in mid-May—which certain-

ly tested the mettle of any cranberry grower.



MASSACHUSETTS

March was considerably warmer than normal, averaging 3.2 degrees a day on the plus side. Maximum temperature was 65 degrees on the 22nd and minimum 13 degrees on the 16th. Warmer than average periods were the 5th-7th, 22nd-26th and 30-31st. Cooler than average days were the 2nd, 3rd, 12th and 15th-18th.

Precipitation totaled 2.24 inches or more than 2½ inches below normal. There was measurable precipitation on 11 days with 0.93 inch on the

7th as the greatest storm. This was the driest March since 1965. We now are a little less than 5½ inches above normal for the year to date and about 4 inches more than 1978 through March.

There was no snow recorded for the month, which is not all that unusual for us; it happens about once every six or seven years on average. The winter did not have a

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great amount of snow, totaling only 17.4 inches. This is the lightest snowfall since the winter of 1957-58.

I.E.D.

WASHINGTON

In contrast to the very wet February, the total precipitation for March was 5.50 inches, 3.77 inches below normal. There was measurable precipitation for 19 days, with 2.94 inches on the 3rd and 4th as the largest single storm.

Maximum temperatures were 72 degrees on the 13th and 14th, minimum was 28 degrees on the 1st. Temperature was recorded in the 60's on the 9th and 10th and the 19th, 20th and 21st.

A.Y.S.

WISCONSIN

Precipitation in March has been light. Snowmelt has been gradual and the previously deep snow cover has been reduced by several inches. Snow depths as of March 9th averaged 19 inches, a decline of 9 inches from

the record depths of two weeks earlier.

Farmers have been anxious for spring to arrive after the cold, snowy winter. The heavy accumulation of snow this winter caused some roofs of farm pole sheds to collapse.

regional news notes

Massachusetts

By IRVING DEMORANVILLE

Dr. Chester Cross of the Massachusetts Cranberry Station discussed various aspects of the cranberry industry at the Northeastern Agricultural Leadership Assembly meeting in Cherry Hill, N.J., held from March 20 to 22.

As of April 1, only one point of

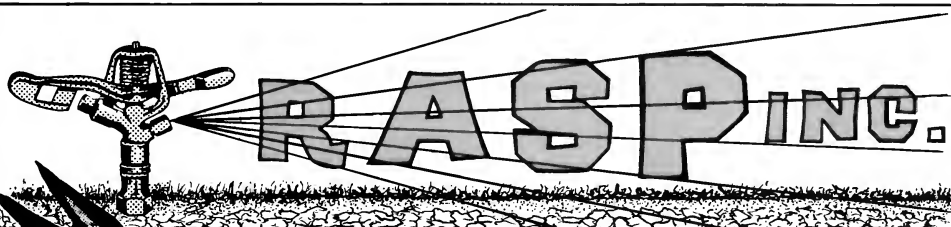
a possible 10 favors good keeping quality in the 1979 cranberry crop.

Such a gloomy prospect has occurred only twice in the last 21 years. The forecast, therefore, is for poor keeping, unless cranberry growers use protective measures.

With a strong market prospect and an urgent need for production, we encourage you to consider "late holding" and fungicide treatments to reduce field and storage rots this year.

We feel that the expense of rot control in 1979 will be much less than the lost value of unusable fruit.

The following stations are participating in the cranberry frost warning service: WEEI, Boston, 590k AM, 103.9mg FM, 2 and 9 p.m.; WBZ, Boston, 1030k AM, 92.9mg FM, 2 and 9 p.m.; WPLM, Plymouth, 1390k AM, 99.1mg FM, 2:30 and 9:30 p.m.; WOGB, West Yarmouth, 1240k AM, 94.3 FM, 2 and 9 p.m.; WBSM, New Bedford, 1420k AM, 97.3 FM, 3:30 and 9 p.m.



Bugs

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The cranberry weevil has been added to the Guthion 2S label through a Special Local Need state clearance. This is for Massachusetts use only. The material must not be applied within 21 days of harvest.

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A Special Local Need label has been obtained for the use of Diazinon 14G to control the cranberry girdler.

Washington

By AZMI Y. SHAWA

Field Day at the Coastal Washington Research and Extension Unit will be held June 29

The author spoke about weed control in Washington cranberry bogs and about two nitrogen fertilizer formulations, SCU and IBDU, at the recent Wisconsin Cranberry Growers School in Wisconsin Rapids. He spoke about IBDU at a meeting in West Wareham, Mass., that was sponsored by Swift Agricultural Chemicals.

Jim Chabot's cranberry bog was featured in a new agricultural publication put out by the Washington State University Cooperative Extension-Service for students.

HOPKINS ACQUIRES INDIANA CONCERN

Hopkins Agricultural Chemical Co. of Madison, Wisc., has acquired

Seedkem Inc., an Evansville, Ind., chemical distributor.

Seedkem will operate as a wholly owned subsidiary of Hopkins, under the management of Steven W. Cook, president.

The acquisition was accomplished concurrent with the confirmation of a plan of arrangement—which was confirmed March 27—to remove Seedkem from its Chapter 11 proceedings, which were filed Jan. 9.

CRANBERRIES CAN BE KEPT FOR YEAR

Cranberries can be kept in the freezer for at least a year, according to the food columnist for the San Jose (Calif.) Mercury.

Some authorities, she noted, set maximum storage at 16 months.

The storage times, she wrote, are based on unsweetened cranberries packed in moisture-vapor proof bags and kept at a temperature of zero degrees F or lower.

"Where there's marriage without love, there will be love without marriage."

—Ben Franklin

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Investment Scoop

Contraries

By MARTIN B. PERSON JR. ⁵
President, Gage-Wiley & Co., Inc.

If you have seriously considered looking to the stock market today for investment opportunities, you must be contrary-minded, to say the least.

YOU probably are quite independent in your views on the prospects for our economy and rather untroubled by the negative verbiage that regularly fills the media. You have already learned that it takes an unusual amount of courage to tell anyone, particularly your spouse, how you like certain stocks.

Buying shares of American industry as a means of participating in the growth of our capitalistic system sounds like something that our fathers used to say once upon a time, but not like something that we'd be likely to tell our children. I just happen to think it still has merit.

THESE DAYS most investors are primarily attracted by the confusingly wide variety of high interest rates offered by all sorts of institutions, from the savings banks to the money market funds and the U.S. Treasury securities. In an era of high inflation, those alternatives offer the kind of guarantee that appeals to a nervous public, which tends to have little understanding of or confidence in American business. The past ten years have provided little cheer for the investor who held a list of "blue chip" stocks. They were fine in the 50's and 60's but not yet in the 70's.

So why not abandon stocks altogether?

THE BASIC REASON why I'm not giving up on common stocks at this point is precisely because their prices have reflected this powerful negative emotional response. The same public which has bid up the

price of gold and diamonds, houses and farm land—on the assumption that those areas represented real value—has apparently neglected the fact that the earnings of leading U.S. corporations in many industries in the past ten years have been showing average annual growth rates in the 12 to 20 per cent range.

FORGOTTEN, too, is the fact that the dividend payment of these companies has been growing at similar rates. As a result, where are the best investment values today?

I'M CONFIDENT a well informed investor can find many opportunities for growth of capital and dividends in the stock market, precisely when it is unpopular with the general public, precisely when most professional investors with large portfolio responsibilities are resting on big bond inventories, hoping to "catch the turn back" into common stocks.

It's not always bad to be contrary at times like this.

CHERRIES IMPORTED BY JAPAN AGAIN

After 58 years of Japanese import embargoes, the U.S. has begun to export sweet cherries to Japan again.

Cherries currently imported into Japan are mainly produced in Washington and Oregon.



A quick stop at the supermarket and minutes in the kitchen can produce dinners that look and taste fussed over.

Already prepared roasted chicken, for example, can be a busy person's favorite dinner. For variety, give chicken a flavor boost with a spicy no cook cranberry sauce made by blending cranberry sauce, catsup and horseradish.

CRANBERRY BARBECUED CHICKEN SAUCE

(Makes enough sauce to go with six servings barbecued chicken)
½ a 16 ounce can whole berry cranberry sauce
¼ cup catsup
1 tablespoon horseradish
4 pounds cooked barbecued chicken (purchased)

In a bowl, mix cranberry sauce, catsup and horseradish. Can be served hot or cold.

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Bogs and taxes

Growers in Wareham, Mass.—one of the prime cranberry producing towns in the nation—won a key victory recently when it was ruled that bogs should be assessed at a lower rate, based on their agricultural value.

The ruling is regarded as significant by supporters of efforts to preserve farmland and open space.

Specifically, the Massachusetts Appellate Tax Board directed the assessors of the town of Wareham to apply a different scale of values to farmland than they do to residential and industrial properties. The assessors had been judging the bogs—and other agricultural properties—on the basis of what residential and industrial developers would

pay for them, a notably higher figure.

The board's decision was a victory for grower David Mann, president of the Cape Cod Cranberry Grower's Assn., who had appealed the action of the assessors. A majority of association members had provided a 5 cents a barrel donation to pay for legal fees.

The case stemmed from the 1974 state Supreme Court's decision—the "Sudbury ruling"—that required all towns to assess property at 100 per cent of fair market value.

Following the decision, the state legislature passed a law that enabled farmers to be taxed only for the value of what their land was worth to them agriculturally. To help assessors determine the value of agricultural land, the legislature required that annual guidelines be established by a Farmland Valuation Advisory Commission.

By failing to value bogs according to the range set by the guidelines, the Wareham

assessors precipitated the legal action.

Wareham has some 7,000 acres of bogs.

Said Mann: "The town should appreciate the fact that, by keeping Wareham in open land, the cranberry growers are helping stem all the problems associated with too rapid growth and inevitably higher taxes."

In a decision involving a second case brought by Mann, the Appellate Tax Board ruled that all land within a farm qualified for assessment according to agricultural values, regardless of the ratio between productive and nonproductive land.

In still another case involving

(continued on next page)

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COVER PHOTO

**SO WHAT HAS THAT SIGN
GOT TO DO WITH CRAN-
BERRIES?—To find out, turn
to Page 7.**

(Photo by the Pacific Tribune)



BOGS AND TAXES . . .

(continued from page 3)

Bay State cranberry farmers, this one brought by Wareham grower Daniel O'Connor and others, the Massachusetts Supreme Court ruled that a grower with fewer than five acres of bogs was eligible for coverage under the Farmland Assessment Act if the surrounding land which brought the total acreage up over the minimum of five acres was related in some way to "raising cranberries and preparing them for market."

Mann, who was involved in two of the legal actions, has been growing cranberries for more than 20 years. His dad had been sales manager for Ocean Spray for many years, but, he said, "I became interested in the growing end." After graduation from college and a few years in the Navy, he bought his first bog in 1956. He now owns 125 acres in Wareham, Bourne, Plymouth and Hanson.

**** 40 years ago ****

Fire destroyed 19,000 barrels of cranberries in a West Barnstable, Mass., freezing plant owned by the United Cranberry Co.

A severely cold winter has resulted in extensive damage in New Jersey bogs. Wisconsin, Washington and Massachusetts also reported hard winters.

The town of Wareham, Mass., which boasts being the world's cranberry center, is getting ready for its 200th anniversary fete on July 8-10.

Jacob J. Emmerick, one of the earliest, most well known and successful of the Wisconsin growers was fatally stricken by pneumonia. Emmerick, known as "Jake," emigrated to the U.S. from Germany as a youngster with little money in his pocket. Employed on a cranberry farm, he saved enough money to enter the cranberry business himself in 1891. He ultimately became one

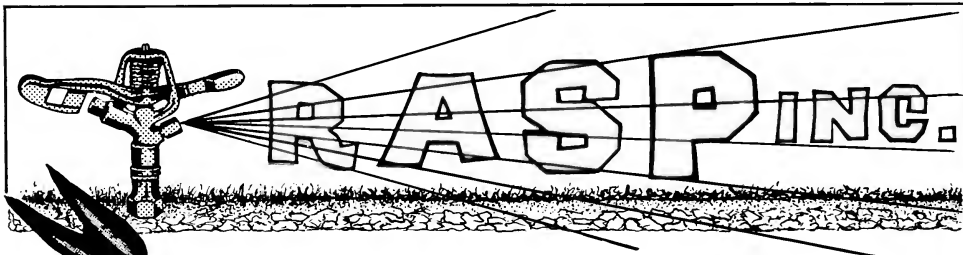
of the leading growers in Wisconsin. The J.J. Emmerick Cranberry Co., located in Cranmoor, contained 983 acres.

Ground was broken for the new cranberry office and headquarters for the A.D. Makepeace Co. in Wareham, Mass.

The Bruce & Hubbell Engineering Co. of Brockton, Mass., has developed "Accurate Pak," an automatic cranberry box filler designed to eliminate the guess work heretofore involved in getting the right amount of cranberries into a box.

NEW EXHIBITS

New exhibits at the Cranberry World Visitors Center and Museum in Plymouth, Mass., include sight-and-sound shows on the growing and processing of cranberries.



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AGWAY

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editorial



Save the bogs with fair taxes

In the "40 Years Ago" column in this issue, there is an item about the town of Wareham making plans for its 200th anniversary celebration back in those days.

Also in this issue, there is a current story about a legal battle that involved the taxation of cranberry bogs.

There is a strong (and ironic) relationship between that old column item and the story.

The item (on Page 4) cites that Wareham boasted at the time of being the World's Cranberry Center.

The story (Pages 3 and 4) tells of the legal battle growing out of the move by the assessors of the town of Wareham to tax cranberry bogs at 100 per cent of fair market value rather than according to agricultural values, as state law requires.

Because the law is pretty clear, the cranberry farmers won.

What if they hadn't? Well, you would see at least some—and perhaps a major—attrition in cranberry bogs . . . and, then . . . POOF . . . there would go the claim Wareham has to being a leading Cranberry Center.

That would be a shame. After all, how many towns can make claim to such a prized distinction?

And, irony of ironies. Let's say the assessors won. And valuable farmland became converted to residential developments. Up would go the tax demand for schools and other services. The additional tax load would far exceed the loss the town will be taking now by taxing bogs according to agricultural values rather than their potential for industrial or residential development.

And this isn't saying anything about the change that would come about in the character of the town.

In sum, the ruling by the Appellate Tax Board that cranberry bogs should be assessed according to agricultural values is beneficial for cranberry growers—and the town of Wareham.

Tips for the season

By IRVING E. DEMORANVILLE
Massachusetts Cranberry Station

Here are some tips for the late spring and early summer.

1. Keep a sharp watch for cutworms after the late water flood

is drawn.

2. Put in flume planks and impound drainage water for 24 hours after using any pesticide. Drainage water must be held seven days after using Guthion or Difolatan.

3. Many bogs will benefit from an application of fertilizer, especi-

ally where heavy crops were harvested. Some bogs that have had Casoron treatments either last fall or this spring may look "hungry" and should be fertilized. Don't forget to touch up thin or weak spots by going around with a bucket of fertilizer and using it.

4. Do not use Guthion or malathion after hook stage.

CRANBERRIES

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Quilt deadline is given

The deadline for entries for the 1979 National Cranberry Quilt Patch Contest is Sept. 1.

The contest is being sponsored by the Plymouth County (Mass.) Extension Service, in conjunction with the '79 Massachusetts Cranberry Festival.

Entries should be sent to: Mrs. Nancy Mott, c/o 1979 Cranberry Festival, South Meadow Rd., RFD 5, Carver MA 02330.

The theme of this year's contest is the fall harvesting of the cranberry.

Patches may depict—from past or present—the tools and techniques used to gather in the berries, to sort and screen them and to ready them for use throughout the coming year. Winning patches will be judged and

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selected for inclusion in the National Cranberry Quilt.

Entrants are advised to use pieced, embroidered or applied techniques only. The finished patch must be an exact 15 inch square plus seam allowances and of cotton or cotton blend fabric.

First prize will be \$100. There will be 14 runnerup prizes of \$20 each. All entries will become the property of the contest.

Entries should have the name and address written or embroidered on muslin and secured to the back of the quilt.

The completed quilt will be available for loan early in 1980.

First prize last year went to Linda McClellan of Abington, Mass.

Other 1978 winners were: Alice Smith, Randolph, Mass.; Linda Archibald, Hanson, Mass.; Barbara Davis, Plymouth, Mass.; Dora Scheidecker, Jacksonville, Ore.; Phyllis Cohen, Hanover, Mass.; Joyce Mazalewski, Carver, Mass.; Connie Jarvio, Craver, Mass.; Virginia Peck Loring, Greenfield,

Mass.; Edith Follett, North Abington, Mass.; Doris Arnold, Monson, Mass.; Jean Gibbs, Carver, Mass.; Robin Moody, Carver, Mass.; Grace Hellmann, Mount Holly, N.J.; Jeanette Cousino, Greenfield, Mass., and Aquinas Aalto, Manomet, Mass.

PCA'S REACH \$2-BILLION

Production Credit Associations (PCA's) of the Seventh Farm Credit District—which embraces Wisconsin—passed the \$2 billion mark in loans outstanding on March 29, according to Howard C. Richards, president of the Federal Intermediate Credit Bank of St. Paul.

Of the \$2 billion in loans outstanding, approximately 36 per cent is in Wisconsin, Richards says.

PCA's are farmer-owned, income tax paying, cooperative type credit organizations. A part of the nationwide Farm Credit System, they obtain loan funds from the sale of securities on the nation's money markets through the System's fiscal agent in New York City.

The funds are channeled to Seventh District PCA's through the Federal Intermediate Credit Bank of St. Paul, which is owned by the PCA's.

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REUBEN ANDERSON of Long Beach, Washington, brings a touch of humor to his cranberry bog. "People were always stopping to ask me what I was doing, so I put up the signs and it stopped them from bugging me so much," Anderson said. Besides, he added, "there isn't enough humor in the world these days, so I thought I'd brighten things up a little at the same time." Passersby testify that Anderson's wit works on them. To keep his jokes from becoming stale, Anderson changes his signs about once a year.

(Photos by the Pacific Tribune)



CALLING ALL INVENTORS!

D'ya have a piece of homegrown machinery you're sort of proud of?

Well, this year the Cape Cod Cranberry Growers Assn. will hold a contest for built-from-the-ground up or modified machinery used in cranberrying. The contest will be part of the association's

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annual meeting on Aug. 21 on the grounds of the Cranberry Experiment Station in East Wareham, Mass.

So, add that piece of baling wire and tighten that widget and bring that new water harvester or whatever over to the experiment station on the 21st.

For further information, you can call the association president, Dave Mann, at (617) 759-5283.

weather watch

MASSACHUSETTS

April averaged out just slightly cooler than normal at 0.3 degrees a day on the low side. The first three weeks were extremely cold; in fact, as cold as any over the past 14 years. However, that last nine days made a complete turn-around and very nearly evened out the month. Maximum temperature was 75 degrees on the 26th and minimum 28 degrees on the 8th. Cool periods were 1-4th, 6-10th and 13-16th. Warmer than average periods were 23-26th and 28-30th.

Precipitation totaled 5.65 inches, which is about 1 1/4 inches above normal. There were measurable amounts on 12 days with 2.39 inches on the 26-27 as the largest storm. This is our wettest April since 1973. We are about 6 1/4 inches above normal for

the year to date and over 6 1/4 inches ahead of 1978.

There is plenty of water around as we head into the spring frost season and the bogs are pushing from the last two weeks of warm weather. The bogs seem to have wintered quite well, with very minor winter kill and oxygen deficiency. There are some areas of Howes with various amounts of leaf drop, probably from several factors such as extremely high production, not having been sanded for five or more years, red mites, herbicide injury, etc. The bud looks very nearly as good as last year.

The Frost Warning Service has 285 subscribers, an increase of more than 100 over last year. Of course, the new method of funding the operation of the Cape Cod Cranberry Growers Assn. is responsible for the increase. No warnings were released through May 2.

I.E.D.

NOVA SCOTIA

Until close to the end of April, the weather had been cool and cloudy. The weekend of April 21-22 was sunny and many residents took the opportunity to plant their early vegetable garden. The withdrawal of water and weed control commenced the last week of April on cranberry bogs in Nova Scotia.

I.V.H.

WASHINGTON

Washington cranberry bogs were subjected to a long, cold winter, causing extensive damage to fruit buds and vines. Bogs with thin

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vine coverage were hit the hardest.

Bud examination during March showed an average injury of 19.3 per cent at Grayland and 33 per cent at Long Beach. The cold dry East wind contributed to the higher injury at Long Beach.

Maximum temperature for April was 74 degrees on the 28th and the minimum 35 degrees on the 10th. Precipitation totaled 4.79 inches, with the largest single storm coming on the 13th with .91 inches. There were 21 days with measurable precipitation.

A. Y. S.

WISCONSIN

Temperatures averaged about 2 degrees below normal in April. Precipitation was mostly below normal for April except in the southeast. The crop season began in the southern half of Wisconsin on April 16. Cool, wet weather in late April and early May interfered with field work. A stationary warm front moved into the state May 5, bringing strong south winds and warmer temperatures, except to areas north of the front where snow fell. High temperatures reached into the mid-80's in southern areas from May 8-10, while the north had cooler readings and some rain.

regional news notes

Massachusetts

By IRVING DEMORANVILLE

Prof. Stan Norton visited the New Jersey cranberry area for four days in April. He toured the Cranberry-Blueberry Research Station and the experimental bogs, as well as several commercial operations. Stan was interested in the various types of equipment developed and in use by the growers. Perhaps some of these ideas will take root in Massachusetts.

Nova Scotia

By I. V. HALL

A recent paper titled "Farther

Observations on Cranberry Fungi in Nova Scotia" has been published by C.O. Gourley in Cdn. Pl. Dis. Survey, Vol. 59, 1979. This will be of interest to pathologists dealing with cranberry diseases.

Washington

By AZMI Y. SHAWA

Annual Cranberry Field Day at the Coastal Washington Research and Extension Unit will be Friday, June 29.

Massachusetts Farm Bureau

A word of caution, as more and more cities and towns in Massachusetts (continued on next page)

CRANBERRY GROWERS REALTY

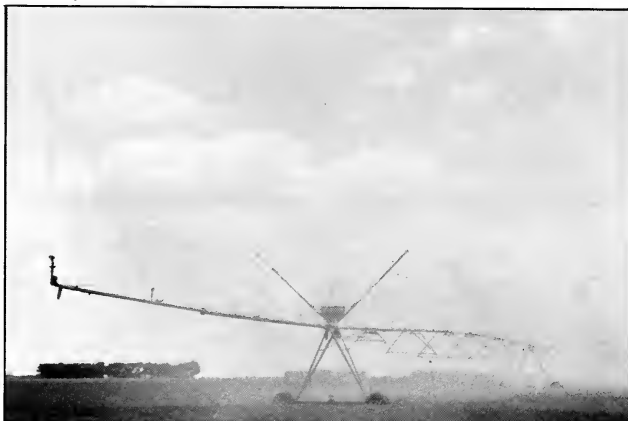
Listings of buyers and sellers welcomed on cranberry acreage and upland.

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FARM BUREAU . . .

(continued from preceding page)

move to 100 per cent valuation. Look over the new "full and fair" valuation for your farm when it is announced to you. Even if your farmland is covered under Ch. 61-A, the so-called 100 per cent valuation could be so high as to present a serious

financial problem on the rollback taxes, should you decide to sell later on. If you question the new valuation, take it up with your local board of assessors right away.

Sad to report the recent death of Forest Shaw of Great Barrington, who was serving as membership director for the Berkshire County

Farm Bureau. Shaw had been a Farm Bureau member since 1949 and had served as county FB president and a MFBF board member for many years.

The College of Food and Natural Resources at the University was highly praised recently by an accreditation team.

"God heals and the doctor takes the fee."

—Ben Franklin

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- 3 tablespoons reconstituted lemon juice

Combine all ingredients and chill for several hours. Pour into tall glasses and add ice cubes. Garnish, if desired, with lemon or lime slices or a pineapple spear.

CHINA MAY BECOME \$1-BILLION MARKET

By BEVERLY HORSLEY
Associate Editor, Foreign Agriculture

Will China be the next country to become a \$1-billion market for U.S. farm products?

That question would have been absurd three years ago, when U.S. agricultural sales to China had all but ceased. During calendar 1979, however, U.S. farm exports to China appear likely to hit at least \$800 million and the final total could reach \$1 billion.

Given China's history as an erratic market for farm products, caution is in order regarding its import potential, especially since Chinese crop production

appears to be recovering from the drought-induced setbacks of 1977 and 1978.

Additionally, the country has been the target of aggressive sales efforts by other countries. These competitors include Australia, Canada and Argentina—with their strong and longstanding positions

in the Chinese grain market—and the European Community—with its surplus of wheat for sale at subsidized prices.

On the other hand, China's role must now be viewed in a new light that reflects the dramatic changes made recently in Chinese-U.S. relations and China's economic priorities.



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—Shakespeare



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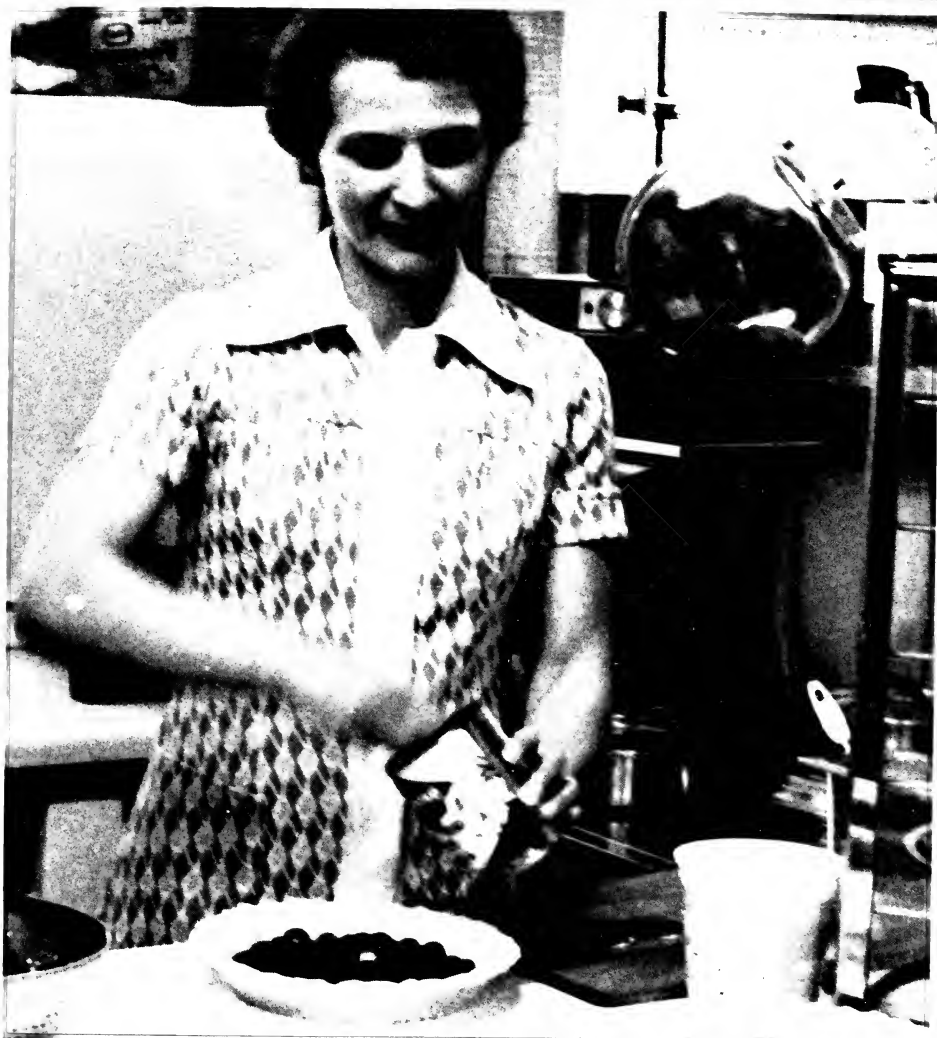
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THE NATIONAL CRANBERRY MAGAZINE

Vol. 43, No. 6

July 1979



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History: L. I. bogs

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Cranberry nut pie

Darlene goes into business

It all began when the manager of the cranberry receiving plant in Babcock, Wisc., said to Darlene Peterson:

"Darlene, why don't you make a cranberry pie?"

He and other lunchers at Darlene's Country Cafe had always liked her other pies.

Hmmm, thought Darlene, that does make sense. After all, here we are, right in the heart of Wisconsin's cranberry country.

She made her pie. She used both white and brown sugar but not so much as to hide the tart cranberry taste. For a crunchy touch and added flavor, she put

in chopped walnuts.

Darlene's cranberry nut pie was an instant success. Soon it became a regular part of the menu.

AND THEN Darlene got to thinking, just like she had before she decided, five years ago, to run a restaurant.

People are driving here from Wisconsin Rapids and Marshfield and all the way up from Necedah to buy whole pies, she figured, so why not put them in the frozen food sections of local stores?

Husband Ralph, who works in construction and who expects enterprising thoughts to come

tumbling from Darlene's head, agreed that the idea was sound.

Thus was born Mrs. Peterson's Cranberry Nut Pie.

THE ENTERPRISE began on a small scale, supplying a couple of stores and another restaurant. Now it has grown to eight outlets, in Wood and

(continued on page 6)

COVER PHOTO

DARLENE Peterson makes one of her tasty cranberry nut pies, which will be frozen and later distributed to local retail outlets.

(Photo by Joan E. Humphrey)



MRS. PETERSON, right, gets assist from employee Lorell Scott.

(Photo by Joan E. Humphrey)

The cranberry bogs of Long Island

By TIM HUSS

Part I

Nearly everyone has enjoyed the several products derived from the fruit of the cranberry, but few people are familiar with the ecology of this interesting plant or the role it has played in many local economies and histories.

Today the cranberry industry is an important part of the agricultural economy only in Massachusetts, New Jersey and Wisconsin. But many other parts of the country were at one time involved in cranberry production. New York State's easternmost county of Suffolk was once the third largest producer of cranberries in the nation.

Although the Long Island cranberry industry was wiped out by a series of disasters culmi-

nating in the great cancer scare which removed the fruit from our Thanksgiving and Christmas tables in 1959, all is not lost. The Cranberry Bog Preserve near Riverhead is now a mecca for students of unusual plant and animal life as well as a haven for people who simply enjoy a tranquil oasis in a rapidly growing population center.

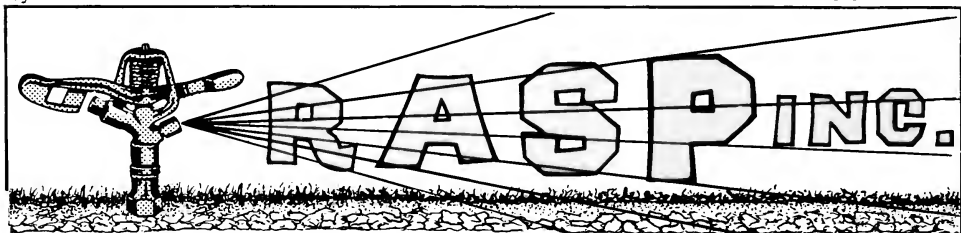
THE PILGRIMS along the coast of Massachusetts were introduced to the cranberry by the Indians. Soon they were harvesting the fruit each fall. In addition to a delicious sauce, the Pilgrims made a brilliant red dye from the fruit.

Commercial cranberry farmers had to imitate what the coastal Pilgrims had naturally: flooding

in early spring and in the fall to protect the blossoms and fruits from frost damage, and sanding in the spring to provide a good substrate for new shoots to root in and to keep down the number of weeds.

The cranberry has a large range extending from Minnesota to Newfoundland, and into Canada on the north, then south to Illinois, Ohio, New Jersey and the mountainous regions of North Carolina. Three different species cover this range: the mountain cranberry (*Vaccinium vitis-idaea*) of northern Canada and northern New England, and the small cranberry (*V. oxycoccus*) and large cranberry (*V. macrocarpon*) which cover the remainder of the range. The large cranberry is generally the more widespread species on the more southern coastal bogs

(continued on page 8)



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Bugs

editorial



"We do not count a man's years,
until he has nothing else to count."

—Ralph Waldo Emerson

The fuel crisis

As a farmer, you are entitled to 100 per cent of your fuel needs for your farming operation.

However, there is no guarantee that your privileged status will continue or that supplies will be available in the future, no matter what your status. And, certainly, there is no guarantee that fuel prices won't continue to soar.

Now, on top of the depressing news about the fuel shortage and wild price hikes, has come a statement by Energy Secretary James Schlesinger that oil companies have been refining less oil while, at the same time, they have been importing more crude oil.

An oil company spokesman blamed fires and mechanical problems for the reduction in refinery utilization. Is that the truth? Or are the majority of Americans right? They invariably tell pollsters that they believe the gas shortage has been artificially created by the oil companies to jack up prices.

It seems that Americans are getting a hard kick in the pants. They are shelling out tax dollars for a Department of Energy that can't seem to predict or get at the roots of our fuel problems. And they may be at the mercy of oil company moguls who differ from greedy OPEC nation leaders only in that they don't wear a kaffiyeh.

Despite an embarrassing past record (Schlesinger last year called talk of a gas shortage "political balderdash"), the Department of Energy should waste little energy in getting the facts so that the American public can get a clear, concise answer to the reasons for the shortage and high prices and a clear, concise indication of what lies ahead.

Update on CRANBERRIES

Arthur Poole, Oregon extension agent and cranberry specialist, has agreed to join CRANBERRIES' roster of advisors. He will contribute articles to the magazine periodically, we are pleased to announce.

Philip E. Marucci of the Cranberry and Blueberry Station in Chatsworth, N.J., first appeared on the masthead of CRANBERRIES in December 1952. After almost three decades of contributing his expert knowledge to the magazine, he has decided to hand over the mantle of advisor to another station staff member, soon to be announced.

CRANBERRIES also is continuing to attract outstanding freelance writers and has added a cartoonist, Henry F. Mazel, whose first offering appears on page 7.

CRANBERRIES

THE NATIONAL CRANBERRY
MAGAZINE

—Our 43rd Year of Publication—

VOLUME 43—No. 6
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ISSN: 0011-0787

DARLENE . . .

(continued from page 3)

Juneau counties. Mostly super-markets, these outlets are supplied with 500 pies weekly.

In addition, a cheese company in Milwaukee is going to attempt to market the pies.

Her quick success has left Mrs. Peterson breathless and feeling a mite overworked.

"We still roll out the crusts by hand," she said. "The work is done during slow periods in the restaurant. There are four people working in the restaurant full time and either four or five part time."

The Country Cafe opens at 4 a.m. and closes at 6 p.m., with even longer hours planned.

Daughter Rosalyn, 18, who recently was graduated from high school, delivers the pies. The Peterson's also have two sons and three grandchildren.

TO MAKE life a little easier in the future, the enterprise is going to get an automatic dough roller and a shrink tunnel, which, Mrs. Peterson explains, automatically wraps the pies.

People still tend to think of the cranberry as a vegetable and not a dessert, the unassuming entrepreneur says.

Her cranberry nut pie may change that mode of thinking.

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Agricultural activities such as pruning, clearing of brush and trees are exempt from the ban on open burning in Massachusetts.

However, permission to burn must be obtained from the local fire department. The local fire chief may refuse to allow open burning on days when atmospheric conditions are not right.

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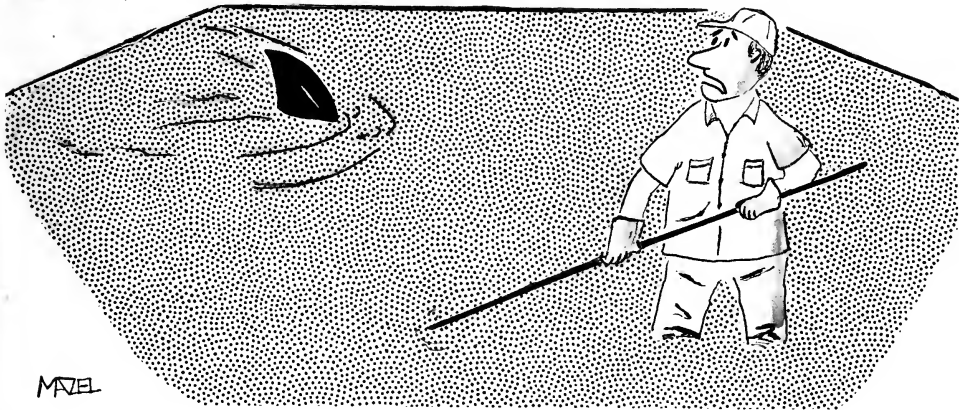
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MAZEL

weather watch

MASSACHUSETTS

May was very warm and wet. The temperature averaged 3.7 degrees a day above normal, breaking our old record set in 1944. Night temperatures were particularly warm. Maximum temperature was 91 degrees on the 10th and minimum was 37 degrees on the 3rd. Warmer than average periods were the 1st, 8-10th, 12th, 21-23rd and 29-31st. The only cooler than average days were the 6th, 19th and 20th.

Rainfall totaled 6.59 inches, over 3 inches above normal. There was measurable precipitation on 14 days, with 2.94 inches on the 23-24th as the largest storm. We are about 10 inches above normal for the first five months of 1979 and nearly 7 inches ahead of 1978.

We have not issued one frost warning so far this spring. We have

never had a spring season without some warnings but this may be the exception. This is only the fourth May in our records without a warning but two are in succession—last year and this year. For comparison, there were 15 warnings in 1977, 24 in 1976, none in 1975 and seven in 1974.

Weather data to June 1st does not favor good keeping quality in 1979. Only one factor of a possible 16 favors good keeping, the lowest number of favoring factors since the quality forecasts were begun. The prospect, therefore, is for very poor keeping quality this year. It is urgently necessary that cranberry growers use fungicides as detailed on the Insect and Disease Control Chart. Growers are further warned that overuse of fertilizers will aggravate an already bad situation. Your cranberries are needed by a strong market and only the good ones can be used. You will be well paid for sound berries, making a good investment out of fungicides used.

I.E.D.

NOVA SCOTIA

The mean temperature for April was slightly higher than the 50 year average. Since then conditions have been favorable for plant growth and we are now experiencing an early spring. On May

17 we had commercial varieties of pear at the Kentville Station in full bloom. The prior week we had at least four days with warm, moist conditions, which will later present some disease problems.

I.V.H.

(continued on page 9)

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LONG ISLAND . . .

(continued from page 4)

and marshes. It is also the species from which most modern commercial varieties have been derived.

Being members of the heath family Ericaceae, these plants are tolerant of sandy, acid soils typical of the bogs in north-central and northeastern North America. So it was here in the wetland habitat of the bog that early settlers found the cranberries to be most abundant, its low creeping evergreen vine traversing the surface of the bog floor among the sphagnum moss, and other unique, rare and beautiful bog flora.

BOG HABITATS were a common sight on Long Island when the first Europeans arrived in the 17th century. But, while the early settlers of Massachusetts, and later New Jersey, were soon developing a cranberry industry, Long Island settlers showed little interest in this fruit, other than occasional household ventures into the bog each fall to collect the berries for their homemade products. Islanders were more interested in farming other crops and developing their milling industry along the banks of Long Island's numerous coastal streams and rivers.

The relatively large areas of low-lying, freshwater wetlands along the banks of the Peconic provided ideal conditions for the creation of mill ponds. Consequently, the milling industry became a major part of the economy in Riverhead, a community that developed along the Peconic's banks. The water mills were used to power sawmills and grind grain.

But with the advent of the industrial age, gas and coal began to replace water as a source of energy. Engines began to do the work of the old water mills, and by 1870, the local millers along the Peconic were desperate for an alternate source of income.

IN 1870 Warren Hawkins and Bull Overton of Bayport experimented with cranberry plant cultivation with highly successful results, and the news spread

quickly to the millers along the Peconic. By 1875, many of them went to work preparing their lands for cranberry production.

The requirements for cranberry production include an abundant supply of flood water from either a natural or artificially created body of water, an irrigation system of ditches, weirs and pumps, and low, level wetlands.

Once a source of flood water was established, the backbreaking task of ditch digging, dike building, and dam and weir construction had to be initiated. Generally, ditches were dug around the perimeters of the wetlands. This served to drain the wetlands so they could be worked more easily. All vegetation was then cleared away and the wetland was scalped, removing the upper 4 to 6 inches of vegetation and organic material, leaving a bare muck and sand substrate behind. The material that was removed from the wetland was used for creating dikes around the bog.

ADDITIONAL DRAINAGE ditches were then dug across the bogs, and the bog floor was graded to assure even flooding and to facilitate drainage. A weir was placed at each end of the bog, and

flooded bogs were drained either by allowing the water to flow naturally downgrade to the Peconic or by pumping the water back into the main pond. When finished, the larger cranberry farms consisted of 10 or more separated bogs.

The final step before planting was to haul in sand and lay it on the bog floor to a depth of at least 4 inches. In this sand substrate, the cranberry vines were planted.

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—Benjamin Franklin

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WEATHER . . .

(continued from page 7)

OREGON

Cranberry weather forecasts are continuing on the National Weather Service radio at 162.40 megahertz. The broadcast schedule is now from 7 to 10 p.m. The forecasts accurately predicted bog frosts which occurred for two or three nights in late May.

In addition to frost information, the broadcasts give heat warnings, wind and precipitation forecasts.

A.P.

WASHINGTON

The first quarter of 1979 showed 3.98 inches more precipitation than the same period for 1978. Mean temperature of January and February was 7.3 and 4.3 consecutively, colder than the same period of '78. It is interesting to note that the temperature warmed up in March and the mean temp of this period in both years was almost the same.

A.Y.S.

WISCONSIN

Through the week ending May 27, temperatures averaged 8 degrees below normal. High readings were in the 50's and 60's until the weekend when temperatures warmed to the 70's. Overnight lows were in the 30's, with scattered light frost in a few areas. Southern areas received little or no rain, while other areas received less than a half inch, except for the northwest.

For the week ending June 3, temperatures averaged slightly above normal. High readings were in the 70's until reaching the 80's on the weekend. Overnight lows were mostly in the 40's and 50's except for some 30's at the beginning of the week. Rainfall varied throughout the state, with light totals in the northeast and extreme south and heavy amounts of 1 to 3 inches in parts of west-central Wisconsin.

Temperatures averaged about 2 degrees above normal for the week ending June 10. Substantial rainfall occurred during the week, with showers and thunderstorms every day but one. A tornado touched down at Monroe, causing property damage.



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Growers approve marketing order

Cranberry growers in 10 states have voted to continue the federal marketing order program that regulates the handling of their crop.

The program covers cranberries grown in Massachusetts, Rhode Island, Connecticut, New Jersey, Wisconsin, Michigan, Minnesota, Oregon, Washington and Long Island, N.Y.

Assistant Secretary P.R. Smith of the U.S. Department of Agriculture said less than 10 per

cent of the total number of growers, representing less than 10 per cent of the total 1978 production, voted to end the program. About 57 per cent of eligible growers voted in the May 14-23 referendum. The referendum was conducted by the department's Agricultural Marketing Service.

The marketing order program, established in 1962, requires a grower referendum every four years.

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Honey bees : more berries

By AZMI Y. SHAWA

Bumble bees are very efficient pollinators for cranberry bogs, but are not present in large enough numbers to do the complete job.

Honey bees are the most important pollinating insects for cranberry bloom because the beekeeper is able to place colonies when and where they are needed. Two strong colonies of honey bees per acre will normally provide good pollination of cranberry bogs.

Colonies should be obtained from a reliable beekeeper who can supply strong, healthy, two story colonies. Weak colonies are of no value for cranberry production.

The strength should be checked on the first warm day after hives are placed in the bog. The most practical way for the grower to assess the hive is to note whether good numbers are actively flying from each of the colonies.

Starting about 100 yards from the edges, colonies should be placed in groups of 6-15 at 200 yard intervals throughout the bog. A 10 acre bog requires only one grouping near the center.

The bees should be placed in a sunny location with protection from wind. Placing of colonies should be delayed, if possible, until the bog is 10-20 per cent in bloom. This practice reduces the chance of the bees foraging

BRADER MADE DIRECTOR

Charles R. Brader has been named director of the Fruit and Vegetable Division of the U.S. Department of Agriculture's Agricultural Marketing Service.

The division is responsible for marketing agreements and orders for fruits, vegetables and specialty crops, market news and regulatory programs, including the Perishable Agricultural Commodities Act.

out of the bog area before the cranberry bloom is abundant. Flowering weeds in and around the bog should be eliminated to avoid competition for bee visitation. Avoid applying any unnecessary insecticides during the presence of the bees. In the case of an absolute emergency, use malathion, which is considered the least injurious to bees. Apply at night or early morning before bees start foraging.

BASE QUANTITIES ARE BEING STUDIED

The Cranberry Marketing Committee deferred action on adjusting base quantities during a meeting June 13 at the Hilton Hotel in Mount Laurel, N.J.

A subcommittee will meet further on the matter and present proposals at the annual meeting of the entire committee on Aug. 23 in Wisconsin, according to Charles F. Hastings Jr.

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- 4 strips bacon, diced
- 2 tablespoons chopped onion
- 2 tablespoons chopped celery
- 2 cups small cubes of bread
- 1 cup fresh cranberries, cut in half
- 1 teaspoon grated lemon rind
- 2 tablespoons chopped parsley
- 1 cup tomato juice
- ½ cup grated Parmesan cheese

Split lobster tails lengthwise (while still frozen) with a sharp knife, cutting through the outer shell. Leave the under membrane intact. Spread open and put in a shallow baking pan. Sprinkle cut surfaces with salt, pepper and lemon juice.

Fry bacon until crisp. Remove bacon and add onion and celery to fat; saute until tender. Add bread cubes and saute until cubes are golden brown. Add cranberries, lemon rind, parsley and salt.

Fill split lobster tails with cranberry mixture. Spoon tomato juice over stuffing. Sprinkle with Parmesan cheese. Bake in a moderate 350 degree oven for 20 to 25 minutes, or until tops are lightly browned and lobster is done.

ATTEND MEETINGS

Dr. Robert Devlin of the Massachusetts Cranberry Station attended the recent annual meeting of the northeastern section of the American Society of Plant Physiologists in Albany, N.Y.

Prof. Stan Norton of the station

attended an irrigation design seminar at the University of Massachusetts, Amherst, recently.

NEW PRODUCTS

In close cooperation with the seed testing station of the Netherlands government, the Dutch firm of Inventum N.V. of Bilthoven, the Netherlands, has developed a

new seed germination table, the major feature of which is a sealed heat exchanger which supplies water for heating or cooling the germination plate and thereby simulates temperature and light levels in the day/night cycle.

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THE NATIONAL CRANBERRY MAGAZINE

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August 1979

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DEMORANVILLE has been adviser and friend to hundreds of growers in the Bay State for more than 25 years.

Recently a grower told CRANBERRIES, a tone of awe in his voice: "You know, there isn't anybody in the world who knows more about cranberries than Irving does. Now that's something."

Modest and unassuming as he is, Demoranville likely would demur. But he'd find others nodding assent with that grower.

The 54-year-old cranberry expert originally had planned to become an engineer but switched to horticulture at the University of Massachusetts, majoring in fruit science and minoring in plant physiology and soil chemistry. Of course, the summer he put in as a bog worker at the Experiment Station might have influenced his direction.

Another influence, no doubt, was growing up in a cranberry family. His dad combined a career in painting and paperhanging with cranberrying.

TODAY DEMORANVILLE owns 7½ acres of bog in Freetown. "Even though I'm the expert, I'm not the top producer by any means," he says, chuckling. "I manage to beat the state average, but there are a couple of fine growers in the area who beat twice the state average easily."

Seated in the Experiment Station, near the large, ornate pot belly stove that has been an office fixture for years, Demoranville reveals himself to a visitor to be a cornucopia of information about

any number of subjects related to the cranberry: the evolution from scooping to mechanical harvesting, insects, the introduction of chemicals, the roller coaster economy of the industry over the years, the marketing order, the great cranberry scare of '59, the false blossom plague in New Jersey a decade ago, comparisons between growing in Massachusetts and Wisconsin, and so on.

THE CRANBERRY EXPERT believes the crucial factors in the industry are frost protection and insect control. He is heavily involved with both and wishes he

COVER PHOTO

CRANBERRY specialist Irving E. Demoranville, or "Dee," as his friends call him, enjoys a good laugh while chatting with a visitor at the Cranberry Experiment Station in East Wareham, Mass.

(CRANBERRIES Photo) ✓

had more time for experimental breeding.

Married, with three girls, one of whom plans to get her doctorate in botany, Demoranville says, smiling, that in his spare time, "I grow cranberries." He also is secretary-treasurer of the Cape Cod Cranberry Growers Assn.

With the rest of his spare time, he reads—detective novels and history—and avidly follows the Boston Red Sox, Patriots, Bruins and Celtics.

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Insects, weeds are topics of seminar

By MICHAEL COUTURE

Crop prospects this season appear relatively unaffected by insects and weeds.

That's what William "Bill" Tomlinson, retired entomologist from the Cranberry Experiment Station in East Wareham, told about 50 growers during a seminar at the station recently.

BUT TOMLINSON warned that it was a bad year for weevils on the bogs and told growers that if they had waited before taking steps to eradicate the weevils, it was too late because the insects have started laying eggs.

"Guthion is the only thing we have for them right now," he said.

Tomlinson said fruitworms were not active on cold nights, such as the area experienced during the latter part of June, but he noted that the bugs were flying.

The entomologist advised growers to delay putting out pesticides for as long as possible to avoid damage to the bees. Parathion could significantly harm the pollinators, which are bountiful, he said. He cited a more than normal amount of honey and bumble bees this year.

"And both are busy. It's been a tremendous year for bumblebees. I've never seen a better year," he said.

Parathion will kill from 50 to 75 per cent of the bugs inside the berries, Tomlinson said. But the chemical is a potent fish killer, he added, and he advised against the use of it in areas with considerable amounts of fish.

The red mite is more abundant this year than most, according to Tomlinson, who recommended the application of omite to counteract

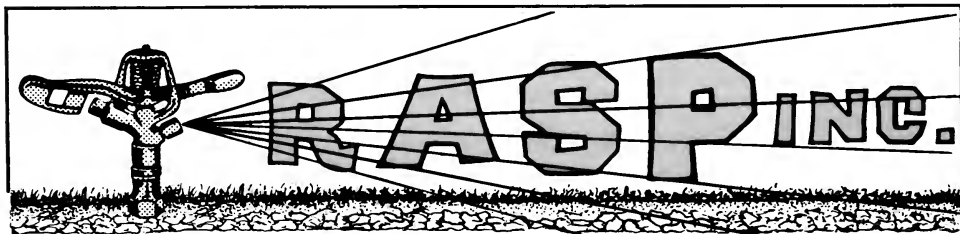
the insect. Omite could even be applied on the bloom if there is a heavy infestation, Tomlinson said.

DR. ROBERT DEVLIN, noted plant physiologist at the station, said the slow clearance of many pesticides and herbicides by the Environmental Protection Agency was because of the relatively small stature of the cranberry industry as compared to other agricultural interests in the nation.

In particular, Dr. Devlin mentioned glyphosate, a herbicide he believes will control most tall weeds in a bog. Two laboratories in the nation, one of them being the UMass station in East Wareham, have been working with the substance to evaluate it, according to Dr. Devlin.

"A 24 C clearance (state label for special needs) is being applied for and we will eventually get a federal clearance, but we can't wait for New Jersey and Washington state to send in findings," he said. "We might be able to get in

(continued on page 15)



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in '77 by 358,721 barrels.
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Salt o' the earth

We've spent a considerable part of the last month away from typewriter and pica rule, riding down bumpy roads to hidden bogs, crunching our way carefully over fresh bloom, and talking to growers.

The travels renewed an old opinion:

Namely, that if you were stuck in a foxhole or stranded on a desert island, a good companion to have along would be a grower. With only slight apology for indulging in generalities, you'd find him—or her—to be straightforward and honest, hardworking and resourceful, and with a wonderful knack for improvising when necessary. The grower is a person with little appetite for cant and gimmick and is someone who can be counted on in word and deed; a very jewel of a trait.



FTC staff

Calls for trust move against Ocean Spray

After an almost seven year long investigation, the staff of the Federal Trade Commission is recommending that the commission issue an antitrust complaint against Ocean Spray Cranberries Inc.

AT THE TIME of this writing, a formal complaint had not been issued.

James St. Clair of the Boston law firm of Hale and Dorr would represent Ocean Spray if the commission follows the staff's recommendation. As a cooperative, St. Clair contends, Ocean Spray is exempt from federal antitrust laws.

Given the pre-public nature of the proceedings at this stage, FTC staff members won't comment on the case.

Aside from the usual antitrust questions, the Federal Trade Commission will have to wrestle with the issue of the relationship between grower cooperatives and antitrust laws. Interpretation will have to be made of the 1922 Capper-Volstead Act, which exempts cooperatives from certain antitrust provisions.

MARKET REPORT GIVEN

The latest inventory and handling report compiled by the Cranberry Marketing Committee showed that the combined inventory of all handlers—only one was left out—amounted to 1,180,506 barrels as of May 1.

The breakdown is as follows: freezers, 816,563 barrels; processed, 339,618; fresh and other, 24,325.

The number of barrels, 2,451,386, acquired in '78 exceeded those acquired

CRANBERRIES

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DAVE BROOKS takes minimum temperature readings at cranberry vine level in the bog. (Photo by Arthur Poole)

Oregon growers get new weather service

By ARTHUR POOLE

A new cranberry weather service began operation on Oregon's south coast recently to give frost and heat warnings to area cranberry farmers.

THE FORECASTS are prepared by the National Weather Service in Portland and are broadcast every evening between 7 and 10 on the VHF relay station near Coos Bay. The broadcasts can be received on weather band radios tuned to 162.40 megahertz.

Dave and Jeannette Brooks of Bandon have volunteered to take the instrument readings and phone the information to NWS meteorologists. The weather station is located on the Brooks cranberry farm, about three miles south of Bandon, between Highway 101 and Rosa Road.

Ambient, maximum and minimum temperature readings are taken a few feet above a dike at the edge of a cranberry bog. And a minimum temperature is taken at cranberry vine level in the bog.

Readings are taken about 3:30 every day. Rainfall amounts are also recorded. Wind direction and

velocity instruments may be added later.

Bob and Gayle Christiansen, neighboring cranberry farmers, serve as alternate observers in the program.

The program is coordinated by Earl Bates, an agricultural meteorologist with NWS, who is stationed at Oregon State University in Corvallis. Bates helped obtain the weather instruments and shelter for the program.

More than 50 per cent of the cranberry farmers listen to the broadcasts. Growers report that the forecasts have been very accurate and helpful. The broadcasts also give long range weather information, which is very useful in planning field work on the bogs.

ALL OREGON cranberry farmers use sprinkler irrigation systems for frost and heat control. When temperatures approach freezing, sprinklers are turned on, usually by thermostatic control, to protect fruit buds and flowers from injury. Frosts are most damaging during the period from March through June.

Heat damage can occur when

temperatures rise above 80 degrees F. Berries become scalded and further growth stops. Irrigation during these periods rapidly reduces the temperature and protects the crop. Heat damage usually occurs during July, August and September.

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Grower fashions weed applicator

How best to apply the recently approved weed killer, Weedar 64.

That's the problem West Wareham, Mass., grower Douglas Beaton tackled.

First, he got a pail. That was to hold the solution.

Then he got a pair of tongs, the kind you use to lift hamburgers at an outdoor barbecue, and extended the arms. He replaced the burger grippers at the ends of the arms with paint pads. Their purpose was to absorb the Weedar 64.

To make sure the Weedar 64 didn't drip on the vines, he attached a rod at the top of the pail so the pads could be squeezed.

Cranberry worker Linda Savoy, seen in the photo at right, gingerly applied the Weedar 64 to chokeberry and silver leaf brier.

Did it work?

"You better believe it," Beaton said.

Twenty four hours after application, the weeds had turned a deep brown and died.

regional news notes

British Columbia

Azmi Y. Shawa, extension agent in horticulture for the Coastal Washington Research and Extension Unit, visited Dr. George W. Eaton at the department of plant science, University of British Columbia, in early July.

The two well known cranberry researchers met to discuss progress being made on a joint research project. They are investigating the productivity of British Columbia and Washington cranberry bogs. The object of the study is to identify problems which interfere with regular production of optimum



WEED KILLER Linda Savoy gets ready to apply Weedar 64.

yards of high quality fruit.

Shawa and Eaton are examining hundreds of samples collected in the fall of 1978 from Washington and British Columbia plantings.

Massachusetts

By IRVING DEMORANVILLE

The 92nd annual meeting of the Cape Cod Cranberry Growers Assn. will be held at the Cranberry Station Aug. 21 at 10 a.m.

The program will consist of equipment displays, exhibits, a tour of

the state bog and a chicken barbecue lunch. In the afternoon there will be a business meeting, committee reports and the official crop forecast by Alvin Potter of the Crop Reporting Service. Guest speaker will be Wendell Woodman, an investigative newsman.

Reports and observations indicate another heavy bloom, but there is some difference of opinion about whether it is as heavy as last year.

Winterkill injury is very minor, but there was a fair amount of leaf drop,

(continued on page 14)

The cranberry bogs of Long Island

By TIM HUSS

Part II

The laborious and time consuming nature of cranberry growing in the 19th century is documented in the following from records of the Cranberry Bog Preserve Committee.

In 1885, two brothers, M.H. and S.H. Woodhull, purchased land near present day Sweezy's Pond and Wildwood Lake in Riverhead and began preparing it for cranberry cultivation. In the first year, working until the Christmas season, a small crew was able to prepare 10 acres, which were not sanded until the following spring. The cranberry vines were set in May 1886.

During that same year, 15 more acres were graded. In the spring of 1887, these additional acres were sanded, using the muscle of as many as 35 men who were paid \$1 a day to move sand in wheelbarrows which they pushed along planks out onto the bog. Once sanded, the 15 acres were then planted with vines imported from New Jersey and Cape Cod at a cost of \$4 per barrel.

Not until 1889, approximately four years after the Woodhulls' first planting, was the first harvest made, and only 10 bushels were harvested and sold locally. In 1892, however, 21,600 bushels were harvested and sold for \$2 per bushel—a huge success for a new industry. By the 1920's ten major bogs were in operation, employing 50 people year-round and many more during the harvest.

FROM SPRING to fall the bogs along the Peconic bustled with activity. In the spring, winter flood waters were drained and vegetation was evident one or two

weeks later. Flowering began toward the end of June and continued until full bloom was reached around the 4th of July. During the spring, protection from frost had to be afforded the blossoms. The flowering period was critical because the extent of pollination would determine the size of the fall crop. For this reason, honeybees were particularly important to the cranberry grower, and a bee's nest in the adjacent oak woodland was a cherished resource.

Although sanding in the spring helped to keep down the weeds on the bog, weeding was still an important job. It was a common sight in the old days to see gangs of weeders crawling over the bog on hands and knees, pulling out weeds and throwing them into their weed baskets or using scythes to mow them down. As late as the 1930's these weeders were paid as little as 10 cents an hour. By the

1940's extensive use of chemical weed killers greatly reduced the laborious task of weed control.

SEVERAL VARIABLES could affect the size of the harvest. Poor pollination during the flowering season, fungus diseases, viral diseases and insect attack were all potential threats to the cranberry farmer. Viral diseases like "false blossom of cranberries" could adversely affect fruit development. The black-headed fireworm (*Rhopobota vacciniana*) and the cranberry fruit worm (*Naevana vaccinii*) were well known for their respective foliage and fruit damage which could literally wipe out a year's crop.

Up until the 1930's, however, there were no major problems with the Long Island cranberry crops, and autumn along the Peconic would find the bogs covered with harvesters. In later years a motorized picker resembling a



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"In dealings between man and Man, truth, sincerity and integrity are of the utmost importance to the felicity of life."

—Benjamin Franklin



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gasoline powered lawn mower would rake through the vines and force the berries back into the catcher. Since there were no local processing plants, the berries had to be sold locally or rapidly trucked to New York City and other population centers.

Trucking and storage were critical operations. The stored crop was vulnerable to fungus rots and to breakdowns in temperature control. Optimum temperature for storage was 36 to 40 degrees F, but this range was far from easy to maintain in the early 1900's. Crop losses of 30 per cent or more were sometimes experienced by unlucky farmers. For these reasons, long distance shipment by truck was not possible.

AFTER REACHING its peak in the 1920's, the cranberry industry on Long Island began to decline. For one thing, the smaller bogs of the island could not compete with the larger operations in Massachusetts and New Jersey, and without a local processing plant the Long Island growers could not get as much money for their crops as could the growers in other parts of the country. By 1936, the number of major bogs in Suffolk County was down to about six. Then disaster struck.

The fireworm was suddenly a major problem. This insect would lay billions of eggs on the bog in the spring. The defoliating capability of the larvae was devastating, and elaborate spray systems had to be established to carry insecticide to all corners of the bog. Such a system was too expensive to be practical, so many of the remaining farmers gave up the fight.

A FEW GROWERS managed to keep going but rising labor and trucking costs made it difficult to show a profit. Then, on November 9, 1959, the final blow was delivered when the Department of Health, Education and Welfare announced that the weed killer amino triazole, used extensively on cranberry bogs throughout the country, had been shown to cause cancer in laboratory mice.

The cranberry industry all

over the nation went into shock on "Cranberry Black Monday." The Long Island industry was all but finished. By 1965, only the old David marsh in Calverton was still in operation. In 1974, this bog also ceased commercial production. Long Island's cranberry days were over.

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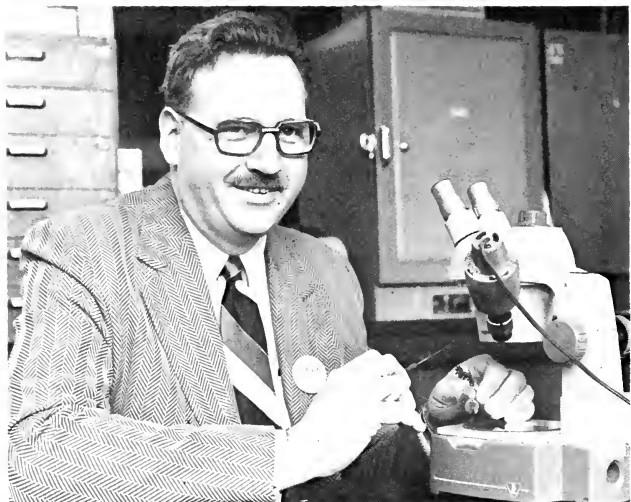
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PLANT SCIENTIST George Eaton, recipient of the George Darrow Award for "excellence in small fruits research." (UBC Photo)

Eaton, Kyte win honors

A University of British Columbia plant scientist and his research assistant have been named 1979 co-winners of the George M. Darrow

Award by the American Society for Horticultural Science.

George W. Eaton, a horticulture professor at UBC, and assistant

Tina Kyte will receive the award on Aug. 2 during the society's 76th annual meeting, at Ohio University. It is given for "excellence in viticulture and small fruits research" and the citation specifically recognizes the recipients' research paper, "Yield Component Analysis in the Cranberry."

Dr. Eaton said he and Mrs. Kyte developed a numerical technique for breaking down yield into various components, such as flower per bush, length of stems, etc., and then measuring the relative importance of each factor.

"This provides a rational basis for deciding what research to pursue or what management practices to adopt," said Dr. Eaton.

He said that although he and Mrs. Kyte had used the cranberry for their research, the analytical system they had developed could be applied to interpretation of yields for many other crops.

My father used to say, 'Superior people never make long visits.'

—Marianne Moore

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weather watch

MASSACHUSETTS

June was a little on the cold side, averaging 0.8 degrees a day below normal. Maximum temperature was 85 degrees on the 15th and minimum 43 degrees on the 26th. Warmer than average days were the 7th, 15th, 16th, 23rd and 30th. Cooler than average were the 3-5th, 12th, 13th and 25th.

Rainfall was well below normal at 1.43 inches or about 1 3/4 inches less than normal. There was measurable precipitation on only four days, with .76 inch on the 18th as the largest amount and none recorded for the rest of the month. We are now about 8 1/4 inches above normal for the 1/2 year period and more than 7 inches ahead of 1978 for the same time.

This is probably the strangest spring frost season on record. No frost warnings until June 12 and then one on the 12th, 13th and 25th with close, scary nights on the 18th, 19th, 20th and 26th. The warning on the 25th was the latest on record and produced temperatures as low as 25 degrees in the Wareham area. There appears to be but very little frost injury. However, we will know better after the blossoming period. In comparison, there were also four warnings in 1978, 15 in 1977, 25 in 1976 and four in 1975.

I.E.D.

NOVA SCOTIA

The temperature for May averaged 12.6 degrees C. Celsius was considerably higher than the 50 year average of 10.3. Our rainfall was exceptional at 152.8 mm compared with a 50 year average of 69.3. Consequently, we are expecting some difficulties in maturing this year's crop.

The maximum temperature at Kentville in June was 31.0 on June 16 and the minimum was 3.5 degrees C on June 26. Precipitation for the month was 87.4 mm.

I.V.H.

WASHINGTON

May maximum temperature was 73 degrees on the 26th and minimum 37 degrees on the 13th and 14th.

Precipitation totaled 3.31 inches, above average for May, but the average for the first five months of 1979 is 7.67 inches below the overall average.

The maximum temperature for June was 71 degrees on the 1st and the minimum was 38 degrees on the 14th. The precipitation total was 1.60 inches, raising the shortage of moisture to 8.92 inches below average for the January to June accumulation. Growers are irrigating 4-7 hours per week, depending on the conditions of their particular bog.

A.Y.S.

WISCONSIN

Temperatures during June averaged slightly below average. The first half of the month had above normal temperatures, while the last half was cooler

than usual. Rainfall during June averaged about 1/2 inch below average for the state.

Temperatures in the first week of July were below normal, due to several cool nights. Daily highs were in the pleasant 70's and 80's, with overnight lows in the 40's and 50's. Rainfall totaled about 1/2 to 1 inch statewide on July 2-3, although severe storms in a few areas brought locally heavy amounts in excess of 3 inches. Hail accompanied some of these storms.

—Wisconsin Agriculture Reporting Service

In my country, as in yours, public men are proud to be servants of the state and would be ashamed to be its servants.

—Winston Churchill
before Congress



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OCEAN SPRAY ISSUES COMMERCIAL PAPER

Ocean Spray Cranberries, the nationwide growers cooperative with more than 800 cranberry and grapefruit growers, last month became only the fourth pool marketing cooperative in the country to issue commercial paper, a form of short term securities.

Commercial paper is unsecured and only businesses with a high credit rating can obtain funds in this way.

Ocean Spray's chief financial officer, Alvin E. Wanthal, noted that the issue will place Ocean Spray, one of 7,500 cooperative businesses in the nation, in the company of some of the largest and most prestigious corporations

in America.

"Land O' Lakes, California and Hawaiian Sugar, and Sunkist are the only other pool marketing co-ops to have commercial paper ratings," he added.

OCEAN SPRAY carries a commercial paper rating of A-1 from Standard & Poor's, the highest rating issued by that firm. The cooperative's commercial paper also carries an F-2 "Investment Grade" rating from Fitch Investor's Service.

Ocean Spray initially will offer \$15 million in commercial paper, to be sold exclusively through Goldman, Sachs & Co. of New York and issued by the Chemical Bank of New York.

Wanthal explains that funds obtained through sale of paper will be used solely for the cooperative's seasonal financing needs.

Ocean Spray currently reports annual sales of some \$160 million and equity of

\$28.4 million. The cooperative ranks 839 in Fortune Magazine's list of the top 1,000 industrial firms in America.

GROWERS CITE GAS PROBLEMS

By MICHAEL COUTURE

Southeastern Massachusetts growers have felt the gasoline crunch in more ways than simply not being able to get needed fuel. It seems that growers are perplexed about how to prove they are really farmer-growers entitled to 100 per cent allocation for fuel needs.

In their distress, the growers have sought the aid of an old friend—the University of Massachusetts Cranberry Experiment Station in East Wareham. At a recent seminar on pesticides and herbicides at the station, several growers described their frustration at not being able to prove their occupation to gasoline station operators.

"He (operator) tells me I need something in writing," said one grower.

Another said that the state Farm Bureau has farmer identification cards but had not heard of their distribution to cranberry growers. Irving Demoranville, "Dee" to most growers who know the station scientist, said he was looking into some form of identification with the bureau.

"They (the bureau) indicated they were working on it," Demoranville said, "but there's nothing yet." So, all growers can do is hold their breaths and wait.

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976	Response of Cranberry Bogs to Sulfur-Coated Urea	1.75

(continued from page 7)

especially on Howes, from various causes.

No one knows at this time if the cold nights in mid and late June caused any injury. Pollination weather has been very good and some set is showing, but it is too early to make any judgment yet. Even though there has been little rain in June, bogs are generally not suffering any drought because of constant sprinkling on cold nights.

Prospects appear to be good at this time and we should have one of our better crops, probably in excess of 1,000,000 barrels.

Dr. Charles Brodel from Cornell University began work as the Cranberry Station entomologist June 11. "Chuck" will be working closely with the staff and growers as Bill Tomlinson did in the past. We are very happy to have him and are looking forward to a long and productive association.

Dr. Chester E. and Mrs. Cross left June 22 for a combination of work and vacation on the West Coast. "Chet" was a speaker at the Washington Cranberry Grower Field Day June 29 and he and Mrs. Cross planned to visit the cranberry areas in British Columbia, Washington and Oregon as well as take other botanical side trips.

Bill King is the new land use administrator at the Massachusetts Department of Food and Agriculture.

Like Father Scientist, Like Son Scientist Department: Jonathan B. Zuckerman, son of Dr. Bert Zuckerman, plant pathologist and nematologist at the Cranberry Experiment Station, received a first prize and the Arthur D. Little Scholarship Award for his exhibit, "Molecular Probes for Studying Cell Membrane Properties," at the 30th annual Massachusetts State Science Fair. Zuckerman, a junior at Dartmouth High School, plans a career in medical research.

Nova Scotia

By IVAN V. HALL

I visited some bogs in the Aylesford, Nova Scotia area on July 10 and nearly all florets were in bloom. Some pinhead berries also were noted. A moderate force of wild

bees were found, supplementing a force of honeybees.

Oregon

The Bandon Cranberry Festival will be held Sept. 13, 14 and 15.

Wisconsin

By VERNON GOLDSWORTHY

The crop is about 10 days to two weeks late, but everything else is good so far, and indications are for a good crop. Insects are no worse than usual and most growers are getting in some bees for pollination.

There has been quite a lot of replanting and some new planting being done and most everything that is being planted is pretty much in Stevens or Ben Lears.

It looks like the cranberry growers are going to get good prices this year for their crop and there seems to be not enough cranberries to take care of the demand. The big increase in sales is due to cranberry juice, which has grown by leaps and bounds.

Growers are anticipating putting in some new acreage next year and I imagine about the same as this year. I am sure the same will be true in most other growing areas.



Andrew J. Murray



George H. Kilpatrick

OBITUARY

MARIE BRATENG

Marie Brateng, 84, of Long Beach, Wash., owner and operator of a cranberry farm with her husband until 1954, died recently in Long Beach.

Mrs. Brateng's husband, Carl, died in January of this year.

She was born in Polk County, Minnesota. Very active in the Grange, she was a member of the Long Beach Grange. She also belonged to the Lutheran Church.

Mrs. Brateng is survived by three sons, Norman, Erling and Clarence, of, respectively, Long Beach, Ilwaco and Longview, Wash.; two daughters, Palma May of Long Beach and Helen Danielson of Kelso, Wash.; 10 grandchildren; 10 great-grandchildren; and a brother and sister, George Bugge and Hilda Wennberg, both of Minnesota.

Services were held at Penttilä's Chapel by the Sea in Long Beach. Interment was in Lone Fir Cemetery.

PROMOTIONS MADE AT OCEAN SPRAY

Andrew J. Murray, formerly director, retail sales, has been promoted to vice-president, sales, at Ocean Spray Cranberries, and George H. Kilpatrick has joined the company as vice president, domestic marketing.

The announcement was made by president Harold Thorkilsen.

Both men will report to Patrick M. McCarthy, senior vice president, marketing.

Murray came to Ocean Spray in June 1971. He has played a central role in the company's national sales effort by directing Ocean Spray's field sales organization across the country.

Before joining Ocean Spray, he held various key sales management

(continued on next page)

INSECTS, WEEDS . . .

(continued from page 4)

a 24 C clearance for next year or the year after."

Another weed control, diquat, might be able to get the same clearance by 1980. State clearance for another herbicide, 2,4-D, has come through. Dr. Devlin warned growers who were using it not to walk through weeds already sprayed because the chemical could then be picked up on clothing or shoes and transmitted to cranberry vines, thereby killing them.

A relatively new chemical, devrinol, has state clearance and is producing positive reports on its use for sedges and nutgrass, Dr. Devlin said. A grower said it also was effective on rushes and carex crumps.

Tomlinson introduced Dr. Charles "Chuck" Brodel, the entomologist hired to replace him at the station.

PROMOTIONS MADE . . .

(continued from page 14)

positions at Sara Lee and the Quaker Oats Company's Burry Biscuit

Division.

Kilpatrick comes to his new post from another leading cooperative, Land O' Lakes, where he was vice president, new products. He has also served as vice president for marketing and sales at Hanover Brands Inc.; as a marketing executive with Welch Foods Inc., and as a field salesman with the Campbell Soup Co.

Kilpatrick holds BS and MBA degrees from Cornell University.



There's more to summer drinks than iced tea and lemonade. What's new and fun and delicious are fruit juice based coolers. Take

cranberry juice cocktail, add a bit of this and that and suddenly you've created a new drink.

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6 cups cranberry juice cocktail
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1 orange, sliced
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Sugar to taste

In a tall pitcher, mix together cranberry juice cocktail, wine and sliced fruits. Sweeten to taste. Chill several hours to blend flavors. Serve in large wine glasses with fruit. Makes 12 servings.

CRANBERRY CORDIAL

1½ cups cranberry juice cocktail
¼ cup sugar
½ cup vodka

In a saucepan, mix together cranberry juice cocktail and sugar. Bring to a boil; boil for 10 minutes. Cool. Stir in vodka and pour into bottles. Chill until ready to serve. Makes about 2 cups.

Partisanship is our great curse. We too readily assume that everything has two sides and that it is our duty to be on one side or the other.

—James Harvey Robinson



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Bog sales boom, broker says



BEATON studies the maps of some bog property.

Douglas R. Beaton spread his index finger and thumb about 2 inches apart.

"Three years ago, I had a stack of listings that thick," he declared.

"This year I've got a list of buyers that thick."

Massachusetts broker Beaton said this year transfers of cranberry bogs have far surpassed anything he has seen in his seven years in real estate.

"I'VE GOT a lot of young people asking, 'Where can I buy a bog?'" he said. "Many of them have little or no cranberry background. But they're being successful at it."

He cited two men in their 30's. They went to Cornell University together. One is a banker, the other is a veterinarian. They've

decided to become partners in cranberrying and have asked Beaton to look for property.

Those looking for easy money in growing won't find it, unless oil is found on their property, he warned.

"But if they're not afraid to work, to get their hands dirty, they can do all right," he added.

"Three years ago, cranberries were being dumped. Today the world's screaming for cranberries."

Real estate began as a sideline for Beaton and still is. He's part of Beaton's Cranberry Grower's Service, operated by himself, his dad, Kenneth, and his brother, Peter. The company provides harvesting, sanding, netting, mowing and other services. In addition, there are about 700 acres of bog in the family.

COVER PHOTO

BETH Johnson, guide at Cranberry World, shows visitors an old hand scoop. Beth, who lives in Carver, Mass., grew up in a cranberry growing family. Story on page 8.

(CRANBERRIES Photo)

Through the company, located in West Wareham, Beaton, 36, ran across some people who wanted to sell, others who wanted to buy, and out of these encounters grew the real estate business.

"I consider this another service," he said, "fitting the right people together."

BEATON'S DAD and uncle came to Massachusetts from Prince Edward Island around the turn of the century. His father, who is now in his 60's, borrowed \$500 to start his first bogs.

The good looking, gregarious Beaton, a graduate of the University

(continued on next page)

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BOG SALES . . .

(continued from page 3)

of Rhode Island, worked "inside" for a major farm supply company for a year, then realized it was going to be life in the bogs for the rest of his life.

"I fall asleep on asphalt roads," he cracked, while driving along bumpy roads with this writer for a bog inspection tour.

"You know," he said, "this is the best business in the world. I wouldn't want to do anything else."

AN INVETERATE grower, he has put 700 grape vines into his upland. Working with a wine expert, he hopes to develop a wine that'll make French vintners green with envy.

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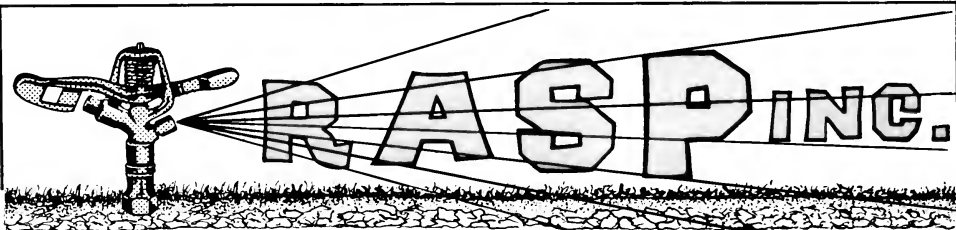
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SOME day a good table wine, Beaton says. (CRANBERRIES Photos)



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Bugs



Turnabout foul play

A nation is in a bit of a pickle when its sense of ease hinges too much on what's happening in Washington.

But the speech of President Jimmy Carter several fortnights ago was legitimate cause for a bodily shiver or sense of alarm.

The nation's leader had been informed via the polls that there was a lack of confidence in *him*. So what does he do? He tells the American public in a lengthy sermon that it is suffering from lack of confidence in *itself*.

The performance was more saddening than infuriating. Carter is a warm, friendly, decent, intelligent human being who obviously was undergoing—hopefully, temporarily—a personal crisis of despair and confusion of purpose.

The ensuing cabinet shakeup, the dumbly devised loyalty test for government employes and Carter's amazing flip-flop on key Middle East issues further diminished confidence in his capacity for his job.

What Americans needed to hear instead of pious scolding was some good, hard sense about energy and stagflation (yes, that word can be revived).

What, you might ask, has all this got to do with cranberrying? Well, the tone set in Washington does have something to do with the general state of the economy. And the general state of the economy has a lot to do with cranberrying and everything else.

Little minds are interested in the extraordinary; great minds in the commonplace.

—Elbert Hubbard

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Chiropractic's loss is entomology's gain

By MICHAEL COUTURE

Dr. Charles Brodel might be cracking necks and straightening out other problems of the spinal cord today if his youthful ambition to be a chiropractor had been fulfilled. Instead, he's at the University of Massachusetts Cranberry Station in East Wareham, giving advice on his field-entomology.

THE 31-YEAR-OLD Long Island, N.Y., native is the newest addition to the scientific staff at the station, replacing William E. Tomlinson, who retired recently after many years of service.

Preferring to be called "Chuck," the personable Brodel is enthusiastic about his position at the station because of the opportunity to both teach and do research.

While a student at Cornell University, Brodel worked summers at the New York State Agricultural Experiment Station in Geneva, N.Y. It was then that he branched out into berries—cranberries, blackberries, raspberries, strawberries—and apples and cherries.

"The state has a good setup for small fruits," he said. "I worked with Professor George Schaefer,

who was interested in insects, such as aphids, and the viruses they transmitted to plants."

Brodel began studying the relationship between aphids, viruses and raspberries. He became interested not only in the acquisition of viruses by plants but also the transmission of virus from plant to plant.

He explained that plant viruses cannot be transmitted to humans or pets.

His studies also included the resistance of various plants to

viruses. Certain varieties of raspberries were especially resistant to the viruses, he noted.

In his work with berries, Brodel observed similarities among pests, such as the Eastern raspberry fruitworm and the cranberry fruitworm. Both consume the fruit but the cranberry fruitworm is more destructive, Brodel says.

BRODEL was at Cornell when he was drafted in 1971, during the Vietnam conflict. Although his studies were in biology, chemistry, education and entomology, the Army—in the kind of manpower matchup it is frequently noted for—put him in the MP's.

However, he was soon assigned to work that kept alive his interest in insects. Attached to the Letter-



DR. CHARLES BRODEL makes a bog inspection.

(Photo by Michael Couture)

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man Army Institute of Research, he studied the effect of various mosquito repellents on humans. The task was vital because of the problems troops in Vietnam faced with the bug.

"Conscientious objectors who had volunteered were used in the experiments and it was found that the most effective repellent was one used during World War II," Brodel said.

Returning to Geneva, N.Y., when his service time was up, Brodel earned enough credits to bypass the master's program and go directly into the doctoral program.

He said: "I found out one thing about earning degrees, something I learned from an older woman who ran a rooming house where I stayed—be persistent. You don't have to be the most intelligent person to get a degree, but you must persevere."

POSSESSING a love of the outdoors, based in part on his days in upstate New York, Brodel looks forward to the time he'll spend in the bogs. If not for that love, he'd have gone into industry or teaching.

Of course, working with growers will satisfy his desire to instruct. The diversified work suits him and, in some ways, fulfills the idealism of his younger years when he wanted to help eradicate the ravaging of the world's food supply by insects.

A realization of the importance of cranberries to Massachusetts has deepened his enthusiasm for his new post.

PVC MAKES RULE BOOK

Charles W. Harris of Charles W. Harris Co. Inc., North Dighton, Mass., irrigation specialists, thought it about time that PVC (polyvinylchloride) pipe was formally included in the USDA's Soil Conservation Service regulations for cranberry bog sprinklers.

Harris has been using the pipe in bog sprinklers ever since it came on the market 10 years ago.

With an assist from J. Stanley Norton of the Cranberry Experi-

ment Station in East Wareham, Harris' cause bore fruit. PVC is now part of the minimum depth regulations, to wit:

When polyvinylchloride (PVC) pipe is installed on cranberry bogs the minimum depth of cover shall be 12 inches where the winter flood will equal or exceed 12 inches, or a depth that will place the top of the pipe at least 24 inches below the water surface where the winter flood is less than 12 inches.

The change will be subject to review in April 1980, notes Edward G. Konieczny, SCS's district conservationist.

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THOUSANDS visit the admission free cranberry exhibit annually.

Visitors center schedules events

Besides its regular exhibits, the Cranberry World Visitors Center in historic Plymouth, Mass., will feature a concert and two art displays in September.

The concert will be given Sept. 16 from 1 to 3 p.m. by the Silver Stars Steel Orchestra. In the art gallery during the month will be bird carvings by David Murray and bird photographs by Werner Meinel.

Visitors to Cranberry World will continue to see a wide range of regular exhibits, including antique harvesting tools, sight-and-sound shows, old and contemporary

machinery, a diorama of a working cranberry farm, three mini-bogs and assorted artifacts tracing the



GUIDE Larry Cole explains the operation of an early separator. (CRANBERRIES Photos)

history of the cranberry from pre-colonial days to the present.

Admission free Cranberry World is located on the waterfront, about 10 minutes on foot from Plymouth Rock.

Visitors also can avail themselves of free cranberry recipes and refreshments and cooking demonstrations.

Guides are available to explain the machinery, harvesting techniques and other subjects. Among the guides are veteran grower Larry Cole and Beth Johnson, daughter of grower Charles Johnson. When Beth isn't guiding, she's studying international marketing at Bentley College.

In October the collages and oils of Brooks Kelly and the sculpture of Dennis Kowal will be featured.

In November the portraits and townscapes of Thomas Brady will be displayed.

Groups must make reservations. Information can be obtained by calling or writing Cranberry World Visitors Center, Ocean Spray Cranberries Inc., Plymouth MA 02360.

Read CRANBERRIES

The cranberry bogs of Long Island

By TIM HUSS

Conclusion

Drive the roads along the Peconic today and you can still see the remains of the old bogs. The Woodhull bog at Sweezy Pond is now a part of the Suffolk County Park system. The old David bog at Swan Pond is visible from River Road near the present day site of the Grumman plant in Calverton.

No longer managed or harvested, the cranberry plants in the bogs have decreased as the other naturally occurring species have seeded in, taking their natural place in the bog ecosystem.

THE NATURALIST finds these bogs unique and interesting habitats. Many species of plants that flourish on the bogs are difficult to find elsewhere on Long Island. There are the insect-eating pitcher plants and sundews, for example, and the rare and protected white fringed orchid. Animal life is equally unique, especially for an area where habitats are rapidly disappearing.

The old ponds that were once so important as a source of flood water now support sunfish, chubsuckers, pickerel, and others. Amphibians and reptiles, like the large spotted salamander, green frog, hognose snake, milk-snake, musk turtle and painted turtle, commonly use these wetlands for breeding and feeding areas. Song birds, shorebirds and waterfowl also find the bog and its surrounding aquatic and upland areas a reproductive feeding and nesting habitat. The list of mammals living on or near the bogs is long and varied—mink, skunk, weasels, muskrats, bats, and flying squirrels.

BESIDES PROVIDING habitat for a number of rare and unique species, the bog vegetation and soils filter out potential water pollutants and stabilize the

watershed, thereby helping to maintain the water quality of the Peconic River.

For these reasons environmentalists argue that the bogs should be preserved and protected from development. The bogs that are still in private ownership, however, are subject to development and, with no other way to use these lands, many owners are looking for buyers. The fate of these bogs will be decided by the New York State Department of Environmental Conservation in hearings held under the present Freshwater Wetlands Law.

Fortunately the park system of both Suffolk County and New York State will protect many of the bogs. In addition to the County Park at Sweezy's Pond, a state park soon to be established in East Hampton at Napeague Meadows will protect some last remaining patches of natural cranberry bogs.

IT IS GOOD that these wetlands are protected, for whether one is a naturalist looking for rare and unique species or just someone looking for a peaceful walk in the outdoors, the cranberry bogs are a beautiful and fascinating place to visit.

Here during the season one can sample the fruit that was once so important to the local economy of eastern Long Island. The decaying Weirs and dams serve as reminders of days gone by, when a few Long Island millers had to dramatically change their lifestyles and the shape of the land around them in order to survive along the banks of the Peconic.

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Western yield high, says Eastern scientist

By MICHAEL COUTURE

The average barrel per acre yield of cranberries in the West and British Columbia impressed Dr. Chester Cross of the University of Massachusetts Cranberry Experiment Station in a recent trip to those areas.

DR. CROSS was particularly impressed with the yield in British Columbia, which amounts to 165 barrels per acre. Oddly enough, the growth of the berries in the province was initiated by three former Carver, Mass., residents who decided to move to British Columbia.

One, James Thomas, is still in the cranberry business and showed Dr. Cross some of the bogs. Dr. Cross said Thomas is slowly getting out of the business and going into blueberry growing, a more profi-

table venture because of the 80 cents a quart sales price as compared to 20 cents for cranberries.

Despite the average yield ratio, Dr. Cross says, the good growers in the West can raise good crops but then so can the good growers in Massachusetts.

"You can't go by the average all the time," he remarked. "I came back reassured that we in the business here can be competitive with those in the West."

Dr. Cross says he knows a Middleboro, Mass., grower who has raised early blacks, dry picked to the amount of 2,930 barrels on 10 acres.

ONE MAJOR FACTOR going for the Western growers, according to Dr. Cross, is the relatively mild, rainy climate that provides little frost, thereby eliminating the

constant need for sprinklers that growers experience in the Bay State.

Moreover, the Western growers are sophisticated in protecting their bogs from frost, to the point of installing thermostats on the sprinklers, he said.

Dr. Cross said the British Columbia bogs are still new in comparison to Eastern bogs, and, therefore, are not subjected to the heavy incidences of insects, fungus and diseases accumulated over the years in Massachusetts bogs. He added that the mistakes created over the years in the East have not been repeated in the West.

RESANDING of bogs is a very expensive operation for the Massachusetts grower and is avoided by Western states. Again, this is another factor that leads to a bigger yield with a minimum of expense, Dr. Cross said. One of the things he intends to experiment with is the need or lack of need for sanding.

Although a great deal of bog building is taking place in Oregon,

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Dr. Cross said the acreage is not substantial. Growers there, he added, reap a good harvest with the Crowley berry, with which the Eastern growers have not had much success. The reason for this, according to Dr. Cross, is that conditions are good in Oregon for the long dormant period necessary for the Crowley.

Oregon growers, he added, can attain 300 barrels per acre with the Crowley and 150 an acre with the McFarlin, which was brought to the state from Carver, Mass.

Investment Scoop

MARKET PLANNING

By **MARTIN B. PERSON JR.**
President, Gage-Wiley & Co. Inc.

Some of the best investment results I have seen over the years have been produced by those individuals who set out with a long term objective and stuck to it. Of course, developing such a program takes more time and care than many who want get-quick methods or instant gratification think they can spare in today's fast paced world.

FOR A FEW, the stock market is the place where you are expected to take considerable risk for the rare chance at a long shot big win. Maybe the risk is reduced by spreading the investment over a number of stocks, but the essential point—using this approach—is somewhat akin to the racetrack idea of trying for the big winner which will justify the other expected losses. Play the long shot. Think big.

For others, the stock market is the source of high dividends from high yielding stocks or generous income payments from corporate or tax-free municipal bonds. For this type of investor, once the basic decisions are made and the bulk of cash is put to work in the optimum choices available at the time, only a major change in the economic outlook will provoke more than a cursory glance at the underlying values. The investments were made carefully and conservatively in the beginning and they should

continue to produce without constant attention. Looking forward to the checks and clipping the coupons are the highlights to the typical income oriented investor.

But for most investors today, while the long shot winner would be great and a fat dividend check would help fill the gas tank, the real reason for putting money into the market is because it offers a reasonable expectation for the long term growth of their capital and the growth of their future income. This investor needs to start with an overall plan that takes into account present and future financial needs; a sort of personal balance sheet. The resulting review of income and expenses should reveal the size of a definite periodic investment to be made in securities that are carefully chosen for specific objectives.

MAYBE FARMERS are better able to appreciate the essential importance of long term planning because every day they deal with natural cycles and fluctuations within the broader scope

of programs which cover long periods of time. They know there are few shortcuts to success and that it takes patience and persistence to produce the best results.

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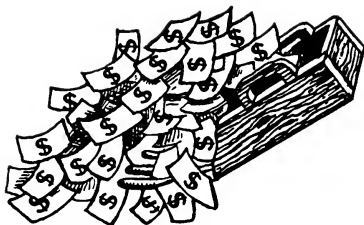
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Crop forecast for '79 given

By JOHN S. NORTON
Massachusetts Cranberry
Experiment Station

A cranberry crop of 1,198,000 barrels is forecast for Massachusetts in 1979.

This forecast is based on weather conditions during the bloom period of June 15 through July 20.

THE EFFECTS OF adverse conditions prior to June 15 are accounted for in the estimate of losses due to winter-kill, oxygen deficiency, spring frost, etc., that was provided by other members of the cranberry station staff. The weather factors that are used directly in making the estimate are daytime temperature, daytime precipitation and sunshine. It is felt that these are major factors influencing honey bee activity.

An extensive description of the process through which the formula was developed can be found in CRANBERRIES magazine, Volume 38, Nos. 4 and 5, August and September 1973.

THE WEATHER FACTORS have a numerical rating of "0" to "4" for each day of the bloom season. The value of "0" is ascribed to an ideal day and the value of "4" to a day when the bee activity would be very low. The intermediate numbers are for intermediate conditions relative to bee activity. In the formula, the numbers are known as penalty points. The smaller the total number of penalty points, the larger the crop will be, due to greater bee activity.

There were 31 penalty points during the 1979 bloom period. This is a very favorable value. This

would indicate that a crop of 880,000 bbls. could be anticipated if there were no water harvest and if the spring frost had been an average one.

However, water harvest has had the effect of increasing yields

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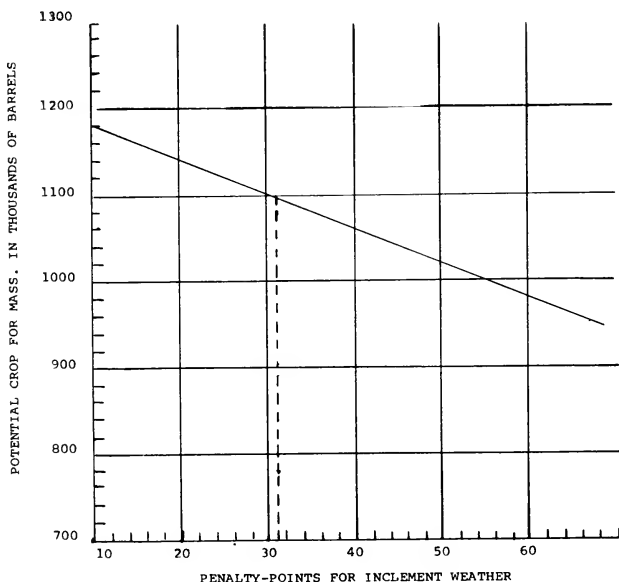


Figure 1. Relationship between weather during bloom period of June 15 through July 20 and the "Potential" cranberry crop for Massachusetts during a 10-year period. The diagonal line represents the crop actually harvested plus an estimate of the losses to frost, flood, drought, scald, etc.

after a few years, by about 65 per cent. This means that 40 per cent of the water harvested berries represent increased yields over what would have been harvested dry from the same area, if that area had never been water harvested.

I ESTIMATE that 550,000 bbls. of berries will be water harvested in 1979. Forty per cent of this amount, or 220,000 bbls., represents an increase over dry harvest. This 220,000 bbls. must be added to the 880,000 bbls.

An additional 100,000 bbls. is being added to compensate for the spring frost season being milder than usual.

These two additions bring the potential crop up to 1,200,000 bbls. (880,000 + 220,000 + 100,000).

It is estimated that 2,000 bbls. have been lost to hail. This reduces the potential crop for Massachusetts, as of July 20, 1979, to 1,198,000 barrels.

THE GRAPH represents the crops harvested during the last 10 years, with adjustments for losses due to the various factors. The diagonal line is drawn in a position that anticipates the water harvest of 550,000 bbls. of cranberries. The dotted line, extending vertically from 31 "penalty points," intersects the curve at 1,100,00. Because there were no losses to early spring frosts, 100,000 bbls. is added to this figure, producing 1,200,000 bbls. as the potential crop for 1979 before any losses are subtracted.

Obviously, if there are any measurable losses to the crop for any reason, such as insects, flood, drought, frost, etc., between July 20 and harvest, the amount harvested will be less than the above estimate by the amount of those losses.

**Be informed—
read CRANBERRIES**

weather watch

MASSACHUSETTS

July was hot and humid. Temperatures averaged 1.3 degrees a day above normal, which makes it the eighth warmest in our records. Strangely enough, we did not make 90 degrees. The warmest was 89 on the 22nd and 29th. Minimum was 49 degrees on the 5th and 6th. Warmer than normal periods were the 13th, 16th, 23-25th and 28th-31st. Cooler than normal days were the 1st, 4-6th, 11th and 12th.

Precipitation totaled 3.78 inches, which is 0.9 inch above normal. However, this followed the usual pattern in recent summers, with the largest storm of 1.97 inches in the early morning hours of the 1st and nothing of any consequence until 1.40 inches on the 27th. A month of much irrigation. We are over 9 inches above normal for the seven month period and 7 inches ahead of 1978 for the same time.

A final note: July was a month of great contrast. The month was one of our warmer ones, but on July 5th we issued a frost warning, the latest on record. The month was above normal in total precipitation, but was basically a droughty month. We recorded fog on 13 days, which is probably some sort of record, and the humidity was continually high for the last three weeks. Boston recorded 15 days with the dew point 70 or higher, the worst in 24 years.

I.E.D.

WASHINGTON

The total precipitation for July was 2.03 inches. Maximum temperature was 88 degrees F on the 16th and 17th and the minimum temperature was 41 degrees on the 2nd and 3rd. Moisture continued in short supply but not at a dangerous level as yet.

A. Y. S.

WISCONSIN

Temperatures averaged near normal

during July, but rainfall was below normal in most areas of Wisconsin. Rainfall became heavy in the southern half of the state during the first 10 days of August. Although they interfered with the harvesting of hay and oats, these rains improved crop prospects.

—Wisconsin Agriculture
Reporting Service

regional news notes

Massachusetts

By IRVING DEMORANVILLE

Dr. Chester Cross of the Cranberry Experiment Station and his wife, Shirley, returned recently from their West Coast trip. They thoroughly enjoyed it and have many fond memories of people they met and places visited. I have seen the pictures of the first part of their travels and they are marvelous. Chet admits that he saw some outstanding bogs in all cranberry areas in British Columbia, Washington and Oregon.

New Jersey

A new book on the Pine Barrens, the region in New Jersey where cranberries are grown, was published recently. Titled "Natural and Cultural Resources of the New Jersey Pine Barrens," it is edited by John W. Sinton, associate professor of environmental studies at Stockton State College. The book, published by Stockton's Center for Environmental Research in cooperation with Rutgers University and the state Department of Environmental Protection, is available by calling the center at 652-1776, Ext. 510.

Oregon

Cranberry princesses for this year's Bandon Cranberry Festival are Shelley Butler, Sandra Caldwell, Tara Herold, Debbie Richert and Joy

(continued on the following page)

REGIONAL NOTES . . .

(continued from page 13)

Rowell. The theme of this year's festival, to be held Sept. 14-16, is "Cranberries by the Sea."

Washington

By AZMI Y. SHAWA

Dr. George Eaton of the University of British Columbia presented a paper, "Cranberry Yield Component Study," at the annual meeting of the American Society of Horticultural Science July 30-Aug. 4 at Ohio State University. I traveled to Vancouver early in July to confer with Dr. Eaton on this project.

This writer presented a paper, "Effect of Nitrogen on 'McFarlin' Cranberry Pollen Germination and Yield," at the same ASHS meeting.

Wisconsin

George C. Klingbeil, who retired as University of Wisconsin extension horticulturist a couple of years ago, is a consultant for Young Seed Company and Nursery in Randolph these days. He told CRANBERRIES that he's getting in time these days for two of his favorite pastimes, fishing and traveling. He also found time last winter to teach a small fruits course at Michigan State.



There isn't a better way to start your fall baking than with freshly picked cranberries and juicy pears. Combine them for a succulent cranberry pear pie, in which the bright red berries peek out amidst the lattice top.

CRANBERRY PEAR PIE

3 cups (¾ lb.) fresh cranberries
1 cup water
1½ cups sugar
¼ cup cornstarch
¼ teaspoon ground cinnamon
2 cups pared sliced fresh pears
(three pears)

pastry for 2 crust, 9 inch pie

In saucepan, combine cranberries and water. Bring to boil; simmer 3 minutes. Mix sugar, cornstarch, and cinnamon. Add to hot cranberries; cook quickly, stirring constantly, until mixture thickens and bubbles. Remove from heat. Gently stir in pears. Turn into pastry lined 9 inch pie plate. Add lattice top; seal; crimp. Bake in 400 degree oven for 35 to 40 minutes.

Pedersen host in Wisconsin

The Stuart Pedersen family of Warrens played host Aug. 9 to a well attended meeting of the Wisconsin Cranberry Growers Assn.

THE EVENT featured exhibits of cranberry equipment and agricultural chemicals and supplies.

Dr. Malcolm Dana of the Department of Horticulture and Dr. Donald Boone of the Department of Plant Pathology, University of Wisconsin-Madison, fielded growers' questions.

The Pedersen Marsh comprises 45 acres of cranberries. The original planting was made by Pedersen's father in 1947.

The Pedersen's also operate the Jellystone Park campgrounds adjacent to the marsh.

Moderator for the meeting was David Olsen of the Monroe County Extension office.

Don Landgraf, association president, welcomed the group.

Attending were the Warrens Cranberry Festival princesses.

George Klingbeil gave the executive secretary's report.

Committee reports were made by Leo Sorenson.

Al Morrison, National

Weather Service, Milwaukee, spoke on the Cranberry Weather Service.

The program was sponsored by the University of Wisconsin-Madison and the Monroe County Extension, the growers association and the Wisconsin Department of Agriculture, Trade and Consumer Protection.

CRANBERRY EXHIBIT

Women volunteers from the cranberry growing region of Massachusetts will again operate the cranberry booth at the Eastern States Exposition in Springfield. The exhibit was a big hit last year.



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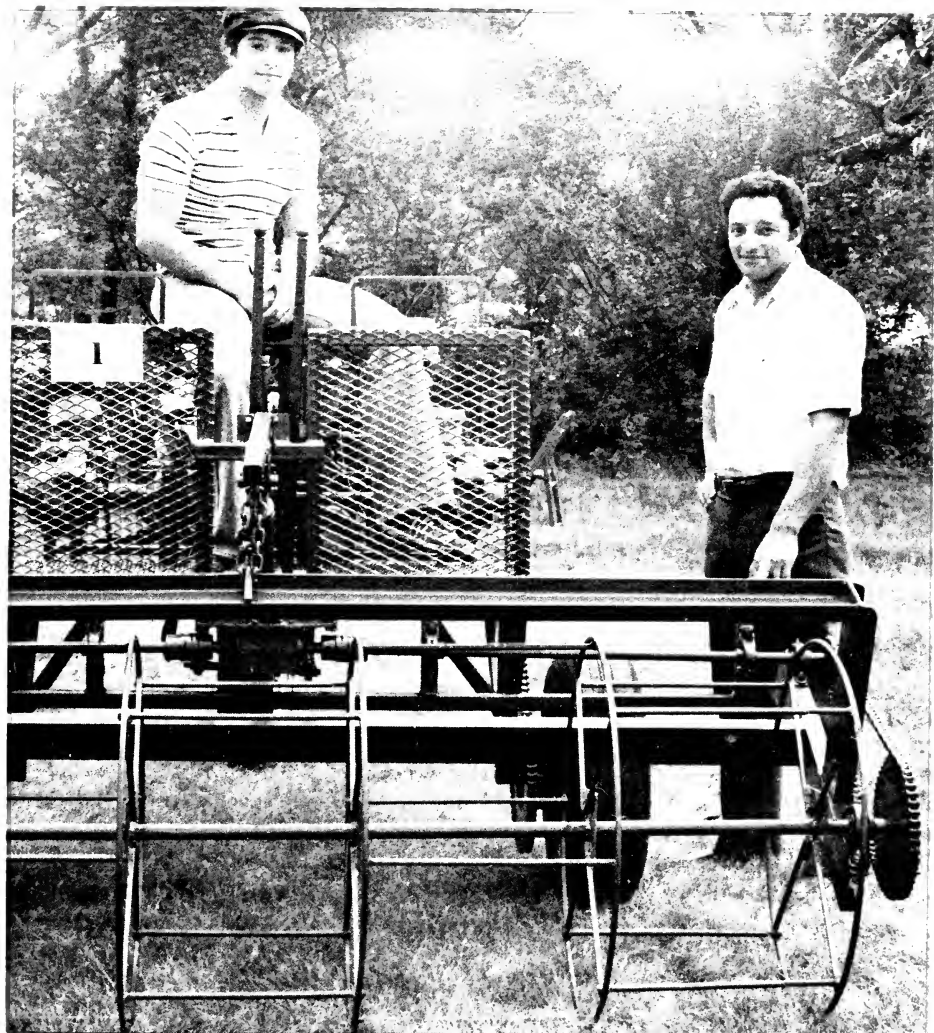
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CRANBERRIES

THE NATIONAL CRANBERRY MAGAZINE

Vol. 43, No. 9

October 1979



Grower meetings...2, 6

★★★★★

'79 crop estimate...4

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Contest, talks presented

By MICHAEL COUTURE

A contest featuring equipment fashioned by growers was one of the highlights of the recent annual Cape Cod Cranberry Growers Assn. meeting.

The 300 growers present had an outdoor luncheon of barbecued chicken, potato salad and (what else?) cranberry sauce and cranberry juice.

Dr. Chester A. Cross, long time director of the University of Massachusetts Cranberry Experiment Station in East Wareham, Mass., where the affair was held, told the gathering that grower inquiries are welcomed at the station.

Michael Poisson of the New England Crop and Livestock Reporting Service said that Massachusetts should continue its reign as the top cranberry producing state again this year, according to NECLRS estimates. But the predicted total—1,080,000 barrels—will be down about 8 percent from last year's record setting total of 1,180,000 bbls., he noted.

New officers voted in by the association for a two year term were: president, John C. Decas; 1st vice president, Clark A. Griffith; 2nd vice president, Paul Morse; secretary and treasurer, Irving Demoranville.

Dr. Cross mentioned that station staffer Demoranville recently received his full professorship from the University of Massachusetts.

Investigative newsman Wendell Woodman spoke on research he has done showing how the development of alternate energy sources had been hampered in the past by

government itself.

First prize in the harvesting equipment division of the contest went to Jim DiBurgo and his 18-year-old son, Gary, for their water reel. Gary built the machine, under his dad's supervision.

Winner in the all other equipment category went to outgoing president David Mann for his weed burner.

IN HIS TALK, Dr. Cross said this generation of growers has been faced with extensive federal regulation of pesticides and herbicides that other generations were not confronted with. But he assured growers that they could check with station personnel about the proper application of any weed or pest control.

A long time avowed supporter of the correct use of pesticides and herbicides, Dr. Cross nevertheless feels the government is too restrictive in its regulations.

He credited now retired but still active entomologist William Tomlinson and his replacement, Dr. Charles "Chuck" Brodel, with treating many bogs with orthene for brown spanworms, then consolidating data to be submitted to the Environmental Protection Agency.

Dr. Cross said he wanted the growers and Dr. Brodel to get to know each other just as they had gotten to know Tomlinson so well.

"And by working closely with (Brodel), you will find you don't run contrary to the regulations," Dr. Cross said.

In a light comment, Dr. Cross said the people "who pull weeds on cranberry bogs have the strongest fingers I have seen and the biggest feet." He mentioned, however, that the trampling of berries by feet was responsible for considerable losses and

recommended the use of chemicals. Devrinol, he said, kills other weeds besides nut grass and cut grass and more uses for it probably will be found.

BECAUSE GROWERS in Massachusetts maintain a consistent level of production, the state is a leader in national cranberry production, Dr. Cross said. He observed that he and his wife visited the western states and British Columbia this year with a feeling of "fear and trepidation" but later felt that the Massachusetts grower, when he uses his bogs wisely, can equal the production yield per acre in these areas.

Rainfall is a major aid to growing on the West Coast, where a state such as Oregon gets 122 inches annually, Dr. Cross noted. Also, growers in Oregon and Washington do not sand bogs, a task done every five to six years by Bay State growers, he added.

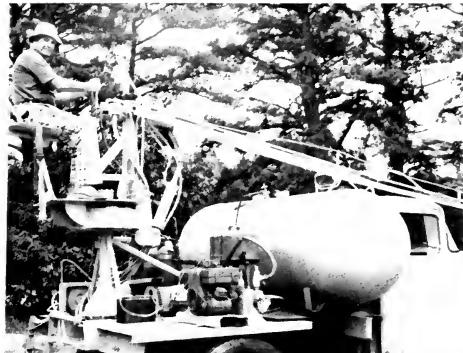
"We sand and pay the bill for expensive sanding equipment, but the people in Oregon and Washington are rebuilding their bogs and I haven't heard of that going on in Massachusetts," he declared.

John Barrus, former state legislator and now director of governmental affairs for the State Farm Bureau, told the audience that a key bill currently on Gov. Edward King's desk would enable growers to have farm registration plates. Optimistic about the bill's chances, Barrus said the bill cleared the House and Senate and now awaited King's signature.

COVER PHOTO

JIM DiBurgo, right, and his son, Gary, pose with their prize-winning water reel. DiBurgo operates 65 acres in Middleboro, Mass.

(CRANBERRIES Photos by Michael Couture)



DAVID MANN atop his weed burner.



DR. CHESTER A. Cross addresses the annual meeting.



PRESIDENT Decas, left, chats with Gilbert Beaton.



MARSHALL SEVERANCE, center, receives the door prize—a tool set presented by the Shuster Corp. of New Bedford—from Arthur Marshall, left, and Richard King.

CRANBERRIES Photos
By Michael Couture

regional
news
notes

Massachusetts

By IRVING DEMORANVILLE

Water supplies are in generally excellent shape, berry size is average or better, color is about natural for this time of the season. There may be some quality problems as the season progresses.

The official crop estimate released by the New England Crop Reporting (continued on page 10)

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MEMBER F.D.I.C.

Record crop forecast

The U.S. Department of Agriculture predicts that the 1979 cranberry crop will smash even last year's record breaker.

The agency's first forecast of production is for 2.49 million barrels, almost 1 per cent above last year's record breaking 2,458,500 bbls. and 18 per cent larger than the 1977 production.

Based on early August conditions, all states except Massachusetts expect increases from a year earlier.

The Massachusetts crop is forecast at 1.08 million barrels, down 8 per cent from last year's record crop, but 23 per cent above 1977. There was little frost damage in bogs and late rains have resulted in medium to large berries.

New Jersey expects a crop of 240,000 bbls., an increase of 8 per cent over last year and 53 per

cent above the short 1977 crop. Bloom was heavy but set and size of berries are only average.

Production in Wisconsin is forecast at 910,000 bbls., 11 per cent over the crop of 1978 and 7 per cent higher than in 1977. Although the season is one to two weeks later than normal, growing conditions have been favorable and there is a good set of berries.

Oregon expects a record crop of 109,000 bbls., 15 per cent above 1978 and 35 per cent larger than the 1977 crop. Growing conditions have been excellent thus far.

The Washington crop is forecast at 147,000 bbls., 6 per cent and 8 per cent over the previous two years, respectively. Winter damage was minor in the

North Beach and Grayland areas but damage was significant in the Long Beach area. Bloom was good, pollination weather excellent, and set and berry size are better than average.

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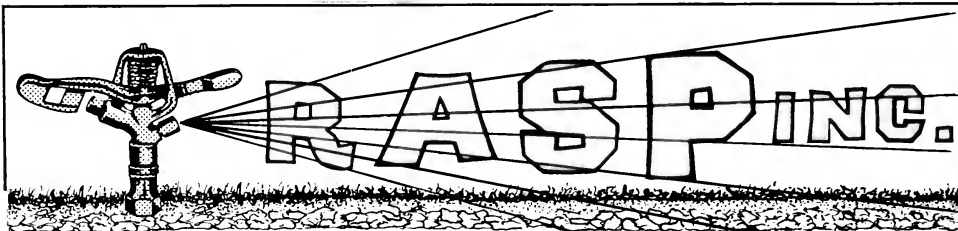
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editorial



Good year ahead!

The first forecast of U.S. cranberry production by the USDA is most promising. Should it come true, the cranberry crop will be a record buster for the second year in a row.

Small wonder if there are signs of buoyancy in the bogs.

Not only does the size of the crop promise to be excellent, but demand remains high and the good '78 price promises to at least hold.

There are small signs, too, of reasons for thumbs up. Buyers are looking for bogs. Investment in machinery and supplies is far from lagging. And more people are showing up at the annual growers meetings.

Massachusetts is the only cranberry growing state expected to produce a smaller crop this year, according to the USDA statisticians. However, John S. Norton, who is on the staff of the Massachusetts Cranberry Experiment Station, predicts that the '79 crop will exceed the '78 crop by 1.5 per cent. We're going to be optimists and go with John.

Most of the credit for the growers' good fortune should go, of course, to nature and the grower himself. But some credit is due the marketing people, food specialists and others for helping create new uses and fostering greater demand for that little red berry.

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Growers hear reports on cross-breeding, weeds

By MARY E. ARCHIBALD

Reports on an estimated record '79 crop, experimental cross-breeding and weed control were among the highlights of the Aug. 30 annual meeting of the American Cranberry Growers Assn. at the New Hedger House in Chatsworth, N.J.

JACK ST. PIERRE of the New Jersey Crop Reporting Service said that a record 2.49 million barrels is the first forecast for U.S. cranberry production this year.

New Jersey's expected crop of 240,000 barrels represents an increase of 8 per cent over 1978, St. Pierre said.

(See crop forecast story, page 4.)

WALTER FORT, New Jersey

field representative on the federal Cranberry Marketing Committee, reported that the total trade demand for cranberries this year was put at 3,155,000 barrels at a recent committee meeting in Wisconsin.

Fort said that smaller amounts of herbicide are used in Wisconsin than in New Jersey. Smartweed is a problem there, he added.

As in New Jersey, Fort said, deer plague Wisconsin growers. He said a property toured at the Wisconsin meeting had a year-round fence to combat the deer problem.

Heavy equipment is used in some Wisconsin cranberry areas, he said, such as a 30-foot beater on a picking machine that can harvest 24 acres a day. A ditch wheel is another innovation for

controlling weeds, he noted.

The Crowley vine, sturdy in New Jersey, is somewhat weaker in Wisconsin, Fort told members. In new production, the Stevens variety appears to be most successful.

After Fort reported that most Wisconsin cranberry acreage is under overhead irrigation, Charles Thompson, president of the American Cranberry Growers, added that New Jersey lags behind in sprinkler installation and that more sprinklers must be put in if the state is to increase its crop size.

DR. ERIC G. STONE of the U.S. Department of Agriculture gave a progress report on the USDA cranberry breeding program, in which 151 varieties—from New Jersey, Massachusetts, Washington and Wisconsin—are being

(continued on page 8)

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(continued from page 6)

rooted in the greenhouse at the Rutgers University Cranberry and Blueberry Experiment Station at Oswego.

A second greenhouse is expected to be completed at the station before cold weather sets in, Stone said.

Crosses have been made both in the field and in the greenhouse, he reported. Nicholas Vorsa, a Ph.D. candidate at Rutgers, has assisted in much of this work.

Crossing is time-consuming and Nick has spent three weeks "on his belly" in the bogs making crosses and closures, said Dr. Stone. Cages have been placed over the crosses in the bogs to prevent unwanted bee pollination.

In the greenhouse, 300 attempts to cross were made, 30 per cent set and there were 3,000 seedlings. One thousand crossing attempts were made in the bogs, 50 per cent set and there were 15,000 seedlings, cited Stone.

In all, 13 varieties made crosses at the bogs. Some of the lines made additional crosses, principally with Crowley. Crowley is becoming a more important variety, Dr. Stone said.

JOHN ROPES, director of grower relations at Ocean Spray Cranberries Inc., said the subject of the therapeutic value of cranberries is a sensitive one and that the words, "good for you," cannot be placed on a bottle for sales purposes.

No definite therapeutic claims may be made, he said, although cranberry products are used as an adjunct in therapeutic treatments.

Because urinary odor is a serious problem in hospitals and nursing homes, many institutions add cranberry juice to food, he observed. The juice appears to have an acidifying effect, reducing the odor.

SPEAKING ON WEED CONTROL, Dr. William Welker of the USDA commented that New Jersey has the "biggest and best weeds anywhere in the country."

He explained that compounds like glyphosate and Roundup have been screened. They had been found not to kill cranberries and sometimes to increase production, he added. The weed killer must be wiped on, not sprayed, he said.

The first wiping machine, developed in Washington, was not satis-

factory, Welker said.

Then Thomas Darlington of New Jersey invented a wiper which worked well as a research tool. Seven to 8 feet wide, it could do 2 acres a day.

It was found that the grower needed more wheel width, stability and lack of drip, Welker noted. A modified machine was then developed with a wider belt, larger sponge, double pulley and a tank to replenish solution.

It was also found that the grower needs a gravity system that is chain-driven. He needs to be told how much solution to use, how much to put on and how to stay out of trouble, Welker said.

A trigger may be used "with a slight head on it, also a fancy dribbler," said the USDA scientist.

If use is made of 2-4D, which, it is hoped, will be available next year, Welker said, there will be little problem of not getting enough solution on the weeds.

Fast control is not necessarily good control, he said. Some good compounds show no activity for two to three weeks, he explained.

If one or two weed species are missed, a grower might use a hand applicator consisting of a hockey stick with back pack and trigger, with a solution feeding through a plastic tube.

AFTER LUNCH a tour was made of the Rutgers University research cranberry bogs to see weed control plots, fertilizer plots, cranberry variety trials, the USDA greenhouse with its variety collections and weed control applicators, including spot treatment devices and weed wiping machines.

MARKETING COMMITTEE PREDICTS SALES DEMAND OF 3.15 MILLION BBLs.

The Cranberry Marketing Committee, at its recent annual meeting in Wisconsin Rapids, Wisc., voted to accept 3,155,000 barrels as the total sales demand for 1979.

The vote, based on a motion by Gilbert T. Beaton of Massachusetts, projected sales of 2,555,000 with a 600,000 barrel pipeline.

After a poll of members, it was voted to accept 2,502,500 bbls. as the estimated 1979 crop. The USDA projection is less—2,485,500 bbls.

Canadian production was estimated by the committee at 155,000 bbls.

With total estimated production of 2,657,500 bbls. added to an estimated carry-in as of Sept. 1 of 598,658 bbls. minus an estimated shrinkage of 130,000 bbls., total marketable supply

(continued on page 11)

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John Decas

Colorful headgear, battler with humor



JOHN C. DECAS, right, noted for his head-turning headgear, is the new president of the Cape Cod Cranberry Growers Assn. Next to him is David Mann, outgoing president. Dave doesn't do badly in the headgear department himself.

(CRANBERRIES Photo by Michael Couture)

By **MICHAEL COUTURE**

Although he doesn't knock formal education, John C. Decas, newly elected president of the Cape Cod Cranberry Growers Assn., said a summer spent at the UMass Cranberry Experiment Station in East Wareham, Mass., really taught him the rudiments of cranberry growing.

"I worked that one summer as a laborer and learned more here than in all the time I spent in college," Decas said.

The well spoken graduate of the Stockbridge School of Agriculture at the University of Massachusetts explained that college was a multi-faceted experience but that the station was geared exclusively to production-experimentation in cranberries.

When he worked at the station, Dr. Chester A. Cross, director, and Irving "Dee" Demoranville were there—as they are now—so the younger Decas feels he learned his trade well.

At least his experiences were pleasant and rewarding enough to encourage him to stay in the business that his father and uncle founded in 1932 on the advice of another well known cranberry man, L.B. Handy. They started with 10 acres and today the business has 400 acres.

"I CAME OUT of the Army and got into the business because I was fascinated by it," Decas said. "Funny, but I got into it in the same year (1959) that the famous cancer scare came about because of (amino triazole) used as a weed killer. HEW said the chemical caused cancer and it was a difficult time. We had 40 car-loads of berries canceled within an hour and a half."

Decas is easily recognized among growers because of his colorful headgear. He is constantly with a cap or hat upon his head,

(continued on next page)

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DECAS . . .

(continued from page 9)

the most famous being a plantation hat worn by Charlton Heston in a film.

The new president is well known in his hometown of Wareham not only because his family has had the cranberry business for all those years, but also because he has been in the front line of town politics.

He served on the school committee for 13 years and the finance committee for seven.

His years in town government have been marked by such controversial issues as whether to build a new high school to relieve double sessions. Decas has taken a tough stand against school vandalism and jumped into the middle of a fray over whether a gay rights speaker should address high school students. He opposed the idea.

All the while, Decas kept intact his sense of humor, which can be good natured or biting, depending on the situation.

"I HAVE FOUND that the industry, including my own business, has had to rebuild itself . . . grow with the times . . . become innovative rather than conservative, such as in the use of sprinklers," Decas remarked. "I would say that we were one of the first major growers in the area to go 100 per cent with sprinkler systems."

In 1962 he was elected independent representative on the Cranberry Marketing Committee from Massachusetts and now remains as the only original member left on the body. Also, he was once chairman of the Rochester Growers Assn., which embraces an area where his firm has property.

He says the Cape Cod growers association "has made some liberal changes in the past few years to meet the needs of the times."

He credits outgoing president David Mann with having done an excellent job.

The biggest challenge facing growers, he said, will be the need to produce enough berries to keep up with demand.

"I maintain that the growers, with

the revenues produced due to good prices and large sales, will meet the challenge. I think we will find the need of the country for cranberries can be fulfilled without any new acreage being developed. This can be done through new growing methods and additional monies to invest into present bogs."

REGIONAL NOTES . . .

(continued from page 3)

Service for Massachusetts—1,080,000 barrels, down 8 per cent from last

year's record crop—is probably not far off the mark even though some think it is high.

The crowd of more than 300 at the 92nd annual meeting of the Cape Cod Cranberry Growers Assn. meeting was the largest in many years.

The new officers are cited in Michael Couture's story on page 2. New directors are Chris Makepeace, Doug Beaton and Wilho Harju. They replace Al Pappi, Bill Atwood and Ken Beaton, who served the

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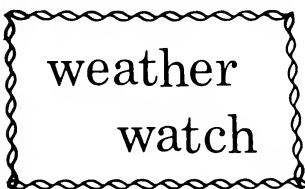
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association for many years and deserve special thanks. We will miss their advice and counsel.

Dr. Robert M. Devlin presented a paper at the Plant Growth Regulator Conference in Las Vegas in August.



MASSACHUSETTS

August temperatures averaged 1.3 degrees a day below normal, the coolest August since 1968. Maximum temperature was 8.8 degrees on the 1st and 2nd and minimum was 49 degrees on the 16th. The only warmer than average period was the 1st-3rd.

Cooler than average periods were the 11-13th, 15-20th, 22nd and 23rd.

Rainfall totaled 5.89 inches, which was 1.6 inches above normal. There was measurable rain for 12 days, with 2.51 inches on the 4th as the largest storm. Total for the year is about 10½ inches above normal and 8 inches more than in 1978.

I.E.D.

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MARKETING . . .

(continued from page 8)

was figured to be 3,126,158 bbls. for '79.

Chairman Charles S. Thompson Jr. of New Jersey referred in his report to the need for an allotment program in 1980 to help strengthen the position of growers.

IT WAS VOTED that Thompson should appoint a subcommittee to select a public member for the Cranberry Marketing Committee.

Member Norman I. Brateng was appointed by Thompson to find a fieldman for Oregon.

In other action, the committee voted not to change the fieldwork situation in Massachusetts, to distribute a newsletter after the annual meeting and to submit a monthly article to CRANBERRIES magazine, to have the original subcommittee meet before the February meeting to review the reserve percentage to be used regarding the 1980 crop, to distribute the entire 2 per cent "new grower" pool, to hold the next committee meeting in February in New Jersey, to continue the assessment rate at 3 cents a barrel, to budget \$1,800 for postage and mailing and to continue the manager's salary at the same level.

Besides Thompson, Beaton and Brateng, other members present were John C. Decas, Richard H. Indermuehle, Clare L. Searles. Alternates present were Robert B. Hiller, Russell M. Lawton, Alvan R. Brick, Stephen V. Lee III, Patrick A. Getzin, Donald G. Hatton.

Also present were fieldmen

Walter G. Fort and Clayton L. Garnett, manager Charles F. Hastings Jr., USDA representative Ronald L. Cioffi and Wisconsin growers Leo Sorensen, John Gottschalk, Robert Gottschalk, John Rezin, Thomas Harkner and Donald Duckert.

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1 package (3 ounces) raspberry flavored gelatin
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In a saucepan, heat cranberry juice cocktail to boiling; stir in raspberry gelatin until dissolved. Stir in cranberry sauce. Stir until mixture is thickened. Fold in whipped cream and pour into serving bowl. Chill until firm. Makes 6 to 8 servings.

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Cranberry storage...3

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Price controls...4

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Cranberry storage results are given

By JOHN S. NORTON,
Agricultural Engineer,
Massachusetts Cranberry
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INTRODUCTION

In the fall of 1978, a study of refrigerated bulk storage of cranberries that was initiated in 1976 was continued.

The objective of the experiment is to develop a container design and ventilation system that will permit the storage of fresh cranberries in 1,000 lb. containers, for extended periods of time, with no greater storage losses than would occur in field-boxes stored under the same conditions.

Experiments in cooperation with Ocean Spray Inc. in 1964-66 indicated that such a system would be possible.

The need to have such a system will arise when a dry harvester with the capacity to harvest two or three acres of berries a day is developed. It will be well to have the system perfected when that day arrives!

EXPERIMENTAL PROCEDURE

Howes variety cranberries from the State Bog were harvested on October 23, 1978 and placed in common storage until Nov. 9. On Nov. 9 they were weighed, samples were taken to determine the percent field-rot and four bulk bins were placed in the cold storage room and filled with berries.

Two bins contained about 1,000 lbs. each and two contained 700 lbs. each. Six field-boxes, containing a total of 203 lbs., were placed in storage as controls.

The berries were removed from storage and screened on Jan. 19,

1979.

It was intended that the berries should be stored at 35 degrees F and 70 percent R.H. But considerable difficulty was experienced in lowering the temperature to 35 degrees.

The evaporator coil iced up rather quickly, rendering the cooling unit ineffective. It had to be defrosted frequently.

On January 2, the compressor was placed on a controlled, intermittent operation, with four, two hour off periods every 24 hours. This allowed sufficient time for defrosting of the coils with only about a 2 degree rise in storage room temperature. The relative humidity remained between 68 percent and 75 percent throughout the storage period.

In addition to determining the amount of storage rot that occurred in the berries, we also determined the loss in weight of the berries. The weight loss was compared with the amount of moisture removed from the storage atmosphere by the cooling unit evaporator coil. The condensate was collected in a tray below the coil and conducted by hose into a container, which was weighed and emptied periodically.

The storage bins were those used as temporary holding bins by Ocean Spray Inc. but with an important modification in their construction. Each bin had 16 perforated, plastic tubes the height of the bins installed in it. Sixteen, 2 inch diameter holes were drilled in the bottoms of the bins in regular rectangular arrangements.

Hardware cloth was tacked over the holes on the underside of the boards. The perforated tubes were then set upright in the holes and anchored in that position.

The tops of the tubes were covered with screen to prevent cranberries from falling into them.

THE STORAGE ROOM was 7 feet 4 inches square and 7 feet 4 inches high. The width was not sufficient to permit two 10 bbl. bins to be placed beside each other. But it was sufficient for a 7 bbl. and a 10 bbl. bin to be placed side by side. There was sufficient height to permit the stacking of two bins of either size, so the 10 bbl. bins and the 7 bbl. bins were stacked in pairs. The space above the 10 bbl. bins was about 1 foot high. There was nearly 2 feet clearance above the 7 bbl. bins.

The space above the bins was enclosed and the air discharge from the evaporator coil fan was

(continued on page 12)

COVER PHOTO

GROWER Joseph DeLorenzo sits upon a cranberry box—what else?—as he talks about turkeys, cranberries and other matters.

Story on page 8.

(CRANBERRIES Photo)

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JOAN E. HUMPHREY
Friendship, Wisc.

Is castor oil needed?

Nobody loves price controls, not even John Kenneth Galbraith, who was in charge of them during World War II and who is less hostile to controls than most of his fellow economists.

But don't be surprised, despite official denials, if they are adopted eventually as a stopgap, painful solution to the even more painful problem of a seemingly uncontrollable inflation.

Otherwise, how long must the grower, for example, continue to add 13 percent to last year's prices for supplies, for repairs, for labor, for everything? Even if inflation weren't a zero sum game, and everybody in the nation could somehow be a winner, the plague of rising prices is ruining the dollar abroad and creating havoc in an increasingly interdependent world. The situation is desperate, symbolized by the crazy lunge toward gold.

Enactment of controls—at least, until the inflation balloon showed signs of descending, until our economists can figure out a better game plan, until America begins to do something about its less than cheering rate of productivity—will be a sign to our anxious allies that we intend to exert strong economic leadership.

We may not get controls in this administration. But don't be surprised if we do, if the situation worsens. Controls are a lousy medicine. But, then, so is the disease lousy. The harsh world of economics never offers a pleasant alternative to a rotten problem.

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Three chief problems facing local growers

By JOAN E. HUMPHREY
and BOB TAYLOR

Charles Goldsworthy, president of Cranberry Products Inc. of Eagle River, Wis., is a man on the go.

TALKING WITH growers and fieldmen, checking in at the Cranberry Products Gift Store his company operates, answering dozens of phone calls, he works at a fast pace.

Recently he settled down long enough in his tidy—almost anti-septic—office to talk to CRANBERRIES about what he thinks are the three major problems facing growers in his part of the country.

One problem is man-made, the

other stems from nature and the third is a combination.

Growers, Goldsworthy said, have to put up with a lot of outside governing by the Environmental Protection Agency, the Department of Natural Resources and the Federal Trade Commission.

“Back in the earlier years when most berries were packed fresh, our greatest problem was getting deer hunters back to pack the crop and now regulations are our biggest problem,” he added.

TURNING TO NATURE’S doing, he said that in northern Wisconsin frost is a threat 12 months of the year.

Goldsworthy raised his hands and drew an imaginary line in the air.

“We have a valley through here where you can expect frost anytime,” he said. “You can go a short distance either north or south of this line and find normal temperatures. But through this valley—never. You must always be on guard against frost.”

The frost relates to the third problem—the fuel crisis.

“We have come close to running out of our diesel fuel supply,” Goldsworthy said. “If we have no fuel to run our sprinklers the nights there is frost, we could lose the whole crop. This is a week to week situation.

“One solution would be to

(continued on next page)



CHARLES GOLDSWORTHY, right, president of Cranberry Products Inc., and Ed Savola, company employee, check the crop. (CRANBERRIES Photo by Joan E. Humphrey)

GOLDSWORTHY . . .

(continued from page 5)

convert the water pumping engines so they run on something other than diesel fuel."

GOLDSWORTHY, 44, stepped into the presidency a year ago when when his dad, Vernon, 74, retired for health reasons. The elder Goldsworthy, who has been an advisor and correspondent to **CRANBERRIES** for years, still keeps up an active interest in cranberrying.

Vernon Goldsworthy founded Cranberry Products 25 years ago with Ralph Sampson, who is currently treasurer of the company.

The medium size company is primarily a private label packer but also puts out its own line—mostly sauce and juices—under the Eagle River label. Cranberry Products also produces gourmet jams and jellies and maple syrup.

Inquiring beyond the sketchiest details about the company is a little like asking the Pentagon for a look at its classified secrets. Number of employees? No comment. Volume? No comment.

Charles Goldsworthy did tell us his products are marketed from Detroit to Jacksonville and in the west except for Washington and Oregon. Otherwise, he adheres to his motto—"keep a low profile."

A writer for **CRANBERRIES** was denied a plant tour and doors she did see were boldly marked no admittance.

CHARLES' WIFE, BETTE, supervises the gift store, which offers a panoply of cranberry related products, including cranberry scented candles and soaps and cranberry glassware. Mrs. Goldsworthy also keeps herself very busy in community affairs.

Charles Goldsworthy is looking forward, with a great deal of pride, to the entry of his son, Mark, 20, into the business in the near future as the third generation Goldsworthy.

He and Bette have another son, Kim, a high school senior, and



VERNON GOLDSWORTHY, family patriarch.

(**CRANBERRIES** Photo by Joan E. Humphrey)

two daughters, Anne, a high school junior, and Peg, a nursing

senior at the University of Wisconsin.

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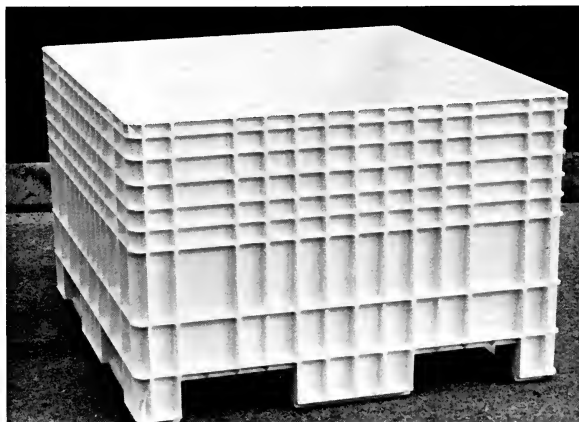
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Grower DeLorenzo

Raised ingredients for a Thanksgiving dinner

Nobody knows better than Joseph DeLorenzo of Duxbury, Mass., that the turkey and cranberry go together.

He's raised both of them.

IN FACT, DeLorenzo, whose muscular forearms, at age 75, are visible testimony, has engaged in all kinds of agricultural activity, from pushing a plow as a boy to cultivating grapes for the fine home wine he produces.

When CRANBERRIES came upon the Duxbury man recently,

there he was, manuevering a rotary tiller through his vegetable garden.

"I retired 12 years ago," he said, "but I think I'm working harder now."

He wiped his brow, pulled up a couple of cranberry boxes, and sat down to tell us, reluctantly at first, because he is a private man, his story.

THAT STORY BEGINS, like so many examples of the search for opportunity and self-sacrifice

that built America, with a tale of immigration.

DeLorenzo's dad, also Joseph, left Italy in the last century to come to America. He worked in a rope factory in Plymouth, Mass., earning \$6 a week. He would keep \$3 for himself and send \$3 home to his family. Every few years he would travel back to Italy.

Finally, when enough savings had been accumulated, DeLorenzo's father brought his family—wife, five sons and one daughter—to America from Malfa, one of the Lipari islands. DeLorenzo was 7 years old.

He describes his father as "quite a gentleman, easy going. Mother was the pusher. She couldn't read or write but she could do figuring in her head like a computer."

At one stage the family owned a grocery store in Quincy, Mass., but for the most part they survived



GROWING things has been vocation, avocation and just plain old pleasure to Joseph DeLorenzo of Duxbury, Mass.

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by working a 12 acre farm in Duxbury.

"Those were the days when you used horse, harrow and plow," DeLorenzo said. "There was no power then."

THE ONLY ONE of the six siblings to remain in farming, he always has enjoyed growing things and learning about how to grow them. He is a graduate of the University of Massachusetts Agricultural College and a few years ago attended his 50th class reunion there.

"We had a class of 72 and about 40 showed up," he said.

His love of growing is apparent when you stand on the DeLorenzo property. There are large trellised roses around the front doorway, a grape arbor, peaches, plums, cherries, nectarines, strawberries, raspberries—you name it.

When DeLorenzo and his wife, Katherine, married, they started off in a log cabin.

"You could see through the chinks. I put tar paper over them. The mice would crawl along the sides. We lived that way for two years. Then we built the house where we are now."

When a contractor wanted to charge him \$500 to dig a hole and build the foundation—"that's like \$20,000 today"—he decided the job would be a do-it-yourself project. Aside from having someone build the forms for the foundation and do the framing, he erected the large, handsome structure himself.

Then he and Katherine decided to raise chickens and there were woods to clear and poultry shelters to erect. They began with nine 20 by 40 buildings and five years later had three buildings 400 feet in length housing 25,000 broilers.

He recalled: "It was good for several years. Then it got to the point where we had trouble making ends meet. We gave up



KATHERINE DeLorenzo has been wife, mother, construction companion, early morning frost watcher and general partner in growing. (CRANBERRIES Photos)

the chickens and turned to turkeys."

"MY WIFE and I put up the barn. We were busier than heck, we had two children going. But we were happier than hell.

"One time I was up on the roof of the barn and the ladder fell down. She just stood there and laughed and shouted up. 'All right, let's see you climb down like a monkey.'"

He remained in the turkey business six years and, finally, in '47 or '48, gave it up. In the meantime, he had been building cranberry bogs, all by hand, and, when he became active in cranberrying, he had but 8 acres. Today he has about 200 acres.

His oldest son, also Joseph, runs the bogs. DeLorenzo pitches in heavily about harvest time. Katherine also assists. Their other son, Ronald, is an insurance executive in Boston. A daughter, Katherine, is a successful water colorist and lives in California. The DeLorenzos have eight grandchildren.

Perhaps because it's his most recent farming activity, DeLorenzo speaks most fondly about cranberrying.

"I love harvest time," he says, in a New England accent. "I like getting into the bogs. I've been operating the walking water reel."

Apparently recalling an actual incident or two, he laughs: "When it gets to be October, it starts getting cold. Especially when you fall into a ditch and you have to empty your boots."

(continued on following page)

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(continued from page 9)

Bay State growers have new control

THERE ARE OTHER memories besides harvests. Like the 10 years or so he'd played seven card stud with fellow Kiwanians, a weekly ritual that started Thursday night and lasted until 4:30 Friday morning.

"At 6 I had to be up to take care of the chickens. Friday was always a bad day. My wife didn't like that at all," he says, a Peck's bad boy look on his face.

Salt water fishing is one of his favorite activities and he takes a bashful pride in the prizes he's won. He earned a citation for landing a 58 lb. wahoo in Miami and a mounted, almost 5 foot long swordfish decorates his living room.

And there have been travels for the DeLorenzo's in recent years. Every year they go to Florida, every other year they travel to California to visit their daughter and her family and they've covered much of Europe, including Italy.

"I was born in Italy and she (Katherine) is the one who was able to do all the talking in Italian," he says, a mingled tone in his voice of self-reproach for himself, admiration for his wife.

Speaking with admiration for Katherine and in behalf of family life are habits.

"We never had trouble with the kids. They were brought up very strict. My wife and I figured that the environment of the family will make or break a kid. You've got to keep them busy, not say, 'Here's \$10, have a good time.' And you've got to spend a lot of time with your family."

TALK RETURNED to cranberries. DeLorenzo, in a habitual display of modesty, considers himself a comparative youngster in the game vis-a-vis

With the end of harvest season, cranberry growers have time to plan and begin their 1980 weed control program with fall application.

THIS FALL Massachusetts cranberry growers have another herbicide option—Devrinol. Available to growers for the first time this spring, Devrinol is also registered for fall application to control nutsedge and cutgrass.

Applying herbicides now is convenient because it saves valuable time next spring, according to experts. Additionally, the grower can see what weeds are in his bogs and where they are located. Applying chemical to those areas only may save time and chemical.

Uncontrolled weeds will eventually thin vines to such an extent that the bog is no longer productive. In addition, bees, essential for pollination, will avoid bogs with cutgrass because the sharp blade edges literally shred their wings. Nutsedge and cutgrass, found in 80 percent of Massachusetts cranberry bogs, can cause a 20 percent reduction in yield.

DR. ROBERT DEVLIN, plant physiologist and weed specialist at the Massachusetts Cranberry Experiment Station, has been testing Devrinol for some veteran growers he has a high regard for.

"I've been at it only 30 years," he says. "There's a lot to be learned."

If there is a key secret, though, to being a successful grower, he thinks it's timing.

"Timing is the important thing," he says. "Knowing just when to sprinkle, knowing just when to spray."

about six years.

"We tested Devrinol thoroughly during the testing period and have no doubts about its effectiveness for either spring or fall application," he states. "Additionally, it is very safe to use on cranberry vines.

"Because this is the first year that growers have the opportunity to use Devrinol for fall application, the true test is in grower response to field performance."

CHRIS MAKEPEACE, general manager of A.D. Makepeace Co., says that this fall he is going to apply Devrinol on part of his 1,500 acres of cranberries. The reason: a matter of convenience.

Makepeace explains: "With some herbicides, fall application is better because it is safer for vines and prevents the herbicide from damaging bog. With Devrinol, we saw no damage after spring application and it gave good control of nutsedge and cutgrass.

"We suspect fall application of Devrinol to be equally effective. Even in wetter areas, where it's hard to get weeds, there doesn't seem to be any germination with Devrinol. It would be nice to have the option of applying a safe, effective herbicide in either spring or fall."

ONE ADDED feature of Devrinol that Dr. Devlin identified is control for other weeds besides nutsedge and cutgrass.

"We were not even testing for this, but growers have had such good control of rushes that we will be formally recommending Devrinol for rushes control next season. And it even does a nice job on annual grasses such as fall panicum and pitchfork grass."

Field studies have shown that for fall or spring application, 60 lbs. per acre of Devrinol 10-G gives good control of nutsedge and cutgrass. If an unusually high concentration of the weeds is present, 90 lbs. per acre is recommended.



Writer Couture says

Cranberry festival like old country fair

By MICHAEL COUTURE

All the trappings of an old fashioned country fair were present—livestock, dog competition, competitive events for men, cake booths from churches and entertainment of various sorts—at the 8th Annual Massachusetts Cranberry Festival and 4-H Fair held at the Edaville Railroad grounds.

SPONSORED by the Plymouth County Cooperative Extension Service, Ocean Spray Cranberries, Plymouth Jaycees, Scholarship Pageant of Wareham, Massachusetts Cranberry Growers Assn., Plymouth County Development Council and the American Heart Assn., the festival drew good-sized crowds during its five day stint in the heart of cranberryland.

Actually, the railroad grounds appear to have everything a festival fair needs, from the large open spaces to the services-entertainment desired by many who might otherwise find a day of wandering around game booths and cake sales a bit tedious. This is especially true when one considers the train ride around the Edaville grounds, an event that brings people from all over the country, particularly at Christmas time.

But on with the festival. It glowed with the excitement of people roaming the grounds, looking at events, applauding the skills of men with power saws cutting through huge logs in a test of time, becoming interested in almost mundane things such as the heart-warming sight of a young girl kissing her droopy eared basset after they had gone through a competition, the children petting goats and cows, the smell of cotton candy and garlicky sandwiches and the pretty girls, such

as Pam Curtis, who won the Miss Massachusetts Cranberry Festival Queen crown.

Some just stopped for a moment to observe a woodcarver working on a large piece of timber, slowly shaping the face that would even-

tually dominate it. Others amused themselves watching the Buckfield Leather and Lather Traveling Show or Scrub Board Slim, the One Man Band.

THROUGHOUT there was a carnival flair without the hucksters, the kind of romantic-escapist appeal that draws the little boy to circuses, and, in general, an atmosphere that fulfills the need to just get out and do something simple like walk around, watch people and animals, make no conclusions, just relax.

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(continued from page 3)

directed through a duct into the enclosed space. This air was forced down through the perforated tubes, which extended above the surface of the berries in the bins, and was discharged through the openings in the pallets of the two lower bins.

The openings in the pallets of the upper bins had been covered with canvas so that the air being discharged from the lower ends of the tubes in those bins would be forced down through the tubes in the lower bins.

The 1976 experiments had revealed that the evaporator fan did not have sufficient capacity to provide adequate circulation through the four bins. So, a small exhaust fan was installed with its intake enclosing the openings in the pallets of the lower bins. This provided a suction on the bottoms of the bins that assured circulation of air through all the tubes.

The volume of air passing through the bins was approximately 500 cubic feet per minute.

The bins were emptied and the berries weighed on Jan. 17 and Jan. 18, 1979.

The berries were screened on Jan. 19 and Jan. 20, 1979. The samples that were taken as the bins were emptied were then examined on Jan. 23 and Jan. 24, 1979.

The samples constituted approximately 1.3 percent of the contents of the bins. The control (6 field-boxes) was weighed, sampled and examined at the same time as the bins.

RESULTS

Table 1 shows the results of the 1978 experiment.

The berries used in the experiment were of excellent quality as evidenced by the percent field-rot presented in column 4. As in previous experiments, the condition of the berries was determined separately, for either three or four layers of berries in the bins. This

Table 1. Percent field-rot, storage-rot and weight-loss in Howes cranberries stored in bulk bins, equipped for forced ventilation. Storage was at 50° for 2 wks., 45° for 1 wk., 40° for 1 wk. and 35° for 5 wks.

Bin #	Section of bin	Total rot %	Field rot %	Storage rot %	Weight loss %
Control 6 field-boxes 203 lb. in; 193 lb. out		9.9	6.2	3.7	4.9
Bin #3	Upper 1/4th	11.4	5.5	5.9	
1001 lbs. in;	Second 1/4th	10.4	4.0	6.4	
942 lbs. out	Third 1/4th	11.3	6.5	4.8	
	Bottom 1/4th	12.6	7.7	4.9	
Average		11.5	6.0	5.5	5.7
Bin #1	Upper 1/4th	12.2	6.1	6.1	
990 lbs. in;	Second 1/4th	13.3	6.1	7.2	
928 lbs. out	Third 1/4th	14.5	5.3	9.2	
	Bottom 1/4th	13.2	6.0	7.2	
Average		13.3	5.9	7.4	6.2
Bin #4	Upper 1/3rd	12.3	7.4	4.9	
715 lbs. in;	Middle 1/3rd	13.8	6.5	7.3	
676 lbs. out;	Bottom 1/3rd	13.7	7.1	6.6	
Average		13.3	7.0	6.3	5.3
Bin #2	Upper 1/3rd	9.8	4.4	5.4	
734 lbs. in;	Middle 1/3rd	13.1	7.1	6.0	
689 lbs. out	Bottom 1/3rd	13.1	6.6	6.5	
Average		12.0	6.0	6.0	4.9
BINS: OVERALL AVERAGE		12.3	6.2	6.1	5.5

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was done to determine whether there were zones in the bins where quality was markedly different from other zones in the same bins.

Column 5 shows that there were no zones that differed from others more than would be expected in any random sampling of berries from a half acre area.

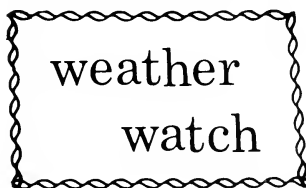
THE STORAGE-ROT in the samples from the bins ranged from 4.8 percent to 9.2 percent, which may seem significant. However, the field-rot, in the samples taken at the beginning of the experiment, ranged from 4.0 percent to 7.7 percent. This is nearly as great as the range for storage-rot.

The storage-rot in the control was extremely low for a nine week period. It was only 3.7 percent versus 6.1 percent for the overall average in the bulk bins.

The weight loss during the nine week period was 5.5 percent for the berries in the bulk bins. It was 4.9 percent for the control. This was nearly double the weight loss in 11 weeks in 1976. However,

the storage-rot in 1976 was significantly higher in two of the bins.

(In the next issue, a discussion of the experiment, as well as the conclusions, will be given.)



MASSACHUSETTS

September was a cool, dry month. Temperatures averaged 1.7 degrees a day below normal. Maximum temperature was 83 degrees on the 7th and minimum 35 degrees on the 20th. Warmer than average days were 2nd to 4th, 7th and 14th. Cooler than average periods were 8-9th, 20th, 22-25th and 30th.

Rainfall totaled 2.65 inches or about 1¼ inches below normal. There was measurable precipitation on only six days with 1.77 inches on the 21-22nd as the large storm, leaving very little for the rest of the month. We are

not hurting for water, as we are 9½ inches above normal for the nine month period and 8 inches ahead of 1978. I.E.D.

NOVA SCOTIA

August weather was characterized by much rain, 128.8 mm as against the 50-year-average of 90.4 and lack of sunshine 149.3 hr compared with 220.0, the 50-year-average. September saw an improvement in the weather and the harvesting of cranberries began Sept. 17. The color was slightly better than at the same time last year. Harvesting continued for another three to four weeks.

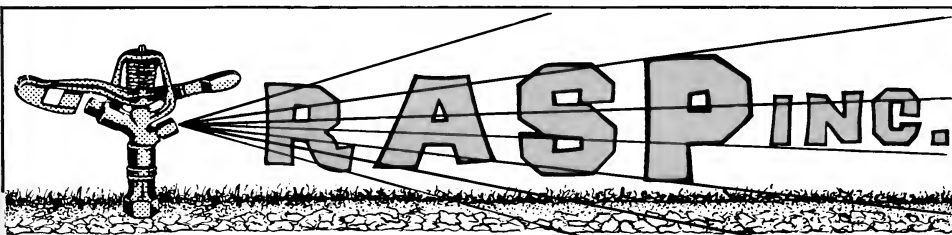
I.V.H.

WASHINGTON

August maximum temperature was 74 degrees on the 21st with the minimum 45 degrees on the 15th and 21st. The precipitation totaled 1.30 inches, with the greatest amount of moisture on the 19th with .53 inches of precipitation.

September maximum temperature was 89 degrees on the 14th with four days registering over 80 degrees for the month. The minimum of 39

(continued on following page)



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Bugs



(continued from page 13)

degrees came on the 28th. Precipitation total was 4.37 inches. There were 17 days with no measurable amount and the greatest of .82 inches came on the 8th.

A.Y.S.

WISCONSIN

Temperatures averaged about 5 degrees above normal during the warm, dry weather the last week in September. For the second consecutive week, there was not enough rain to show measurable totals by districts in the weather table. It was the driest month ever recorded at Mitchell Field in Milwaukee, breaking the record of .05 inch in both March 1910 and February 1969.

Wisconsin Agriculture
Reporting Service

regional
news
notes

Massachusetts

By IRVING DEMORANVILLE

There was a little harvesting as early as the first week of September, but general harvest began about the 14th or 15th.

There was some variability in berry size, but generally it was above average.

Quality is spotty; some bogs good, some bad. Probably not as bad as was thought earlier.

Color did not develop very rapidly, but was much better toward month's end.

Early blacks were probably 75-80 percent harvested by the first week in October, with a large amount of water harvesting.

Only two frost warnings to date, on the 19th and 20th. Temperatures as low as 19 degrees on the 19th, but 24-26 degrees was the general range.

The Massachusetts crop is difficult to predict, but definitely will not challenge last year's. Possibly, slightly over 1,000,000 bbls.

Nova Scotia

By IVAN V. HALL

Color was slightly better than at the same time last year. The British Columbia Department of Agriculture reports that "prospects are for a good harvest with prices expected to remain firm."

Washington

By AZMI Y. SHAWA

The Grayland area had begun harvest by the first week in October, with some of the growers waiting for color. This has been a slow year for good color, due in part to the warm, sunny weather.

The Long Beach area began mainly on Oct. 8, with Mike Nichols starting on the 5th, along with Rueben Anderson. Water is in short supply, possibly causing the harvest operation to take longer than usual in the Long Beach bogs where water picking is utilized.

**CRANBERRY ALMOND CRUNCH PIE**

- 1 unbaked 9-inch pastry shell
- 1 8-ounce package cream cheese, softened
- 3 cups canned whole cranberry sauce
- 1/3 cup brown sugar
- 3 tablespoons cornstarch
- dash salt
- 1/3 cup sifted all-purpose flour
- 2 tablespoons butter or margarine
- 1/2 cup slivered almonds, toasted

Make pastry shell, fluting edges high. Blend cream cheese with 1/2 cup of the cranberry sauce; spread in bottom of pastry shell. Combine the first 1/3 cup brown sugar, cornstarch and salt; blend in remaining cranberry

sauce. Spread remaining over cheese layer. Bake in 375 degree oven for 35 minutes.

Meanwhile, combine flour and remaining 1/3 cup brown sugar. Cut in butter till mixture resembles coarse crumbs; stir in almonds. Sprinkle over pie. Bake 10 to 15 minutes more or until center of pie is firm. Serve warm or chilled. Makes 8 servings.

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CULTURAL PRACTICES FOR NOVEMBER CITED

The following reminders for proper cranberry cultural practices in November were issued by the Coastal Washington Research and Extension Unit in Long Beach, Wash.:

Frost protection—set thermostat on 30 degrees F.

Pruning—delay pruning, if possible, until January to avoid frost injury.

Fungicides (dormant spray)—liquid lime sulfur for cleaning infested bog.

Soil test—once every two years.

USDA TO MODERNIZE MARKET NEWS NETWORK

Deputy Secretary of Agriculture Jim Williams told top state departments of agriculture leaders meeting in New York City that his department will modernize its entire market news communications network by late spring.

Speaking at the first annual meeting of the National Association of State Departments of Agriculture, Williams said the network will be converted to a 1,200 word-per-minute transmission



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December 1979

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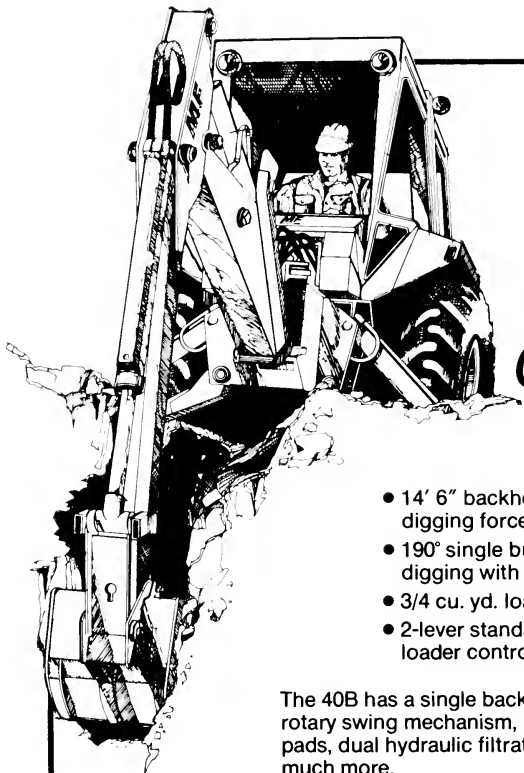


Cranberry Street...3

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A love story...8 & 9

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Gotham celebrates the berry

Cranberry festivals are a tradition in parts of rural America but on a recent Saturday one was celebrated in the Big Apple itself.

The site—appropriately enough—was Cranberry Street in the historic Brooklyn Heights section of New York City.

Several thousand people attended the country fair-like event on Cranberry Street, a picturesque, three block long thoroughfare that runs from the waterfront at Columbia Heights to Henry Street.

There were a coronation of a 1979 Brooklyn Cranberry Queen, square dancing, live entertainment, children's programs and food galore.

The affair was sponsored by the Cranberry Street Assn. with the cooperation of Ocean Spray.

Food stalls offered everything from beer to hot dogs, soft drinks to Italian sausages, along with a big helping of cranberry items.

An all-men's bake-off, featuring cranberry goodies made by amateur male chefs from the area, was judged by such formidable critics as Angela Rizzuti, food writer for *Glamour* and *Vogue*, and Mary Meredith, cookery editor of England's leading women's magazine, *Women and Home*.

Children's games, contests and shows were directed by television's Dokey (Clarabelle) the Clown.

The festival also had a best pet contest, a square dance square-off and a cranberry counting sweepstakes. The day's major competitive events were "Bog Jogs" for seniors and juniors.



A YOUNGSTER who lives on Cranberry Street takes time out from the festivities to munch on a hot dog.
(Photo by Amy Davis)

CRANBERRY STREET STEEPED IN HISTORY

Houses built in the late 1820's, early 1840's and postwar 1860's still front on Cranberry Street.

Many were, and are, being painstakingly restored and/or renovated.

Among those with particular historical and architectural significance are numbers 68 and 11.

11 Cranberry, the Bedell House, belonged to the family of

(continued on page 12)

COVER PHOTO

MAYOR Edward Koch of New York City puts on an apron appropriate to the celebration of the first annual Cranberry Street Cranberry Festival in Brooklyn, N.Y.

(Photo by Amy Davis)



Bailout time

If you're a cranberry grower or processor, forget it. You'll never grow large enough to qualify for a Government Bailout. You'll continue to be at the mercy of the marketplace and you'll manage well or wither.

Now if you're a Chrysler, it's different. You can continue to do dumb things like manufacture motorized Gargantuas when everybody else is veering toward Lilliputian vehicles and your plea for a Government Bailout still will be heard by a sympathetic Administration and Congress.

It helps, too, if you have within your manufactory a powerful, well organized labor union that can assist you in applying political pressure, even if, as in the Chrysler-UAW case, that union is demanding—and getting—a wage-benefit package that'll far exceed the amount of the Government Bailout (otherwise known as loan guarantees) that is being requested in order to put Chrysler into the black.

More on controls

After we penned a comment on price controls for the November CRANBERRIES, an Oct. 8 New Yorker piece by the brilliant economist, Robert L. Heilbroner, came to our attention.

It is Heilbroner's contention that inflation is not an illness curable by such remedies as less government spending, a balanced budget, dehorned corporations or labor unions, etc., but rather a natural outgrowth of the present post-30's, big government, social welfare stage of capitalism. Only price and wage controls will effectively deal with inflation, he says.

But, he warns, "the introduction of the controls needed to break the cumulative and stubborn property of inflation will bring its own brand of problems; namely, bureaucracy and inefficiency."



The publisher and everyone else associated with CRANBERRIES wishes you and yours the happiest of holiday seasons and good fortune in the decade ahead. Yes, Emily, another decade is about to pass us by.

LETTERS TO EDITOR

FEATURE SUGGESTION

Why don't you send someone out here to interview Mr. Harvey Burgess? He's been involved in the bog business since childhood—owned 32 acres and kept them perfect—is only 80 and still can run a picking machine—and is the finest man I've ever known. Come

here and visit with him. He'll tell you more about the cranberry business than you've ever heard before.

David Ward,
North Carver, Mass.

EDITOR'S NOTE: Mr. Burgess gets jotted down right away on our list of coming features. Thanks for the suggestion.

Crop figure upped

The cranberry crop for 1979 is expected to be 2.52 million barrels, 3 percent higher than last year's.

The forecast is 2 percent more than what the U.S. Department of Agriculture predicted last August.

Prospects in Massachusetts improved 4 percent during the period between the two reports to 1.12 million barrels. There was no frost damage or appreciable fruitworm damage by the end of September, the USDA said. Water harvesting proceeded on schedule but wet weather delayed dry harvesting.

A good harvest was reported in New Jersey. Berries in some bogs were slow to color.

Berry size in Wisconsin was smaller than usual but quality was excellent.

Oregon still expects a record crop, although prospects diminished 2 percent since mid-August to 106,000 barrels. Berry color appeared to be normal.

Harvest began in Washington the third week in September, the USDA reported, with berry size and quality above average but color on the light side.

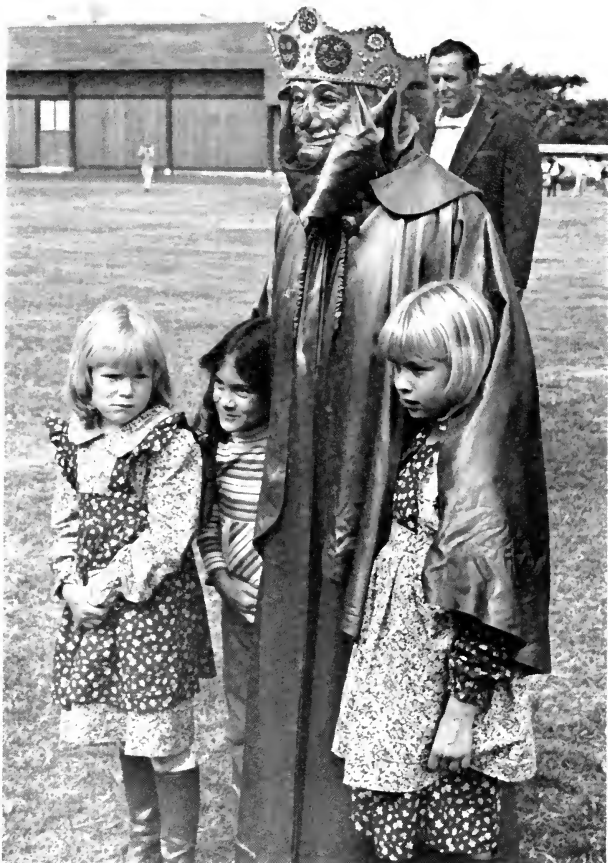
Cranberry production nationally amounted to 2,458,500 barrels in 1978 and 2,102,200 barrels in 1977.

Predictions for 1979 and the production levels for the past two years by state are:

Massachusetts—1979, 1,120,000 barrels; 1978, 1,180,000 bbls.; 1977, 1977, 875,000 bbls.

New Jersey—1979, 240,000 bbls.; 1978, 223,000 bbls.; 1977,

(continued on page 6)



THE MYSTERY KING, actually Roland Parks, inspires different moods in three cute youngsters at the 1979 Cranberry Festival in Bandon, Ore. (Photo by Western World)

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Cranberry Festival attracts thousands

By JOAN E. HUMPHREY

The importance of the cranberry to the region was highlighted at the recent seventh annual Cranberry Festival in Warrens, Wisc.

The festival is now history but for two days it turned this quiet little town of 276 persons into a metropolis of thousands. They came by car, camper, motor home and bus.

"We have no way of knowing the exact number the festival draws and every year it grows," Mrs. Stephanie Scott, wife of a cranberry grower, said. "We love it, though.

"Although we have booths with goodies made from cranberries, arts and crafts, many ethnic eateries, the purpose of the festival is not to make money, but to acquaint people with the many uses of cranberries. We also would like people to think of cranberries as a year-round product."

Mrs. Scott was in charge of the cranberry goodie booth, one of more than 200 booths at the fete.

ANOTHER HIGHLIGHT of the festival was a tour of Russel Rezin and Son, a third generation marsh. The 700 acre marsh was started by Grandpa Richard Rezin in the late 1890's. Today the Rezin's have 85 acres in production. Of all the cranberry growing families in the state, Rezin families outnumber any others.

John Polich, marketing specialist with the Wisconsin Agriculture Department, noted that the crop in Wisconsin—second only to Massachusetts as a cranberry producer—is expected to be up 11 percent over that of last year.

THE TOUR also included a trip to a sphagnum moss marsh, a mint farm and a sunflower farm.

Sphagnum moss is associated with the backup swamps of cranberry ponds. Wisconsin is the leader in this native product, known as the "invisible

industry." It has been produced for 125 years and is shipped from Wisconsin's wetlands to almost every country in the world. Good moss produces up to 1,000 bales per acre but the average is 600 to 700 bales.

William Tehan's Northern Spur Mint Farm, started in 1964, covers 1,020 acres. Both peppermint and spearmint are raised. In 1968 a distillery was erected at the farm to express oil from the plants. The oil is shipped to Lemon Bros. of Indiana or A. Todd of Michigan. There are 26 byproducts of the oil, such as camphor and mentholatim. The oil also is used in candy, gum, teas, liquors, air fresheners and many pharmaceutical products.

Sunflowers are a new crop for Wisconsin. Originally, they were grown for the confection and bird seed markets. Today they are grown principally for the oil and margarine markets. Sunflowers produce three times more oil than soybeans do.

The tour ended with each person receiving a complimentary package that contained sphagnum moss (enough to plant one small pot), mint candy, sunflower seeds and cranberries with a small portion of a cranberry plant.



CRANBERRY Queen Mary Lynn Pischke of Warrens chats with Princess Julie Pratt of Warrens during a casual moment at the festival. The other princess was Lianna Knowlton of Tomah.
(CRANBERRIES Photo by Joan E. Humphrey)

CROP FIGURE . . .

(continued from page 5)

157,000 bbls.

Oregon—1979, 106,000 bbls.; 1978, 94,500 bbls.; 1977, 80,200 bbls.

Washington—1979, 147,000 bbls.; 1978, 139,000 bbls.; 1977, 136,000 bbls.

Wisconsin—1979, 910,000 bbls.; 1978, 822,000 bbls.; 1977, 854,000 bbls.

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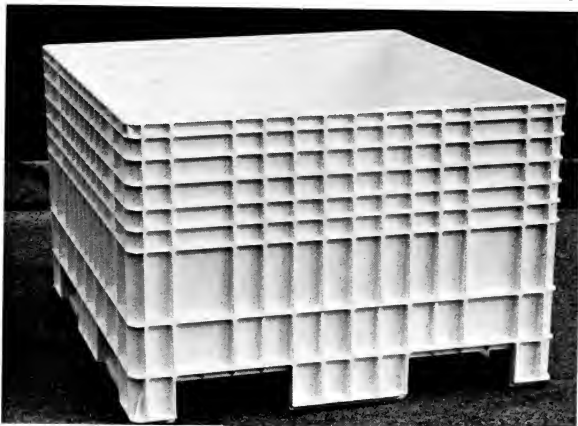
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A love story

The Cranberry Connection



BEATRICE ROSS BUSZEK

(Photo by Shirley L. Spencer)

The multifaceted Beatrice Buszek

Born in Massachusetts in 1922, Beatrice Ross Buszek moved to Nova Scotia with her parents just before the Great Depression. They had been born there.

At 19, she came to the U.S. Several years later, she married. The marriage lasted 15 years.

In 1960, at age 38 and with three small children, ages 3, 5 and 8, she began college. To support her family, she typed medical reports at night; often, late into the night.

Despite her heavy responsibilities, she was graduated with honors from Western Michigan University and Cornell University with a B.A. and an M.A., respectively, in psychology.

In 1962-64, representing Cornell on a two year exchange program, she taught psychology and was director of the psychology and testing clinic at Hampton (Va.) Institute, a black college.

Her next positions were dean of Northfield School in Northfield, Mass., and associate professor of

This is the story of a love affair—a love affair with the cranberry.

It began when Beatrice Ross Buszek “bought a little old house overlooking a deserted cranberry bog in the Annapolis Valley of Nova Scotia.” And it led to THE CRANBERRY CONNECTION, a book with 360 cranberry recipes, now in its third printing in Canada and its second printing in the U.S.

The book, published in the U.S. by the Stephen Greene Press of Brattleboro, Vt., contains recipes like cranberry banana bread, chicken cranberrie, cranberry shrimp dip and cranberry avocado dip, as well as ones with more arcane names, such as Baptist bouillon, Irene supreme and Svengali tomatoes, all hand-lettered in a highly legible, quaint style by the author. Interspersed among the recipes are numerous facts about cranberries. Samples: “The first cranberry cultivation in Canada was in Nova Scotia in 1860;” “Stores in Tokyo, Osaka, Yokohama and Kobe sell cranberry products under a label called *Cranby*.”

The volume also contains photos by Dick Longmire and many delightful sketches by Ms. Buszek’s daughter, Christine, and “daughter-to-be,” Jeanie.

Below Ms. Buszek tells the story of THE CRANBERRY CONNECTION and how it all began.

‘I RETURNED TO THE LAND OF MY CHILDHOOD’

By BEATRICE ROSS BUSZEK

Someone asked me where I got the idea for a cranberry cookbook. It was a simple question but with not so simple an answer. I thought on the many events of the past year and it occurred to me to put them together, to write the story of the bog adventure.

As the tale unfolded, I soon realized it would fill a second book to recount the many beginnings, diversions and intrigues of the cranberry caper. For example, after many years away, I returned to the land of my childhood and bought a little old house overlooking a deserted cranberry bog in the Annapolis Valley of Nova Scotia. What a wonderful spot! I shall always remember the first time I stood in the yard and looked all around me.

The house sits on a knoll alongside the post road just off the main highway. The nearest neighbor is an old Baptist Church and the early morning sun rising out of the mist shines

through its windows, blessing the little house with its golden rays. The North Mountain rises abruptly in



SKETCH of Cranberrie Cottage by Christine Buszek.

(continued on page 10)

Sample recipes

GRANVILLE GRILL SAUCE

Combine one 10½oz can Tomato puree, one cup jellied cranberry sauce, two tablespoons vinegar, two tablespoons chopped onion and one tablespoon prepared horse-radish. Mix well.

Can be used for beef, shrimp or poultry. Makes about 2½ cups.


BOG FOG

Combine ½c. orange juice, ¼c. vodka and ½c. cranberry juice cocktail. Stir briskly. Serve over ice in tall glasses.

with "those sour berries" when "everyone knows they are only good to make sauce." Mother is now a cranberry convert.

And there were things that only obscurely relate to the origins of the cookbook, like the day I climbed into the attic of the little old house and found a bundle of old diaries. I read and read; the diaries upset me. I began to feel very close to the woman who wrote them. Her life seemed a yearly

repeat of the same routine and the only diversions from her duties being Church and cranberries. As I think on it now, I wonder if she had any choice about Church or cranberries either. I was glad when I read that she liked to walk across the road in the wet early morning July grass to find the spots where the cranberry blossoms were most plentiful and pinkest, and that she would pick a sprig and put it in a jar on the windowsill in the kitchen.



THE KITCHEN of Cranberrie Cottage, where the recipes in the book were tried and tested.

(Photo by Dick Longmire)

front, protecting the valley from the fogs of Fundy. At the back, sparkling through the oaks and maples, is a once tidal river with an everchanging mood and face, as if never again quite sure who it is but with a million memories of the days of the wooden ships and the blowing sails. Along its banks, Troop's cows wend their way each day as if guided by some inner time-piece; behind the river the South Mountain gently curves along the horizon.

In June I moved into the house and in October came the crimson harvest. I fired up the old kitchen range and began to cook and experiment, beginning with a spiced version of cranberry sauce. The cookbooks were not much help as, like myself, most cookbook editors had thought of the Cranberry mostly in terms of turkey, but here and there I found creative and tested ideas using this inexpensive native fruit with its unique brisk autumn flavour and high Vitamin C content.

My mother was amused at the sudden cranberry craze but she was also astounded. Some Nova Scotia mothers still believe that a daughter who goes off to the "States" is automatically neither interested in nor skilled in kitchen happenings. She thought it was silly to bother

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The cranberry quest opened many old and new doors to the past, revealing such things as the many links between the "Boston States" and Nova Scotia, and of the early planters from New England prior to the coming of the loyalists, who developed this section of the province, sowing seeds of their culture wherever they settled. And I read of old Cape Cod, and how the cranberry was first cultivated there and later in 1860 in Nova Scotia, marking its first cultivation in Canada. Now, 117 years later, I am in the midst of another cranberry adventure.

In November I spent a couple hours in the botany laboratory at Acadia University, where, among other varieties, the large American Cranberry (*Vaccinium macrocarpon*) and the wild foxberry (*V. vitis-idaea*) are well researched. My mind wandered as I recessed the campus, pondering on all that I had learned about the cranberry—its colorful past and even brighter future. In the midst of my wanderings, a cranberry cookbook took shape in my head and I could imagine the pages with bits of fact and folklore as could be fitted between the recipes. Later, I asked the assistant to check out a library book for me. He looked surprised and I said, "I'm writing a cranberry cookbook." There was an instant of unguarded disbelief on his face, and then he grinned and said, "And I suppose you'll call it, THE CRANBERRY CONNECTION." And—I did.

The long winter weekends at Cranberrie Cottage were spent sorting, testing, creating and printing recipes. The country smell of the wood stove in the kitchen and the apple wood flames in the Franklin filled the house and me with a feeling of warmth and excitement. It was wonderful how accurately my mood, or liking for the recipe, or time of day or night, was reflected in the hand printed pages. Later I could easily spot those recipes printed over the holiday season when I was snowbound for eight days, or those printed during a long dreary rainy spell. Many recipes were discarded, keeping those I liked best and hoped would win over cranberry skeptics. And I smiled to myself when I thought of those who might not agree with my judgement about a particular recipe, and who might then start to see RED. I would tell them, "This is the beginning of your very own cranberry caper."

The lack of traditional cookbook order in THE CRANBERRY CONNECTION is not by chance. The design, or lack of same, is a sort of outpouring of recipes, fact and folklore. My mother has an old scribbler with the same peculiar kind of order, and in it, either written, printed or pasted, are the recipes of her life. I always marvel how she can find a certain recipe, almost as if she knows where each one fits in the life and thickness of the scribbler. Her system introduced me to concoctions I would never have known had I relied only on an index or if, for example, all the pies and only pies were arranged together. I compromised in the cranberry cookbook, providing a table of contents to balance the outpouring of recipes.

The cookbook was nearly finished when spring finally found the valley. There were by now several files of correspondence, research and literature on the cranberry and I had reached the point of jacket design for the book. It was then that I made another decision—a more difficult decision than earlier ones, and again I smiled, knowing there were those who would attribute this hesitation to my roots in the Maritimes. I decided to borrow the money, to find a printer, and to publish the cookbook myself. After nearly a year with THE CRANBERRY CONNECTION, it seemed part of the family. I welcomed the challenge to shape its future and watch it mature.

Early one morning I walked across the lane, trying not to disturb the shining cobwebs in the wet July grass, nor to crush the pale pink blanket-like patches where the berries will nestle in the fall. I picked a sprig of the cranberry evergreen adorned with its delicate blossoms and have it here beside me in a jar. The cookbook is now complete. One part of the bog adventure was over; now another part would begin.

BEATRICE BUSZEK . . .

(continued from page 8)

psychology at Kirkland College in Clinton, N.Y.

From there she taught at John Jay College of Criminal Justice in New York City, all the while consulting in psychiatric epidemiology at Columbia University and teaching a night course at the New School for

Social Research.

Returning to Nova Scotia after her dad was fatally injured by a hit-and-run driver, she decided to stay.

"I had gotten tired of the academic arena and the politics of higher education or just wanted to get out of the old rat race," she told CRANBERRIES.

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At present, she teaches at Acadia University in Wolfville, N.S. Her current specialty is social gerontology, with an emphasis on women and ethnic and race relations.

Two years ago, after not having been a student for 13 years, she returned to Cornell and completed all the requirements for her doctorate. She also has received research grants from Duke University, Radcliffe Institute and the London School of Economics.

Ms. Buszek managed to put her three children, Michael, Christine and John, through college. She has two grandchildren, 4 and 2.

Although she did not have a background in publishing or marketing, Ms. Buszek bravely went to the bank and borrowed \$10,000 to print the first 5,000 copies of THE CRANBERRY CONNECTION.

The success of the book quite changed her life, she said.

"I fretted far less about everything; that my children and grandchildren lived so far away, that my body was intent on flirting with arthritis, and so on. It was quite like a lovely love affair."

But that wasn't the end.

"One day," she recounted, "while exploring the bog area to find where the cranberry blossoms were pinkest and most plentiful, I came upon what Robert Frost called, 'a vision for thieves.' There, in the midst of a patch of pink were beautiful blueberries; dewy, downy bunches of black and blue, berries the size of your thumb, and each one seeming to grow upwards to the sun and to me."

Out of that experience grew—you guessed it—THE BLUEBERRY CONNECTION, just recently published.

She is now at work on a book on Loyalist women in Nova Scotia during the time of the American Revolution and she plans a series of four children's books, based on the seasons.

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CRANBERRY STREET . . .

(continued from page 3)

John Low, one time mayor of Brooklyn and New York. The house is distinguished by a solid mahogany staircase leading to a cupola, or observatory, on the roof, from which one gets a magnificent view of Manhattan.

Number 68 Cranberry was the home of Henry Ward Beecher, pastor of Plymouth Church. His boldness and eloquence in the abolitionist cause give those who

live there generations later a sense of honor and pride.

Both President Lincoln and General Grant are said to have been guests in the Beecher home during the Civil War.



With his tarte aux pommes et cannenberges (anglicized to apple-cranberry tart), Richard W. Nelson captured first prize in the all-men's bakeoff for amateur chefs held as part of the Cranberry Street Festival in Brookly Heights, N.Y., recently.

In all, it was a big day for Nelson. Besides being dubbed the supreme baker, he also won the two-and-a-half mile Bog Jog.

APPLE-CRANBERRY TART

For pastry:

- 2 cups flour
- 2 tablespoons sugar
- ¼ teaspoon salt
- 8 tablespoons butter, chilled
- 3 tablespoons shortening, chilled
- 5 tablespoons water

dried beans or rice

For filling:

- 2 cups fresh cranberries
- 4 lbs. sweet apples
- 1 teaspoon lemon juice
- 1/3 cup strained apricot preserves
- 1 tablespoon vanilla extract
- dash cognac
- 2/3 cup sugar
- 3 tablespoons butter
- grated rind of ½ lemon
- 2 tablespoons sugar

Mix flour, sugar and salt. Add butter and shortening. Rub fat and flour together with fingers until broken into small pieces. Add cold water. Blend quickly, adding additional water if necessary. Gather dough into a mass. Blend dough again, pressing it out from the center with heel of hand. Gather in mass. Knead briefly, sprinkle lightly with flour, wrap in wax paper and refrigerate several hours.

Roll dough 1/8 inch thick. Place over a 10-inch tart pan. Press dough gently into pan, carefully pressing against sides of ring. Remove excess dough, press sides of shell to create even rim 1/8 inch above the pan. Decorate edge around rim with knife.

Place buttered aluminum foil over shell, pressed well against the rim, and weigh with dried beans or rice. Bake in preheated 400-degree oven for 8

minutes. Remove foil and beans, prick bottom of shell with fork and bake 2 minutes more.

To prepare filling, peel apples and slice 3 cups worth into ½ inch slices. Toss in a bowl with lemon juice and 2 tablespoons sugar. Set aside for top of tart.

Steam cranberries for 5 minutes and strain to remove skins. Slice remaining apples (approximately 8 cups). In a large skillet cook the 8 cups apples and the cranberries over low heat, covered for 20 minutes. Beat in apricot preserves, vanilla extract, cognac, 2/3 cup sugar, butter and lemon rind. Bring to a boil and stir until thickened. Pour into pastry shell. Arrange cut apples in a circular design overlapping, around edges of tart. Bake in top third of preheated 375-degree oven 30 minutes.

Stir ½ cup strained apricot preserves and 2 tablespoons sugar in small pot over moderately high heat for 2 minutes. Brush apricot glaze lightly over top of tart.

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"The past decade has seen the growing recognition around the world that American farmers are 'Number One'," J. Bruce Llewellyn, president of the Overseas Private Investment Corporation, recently told agribusiness leaders in Atlanta.



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Cranberry storage results are given

By JOHN S. NORTON,
Agricultural Engineer,
Massachusetts Cranberry
Experiment Station

PART 2

DISCUSSION

The results obtained in the 1976 and 1977 experiments indicated that the results achieved in 1978 were possible. However, there were deficiencies in the experiments conducted in those two years that made it necessary to repeat the work in 1978.

In 1976, the condition of the berries in the upper bins was very nearly the same as was achieved in the current experiment. It was a different story with the lower bins, in which the rot averaged 13.4

percent and 13.5 percent.

A characteristic of all the data of that study, that accounts for this result, was the increase in rot at every level in the bins, with only one exception, in progressing from the top layer of the upper bin to the bottom layer of the lower bin.

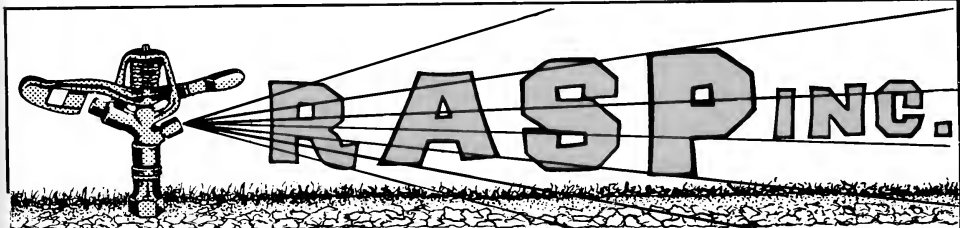
This indicated that there was not sufficient air circulating throughout the entire mass of berries to maintain the optimum atmosphere for proper storage. There was also the possibility that the high humidity promoted fungal decay.

I therefore determined to repeat the experiment in 1977 but with a lower relative humidity in the storage room. This was done, with the humidity level maintained

at approximately 80 percent.

The condition of the berries that were available for use in the experiment was very poor. The field-rot was over 12 percent and the amount of grass clippings mixed with the berries was 5.5 percent by weight. With this combination, it was foreordained that the experiment would be disappointing. There were some useful results, however.

ALTHOUGH THE TOP layer of berries, in three of the bins, had substantially less rot than the other layers in those bins, the consistent decline in quality from top to bottom of the stack, exhibited in 1976, did not occur in 1977. The condition of the berries in the lower two thirds or lower three quarters



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of a bin was relatively constant. This, probably, was due to the lower relative humidity at which the storage atmosphere was maintained.

At the time the bins were scheduled to be emptied, at the end of the 1977 experiment, I'd decided to leave one bin of berries in storage for an additional month. I did this because the vegetative debris below a depth of 6 inches in the first three bins felt moist.

I wanted to determine whether it could be dried out in the fourth bin by increasing the air flow and lowering the relative humidity. I increased the air circulation by installing the kitchen exhaust fan as described earlier. I also adjusted the dehumidifier to lower the humidity to 70 percent.

When the bin was emptied, the grass, which constituted 5.5 percent by weight of the contents, was dry to the touch. It was the unfortunate experience of having berries of such poor quality and condition that led to the establishment of the storage conditions maintained in

the 1978 experiment.

In previous experiments, the berries in the top one-third or one-quarter of the bins almost invariably were of better quality than the control, at the end of the storage period. In the latest (1978) experiment, not one of the 14 samples from the bins had a lower percent rot than the control.

Although the bins had about 50 percent more rot than the control, the 6.1 percent overall average is quite acceptable at that time of year.

ONE POSSIBLE explanation for at least a portion of the difference in rot, between the control and the bins, was the one extra handling to which the berries in the bins were subjected. These berries were poured from field-boxes into the bins and were subject to many impacts against interior surfaces of the bins and the tubes. Many experiments in the past have proved that each handling of the berries results in acceleration in decay.

In previous experiments I

have poured the control berries from the picking box into a second box in order to have all the berries subjected to similar conditions of handling. I failed to execute this operation in 1978.

Consequently, the control berries remained in the boxes in which they were delivered from the field and were not subjected to the same impairment to keeping quality as the test berries, as a result of handling. This freedom of the control from the extra handling could have conceivably caused the entire difference in rot between the treatment and control.

An example of the effect of handling on keeping quality is illustrated by the results of a reexamination of the pre-storage samples from which the amount of field-rot had been determined. The good berries from these 1 lb. samples were retained and held in kraft bags in the cold storage room. They were reexamined on Jan. 25. All the decay had occurred

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between Nov. 9 and Jan. 25.

The average percent rot for the 14 samples was 10.6. The range was 7.4 percent to 16 percent.

One would have expected these berries to have had less rot than the test or control berries because they were free of rot when they were placed in storage. However, the percent rot was nearly double that of the berries in the bulk bins and nearly triple that of the control.

Since the berries were a representative sample of those in the bins, these results indicate that the handling they received during sorting on Nov. 9 caused a marked acceleration of breakdown.

THE WEIGHT OF WATER removed from the storage atmosphere, by the cooling coils, was within 1 percent of the total weight lost from the berries during the 10 week storage period. The total loss in weight of the berries was 209 lbs. The weight of water collected was 211 lbs. Since the storage room was not perfectly air tight, some water would have been removed from humid air that leaked into the room or that was admitted when the door was opened.

The weight of water removed in 1978 was 33 percent more than was removed per 100 lbs. of berries in 1977. Since loss to rot in 1977 far exceeded that in 1978, I must conclude that in order to have satisfactory quality after two or three months in bulk-bins, a slight sacrifice in the form of dehydration of the berries will have to be tolerated. This loss in weight should be approximately 1 percent every 12 days.

CONCLUSIONS

The condition of the berries in the bulk-bins on Jan. 19 was outstanding.

The experiment demonstrated conclusively that cranberries can be sorted in 1,000 lb. containers, to be used as fresh fruit for the Christmas market and beyond.

The bins must be properly ventilated and the relative humid-

ity should be held at approximately 70 percent.

Air circulation through the berries should not be impaired by excessive trash.

Such interference with air circulation will result in severe losses to decay.

regional news notes

Massachusetts

By IRVING DEMORANVILLE

Dr. Robert Devlin was invited to present a seminar on plant growth regulators at the University of Arkansas recently.

The latest USDA crop report has Massachusetts at 1,120,000 barrels. This may be a little high but we should hold on to our third million barrel crop.

The other states remain as in the August estimate, except for Oregon with a slight increase.

The national total is 2,523,000 barrels, a record and 3 percent above 1978.

The harvest was about 95 percent in by Nov. 2, after a fairly late start and many rainy days from late September to mid-October.

There were a total of 17 frost warnings, with the first on Sept. 19. This compares with 22 in 1978, 11 in 1977, 22 in 1976 and 11 in 1975.

Quality has been spotty and some bogs that were not fungicide treated were quite bad.

Nova Scotia

By IVAN V. HALL

The demand for local cranberries is quite good.

Reports from Ontario indicate considerable insect injury.

British Columbia estimated its crop at 14 million pounds.

The largest firm in Nova Scotia, Chase and Bezanson, reports an excellent crop of berries.

Oregon

By ARTHUR POOLE

The cranberry harvest was more than 70 percent complete by the 1st of last month.

The berries have been small and it

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appears that the crop will be smaller than previously predicted.

Growers in the Coos and Curry counties area of coastal Oregon were predicting a record crop of 104,000 barrels. Last year this area produced 92,756 barrels. And it is now predicted the crop will be about 97,000 barrels, up 4½ percent from 1978.

The above figures do not include Clatsop County, which has about 40 acres in cranberry production.

Rainfall has been slightly above normal for this period and it appears most growers will have adequate water for the remainder of the harvest.

Wisconsin

By VERNON GOLDSWORTHY

The Wisconsin crop was pretty much in by the end of October.

The berries are smaller than normal.

All the growers are pleased with this year's prices.

There will be quite a lot of sanding done this year, I am sure, as well as a lot of ditching around the beds. These are things that had been pretty much ignored over the past several years because of the atmosphere created by low prices.

Juice sales are real good but the sale of whole and strained sauce is about the same, with maybe a slight increase.

Winter damage and insect problems were minimal in Wisconsin this year, reports the Wisconsin Agriculture Reporting Service.

APPLE GROWERS NIX MARKETING ORDER

Apple growers in six New England states have voted down a proposed federal marketing order program for their crop.

The program would have covered apples grown in Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.

P.R. Smith, a U.S. Department of Agriculture assistant secretary, said only about 30 per cent of the producers voting favored the proposed program. They accounted for about 49 per cent of the production represented in the referendum.

Currently there are 46 marketing order programs covering, besides cranberries, a wide range of fruits, vegetables and specialty crops like nuts and raisins.

Harvest slowed by cold weather

By MICHAEL COUTURE

Cold and wet weather—unusual for October—held down the harvest, according to Irving Demoranville of the Massachusetts Cranberry

Station in East Wareham.

"By the second week of October, we should have had about 90 percent of the crop picked," Demoranville said, "but I would say that about 70 to 75 percent was picked at that point and that really made it tough to estimate the total."

Harvest figures from individual towns differed a great deal, he added. In fact, he said, figures from bogs in the same town differed.

"Some growers were reporting good results while others were reporting the opposite," he said.

Citing Carver, he said that town had very favorable reports on high yields and quality of berries.

Location really had nothing to do with the variances, Demoranville

explained. What did was the wet weather which cut down on wet picking because workers were reluctant to face icy wind conditions while wading into the bogs.

The unpleasant weather also affected dry picking.

The quality of the berries does not match last year's crop, a fact Demoranville attributes to a warm, wet spring and heavy rains in September and October. Too much water, due both to rain and later to flooding and sprinkling to prevent damage to berries from cold, affected the berry, he explained.

Cold nights during October caused temperature drops as low as 18 and 19 degrees in the bogs, making the use of water a necessity.

TIPS FOR THE SEASON

The Coastal Washington Research and Extension Unit in Long Beach recommends that thermostats be set for 28 degrees in December.

Flooding should be done for only one month if a bog is infested with weevils and can be flooded.

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How to satisfy the 1980 market

By CHESTER E. CROSS
Massachusetts Cranberry
Experiment Station

These are invigorating and challenging times for Massachusetts cranberry growers. After decades of freezers stuffed with excess berries and, largely as a result of this, miserably low prices, the market has now caught up with supply and increased production is needed.

One important contribution to increased productivity would be an increase in the percentage of sound fruit harvested. The

following are a few points to keep in mind as we turn to the job of raising the 1980 cranberry crop.

1-When weather factors appear as ominous as they did in June 1979, it surely would prove economic to resort to fungicides. It takes only an increase of a few barrels of cranberries per acre to pay the costs of treatments.

2-Another factor important in raising sound fruit is fertilizer. With everyone eager to raise larger crops, there is a tendency to overfertilize. One of the first results of this is a development of runners, which delays the coloring of berries and increases their susceptibility to fruit-rotting fungi. In general, Howes require more fertilizer than Early Blacks but caution is advised.

3-The wetter the bog (provided water is not regularly puddled on the surface), the less the tendency to produce runners, and the greater the tendency to produce heavy crops of sound fruit. In warm and dry growing seasons, rot develops heavily on the well-drained portions of bogs unless they are carefully and frequently irrigated. There is almost a consensus that the better drained bogs or portions of bogs

are not receiving enough irrigation water during dry spells in the summer.

4-The above considerations ought not to induce growers to be casual about ditch cleaning. As recently as August 1978, many growers suffered heavy losses to soft fruit when their bogs were flooded for days by heavy rains. This form of soft fruit is produced primarily by oxygen starvation, but even in these cases fungicide treated bogs survived the flood with less injury than bogs not so treated.

5-Finally, the problem of August heat needs to be mentioned. West Coast growers, who enjoy a rainfall of 100 inches or more a year, regularly turn on the sprinklers when summer temperatures exceed 80 degrees F. As Massachusetts growers manage their bogs for higher productivity, they, too, will develop a heavy succulent growth that will need protection by sprinkling when air temperatures exceed 90 degrees F. In 1975, we, in Massachusetts, suffered some heavy losses to "heat scald" in August. We must learn to avoid these losses if we are to deliver the berries our market needs and if we are to profit from our present very favorable situation.



MASSACHUSETTS

October was a cool month, averaging 1.9 degrees a day below normal. Maximum temperature was 73 degrees on the 5th and minimum 28 degrees on the 28th. The only warmer than average days were the 2nd-5th

and 22nd-23rd. Cooler than average periods were the 8th, 10th-12th, 14th-16th, 19th, 25th-28th and 30th-31st.

Rainfall totaled 4.31 inches or about 0.9 inches above normal. There was measurable precipitation on 11 days, with 1.50 inches on the 9th-10th as the largest storm. We are about 10 1/3 inches above normal for the year and 9 inches ahead of 1978 for the same period.

I.E.D.

NOVA SCOTIA

The minimum temperature for October was minus 2.5 degrees C, which occurred on the nights of Oct. 17 and 20.

The weather also remained mild during the first week of November. Rainfall was heavy, with 135 mm compared with the 50 year average of 98.3. Sunshine consequently was down at 88.1 hours compared with the 50 year average of 138 hours.

I.V.H.

WISCONSIN

Temperatures averaged about 4 degrees below normal during the last week in October.

Heavy showers and thunderstorms occurred over much of the state, with 2 to 5 inches of snow over northwestern Wisconsin on the back side of the low pressure system. Pence reported 7 inches of snow, while Wisconsin Rapids just to the west of the stationary front had 4.5 inches of rain. Low temperatures dropped to the teens and 20's on clear nights.

Temperatures averaged above normal during the first week in November in the north and west but near normal in the south and east.

High temperatures were in the 30's and 40's during the first several days in November as cold Canadian air spread across the state.

The second week of November began mildly but turned sharply colder as cold Canadian air invaded the state. Several weak low pressure systems crossed the state later in the week, depositing light snow cover in the north central and south. Temperatures reached the low teens in the northeast and zero in the northwest by the end of the week.

Wisconsin Agriculture
Reporting Service

Insect notes

By CHARLES F. BRODEL
Massachusetts Cranberry
Experiment Station

CRANBERRY FRUITWORM

An extended period of bloom in 1979 enabled fruitworm moths to lay eggs on newly set berries before insecticide could be applied.

These initial eggs were able to hatch, and most of the resultant fruitworm larvae were able to burrow into five or six berries without being affected by two or three subsequent applications of parathion or azinphosmethyl (Guthion^R). Thus, a small reduction in the crop probably resulted on most bogs.

The only way to have avoided such a loss would have been to spray after dusk and sprinkle from 5 to about 10 a.m. the next morning to avoid killing bees.

BROWN SPANWORM

An emergency use registration of acephate (Orthene^R) enabled many growers to control damaging infestations of brown spanworm larvae.

Grower records, conversations, and observations by Bill Tomlinson and myself indicated that acephate controlled the pest without causing markedly adverse environmental effects.

A report describing the sales, usage, efficacy, and environmental effects of acephate has been submitted to the commissioner of agriculture. He, in turn, will submit a report to the Environmental Protection Agency (EPA), as stipulated in the registration document.

Meanwhile, an investigative team from EPA has completed its work and will soon report findings to the agency. We have reason to believe that the report generally will be favorable.

Ocean Spray is now conducting flavor evaluations on products made from acephate-treated berries. The outcome of their evaluations will, in large measure, determine whether Chevron Chemical Co. will seek a national label for Orthene.

CRANBERRY INVENTORY EXCEEDS LAST YEAR'S

Cranberries on hand as of Sept. 1, 1979 totaled 603,032 barrels, according to the annual inventory report compiled by the Cranberry Marketing Committee.

That figure exceeds last year's total at the same time by 64,668 barrels, said Charles F. Hastings Jr., marketing committee manager.

On hand in freezers were 260,092 bbls. On hand in processed form were 342,940 bbls.

EDUCATIONAL PROGRAMS OFFERED IN OREGON

By ARTHUR POOLE

Educational programs of special interest to the cranberry farmer are being offered by the Coos County office of the Oregon State University Extension Service.

The topics, dates, sites, and explanations of the programs are below:

"Financing an Expanding Business," Dec. 13, 7:30 p.m., Ocean Spray Conference Room, Bandon—Cranberry farmers are faced with the dilemma of business expansion in order to meet increased demand for product. This program will explore the accounting and risk management decisions that must be considered when business expansion is contemplated. The discussion will be led by Manning Becker, extension farm management specialist.

"Cranberry Weather," Jan. 21, 7:30 p.m., Ocean Spray Conference

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Room, Bandon—Cranberry farmers will review the usefulness of weather forecasts for heat and frost control.

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