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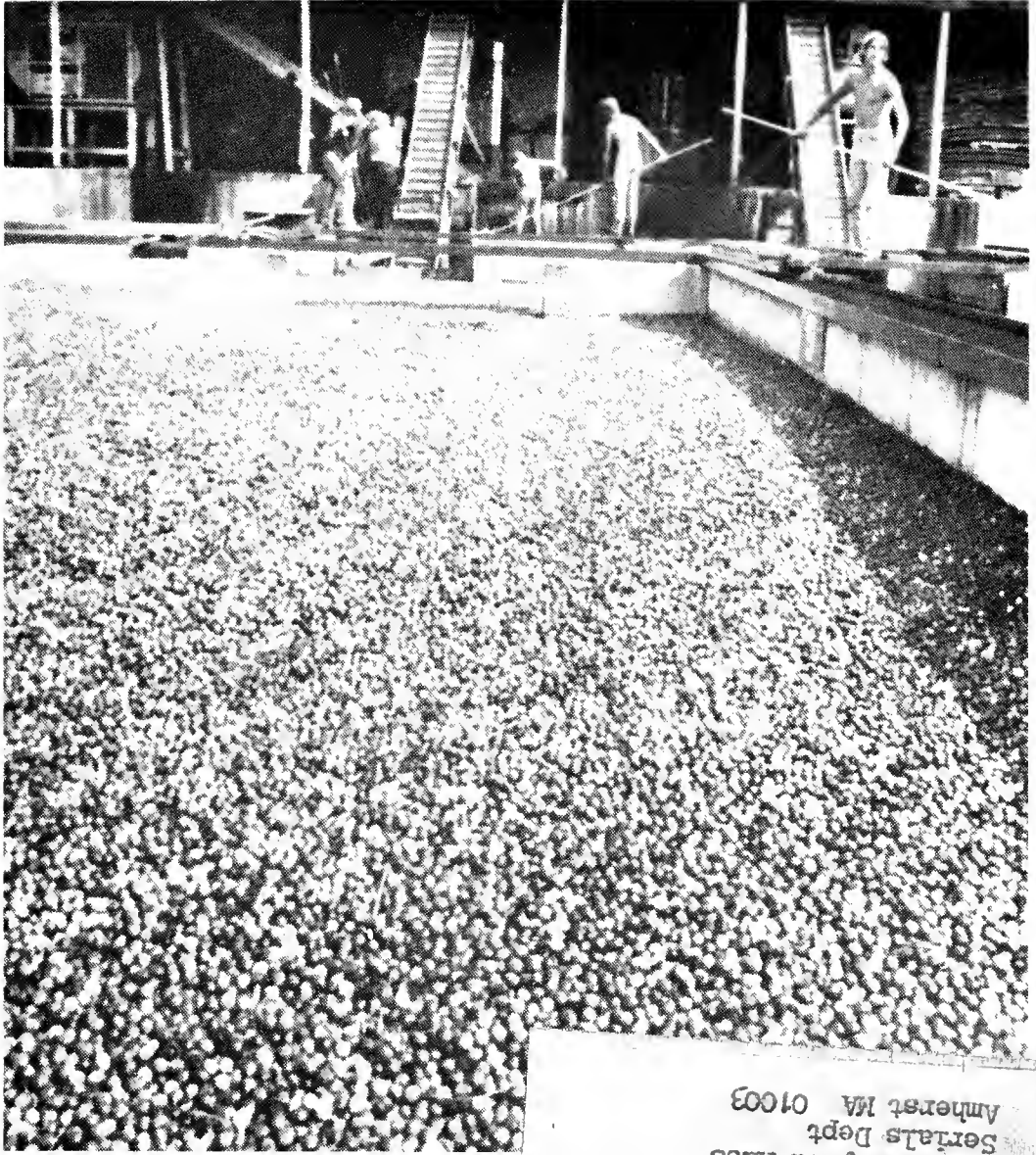
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CRANBERRIES

THE NATIONAL CRANBERRY MAGAZINE

Volume 48, No. 1

January 1984

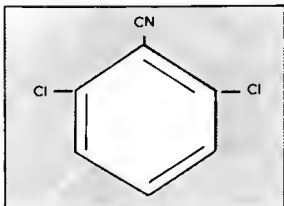


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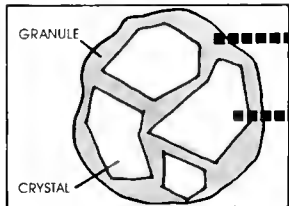
Babcock plan... 3

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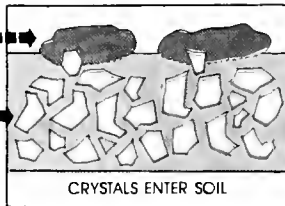
Crop value grows... 4



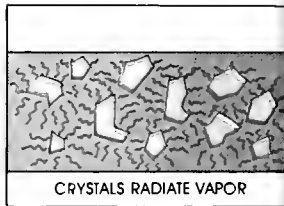
1. Norosac is 2,6-dichlorobenzonitrile, commonly known as Dichlobenil. This unique herbicide goes directly to a vapor stage without going through a liquid stage. It is activated by temperature and soil moisture



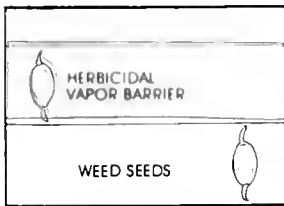
2. This remarkable herbicidal compound of razor-thin crystals is uniquely processed by PBI/Gordon to make a precise granule.



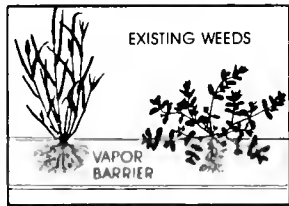
3. Granules are spread on soil or shallow water. Moisture carries the Norosac crystals into the upper layer of soil. Because of adsorption by soil particles, lateral movement is minimal.



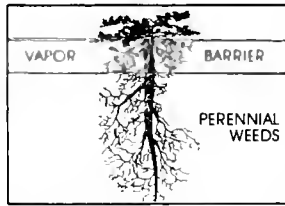
4. Temperature and soil moisture activate the Norosac crystals and they begin to radiate a herbicidal barrier. This continues for an entire growing season, and the spent crystals disappear, leaving no residue.



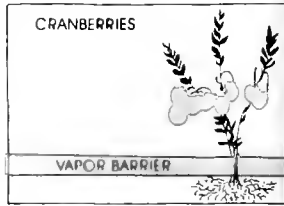
5. In this vapor barrier no plant cell division can occur. Seeds trying to germinate in the barrier will die. Sprouts below this zone will be killed as they try to penetrate the barrier.



6. Existing vegetation such as shallow-rooted grasses and annual weeds having root structures in this barrier will likewise be affected and die after two to three weeks.



7. Certain perennial weeds coming out of dormancy and attempting new growth within the Norosac barrier will run into the same dead end: they will be killed by the vapor.



8. Norosac, when used as directed, does not affect cranberry bushes that have deep roots extending well below the herbicidal vapor zone.

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are dry or under water. And it can be applied anytime that suits you between late fall and popcorn.

Shouldn't you try Norosac?

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Plan new Babcock plant

By DAN BROCKMAN

Anyone who has visited the Ocean Spray plant at Babcock, Wisc., during the peak of harvest time, has seen the backup of trucks that often occurs there. There are times when there are more than 30 trucks waiting to dump. Sometimes these trucks must wait more than six hours to dump.

To help overcome this problem, Ocean Spray has begun construction on a new receiving plant. The new plant will be located on State Highway 21, 3.9 miles east of Interstate 90-94 near Tomah, Wisc.

The new plant will be situated on about 145 acres of land. It will feature a 42,000 square foot building, pools larger and easier to clean than those at the present Babcock plant, a projected 1,500 barrels per hour capacity (and, hopefully, twice that), three hoists and three dump sites, and one scale.

Water will be drawn from two wells on the site, with additional water for pool refills held in a reservoir. Waste water will be held in a 20,000 square foot pool, with solid pool waste being landfilled on a 75 to 80 acre area on the site.

The newly designed pools should eliminate downtime for cleaning and one-way traffic around the plant should cut down on traffic jams.

Land clearing began last

★ ★ ★ ★ ★ ★ ★ ★

COVER PHOTO

MILLIONS of berries are dunked into pools at the Hiller Cranberry Co. Story begins on page 6. (CRANBERRIES photo by Carolyn Caldwell)



GARY PALOTTI, senior project manager, left, and Thomas F. Bleck, general contractor, go over the blueprint for the new receiving plant in Babcock, Wisc. (CRANBERRIES photo by Dan Brockman)

August, with concrete work scheduled for September. Plans called for the building to be completed about Thanksgiving,

with equipment being delivered in February.

The total project is expected to cost about \$6 million.

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editorial



Free riders hurt

Free riders hurt every organization. That verity is no less true for the Cape Cod Cranberry Growers Association.

George Andruk, new CCCGA president, made the point recently when he stated that there are growers who are not doing their share.

"We need members and dollars to have a successful association," he declared.

The CCCGA provides many services for growers. It promotes cranberry sales. It sponsors the frost warning service. It gets heavily involved in legislation pertaining to water, taxes, pesticide use, and other matters.

The association can continue to provide the above and other services only if it receives the support of growers. So free riders ought to start paying their fare. Otherwise, the trolley can't run.



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CRANBERRIES

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Berries, berries everywhere

By CAROLYN CALDWELL

The Hiller Cranberry Co. processing plant in North Carver, Mass., has been literally swimming with cranberries these days. The first step in processing wet berries is to dunk them in 8-foot deep pools.

This plant started handling water picked berries in 1973 and has processed them en masse since 1978.

From the berry pools, the fruit is conveyed up elevators for

processing. Three machines each handle 150 to 200 barrels an hour. Some 150,000 barrels go through the plant in the course of a season.

This plant also has a busy dry harvest screening area.

It's a lively place in the fall, as truck after truck rolls in with wet and dry picked berries. Two shifts of employees work from 7 a.m. to 11 p.m. well into late fall handling the fruit.



BERRIES are raked toward the elevator. (CRANBERRIES photo by Carolyn Caldwell)

regional
news
notes

Massachusetts

By IRVING DEMORANVILLE

Dr. Charles Brodel, representing the Massachusetts Cranberry Experiment Station, attended the recent meeting of the Northeastern Regional IR-4 in Hampton, N.H. Chuck reported on current projects and future needs for pesticides by Massachusetts IR-4 food growers.

Dr. Robert Devlin attended the recent New England Agricultural Chemical Association meeting in Portland, Me.

Dr. Robert Devlin attended the Weed Control Round Table sponsored recently by Agway Inc. in Syracuse, N.Y.

The harvest was at least 90 percent complete by the time of

this writing and it would appear that the Massachusetts crop will exceed the August estimate by perhaps as much as 10 percent. Probably there'll be a total of 1.4 million barrels, maybe even 1.45 million barrels.

Early Blacks were small in many bogs and the crop did not come up to expectations for many growers. However, the Howes more than made up. Color was slow to develop for both Early Black and Howes but did improve for each variety toward the later part of the harvest.

Nova Scotia

By IVAN V. HALL

In mid-September, I had the good fortune to visit some of the marshes in Wisconsin. I wish to express thanks on behalf of myself and two colleagues to Dr. Malcolm N. Dana and the growers we visited for the information we received.

Washington

The Coastal Washington Research & Extension Unit of Long Beach notes that the color in the '83 cranberry crop was enhanced by cold nights and

warm days in September. The berries were sound and of excellent keeping quality for fresh market.

Wisconsin

The University of Wisconsin/Madison Department of Horticulture observes that ideal fall weather resulted in good late season berry sizing, with production reduced slightly by higher than normal fruitworm infestations.

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weather watch

MASSACHUSETTS

October temperature was very nearly normal, averaging 0.2 degrees below normal. It was the warmest October since 1975. Maximum temperature was 78 degrees on the 3rd and minimum 27 degrees on the 31st. Warmer than average periods occurred from the 1st through 6th and 12th-14th. Cooler than normal days were the 10th, 16th, 19th-23rd. Cooler than normal days were the 10th, 16th, 19th-23rd, 25th-27th, 30th and 31st.

Rainfall totaled 4.31 inches, or 7/8 inch above normal, the first above normal since May. We recorded precipitation on seven days, with 1.62 inches on the 23rd-24th as the greatest storm. We are just over 6 inches above normal for 1983 and just 5 inches ahead of 1982.

There were a total of 13 frost warnings issued on 10 days during the frost season, with the first on Oct. 10. The coldest period was toward the end of the month, with a range of 17 to 20 degrees on the 22nd and minimum of 14 degrees on the 29th and 12 degrees on the 30th. For comparison, this was the mildest fall in some years. There were 17 warnings in 1982, 20 in 1981, 28 in 1980 and 17 in 1979.
I.E.D.

NOVA SCOTIA

The good weather of October continued through November. Harvesting operations consequently went well. Color was somewhat delayed as the warm nights of September were not conducive to color development.

I.V.H.

OCEAN SPRAY APPOINTS NEW EMPLOYMENT HEAD

Brenda C. Hughes of Middleboro, Mass., has been promoted to employment manager at Ocean Spray.

She will be responsible for all exempt and nonexempt recruitment, including relocation and orientation.

Hughes joined Ocean Spray in

1981 as human resources supervisor and in March 1982 was promoted to employment supervisor. Before joining Ocean Spray, she was with the Commonwealth of Massachusetts, Department of Youth Services, as assistant regional director, southeastern region.

She received her BA in English from Stonehill College in 1970 and

her MA in counseling from Northeastern University in 1974.

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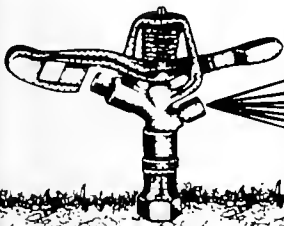
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SCENES from the Harwich, Mass., Cranberry Festival.

(Photos by Lee Baldwin)

Experts answer Question Box

A "Question Box" was provided for growers at last year's field day in Long Beach, Wash. Below are replies to the queries made by Dr. Peter W. Bristow, associate plant pathologist.

Question: Is the Crowley variety more susceptible to disease than McFarlin? How do you rate Stevens?

Answer: McFarlin is one of the parents of Crowley. Because of this, I doubt that Crowley would be significantly more susceptible or resistant to various diseases. Both varieties are susceptible to twig blight, as is Stevens. In the development of new varieties, horticultural characteristics are the prime concern and reaction to diseases is usually only noted when it is very severe. Stevens is grown widely in Wisconsin; unfortunately, the important diseases there are not

generally the same ones which are a threat to cranberries in the Pacific Northwest.

Question: Is the Lophodermium infecting forest trees the same species infecting cranberries?

Answer: No. The species infecting forest trees (pines, fir, etc.) do not infect cranberry and vice versa. There are two species of the fungus Lophodermium which attack cranberry (Lophodermium oxycocci and

(continued on page 18)

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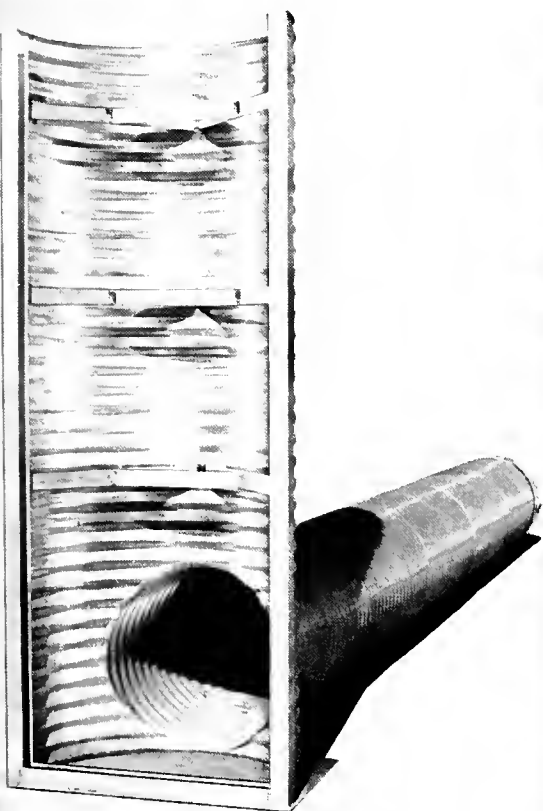
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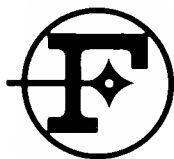
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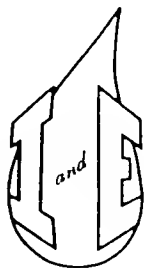


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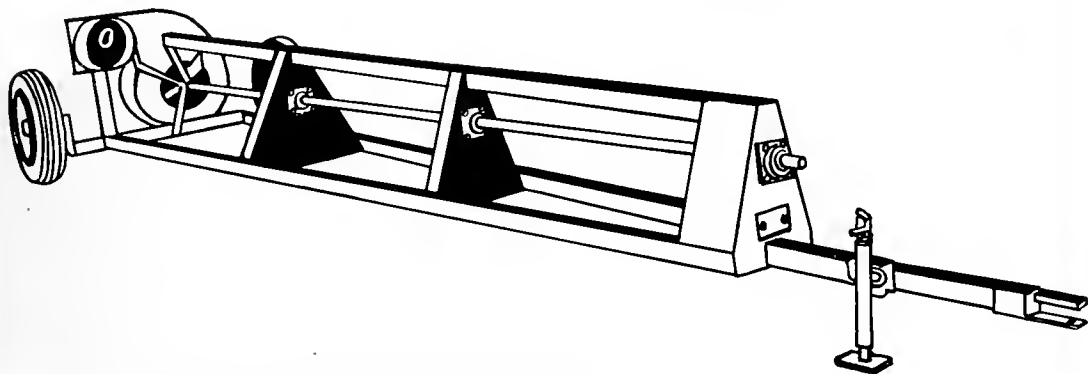
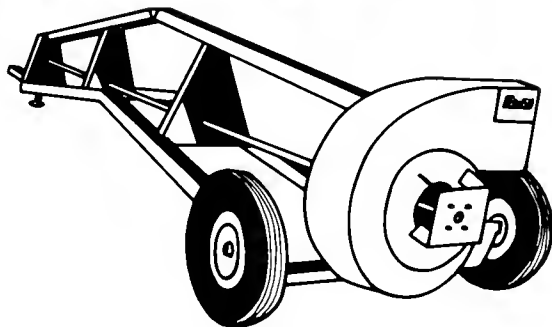
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QUESTION BOX . . .

(continued from page 14)

L. hypophyllum) and both cause twig blight. Cranberry is the only known host for each.

It is doubtful that spores originating in the wooded areas adjacent to bogs are responsible for blighted areas. The disease is often first observed at the edge of bogs. However, this is probably due to a more favorable (microclimate) environment for disease development at the edge than in the center of bogs where there is likely to be better air circulation, etc.

Question: What does the fungus *Guignardia* infect and what damage does it inflict on cranberries? I understand there is a "new" name. What is it and why the change?

Answer: The fungus *Guignardia vaccinii* (the name you are familiar with) was found to be the same as *Botryosphaeria vaccinii* and because the group (genus) *Botryosphaeria* was described as named before *Guignardia*, it (*Botryosphaeria*) is the correct name.

There are two separate spore stages in the life cycle of the fungus. *Botryosphaeria* is the name given to the sexual (perfect stage) spore stage and *Phyllosticta* is the name of the asexual (imperfect) spore stage. The black, circular, pinpoint sized fruiting bodies of *Phyllosticta* appear on the lower surface of infected leaves. Often they are only on one-half of the leaf.

Recently, it was discovered that two different species of *Phyllosticta* attack cranberry. One species, *P. vaccinii*, was only present on samples from Massachusetts and New Jersey. This species causes severe fruit rot in the field (early rot), blossom blight, and stem and leaf blight. The second species, *Phyllosticta elongata*, is present in all growing areas, including the Pacific Northwest. This species causes less damage than *P. vaccinii*.

Bog sanders

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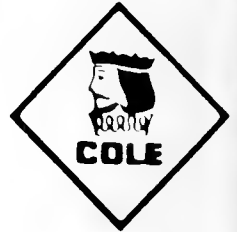
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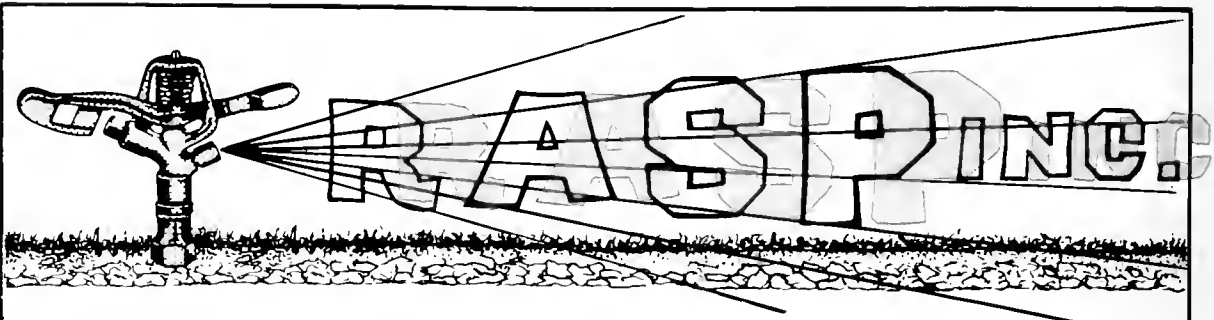


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French student finds her trip the 'berries'

By CAROLYN CALDWELL

A French agricultural student who says she'd "never heard of cranberries before" found herself up to her hip boots in the bright, red fruit this past harvest.

Nadine Dedieu, who is from a small village near Marseille in southeast France, traveled to the U.S. to spend a harvest with the Clark Griffith family of South Carver, Mass. There she worked all aspects of the harvest, including both dry and wet picking.

She liked water picking best of all "because it was so different from any other type of harvest."

Nadine is a third year student at a private agricultural college in Toulouse in southwest France. The school combines academic and field experience.

In addition to trying American cranberry culture, she has worked in vineyards and the tobacco industry in France. Eventually, she would like to work in a French farmer's cooperative.

Nadine is most appreciative of the opportunity to work in the U.S. and especially grateful

for the generous hospitality of the Griffith's. Besides the busy harvest, she was able to take in

a Maine agricultural show and Ocean Spray headquarters with her American family.

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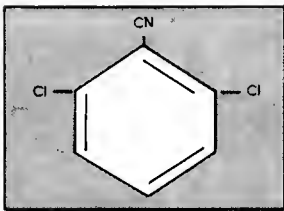
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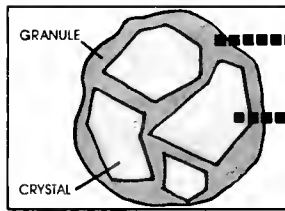
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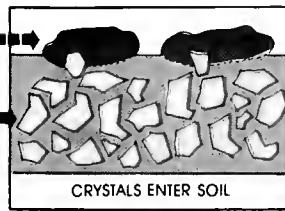
FRENCH student Nadine Dedieu stands beside the berries she helped harvest at the Griffith farm in South Carver, Mass. The story is on this page. CRANBERRIES photo by Carolyn Caldwell)



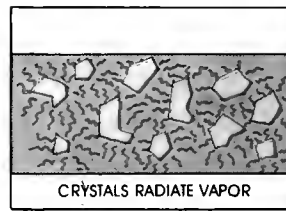
1. Norosac is 2,6-dichlorobenzonitrile, commonly known as Dichlobenil. This unique herbicide goes directly to a vapor stage without going through a liquid stage. It is activated by temperature and soil moisture.



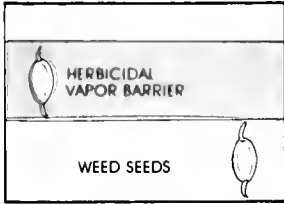
2. This remarkable herbicidal compound of razor-thin crystals is uniquely processed by PBI/Gordon to make a precise granule.



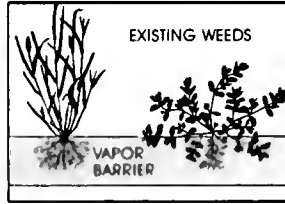
3. Granules are spread on soil or shallow water. Moisture carries the Norosac crystals into the upper layer of soil. Because of adsorption by soil particles, lateral movement is minimal.



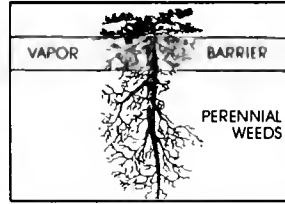
4. Temperature and soil moisture activate the Norosac crystals and they begin to radiate a herbicidal vapor. This continues for an entire growing season, and the spent crystals disappear, leaving no residue.



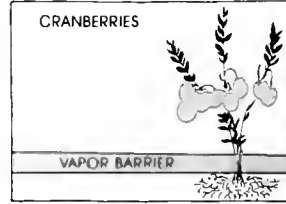
5. In this vapor barrier no plant cell division can occur. Seeds trying to germinate in the barrier will die. Sprouts below this zone will be killed as they try to penetrate the barrier.



6. Existing vegetation such as shallow-rooted grasses and annual weeds having root structures in this barrier will likewise be affected and die after two to three weeks.



7. Certain perennial weeds coming out of dormancy and attempting new growth within the Norosac barrier will run into the same dead end: they will be killed by the vapor.



8. Norosac, when used as directed, does not affect cranberry bushes that have deep roots extending well below the herbicidal vapor zone.

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The graphs above clearly demonstrate why Norosac is as efficient as any herbicide that has ever been offered to the Cranberry grower. We urge you to study it carefully.

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editorial



CRANBERRIES gets fresh face, more muscle

Hope you like the new face lifting given CRANBERRIES as it closes in on its 50th year. (There are very few publications which reach that ripe age, a fact which, if it must be known, makes us feel proud.)

A subscription price hike to \$10 a year has been necessary, as has a hike in advertising rates. At the same time, however, that we're raising prices, we're putting more into the magazine—loosening up space for articles, attracting new writers and photographers, etc. Our aim: to provide a magazine the industry can be proud of.



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MICHELLE Allen, left, best of show winner, and Jeanne MacLellan, second place winner.

(Photos by Richard LaBerge)

Name winners in high school food contest

A cranberry-pineapple cheese dessert won Michelle Allen, 10th grade student at Brockton, Mass., Christian High School, the best of show award in the newly instituted High School Special: Make It Better with Cranberries" contest held recently at the Massachusetts Cranberry Festival in South Carver.

Allen, 14, daughter of the Rev. and Mrs. Raymond C. Allen, 126 S. Meadow St., Carver, received a cranberry-color sashette, an engraved silver bowl and a check for \$25 as prizes. A second bowl will be sent to her home economics teacher, Mrs. Sharon Jeffery. And a larger bowl will go to her school to remain on display until next year's contest.

Second prize went to Jeanne MacLellan, 23 Neal Gate St., Scituate,

for cranberry squares. MacLellan, 15, is a 10th grade student at Notre Dame Academy in Hingham. Third prize was awarded to Joseph Quirk and Daniel Stearns, students at Whitman-Hanson Regional High School, for their joint entry of glazed cranberry-lemon bread.

Honorable mentions were won by Renee Poirier, Tina Fabiani and Karen Lamb, also Whitman-Hanson students.

Judges were Chris Heyl of Hanson and Jim Dunleavy of Peabody, both of whom are professional chefs.

The contest, open to 10th, 11th and 12th grade students from the four cranberry producing counties, Barnstable, Bristol, Norfolk and Plymouth, is sponsored by the Cape Cod Cranberry Growers Association and funded by a grant from the Massachusetts Dairy Improvement Program.

The winning recipes will be included in a pamphlet with those by winners from the seventh annual "Make It Better with Cranberries" competition, held the first weekend of the festival.

The pamphlet may be obtained by sending a large, self-addressed, stamped envelope to: Jean O. Gibbs, RFD 1, Carver MA 02330.

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Early uses of the cranberry

By FREDRIKA A. BURROWS

No other fruit or berry is so representative of America and all she stands for as the native cranberry. The Pilgrims found these little "wails of the swampland" growing wild in the marshes when they stepped ashore at Truro on Cape Cod and again at Plymouth.

COLORFUL accounts of the first Thanksgiving in the fall of 1621 relate that cranberries were served along with wild turkey, succotash, squash and corn bread when the Pilgrim fathers and their Indian guests gathered around the long pineboard table.

Long before the Pilgrims landed at Plymouth Rock, however, cranberries had been used as lifesaving food and medicine. In 1550, James White Norwood's diary makes reference to Indians using cranberries. In James Rosier's book, *The Land of Virginia*, printed in England in 1605, he tells of coming ashore and being presented with birch bark cups of these berries.

Roger Williams wrote *Key Into the Language* in 1640, in which he described cranberries, calling them "bearberries" because bears ate them.

A charming folk story told on Cape Cod relates how cranberries came to grow there. It seems that the Rev. Richard Bourne, a preacher and early settler on the Cape, had an argument with an Indian medicine man, presumably a religious argument regarding the powers of each. To prove his superiority, the angry medicine man cast a spell and mired Bourne's feet in sand so that he couldn't move.

(EDITOR'S NOTE: Ms. Burrows, who resides in West Hyannisport, Mass., has written considerably on both cranberries and U.S. history. Her books include *The Yankee Scrimshanders, Cannonballs and Cranberries and Windmills on Cape Cod and the Islands*. She has had articles published in *Yankee, Good Housekeeping, New Hampshire Profiles, New England Guide, Child Life, American Collector, Antiques Journal, Antiques Gazette and Hobbies.*)



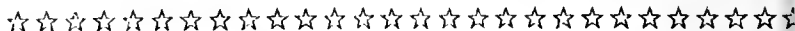
After much shouting and dickering, it was agreed that the minister would be freed if he could best his opponent in a battle of wits. In the ensuing 15 days, weighty problems and mind boggling questions and answers were exchanged, with neither man winning the battle.

During the time that he was trapped in the sand, goes the legend, Bourne was fed and kept alive by a white dove which placed a succulent red berry in his mouth from time to time.

The medicine man watched the dove's lifesaving ministrations but was unable to cast a spell to prevent them. Finally, exhausted from his own exertions and lack of food and water, the Indian fell to the ground and Bourne was set free.

On the frequent trips that the dove made ministering to Bourne several berries fell to the ground. Finding root in the sand, they grew and multiplied. That was the beginning of cranberries on Cape

(Turn to page 10)



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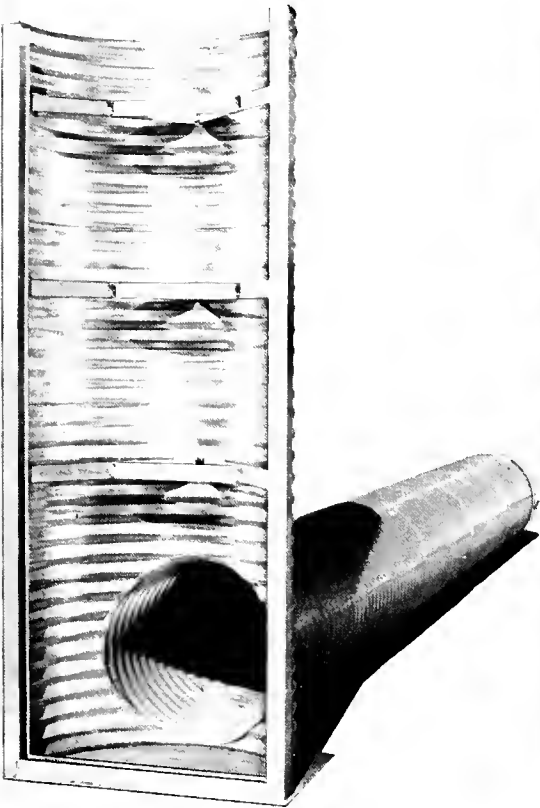
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CRANBERRIES are mentioned in the diaries kept by the members of the Lewis and Clark expedition in the exploration of the Northwest Territory. When they reached the lower Columbia River, the explorers found cranberries growing on the Clatsop Plain and bought supplies of them from the Indians.

Contrary to present-day belief, the English liked bright colors and, soon after building their homes and laying by provisions of food, were following the Indians' example of dyeing wool, yarn and pieces of cloth to be used for patchwork quilts with juices of red and yellow fruits and berries.

When Mary Ring died in Plymouth in 1633, her petticoat was auctioned off by her husband for 16 shillings because it was "wondrously dyed" with cranberries.

In spite of the abundance of cranberries in the Plymouth area and on Cape Cod, it was nearly

200 years before cultivation was attempted. Even then, the berries

were grown only for home use and local consumption.

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Blueberries in Missouri

EDITOR'S NOTE: Because so many growers, particularly in New Jersey, grow blueberries as well as cranberries, and because both plants belong to the *Vaccinium* family, we will run a piece on blueberries now and then.

By **FRANCES JONES**

Surely, an acre of heaven is planted to blueberries, where it's always dawn and misty cool. Soft, wet grass curves over the path on the way to berries hanging as big as grapes. Taste their dewy sweetness and satisfy a hunger that's been there all year.

Such was my feeling on being introduced to blueberries, the wild coastal blueberries of Alaska. Alaska's commercial fishing season was over in late July and by then we had been at camp for two months without fresh fruit or vegetables. That's when blueberries came into their own, and, on those cool, foggy mornings, I would have challenged any bear—black, brown or grizzly—for my share.

That was Alaska. In Missouri, it's different.

JULY in Missouri is close to hell for hot and beats an old hen's dust bath for dry. Fog and dew die in the thought and cool doesn't exist. So when I heard that a Texan had moved here and gone into the blueberry business, I was sure he was addled. In my ignorance of blueberry culture, I assumed the ones I bought in pie filling and from the frozen food case were wild ones, and that they came from cool, damp forest clearings similar to the ones I'd known.

The Texans, Roy and Lou Fern Schoenhals, weren't addled: they were taking a

chance on a new way to farm. Discouraged with wheat farming and wanting a change, they moved first to northwest Arkansas, where they met a number of growers farming some 550 acres of blueberries. The change from wheat to blueberries looked good to them, especially with the Arkansas Blueberry Growers Association headquartered in Fayetteville ready to give them information and advice. They, like me, learned that blueberries tolerate heat if soil and water conditions are right, and if the roots are kept cool. The Schoenhals' began looking for blueberry land.

They needed sandy soil, slightly acid, and a reliable source of irrigation water. And they wanted a location on a hard surface road near a fairly large population center. They found everything they were looking for in 112 acres on Jenkins Creek in southwest Missouri.

The soil was naturally acid and sandy. (Sandy is a local euphemism for *rocks*.) There was an abundance of irrigation water

from spring fed Jenkins Creek. The land lay along Interstate 44, and, although the area is rural, there are approximately 100,000 urban residents within a 30 minute drive.

Eight of the 112 acres were planted with blueberries, 10 with strawberries, and the, up until now, more valuable bottom land was put into pasture for a beef cattle sideline.

SINCE successful blueberry culture depends on lots of water, but not standing water, Schoenhals terraced the rolling upland acres to slow rain water enough to be used by the plants when it's available, yet avoid too much moisture with its resultant root rot. The blueberries were set in hilled rows. A gallon of peat-moss was mixed with dirt from the hole when each plant was set, and a 4-inch mulch of sawdust was laid over the rows to keep roots cool and to conserve moisture. A 10 foot grass strip was left between the rows.

The "drip" irrigation system Schoenhals installed puts on a gallon of water an hour, three

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ROY Schoenhals and his Jenkins Creek Berry Farm. (CRANBERRIES photos by Frances Jones)

drops at a time. A 3/4-inch plastic pipe runs along each row with a water emitter at every plant, and on hot, dry days the blueberries take 5 gallons of water per plant. Water from the creek is screened at the intake and then triple-screened before it goes into the 3/4-inch pipes in order to remove impurities which might clog emitters. After four screenings, the creek water is as clear as city tap water.

Preparing the land, buying 80,000 blueberry bushes and installing irrigation doesn't come cheap. Schoenhals invested \$5,000 an acre before the first blueberry was picked. He expects a yield of seven tons an acre, all harvested by pick-your-own customers. With fresh blueberries at \$3 to \$4 a pint in local stores, it's not hard to imagine the attraction for a customer who saves money by picking berries in a clean, chiggerless field.

I ASKED Schoenhals if he was worried about having 56 tons of unpicked blueberries on hand, with no market.

"Listen," he said, "blueberry growers have had people cut fences, crawl over gates and plug roads with parked cars when they were trying to get at the berries. With that kind of demand, there's no trouble in selling the product!"

He added that the Arkansas Blueberry Growers Association guaranteed a market for surplus berries and had a mechanical picker available should he need it.

Although Schoenhals gets most of his help from the Arkansas Blueberry Growers, the University of Missouri Research Center at Mount Vernon is just 20 miles from the Schoenhals farm. The Research Center identifies Blueray and Bluecrop cultivars as most productive for this area. Schoenhals grows Blueray and Bluecrop and also Collins, Bluetta and Coville. The Research Center findings suggest that Bluetta and Coville tend to winter kill, but Schoenhals' plants

HOW TO CLEAN BERRIES

Don't rinse blueberries. Immediately after picking, pour 2 or 3 inches deep into a cardboard box—berries, leaves, stems and all—and freeze immediately. When berries are solidly frozen, shake box to break berries apart or rub between hands to separate berries. Shake berries vigorously, then let them roll down a terry cloth towel into a clean container.

Leaves and stems stay behind in the box or cling to the towel. Berries are clean and dry—and unbruised—since they are still frozen.

have all survived. He agrees that Blueray is the best producer. The cultivars are all highbush and ripen from mid-June to mid-July.

Raising blueberries isn't all roses. First of all, it takes steady nerves to move 650 miles, trade endless fields for 8 acres on a hill, invest \$40,000 and then wait three seasons for the crop. And some of Schoenhals' customers didn't wait for the crop. They drove out, dug up some plants, and made their own berry patch. That was an expensive nuisance but other things are chancier. Exact soil requirements aren't known for this area, and, the day I was there, Schoenhals was worried about some yellow leaves at the top of the plants. He thought they might indicate iron deficiency in the soil.

Drip irrigation is new to this part of the country and dealers are few and far between. Schoenhals had to move his sprinkling system from the strawberries to the blueberry field when the drip emitters didn't spread enough water during dry weather.

Changing from field crops to berry crops means adjusting to farming that demands more hand labor, and more intensive crop care. Comparing the labor requirements of wheat farming and berry culture, Schoenhals said: "Eight acres of blueberries is equal to 500 acres of wheat in man hours."

Catering to customers who come to the farm calls for lots of extra farm grooming and the

necessity for meeting directly with the public, obligations which some farmers are not willing to accept.

NEVERTHELESS, the Schoenhals' are glad they made the move. Lou Fern, who worked right alongside her husband, put it this way: "Blueberries are a new crop for Missouri, but we think there's money to be made, and, after all, someone has to be first."

The Schoenhals' are living an ever-repeating story of American agriculture—that of making a new start, taking a new chance, trying a new style of farming in search of a more secure future.

As for me, I'm dreaming of some early July morning when it's cool and misty over on Jenkins Creek. If it ever is, look for me in the blueberries. It'll be the closest place to heaven there is around here.

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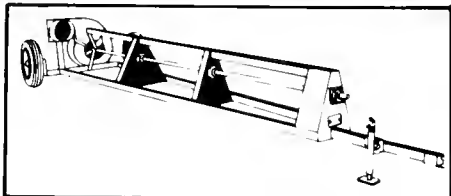
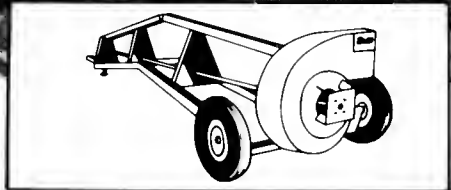
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Don't provoke a tough tax audit

EDITOR'S NOTE: CRAN-BERRIES is pleased to introduce veteran business writer Joseph Arkin to its readers. Arkin holds a BBA in accounting from St. John's University, an MBA in taxation from Pace College, is licensed by the State of New York as a CPA and is enrolled to practice before the Treasury Department. He has had more than 5,000 articles published in more than 1,000 newspapers and magazines.

By **JOSEPH ARKIN**

The Internal Revenue agent who is assigned to audit your return has undergone a vigorous training regimen in tax law plus a course or two in public relations.

UNLESS you find the unusual agent with a warped personality, you'll likely find that the agent assigned to audit your books is interested in completing his assigned task with a minimum of inconvenience.

If you take the positive attitude and graciously accept the fact of life that the Government has the right to audit your books, you'll be better off. Cooperation is the keynote, for nothing riles an agent more than having to deal with an obstinate taxpayer bent on obstructing the orderly conduct of the audit.

In discussions with IRS agents, we find that the biggest gripe they have is the stall.

"My accountant has my books and records and is too busy now to bring them over," is a favorite ploy.

What gain is there in such delaying tactics? Your business books must be produced unless you avail yourself of the right of

pleading the Fifth Amendment (not available to corporate taxpayers) and force the Government to build its own case against you.

Of course, such a plea is invariably the tip-off that you've got something to hide and you can be sure that the audit will then be assigned to a team of special agents. If a material understatement of income is uncovered (25 percent or more), the case can be forwarded through channels with a recommendation for criminal prosecution in addition to civil penalties of 50 percent plus interest.

Thus, we find that a more prudent policy when an agent calls for an appointment is to make one within a reasonable time and to ask for a list of items to have ready. The list you elicit could be a "tip-off" of what areas the agent has been assigned to check. Or, you can refer the agent to your accountant and ask him to make arrangements for the audit. The audit can be held at your place of business or at the accountant's office if that is more convenient to you.

IT IS IRS policy to conduct "office audits" at the local IRS office, but where special conditions prevail (such as voluminous records or your need to remain at your premises), request can be made for the audit to be transferred to the Field Audit Section.

Aside from stalls, what else irks agents and puts them into a poor frame of mind, one likely to stir up resentment and possible adverse consequences?

The work space provided should be adequate, with sufficient desk space to lay out books and worksheets. There should be adequate lighting and

ventilation. A place should be provided which is sufficiently quiet to enable the agent to work efficiently.

Record keeping in a proper fashion is likely to produce a "favorable" response from the agent. If he or she asks for specific items to back up entries appearing in your books or on your tax returns, it is poor policy to dump a pile of papers onto the desk and say, "Here, find what you are looking for!"

The agent can disallow the item in question and say that he could not find any substantiation in the mess of papers you foisted on him. Thus, you'll have the burden of finding the item anyway at a later date, so why not put your papers into order prior to the audit? And, during the audit, you should volunteer to sort through the papers and produce the sought after items.

EVERY AGENT assigned to check tax returns is versed in the tax law as followed by the procedures of the IRS. In essence, IRS policy and recent court decisions (except U.S. Supreme Court) may be in conflict, but the agent must follow IRS policy. His/her role is to come up with the findings of "no change" or with an assessment of additional taxes.

Where you disagree, don't argue, don't cuss out the agent or abuse him/her. Have your accountant call to argue fine points of law. You can refuse to sign the form consenting to the assessment of additional taxes and avail yourself of all the avenues open to argue against the proposed tax deficiency.

BUT, keep in mind that the agent doesn't write tax legislation nor can he/she change IRS policy.

regional
news
notes

Massachusetts

By IRVING DEMORANVILLE

Dr. Charles Brodel and Sherri Roberts of the Cranberry Experiment Station attended the annual meeting of the Entomological Society of America in Detroit, Mich., from Nov. 28-Dec. 2.

Drs. Stan Karczmarczyk and Irena Zbiec returned to Poland in late October, ending a stay of nearly 2½ years with us. They were excellent workers and we will certainly miss them.

Unofficially, the Massachusetts crop appears to be a record and will surpass the 1982 crop by a considerable margin. Probably, it'll wind up to be a total of 1,400,000 barrels or more.

Oregon

Art Poole, county extension agent, gave the Bandon (Ore.) Western World the following reason for the lower than anticipated yield last season:

"We had above normal temperatures after the New Year last winter. Therefore, the plants probably didn't go into complete dormancy. Without a sufficient rest period during dormancy, the plant cannot properly form buds the following spring."

The 1983 harvest was up 13 percent

over last year, but, according to Wayne Scherer, national board member, that's mostly because 10 percent more acreage was planted.

Washington

By AZMI Y. SHAWA

All the indications led to the prospect of a good crop for harvest in 1983. Actual production was an upset for growers.

The 1983 crop is: Grayland, 98,404 barrels; Long Beach, 25,676; Bandon, Ore., 73,145; British Columbia,

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181,810.

The crop in 1982, a poor year for the West, was: Grayland, 67,357; Long Beach, 25,676; Bandon, 63,051; British Columbia, 144,699.

There were, perhaps, many extenuating circumstances: slow berry set (which led to small berries); weather conditions (unusual day and night temperatures, although the color was very good); early harvest (for the Grayland area, about the last week in September).

Harvest was a slow process in the Long Beach area due to a shortage of water. It began the first week in October and ended in the middle of November.

The following meetings are scheduled:

Feb. 21, 7 p.m.—“Fungicide Research, Update,” Dr. Peter Bristow, Associate Plant Pathologist, WUEWC, at North Willapa Harbor Grange, Grayland.

Feb. 24, 7 p.m.—same speaker at CWREU, Long Beach.

March 6, 7 p.m.—“Herbicide Research, Update.” A. Y. Shawa,

North Willapa Harbor Grange, Grayland.

DU PONT VP NAMED

Dale L. Wolf, who heads the Du Pont Company’s agricultural chemicals business, recently was elected president of Groupement International des Associations Nationales de Fabricants de Produits Agrochimiques (GHFAP).

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CONTESTANTS in the Cranberry Challenge were, l. to r.: Sue DiMarzio, Mayflower Seafoods; Robert Folsom, Inn for All Seasons; Barbara Bilbo, Sandy Lane Restaurant; Joan Smoot, The Foxglove; Pat Marma, the Fairview; Steve Bilbo, Tinker's Dam; Dennis Shanks, La Maison de Notre Pere, and Betsy Gay, Station One Restaurant.

Pie wins dessert contest

The warm scent of battle—and sumptuous desserts—filled the air at Cranberry World in Plymouth, Mass., recently.

EVERYBODY was hushed, awaiting the judges' decision.

The occasion: The Plymouth Area Cranberry Challenge, hosted by Cranberry World and featuring some southeastern Massachusetts' finest restaurants in a head chef-to-head chef competition for the most delectable cranberry dessert recipe.

The winner: cranberry apple walnut pie, created by Plymouth's Station One restaurant.

Other entrants included chocolate cranberry mousse, cranberry napoleon, cranberry orange cream pie, cranberry custard, cranberry colada pie, cranberry swirl coffee cake and cranberry apple pie.

Station One received a commemorative plaque and \$500, which it donated to Cranberry Area Hospice.

Herbert Colcord, manager of Cranberry World, described the cooking challenge as "a chance to explore new ideas in cranberry cuisine."

Judges were: George Opalenick,

chief instructor at Johnson & Wales College and president of the Rhode Island chapter of the American Culinary Federation; Michael Gallerani, assistant to the executive, Plymouth Board of Selectmen; Alan Etkins, food and

beverage director, Dunfey's Hyannis Hotel; Kirk Kenyon, chief instructor, Newbury College of Culinary Arts, and Colin Stewart, editor, MPG Publications.

The admission free Cranberry World, a museum dedicated to the

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fruit, is open from April 1 through Nov. 30. Sponsored by Ocean Spray, Cranberry World is Stop Six on the Americana Trail and just a 10 minute walk from Plymouth Rock and Mayflower II.

**STATION ONE'S
CRANBERRY APPLE
WALNUT PIE**

In a 10 inch unbaked pie shell, add:

- 6 large Cortland apples, peeled and sliced
- 2 cups coarsely chopped fresh cranberries
- 1/2 cup chopped walnuts
- 1 cup sugar
- 3 tablespoons flour
- 1 teaspoon nutmeg
- 1 teaspoon cinnamon

Toss all together in a large bowl to mix well.

Mix separately:

- 3 tablespoons all purpose flour
- 3 tablespoons butter
- 2 tablespoons sugar

Crumble over the top of the

cranberry-apple mixture. Place in 450 degree F oven for 15 minutes. Lower heat to 350 degrees F for 30 minutes. Remove from oven and cool.

A suggested pie dough recipe:

Mix:

- 1 1/4 cup all purpose flour
- 1/2 cup shortening
- 1/4 teaspoon salt

Add slowly—1/4 cup ice water. Add water slowly and work crust with a fork or a pastry blender. Refrigerate for half an hour before rolling out.



MASSACHUSETTS

November was a warm month, averaging 2.1 degrees a day above normal. Maximum temperature was 65 degrees on the 9th and minimum

27 degrees on the 14th. Warmer than average periods were 1-3, 9-11, 21, 22, 24 and 25. Cooler than average days were 13-15, 18, 27, 28 and 30. Rainfall totaled 6.49 inches, nearly 2 inches above normal. This was the wettest November since 1975, but only the 10th wettest in our records. There was measurable rain on 12 days with 2.08 inches on the 15-16th as the greatest storm. We are 8 inches above normal through November and about 6-2/3 inches ahead of 1982 for the period.

I.E.D.

NOVA SCOTIA

After a long, dry summer and fall, the weather changed markedly. As of the end of November, we had no snow but we had a lot of rain. In fact, some parts of New Brunswick had record rainfall for November.

Growers had no problem in harvesting their cranberries this year.

I.V.H.

WASHINGTON

September precipitation total was 3.15 inches. October's was 4.92 inches.

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(the 20 year average for October is 11.03). November brought the moisture that would have helped the October water harvest. There was a total of 20.22 inches, with 29 consecutive days of precipitation, the greatest being 2.18 inches on the 24th and the prior 24 hours, the reading having been taken at 8 a.m. on the 24th. There were several days with more than 1 inch: 1.30 on the 3rd, 1.71 on the 4th, 1.26 on the 15th, 1.81 on the 16th, 1.76 on the 17th. Several other days were just under the 1 inch mark.

The November precipitation total was a record for this area, including the readings back to 1945.

High temperature for September was 79 degrees on the 1st, with a low of 30 degrees on the 28th. October brought a cooling trend, with a high of 69 degrees on the 12th and a low of 30 degrees on the 1st, 15th and 16th. November temperatures ranged from 61 degrees on the 1st and 11th to 29 degrees on the 29th. The bog low of 26 degrees came on the 29th also. There were damaging winds on the 11th and 25th. The Grayland-

Hoquiam area experienced heavy wind damage on the 10th and 11th also.

A.Y.S.

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approved the experimental use of an innovative septic system that may be used in place of the "waterless toilet" now required for one acre lots in New Jersey's cranberry growing region.

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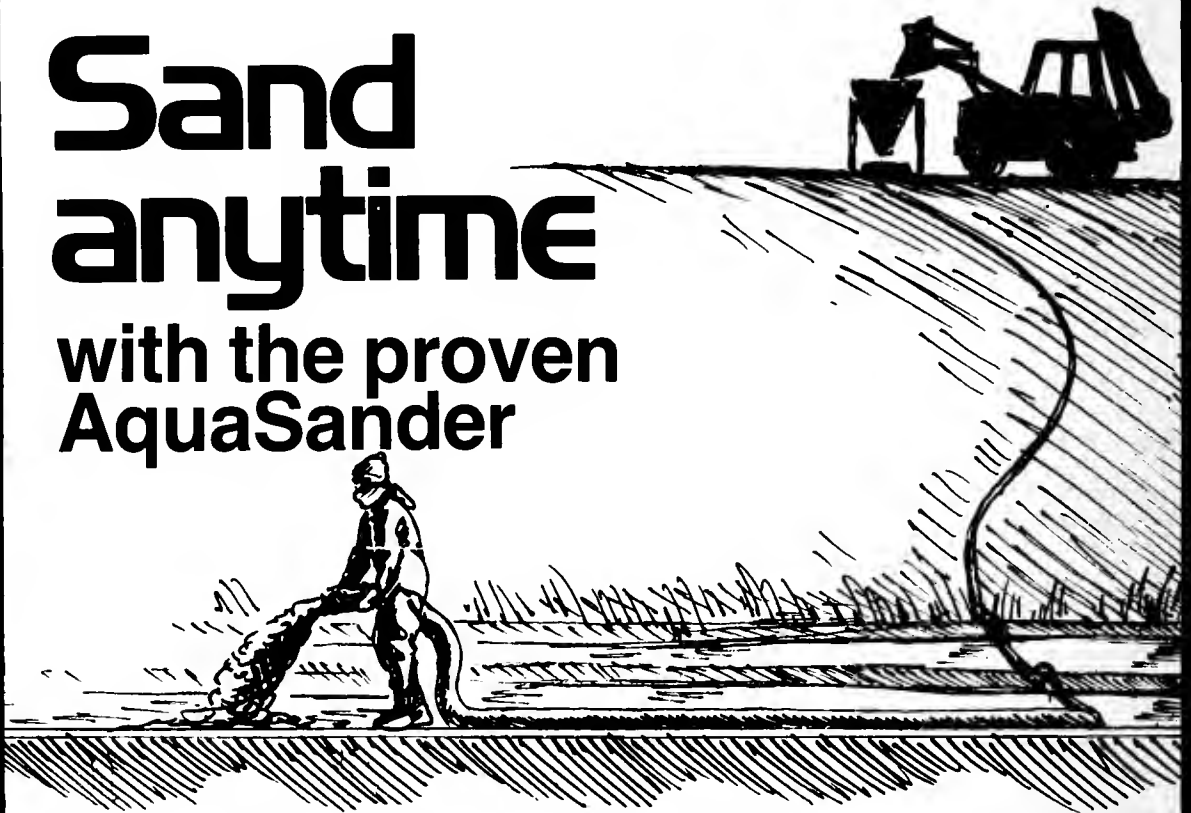
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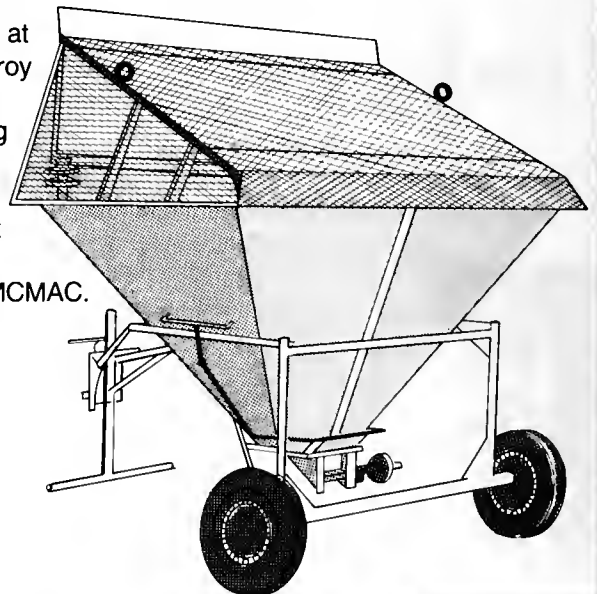


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erry Experiment Station, in
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40 degrees F or less, he
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that crystals or liquid layers
) form.

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he added: "Some products,
those containing emulsifiers,
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By inserting a long rod into
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CORRECTION

A headline in the last issue of
CRANBERRIES read: "Plan New
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Wisconsin marsh finds profit in fresh fruit

By FREDERICK POSS

With two cups of cranberries, one cup of sugar, half a cup of chopped walnuts, half a pint of cream and a great big smile, Nodji Van Wychen whips up the freshest tasting cranberry nut pie imaginable!

"Freshness is the key ingredient for us because two-thirds of our crop goes to fresh fruit sales," she explained, while she, her husband, Jim, and I sat in the warm kitchen of the Van Wychens' Warrens, Wisc., home.

While I busily sampled punch, bars, bread and other goodies made from cranberries, Nodji said: "We do include a recipe book for cooking and baking with cranberries with each gift box of fresh berries that we hand pack in our warehouse."

The words, *hand pack*, struck a nerve in me. How could a family find the time and energy to process their crop via the

arm-strong method in our high tech world?

The Van Wychen's explained their unique approach to merchandising on the way to their warehouse.

"For a marsh of only moderate size like ours," Jim told me, "we've found that over the years a fresh fruit crop is the most profitable way for us to go."

"OVER THE YEARS" for the marsh, by the way, means producing cranberries since 1905, in part with vines that are more than 100 years old and still going strong. Today, the four generation old family business, titled the Wetherby Cranberry Co. Inc., consists of Jim and Nodji Van Wychen, as well as Nodji's parents, Ted and Leona Olson. Together the two families

work more than 800 acres of marsh, including 45 acres of actual berry beds.

And do they work! As Jim and Nodji led me into the large pole building which serves as the warehouse and machine shed, Jim said: "We produce close to the state average of 150 barrels of berries per acre. Each barrel weighs 100 pounds." Immediately, he set to work on a diesel motor in need of repair.

I was still calculating how many tons of fruit were harvested each year when Nodji led me to the packing area. "As soon as they are picked," she told me, "some of the small pie berries

(continued on page 12)

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COVER PHOTO
WORKERS busily sort berries at the Wetherby Cranberry Company in Warrens, Wisc. The story of this family style corporation begins on this page. (CRANBERRIES photo by Frederick Poss)

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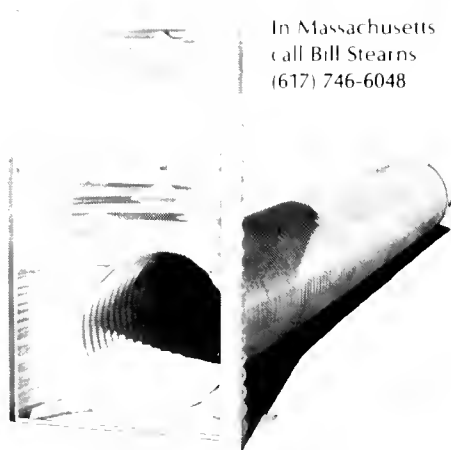
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editorial



Good news, bad news

Foreign Agriculture has noted that U.S. agricultural export values are likely to go up in 1984.

That's the good news.

The bad news is that sales volume is expected to be down for the fourth year in a row. In other words, the rise in values probably will result from higher prices, not larger volume.

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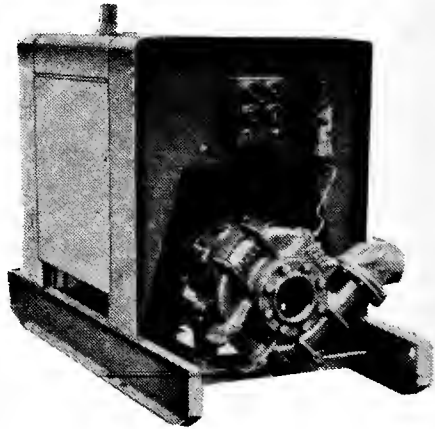
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PINE BARRENS CULTURE, FOLKWAYS TO BE STUDIED

The American Folklife Center in the Library of Congress has begun a survey of traditional culture in the Pinelands, where New Jersey's cranberries are grown.

The Pinelands National Reserve, which was created in 1978 by an Act of Congress, encompasses the region in south-central New Jersey known as the Pine Barrens—a million acres of sand beneath a stubble of short pine trees and scrubby oaks, broken occasionally by the dark, wet green of cedar swamps. The area is inhabited by cranberry growers, farmers, some of whom commute to jobs around the region, and some woodsmen who "work the cycle," hunting for deer and rabbits, trapping for furs, tonging for clams and oysters, making charcoal, or gathering moss or other plants.

The Pinelands Folklife Project will evaluate a broad range of folk technology, craft and expression found within the National Reserve. For two months, a team of researchers trained in folklore, anthropology, ethnobiology,

environmental psychology, American studies and photography will identify and document aspects of the region's folklife. A series of in depth studies based on the survey's findings will get under way next spring.

The project is distinguished from cultural surveys that have already been conducted in the Pinelands in its emphasis on living cultural resources. Traditional activities to be documented include storytelling,

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folk music (religious and secular), folk architecture and landscaping, foodways, crafts, seasonal events and festivals, and family and community social life. The project will also examine the region's distinctive natural environment, including the interrelations of folklife with natural resources and landscapes. Traditional ways of classifying and harvesting the region's flora and fauna, of naming and navigating the woodlands and wetlands, and of forecasting the weather and decorating the landscape will be investigated, as will the rich vein of folklore about the region's people and places.

The survey is being performed under the combined auspices of the Pinelands Commission, the U.S. National Park Service, the New Jersey State Council on the Arts, the New Jersey Historical Commission, the New Jersey Department of Environmental Protection and the New Jersey Department of Human Services.

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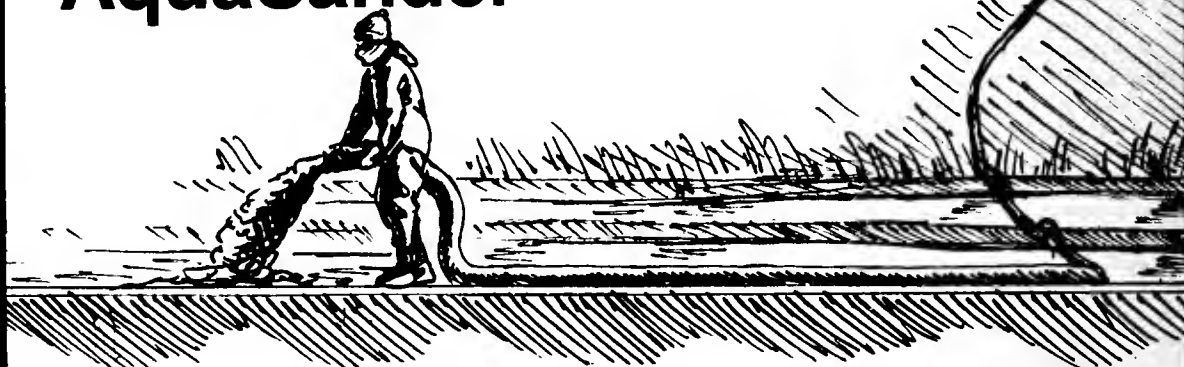
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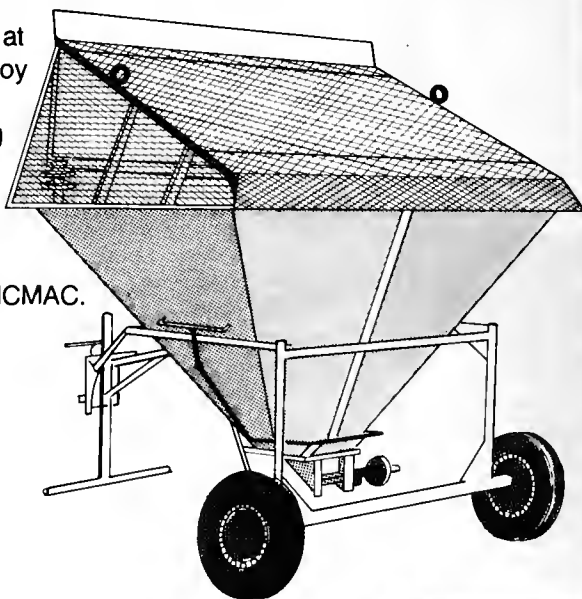


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Massachusetts

By IRVING DEMORANVILLE

Dr. Robert Devlin of the Massachusetts Cranberry Experiment Station attended a meeting of the steering committee of the Plant Growth Regulator Society of America in Chicago from Dec. 6-9. The committee was involved in planning the annual meeting to be held in Boston in July.

According to the Massachusetts Farm Bureau, the following legislation of importance to Bay State farmers has been signed into law:

*mandatory use of Farmland Valuation Committee values when assessing farmland;

*exemption of plastic covered greenhouses from the building code;
*establishment of a producer's security fund for dairymen not already covered by a guaranteed

market program;
*reorganization of the state Department of Food and Agriculture;
*establishment of a Massachusetts apple promotion program.

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WISCONSIN MARSH . . .

(continued from page 3)

are sorted here by hand into bulk bins for processing into sauce and jell."

I glanced at the chutes where 16 ounce bags were hand sealed at a rate of 40 to 60 bags per minute. My fingers began to ache when I realized that tons of fruit had to be sorted and packed, one pound at a time!

Moving up the assembly line to where the berries must bounce through a wooden frame to test their firmness, she continued: "And last year I arranged the sale of several tons of small berries to the Christina Wine Cellars of La Crosse, Wisc. They have a wine master who has



TOP TO BOTTOM: 1. Jim and Nodji Van Wychen and their four children, Tanya, Kyra, Henry and Shana; 2. Nodji's parents, Ted and Leona Olson, enjoy a view of the marsh from the deck of their new home; 3. Ted Olson proves again that cranberry reservoirs provide excellent fishing for panfish, bass, and his favorite—northern pike. (CRANBERRIES photos by Frederick Poss)

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CLOCKWISE, from above: 1. Fresh berries move quickly along the assembly line; 2. Sealed packages are ready for shipping; 3. A bottle of the wine made from Wetherby berries.

(CRANBERRIES photos by Frederick Poss)





A SECTION of the 800 acre Wetherby marsh, which includes 45 acres of berry beds.
 (CRANBERRIES photo by Frederick Poss)

created a brand new product for our crop: cranberry wine!”

Cranberries in the medium size range, Nodji explained, are sorted into 12 ounce bags for distribution to local grocery markets. The sorting becomes so hectic that even the Van Wychen children try to help out. Tanya, 10, and Kyra, 8, know all about quickly filling the plastic bags labeled “Wisconsin Cranberries.” Only Shana, 5, and Henry, 3, are too young to do anything but add moral support and gulp down an occasional raw cranberry before it becomes part of the family cash crop.

The extra large, fancy grade cranberries are also hand sorted and then packed into 3 pound gift boxes sold to individuals and corporations for \$3.95 plus shipping.

“SO WHEN DO you folks take time to breath?” I was about to ask, after watching all the hectic activity. Then I met Ted and Leona Olson and discovered

they were even busier than the young folks.

A healthy tan, a good physique, a strong grip hardly characterize all men in their seventies. But Ted Olson doesn’t easily fit into any mold.

“Yes,” he acknowledged, “I do have a few outside activities besides working the marsh.”

The few projects turned out to include being town chairman

of the city of Warrens and a member of the Monroe County Board.

And Ted’s wife, Leona, her black hair and expressive face alive with energy, is an over-achiever too.

“I love babysitting the kids,” she said, as she smiled at the four little Van Wychen’s, all munching down cranberry snacks. “And in my spare time I

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collect antiques for our new home. Ted and I have visited Australia, Alaska, the Scandinavian countries—and had a ride on the Love Boat!”

“And, boy, does she ever collect!” her daughter added. It didn’t take much coaxing for Leona to explain that, besides extensive samples of honey jars, salt and pepper shakers, dolls and cranberry glasses, there was something very special about her antiques.

“I’ve tried to collect and preserve the old types of equipment used in early times to harvest cranberries,” Leona told me. “The berries were harvested with wooden-toothed rakes, for example, and I’ve tried to save pieces of that kind which show the history behind growing cranberries.”

“And what about the winter months when you can’t grow

anything but a beard in the cold snows of Wisconsin?” I inquired of Jim Van Wychen, now that he had finished with the diesel engine in the warehouse.

“This past year,” Jim explained quietly, “I was state director of the National Association of Farm Analysis Specialists here in Wisconsin. In my spare time, I keep busy selling property and mortgage insurance and working on tax assessments for area businessmen.”

And Nodji’s spare time?

“I find a few minutes to teach C.C.C. classes at St. Andrew’s Church in Warrens, teach the youth choir, be the general leader of the 4-H Club and be chairperson in charge of selecting a queen for the annual fall Cranberry Festival in Warrens,” she said, almost faster than I could write notes.

THEN NODJI looked across at her sunburned, blond, curly headed husband sitting at the

kitchen table with the two smallest kids perched on his knee. She laughed a little, as if he might be reading her thoughts, and said, with a smile: “We never get into any fights around here . . . you’ve got to see each other for awhile to be able to do that!”

When I finally had finished scribbling my last notes, I found I was smiling, too . . . especially when I reached for another piece of pie!

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weather watch

MASSACHUSETTS

December was mild in East Warcham, averaging 1.4 degrees a day above normal. However, many other areas, including the Boston area, were colder than normal. Maximum temperature was 64 degrees on the 13th, not a record but close, and minimum temperature was 2 degrees on the 25th. The period from the 23rd through the 27th was cold enough to have caused some winterkill in unprotected bogs. Warmer than average days were the 6th, 7th, 10th, 12th-16th, 22nd, 28th and 29th. Cooler than average periods were the 11th, 19th-21st, 24th-27th and 30th-31st.

Precipitation totaled 4.47 inches or about 1/4 inch above normal. There was measurable precipitation on 12 days, with 1.04 inches on the 4th as the greatest storm. Snowfall totaled 5 inches, which is just average for us.

For the year 1983, our temperature averaged 0.9 degrees a day above average, our warmest year since 1975. Warmer than normal months were January, February, March, June, July, September, November and December. The only colder than normal month was May. This tied us for the eighth warmest year in our records. Maximum temperature for the year was 94 degrees on Aug. 20 and the minimum was minus 2 degrees on Jan. 19.

Precipitation for 1983 totaled 55.20 inches, which is about 8-1/3 inches above normal. This is about 8 inches more than in 1982. 1983 was the wettest year since 1974 and is eighth wettest in our records. Greatest single storm was from March 7 through 12 and gave us a total of 4.80 inches. The greatest 24 hour amount was 2.12 on April 24, closely followed by 2.08 on Nov. 16. Months with substantially above normal precipitation were February, March, April, October and November. Below normal months were June, July and September.

Snowfall for the year totaled

27.3 inches, which is normal for us. The greatest 24 hour snowfall was Feb. 11-12 with 14 inches. In fact, February was the only month with any appreciable snow.

I.E.D.

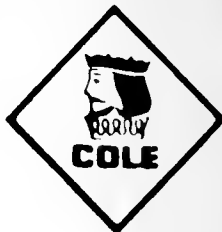
NOVA SCOTIA

Unlike the Midwest, we were fortunate to have seasonable

temperatures during December. The mean for the month, minus 2 degrees C, was close to the 50 year average of minus 3.1. As of Jan. 5 we were in a mild spell and most of the snow was gone. Cranberry vines should be entering the winter in reasonably good condition.

I.V.H.

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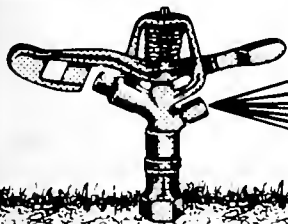


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Grading your tax preparer

By **JOSEPH ARKIN, CPA, MBA**

Business owners invariably have their personal tax returns prepared by their firm's accountant.

THIS is a good policy for this person knows best your individual situation and is acquainted with credits and deductions and carry-overs to which you are entitled. He will use the K-1 form he prepared for a partnership or S corporation, whereas a different tax preparer might have misgivings because of the penalty provisions enacted as part of the Tax Equity and Fiscal Responsibility Act (TEFRA) of 1982.

Also, he'll know if you should report some miscellaneous income for the partial use of company owned assets, e.g., a portion of company owned car expenses that went for personal use.

During the course of an audit, Revenue Agents are impressed favorably where it is shown that due care and diligence were used in the preparation of the return, albeit only the picking up of such an insignificant item as personal use of a company owned asset.

You wouldn't ordinarily keep your accountant to handle your firm's books unless you had confidence in his abilities. However, a clever auditor or statement preparer is not necessarily well versed in tax law.

If you use the services of a "Big 8" accounting firm, or a large local CPA firm, you'll likely have your personal return handled by a member of the firm's tax department, rather than by the same individual who handles your firm's regular work.

FOR the majority who use the services of a one man or woman CPA practitioner, or of a relatively small firm, it becomes

important to establish some guidelines in deciding just who is going to prepare your form 1040.

Here are the things to look for:

1-Is the preparer well versed in tax law? You'll get some idea of this by asking questions as to what he is doing to keep current on the many changes in the law. Does he have a good tax library,

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attend seminars, take the trouble to secure the prestigious master's degree in taxation or take courses in continuing professional education (mandatory in some states)?

You can't expect your tax preparer to know the thousands of sections of the Internal Revenue Code verbatim, but you should expect quick answers to reasonably easy questions, and signs of awareness where an item is complex and has to be researched.

2-You should seek that preparer who alerts you to items appearing in weekly or monthly tax publications which affect your business and personal transactions having a tax impact. Court decisions, revenue rulings, technical pronouncements, etc., are issued almost daily. Knowing these or being alerted to those affecting you can result in better tax planning of transactions and resultant tax savings.

Planning is an important facet of tax return preparation. Many a transaction has resulted in dire tax consequences merely because the mode used was defective, and, with the same facts and situation, could have been structured to effect tax savings and withstand challenges by the IRS.

3-Some individuals hesitate to ask for an automatic extension to file returns and certainly balk at a second extension request where a specific reason has to be given. Why? They fear that the return will be singled out for scrutiny. Right or wrong (the IRS won't tip its hand like this), this is the thinking of many taxpayers and tax preparers alike.

Therefore, we come to the question of just how much time your tax preparer gives you to prepare your information prior to interview time, and, at interview time, how much time is allotted to eliciting the information to properly prepare your return?

After furnishing all of the information requested, just how long do you have to wait for the return to be completed? You

can't put a time span on how long it should take (whether manually prepared or computer prepared) but you'll know somehow when it is too long.

It is best to have enough time to review your return. Find any omissions? Items you forgot to mention?

If such items are uncovered, you'll want enough time to

have the corrections made before the deadline for filing, especially if you have hangups about filing for an extension.

4-In addition to competency and promptness, you have every right to expect a measure of courtesy. You may want to discuss an item or volunteer more information, but, on the other hand, you shouldn't expect

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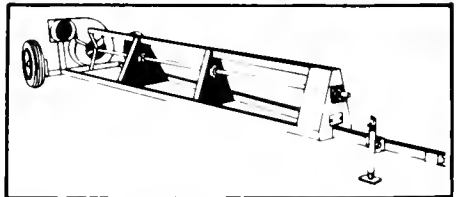
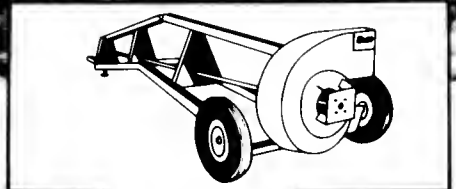
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your tax preparer to drop everything and answer the telephone when in the midst of doing tax work.

Many errors in preparation can be attributed to distraction—answering the phone, seeing a visitor, etc., can all lead to losing one's trend of thought. You do yourself a favor (and a favor to his other clients) when you are willing to wait for a telephone call to be returned and don't insist on immediate telephone contact.

5>Returns should be double-checked before being considered final. Have all areas of doubt been researched? If available, has another member of the firm or staff checked arithmetic? Searched for obvious omissions? Etc.

6-You'd want a preparer who is reasonably ready for you when you come in for an interview. He/she should have last year's return available, notes of last year affecting the current year's return and exhibit some knowledge of your specific problems by having given last year's copy a quick once-over.

Is there a capital loss carry-over? Is there a carry-over of investment credit? Changes in marital or dependency status?

7-Computer generated returns are very neat and manually prepared returns which are typed are also very neat. But what about handwritten returns where the pressure of tax season work gives rise to some items being illegibly written? If the IRS initial checkers can't fathom handwritten schedules, the return is flagged for correspondence and possible extra scrutiny. Who needs this?

8-The axiom that you get what you pay for is never more true than in tax preparation.

You'll see ads of franchise tax preparers offering courses and jobs to just about anybody and everybody. Pass a three or four month course and you're a tax preparer. No accounting degree, no experience in the world of business, no real experience in actually preparing tax returns are

usual credentials of these preparers. Is this what you are looking for? Decidedly NO.

You should want a fulltime tax preparer, one who engages in year-round tax preparation (fiscal year returns, audits, etc.) and who preferably is a CPA or a tax attorney.

Sure you will pay more, but your tax preparer who possesses a degree in accounting, exhibits skills and special training in tax work, is worth the professional fee charged.

How much? Fees vary throughout the country but, depending on years of experience, expertise, etc., you can expect to pay from \$50 to \$75 an hour. You'll pay even more if yours is a complicated return requiring the service of the tax partner of a large local or national firm.

It is often said that paying \$50 more per return to an experienced preparer costs no more than paying \$50 less per return to an inexperienced preparer. You are buying peace of mind and the more experienced preparer is likely to ferret out deductions that will more than cover the difference in fee.

9-Your tax preparer should be

a person who possesses a certain amount of tact and who can handle himself calmly and professionally during the conduct of a tax examination.

The degree of professionalism in this area can be a major factor in how the examination will be resolved.

You certainly don't want a hothead handling a tax audit. Abuse a Revenue Agent and that person will understandably strike back.

Your preparer should come to the audit well prepared and be polite and firm in defending the accuracy of the return under audit.

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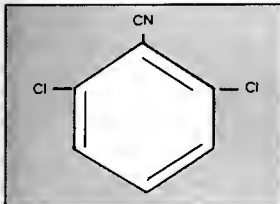
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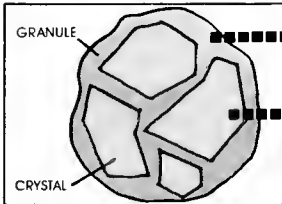
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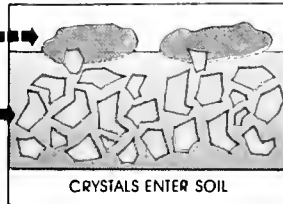
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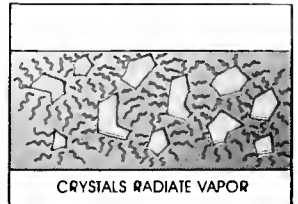
1. Norosac is 2,6-dichlorobenzonitrile, commonly known as Dichlobenil. This unique herbicide goes directly to a vapor stage without going through a liquid stage. It is activated by temperature and soil moisture.



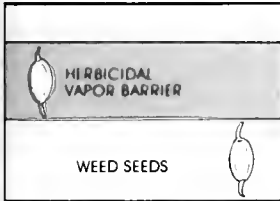
2. This remarkable herbicidal compound of razor-thin crystals is uniquely processed by PBI/Gordon to make a precise granule.



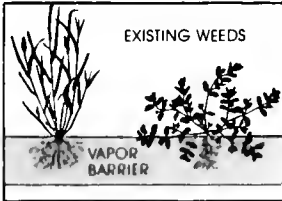
3. Granules are spread on soil or shallow water. Moisture carries the Norosac crystals into the upper layer of soil. Because of adsorption by soil particles, lateral movement is minimal.



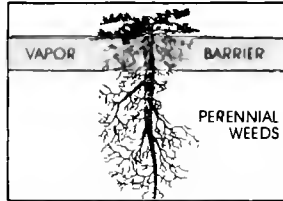
4. Temperature and soil moisture activate the Norosac crystals and they begin to radiate a herbicidal barrier. This continues for an entire growing season, and the spent crystals disappear, leaving no residue.



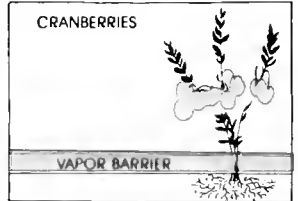
5. In this vapor barrier no plant cell division can occur. Seeds trying to germinate in the barrier will die. Sprouts below this zone will be killed as they try to penetrate the barrier.



6. Existing vegetation such as shallow-rooted grasses and annual weeds having root structures in this barrier will likewise be affected and die after two to three weeks.



7. Certain perennial weeds coming out of dormancy and attempting new growth within the Norosac barrier will run into the same dead end: they will be killed by the vapor.



8. Norosac, when used as directed, does not affect cranberry bushes that have deep roots extending well below the herbicidal vapor zone.

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The graphs above clearly demonstrate why Norosac is as efficient as any herbicide that has ever been offered to the Cranberry grower. We urge you to study it carefully.

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Another record crop

By IRVING DEMORANVILLE

There seems to be no end to record crops for the cranberry.

The U.S. Department of Agriculture's Crop Reporting Service gives the 1983 national crop total as 2,966,000 barrels.

That's about 1 percent over the 1982 total.

1982 topped the 1981 crop

total.

The 1983 Massachusetts crop is cited at 1,400,000 barrels.

This is a record for the state and about 9 percent above the 1982 crop.

The figure puts the Bay State in the cranberry growing lead.

Wisconsin is second, with 1,132,000 barrels, down about

11 percent.

New Jersey came up with 233,000 barrels, down more than 20 percent from last year.

The Northwest is up.

Washington hit 126,000 barrels, up 40 percent.

Oregon came in with 75,000 barrels. That's 15 percent over 1982.

CCCGA takes stand on safety

"We want it to be known that we are concerned about the environment and will insist that agricultural compounds be used in a proper and responsible manner."

So said George Andruk, president of the Cape Cod Cranberry Growers Association, in a recent report on the organization's activities.

Added Andruk: "It is better that we take the initiative before some regulatory agency forces it on us. We also want the public to be aware that we are concerned about everyone's safety."

THE CCCGA building needs subcommittee has concluded that that it

would not be economically feasible to enlarge the library at the Cranberry Experiment Station enough to accommodate growers at a single meeting. Station Director Irving E. Demoranville will schedule three dates for each program to overcome crowding at winter meetings.

For economic reasons, the CCCGA board has decided against the hiring of a parttime lobbyist. Legislative subcommittee members Doug Beaton,

Chris Makepeace, Dave McCarthy and Elton Ashley Jr. will devise a plan for the review of legislative bills.

Andruk saluted past president Dave Mann for his role in the passage of a bill requiring local assessors to use agricultural land values when assessing bogs. Mann will head a new subcommittee to meet with assessors. Other members are Clark Griffith, Marshall Severance and Dick Ward.

Andruk noted that the CCCGA sponsored a tour of bogs by the Water Resource Commission and members of the General Assembly.

"If a water resources bill is inevitable, we want consideration for the efficient water conservation measures we have established," the CCCGA president said.



COVER ILLUSTRATION
THIS DETAIL is from the painting, *The Cranberry Harvest, Nantucket Island, done in 1880 by Eastman Johnson. The entire painting can be seen on pages 12 and 13.*



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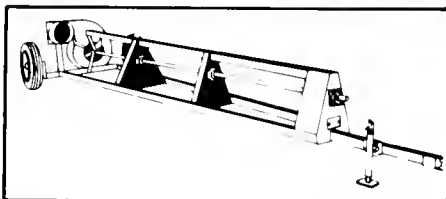
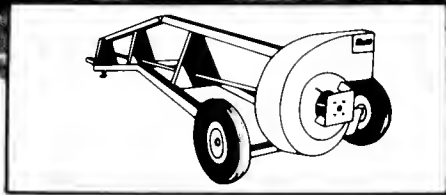
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editorial



Economics or politics?

Behind the Ag Scene says that "the 5%, 6% and 7% interest rates that we used to know are, like the horse, a thing of the past. Though we don't like it, we are learning to live with interest rates of from 10% to 14%." And would you believe 10% to 18%?

How much of the jacking up of interest rates is due to economic forces and how much to political influences? With respect to the latter, I'm thinking of huge and growing federal deficits and their effect on credit markets. It's hard for the ordinary citizen to wield much control over complex and shifting economic forces. But he/she can march up to the ballot box and have an impact on the political forces that influence our economy in general and interest rates in particular.



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THE AUTHOR samples her cranberry banana bread.

Confessions of a cranberry cook

By SUE BARANCIK

Back in the mid 1960's, when I was a young bride and squeaky new social worker, I spent my days attempting to help clients with their problems and my nights clipping recipes! While my husband burned the midnight oil in our university town, I test cooked cakes and cookies, stews and souffles, pasta and pastry.

One of the recipes I came across in those early days of marriage was an unusual sounding bread called cranberry banana. Armed with the necessary ingredients, I set to work and was delighted with the results. The tart taste and bright red hue of the cranberries mingled

with the pale mellowness of mashed bananas in a most satisfying combination.

I brought one of my first loaves of this cakelike bread into my social work office and, with some trepidation, sliced it for afternoon coffee break. My rather taciturn, melancholic supervisor gingerly took a tiny bite.

"I'm not much of a sweets eater," he protested.

"Try," I implored.

Try he did. In minutes, the entire loaf was swooped up by olde stone face. Later that afternoon, he was heard to mutter . . . "if only my wife would bake."

I've been making this extremely tasty and quite attrac-

tive bread ever since. In those early years, I painstakingly cut every one of those little berries with a knife. This was admittedly a tedious task. Then, one day, I plopped them into my blender and, *voila*, the job was reduced to a couple of minutes. Today, we have food processors to do the job as well.

I'm sure that you'll soon see the merits of adding cranberry banana bread to *your* recipe repertoire. A loaf of the bread looks beautiful on the holiday table. It also freezes well and makes a delightful holiday gift.

CRANBERRY BANANA BREAD

¼ cup butter or margarine, softened
1¼ cups granulated sugar
1 egg beaten
2 cups sifted flour
1½ teaspoons baking powder
1 teaspoon salt
½ teaspoon baking soda
2/3 cup mashed ripe banana
1¼ cup cranberries, coarsely chopped
½ cup chopped walnuts

1. In medium bowl, blend butter or margarine with sugar; add egg and beat until smooth.

2. Sift together flour, baking powder, salt, baking soda. Add to creamed mixture all at once, mixing with spoon just until all flour is

moistened.

3. Fold in bananas, cranberries and nuts. Pour into greased 9 by 5 by 3 inch pan. Bake one hour or until done at 350 degrees.

4. Cool in pan 10 minutes. Remove from pan and cool on wire rack.

5. Serve sliced the next day. Or freeze until needed.

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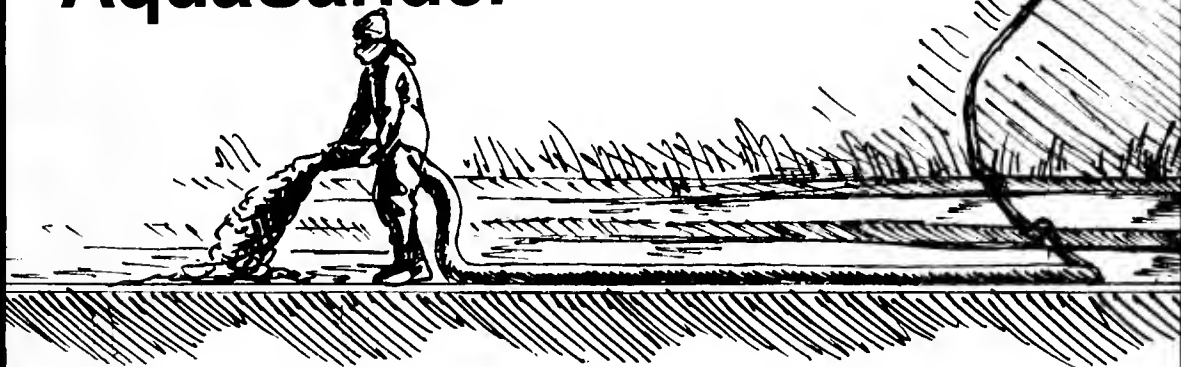
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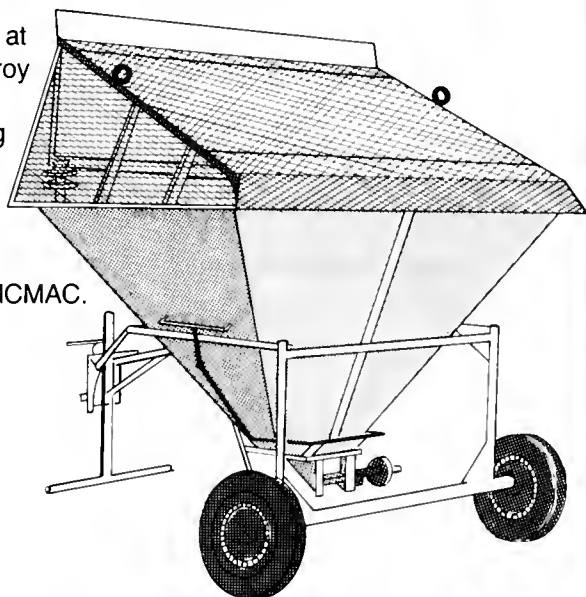


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Winter chore time

By EVELYN WITTER

A soft, heavy snowfall prevented me from making the usual fast trip home from town. My errands had taken longer than I planned, and it was getting late.

Naturally, I was concerned about what the family was doing. I've always made it a point to be home at chore time.

But after I turned in at our farm, the snow-whitened landscape began to answer the questions that had been accumulating in my mind.

The children had made it home from school, all right. Heavy tire tracks swerved where the school bus had skidded into the land, but then recovered a firm, reassuring course.

When I put the car away, I looked toward the garden to see if my husband and son had gone through yet to do the chicken chores.

They hadn't. The horse-nettled weeds, drooping under ridges of snow, blocked the way unmolested.

I looked to the east, to the half acre our children use for a playground. Beyond it lies our hilly orchard and, farther on, the thicket that leads to the woods.

I smiled then, for my menfolks and our dog had left me a note in footprints. There was no mistaking it!

"Dear Mom: We'll be a little late for chores this evening. You see, with the new snow and all, we couldn't

resist the temptation to scare up a few rabbits. Have a good, hot supper ready? Love from Bill, Jim and Bub."

Inside the house, 7-year-old Louise greeted me with a hug of delight. "Look out the window, Mom. The snow has made all sorts of things in the bushes and trees! There are poodle dogs and an alligator . . ."

Since chores were waiting, I supposed mealtime could wait, too. So I joined in the fun. "I can see birds in the snow," I told Louise, "and there's a fish!"

The sky began to brighten, over there where the day was going to bed. The clouds broke apart and took on after-sunset colors. We sat and picked out snow objects until dark blacked out our view.

Soon we heard excited voices

and the rattling of milk buckets. Clearly, the tramp through the woods had been a high adventure.

The chores were now under way, and it was time to start getting that good, hot supper!

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Pinelands climate: continuing challenge

By ELIZABETH CARPENTER

"1983 was one of the hottest and driest years I can recall," said Mike Flint, marketing analyst, New Jersey Crop Reporting Service.

Those attending the recent 116th annual winter meeting of the American Cranberry Growers Association hardly needed the reminder of the eight or nine scorching weeks that caused a decline in the state's cranberry crop.

Despite a 100 acre increase in New Jersey's overall cranberry production acreage, the 1983 crop was down 7 percent from August's projections. Final 1983 crop reporting figures showed New Jersey's 3,100 harvested acres yielded approximately 75.2 barrels per acre, for a total production of 233,000 barrels.

Flint concluded: "Irrigation helps but it can't offset the overall impact of hot, dry weather."

ELEVATION, or, more precisely, lack of it, increases the complexity of the region's weather picture. Keith Arneson, agricultural meteorologist, Cook College, Rutgers University, told growers: "The Pinelands (the heart of the state's cranberry country) has a 170 day growing season, one of the shortest growing seasons in New Jersey." Cold air descends to the low lying bogs, accentuating the need for accurate frost watch protection throughout the year. Two weather related services that can help growers cope with nature include the Green Sheet and Arnson himself.

The Green Sheet, a joint publication of Rutgers Cooperative Extension Service and the New Jersey Department of Agriculture's Crop Reporting Service, presents a weekly review of the growing season, including rainfall data,

growing degree days, temperature, soil moisture and planting and harvesting dates. This publication, free

to farmers, may be obtained by calling James Gibson of the N.J. Crop Reporting Service: (609) 292-6385.

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Arneson's taped weather information may be obtained by calling the Farmers' Forecast telephone number: (201) 828-3091. Additionally, Arneson may be reached directly from 5 a.m. until 1 p.m. daily by calling (201) 932-9551. Both these services to cranberry growers will extend from about the time water is drawn from the bogs until harvest is complete.

DR. PAUL ECK, professor of horticulture, Cook College, Rutgers University, updated growers on his phosphorus fertilizer research. Over a five to six year period, positive response to phosphorus applications has resulted in vigorous upright growth on cranberry vines, Eck noted. He recommends a 1:2:1 ratio (nitrogen, phosphorus, potassium). However, he notes that it is difficult to increase available phosphorus in the predominantly sandy soil of the Pinelands because it leaches out quickly.

He added that he has never been able to get a response to potash in the region's Berryland soil, a soil type suitable for cranberries.

Eck's fertilizer source study verifies that slow release fertilizers, when applied in the spring and after harvest in the fall, prompt superior yields when compared to liquid fertilizer results. The region's highly permeable sandy soil reduces the efficiency of any liquid nutrient application.

DR. ERIC STONE, USDA plant breeder at the Blueberry/Cranberry Research Center, reviewed his ongoing research involving numerous crosses within his cranberry germplasm collection. 1983 was the first year of fruiting for many of these crosses, giving him an opportunity to identify the most promising selections based on estimated yield per acre, grams per berry and percentage of plot coverage.

The search continues for an alternative to the Early Black variety, an early producer with good color although one whose small berry size leaves considerable room for improvement. Currently, a progeny of Ben Lear from open pollination looks particularly promising.

A SUCCESSFUL METHOD for controlling fairy ring on New Jersey bogs has yet to be discovered. Dr. Allan Stretch, USDA plant pathologist at the research center, said 8,000 pounds of lime per acre applied in

the spring and fall failed to control the disease.

Stretch's fungicide application tests on new cranberry plantings continue to yield promising results and prove cost effective. Data shows that when leaf drop fungi are controlled, vine growth is enhanced. However, it appears that continued applications of fungicides reduce berry size and suppress coloration.

PHILIP E. MARUCCI, research professor of entomology and extension specialist in cranberry and blueberry culture, told growers that over 100,000 cranberry vines were propagated at the research center during the winter of 1983. Growers were again invited to participate in similar efforts in 1984. Cuttings from three varieties—Crowley, Cropper and no. 35—will again be used. Virtually 100 percent rooting can be anticipated with vertical insertion of the cuttings.

Marucci reviewed the capricious activity of honeybees on area cranberry bogs during the 1983 pollinating period.

"Honeybees will concentrate their efforts in areas where they can find the most food in the least amount of time," Marucci said.

Unfortunately, cranberry flowers, poor producers of nectar and pollen, are not that attractive to honeybees, and, when water is drawn early from bogs, they may be put into competition with other, more appealing blossoms found on bushes like huckleberry and inkberry. It also appears honeybees

concentrate where vines are open and they may become discouraged by dense vine growth stimulated by heavy fertilization, Marucci noted.

EDWARD V. LIPMAN, ACGA delegate to the state agricultural convention, told growers that computer use on the farm appeared to have bright prospects for the future and was a major topic at the state's 113th Farmers Week held last January.

Lipman expressed concern over the Farm Labor Laws Guide given to convention delegates. He urged growers to obtain copies of this guide in order to evaluate its impact on cranberry growers.

MARY ANN THOMPSON, member of the ACGA water legislation review committee, said the much discussed dam bill was conditionally vetoed by the Governor and would have to be reintroduced into both the state Senate and Assembly.

On a more positive note, she said, recently passed state trespass/vandalism legislation calls for increased fines for offenders and does not require growers to post bogs, dams or waterways.

Named as ACGA officers for 1984-85 were: William S. Haines Jr., president; William Fox Jr., vice president; Dr. Paul Eck, treasurer; Philip E. Marucci, secretary; Edward V. Lipman, ACGA delegate to the New Jersey Agricultural Convention, and Joseph Darlington, alternate convention delegate.

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The Cranberry Harvest, Nantucket Island, painted in 1880 by Eastman Johnson, is part of the exhibition, *A New World: Masterpieces of American Painting 1760-1910*. The exhibition, organized by the Museum of Fine Arts, Boston, opened there last year, then traveled to the Corcoran Gallery of Art, Washington, D.C., and is now at the Grand Palais in Paris, France. There are 110 paintings in the exhibition.

The Cranberry Harvest, Nantucket Island is part of the Putnam Foundation Collection at the Timken Art Gallery in San Diego, Calif.

Johnson was born in Lowell, Maine, educated in Boston, Germany, Holland and France, and, eventually, established a studio in New York City. A noted portraitist, among his sitters were Longfellow, Emerson and Hawthorne.



In 1871, Johnson built a summer home on Nantucket Island. The cranberry harvest became one of his subjects.

In her essay on Johnson and his work for the exhibition catalogue, Carol Troyen writes: "In *Cranberry Harvest* (Johnson) invented for his New York patrons a mythic view of nature in which harvests are always bountiful, the sunshine soft and unceasing, the life close to the soil ennobling, and work on the land a satisfying, even pleasurable activity in which the whole community participates, from the old man who has brought his chair with him to the bogs, to the infant at far right being carried to his mother who stands at center, awaiting his arrival.

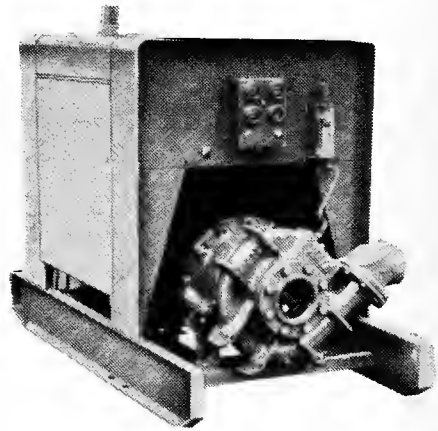
"Johnson's lyrical transformation of the Nantucket cranberry bogs—from muck and mire to a lush plain—makes light of work that was actually difficult and wearying."

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weather watch

MASSACHUSETTS

January was rather cool, averaging 1.6 degrees below normal. However, in the past 20 years, we have had many cooler than normal Januaries, so this one in '84 is about average from that point of view.

Maximum temperature was 52 degrees on the 27th and the minimum was minus 15 degrees on the 22nd. I know that our Wisconsin friends would not cause much concern for our Wisconsin friends but for us it is cold. We tied this minimum in 1970 but must go back to 1942 to exceed it. Warmer than average days occurred on the 6th, 10th and 24th through 27th. Cooler than average days were the 2nd, 8th, 12th, 15-16th and 18th through 22nd.

Precipitation totaled 2.70 inches,

or 1.6 inches below normal. There was measurable precipitation on nine days, with 0.78 inches on the 11th and 0.77 inches on the 31st the greatest storms. Snowfall totaled 11.0 inches on five days, which is a little above average for us.

I.E.D.

NOVA SCOTIA

Our mean temperature and

sunshine for January were close to the 30 year average.

The first few days of February were cold. However, a warming trend followed and most of our snow disappeared. Vines and flower beds were to become susceptible to winter injury in the next six weeks as dormancy had probably been broken.

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notes

Massachusetts

By IRVING DEMORANVILLE

Dr. Karl Deubert of the Cranberry Experiment Station attended the Northeastern Weed Science Society meeting at Baltimore, where he presented a paper.

Dr. Robert Devlin also attended the Weed Science meeting in Baltimore and presented two papers.

Dr. Karl Deubert met with representatives of the Dow Chemical Co. in Midland, Mich. Karl presented a seminar on residue analysis of brush killers used on power line rights of way.

Dr. Charles Brodel attended the national meeting of the Entomological Society of America in Detroit and presented a paper on the timing of

insecticide applications to control the cranberry fruitworm. He also met with Dr. Daniel Maher of Wisconsin and Dr. Carl Shanks of Washington to discuss progress in research projects and plans for the future.

Dr. Brodel and this author met with Jere Downing of Ocean Spray Cranberries in January to discuss current and future insecticide needs in Massachusetts.

* * * *

Prof. John S. (Stan) Norton officially retired from the station on Jan. 31. Stan had been with us for over 26 years, or since July 1957.

He had worked on many projects over the years, but undoubtedly his most important contribution was the low-gallage sprinkler systems which are in widespread use for frost protection, irrigation and application of pesticides. There is no question that we would be raising much smaller crops than we have over the past 15 years without the sprinkler systems.

To note just a few other projects: temporary dikes, wick weed wipes, float sander and vine lifters.

Stan has been a good friend to

the cranberry industry. In addition to his many official labors, he has been absolutely invaluable to the Cranberry Station in fixing our old and sometimes balky equipment, as well as constructing many items for our use that we didn't have to purchase at the expense of an arm or a leg. Are we ever going to miss this enormous contribution!

In addition, I personally will feel his leaving, as he was the most helpful and generous person I have ever known.

Stan will return for temporary duty in August, September and October 1984.

Oregon

"Cranberries Through History" is the winning theme for this year's Cranberry Festival in Bandon. The theme was submitted by Willie Tiffany of Corvallis. "Yankee Doodle Cranberry" was the second choice, followed in order by "Cranberry Super Heroes," "The All-American Cranberry," "Computerized Cranberries," "Cranberries in the Classics" and "Folklore and the Cranberry."

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Ocean Spray Cranberries is among the first national advertisers for a new children's radio show called "New Waves."

Family Radio Programming Inc. of New York, which created and now produces the show, reports that "New Waves" represents the first nationally syndicated, commercial radio program for 9 to 14 year olds and their parents. The program premiered on Feb. 19 and will air every Sunday on radio stations nationwide.

McGavren Guild Radio, the program distributors, estimated that the initial target penetration would reach 65 percent of the available national audience.

The magazine type show offers children a combination of entertainment and information suited to their particular interests. It is being hosted by Fred Newman, who was named outstanding cable personality of the year for his work on "Livewire," a talk show for teenagers on the Nickelodeon cable television network.

"New Waves" features popular music, news, celebrity interviews, comedy, drama, contests and life-

style features—all in one fast-paced, two hour show.

"For Ocean Spray, 'New Waves' represents an opportunity to take a leadership position in an innovative broadcast programming concept for

children," said Christine M. Maslee, director of communications for the grower-owned marketing cooperative.

"For our products," she added, "the show offers an ideal communications vehicle to families to whom

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A 60 second radio spot has been created for the show by Kenyon & Eckhardt Advertising Inc. of Boston. The spot features the line of Ocean Spray drinks.

The president of Family Radio Programming, George Morency, said that "New Waves" was conceived as the result of extensive research and development supported by the John and Mary R. Markle Foundation. This foundation, which specializes in funding media and communications projects, was one of the original underwriters of "Sesame Street," the acclaimed public broadcasting program for children.

WASHINGTON COMMISSION FUNDS SEVEN PROJECTS

Through an assessment on growers in Washington and contributions, the Washington State Cranberry Commission funded seven research programs in 1983.

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They were: control of the black vine weevil; improvements to the Furford picking machine; control of weeds in existing bogs; speeding development of new bogs; control of weeds in new bogs; epidemiology and control of twig blight; enhancing color and keeping quality.

Said commission chairman Emil

D. Caruthers: "The Washington State Cranberry Commission will continue to pursue its charter to improve the general well-being of the cranberry industry with all available resources. Continued support of our efforts through contributions and suggestions concerning research programs will be gratefully received."



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Cranberryman wins 13 year old court case

By JOAN HUMPHREY

The Wisconsin Court of Appeals recently rejected an appeal by a group of property owners who claimed that cranberry grower William Zawistowski Jr. of Stone Lake was polluting Lake Sissabagama.

The original suit was filed 13 years ago.

The property owners claimed that phosphorus used as fertilizer ended up in the lake, feeding algae growth.

The appeals panel said the assertions were based on eight year old fertilizer records. It also cited conflicting evidence on the amount of fertilizer used.

IRS MAKES NEW RULING ON FARM ESTATE TAXATION

The Massachusetts Farm Bureau Federation notes that the Internal Revenue Service now allows a farm estate to deduct the full indebtedness on special use valuation property, "providing the deceased farmer was personally liable on the mortgage."

Says the MFBF: "The new ruling is an important recognition that farming as a business has a very low return on capital."

It adds: "The intention of the 'special use valuation' of farm real estate was to encourage the continuity of family farming from one generation to the next, to prevent breakup for payment of taxes.

"In the past, IRS has stipulated that if a farmer chose special use valuation, the full value of the property was not 'included' in the gross estate. Because of this, the farmer could not deduct the full amount of a mortgage in computing the estate tax."

FARM POPULATION CONTINUES TO DECLINE

The U.S. Census Bureau reports that the nation's farm population continues to decline. Between 1980 and 1982, there was a loss of 431,000 farm residents. Today 5.6 million

people—one out of every 41 Americans—live on farms.

The median age of the farm population is 35 years, compared to a national median age of 30.

CORRECTION

The article, "Storing Pesticides," in the February 1984 issue of CRANBERRIES, was based on material written by Charles F. Brodel, entomologist at the Cranberry Experiment Station. The piece mistakenly

cited director Irving E. Demoranville as the source.

PCA RESEARCH STUDY EXAMINES FARM TRENDS

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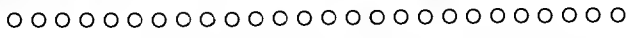
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CAPTAIN CRAN BERRY



PINELANDS COMMISSION MOVES AGAINST ARMY

The Pinelands, N.J., Commission recently authorized legal action against the Defense Department if it fails to quickly clean up toxic contamination from the Fort Dix landfill.

The commission, which functions in the state's cranberry growing region, adopted a resolution approving legal action if it is found that the Army "is not pursuing the alleviation of the threat of contaminants emanating from the Fort Dix landfill in a timely and efficient manner." This complements action taken by Burlington County, which has recommended that the landfill be closed and that cleanup plans be developed immediately.

Toxic chemicals originating from the fort's landfill were recently found in a nearby test well. Three of the chemicals found in the test well—methylene chloride, chloroethane and trichloroethane—have been identified as possible carcinogens. It is possible that the chemicals may have come from cleaning agents used at the base's machine shops and auto repair yard, says the agency.

In other Pinelands news, the National Conference of State Legislatures' recent report on land management techniques in the United States notes that the Pinelands Commission and Pine-

lands Management Plan "appear to be making strides in finding the proper planning/implementation for protecting a vast expanse of natural resource-rich land."

Also, recently, the State Legislature gave its final approval to legislation authorizing a state bank to promote the sale of Pinelands Development Credits.

MASSACHUSETTS GROWERS

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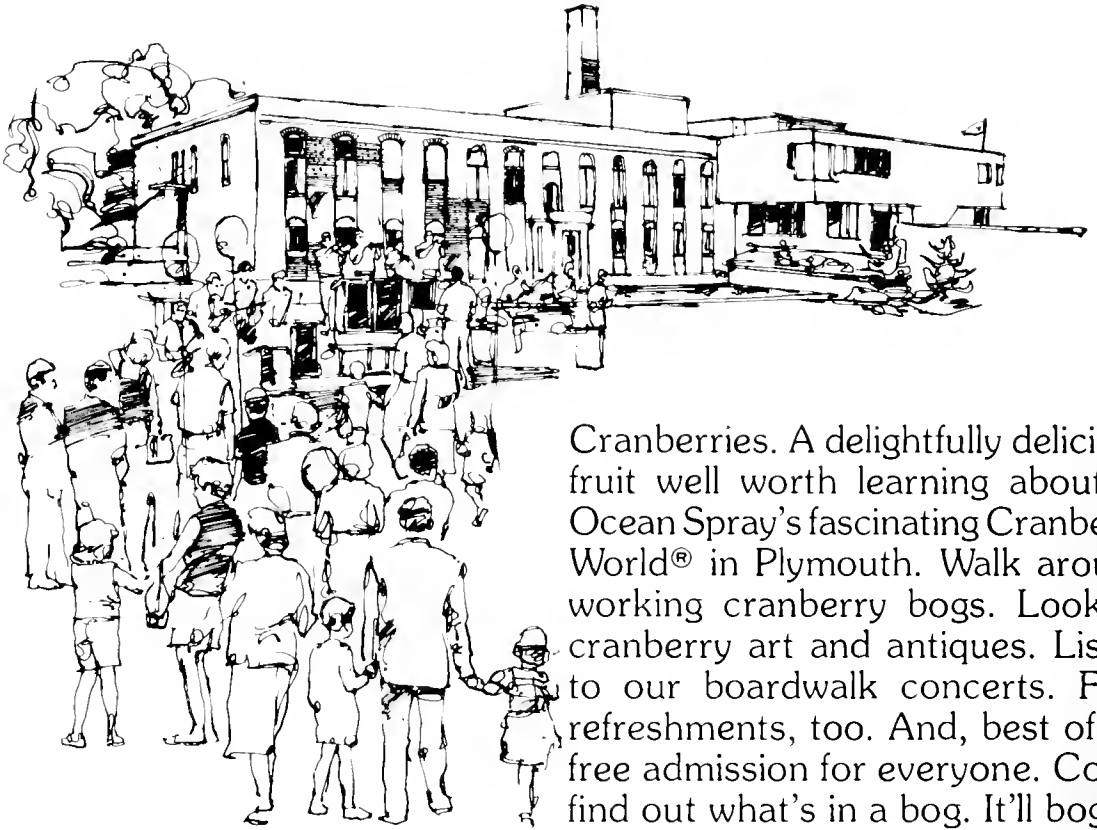
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Retirement days ... 3

★★★★★

Fruitworm trials ... 10



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Retirement into what?

Author finds answers exploring old dreams by talking to friends,

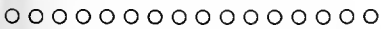
Editor's Note: Cranberry grower, butcher, baker or college professor, one day you'll be confronted with retirement. Dr. Harold Gluck (he holds doctorates in political philosophy and jurisprudence) is 78 and has pondered the subject ever since "retiring" 15 years ago from a magazine editing and writing post. He figures he's written about 10 million words in his lifetime, for magazines as diverse as *Frets*, *Miniature and Doll Dealer*, *Physician's Management* and *Soccer America* (he bills himself as the "world's oldest living soccer player"). Gluck lives with his wife, Jeannette, 77, in the Bronx, N.Y. This is his first piece for CRANBERRIES.

By HAROLD GLUCK

Within a year, I would retire. That meant I would attend my "farewell" dinner. Hear speeches about how valuable I was to the establishment. Be given the usual farewell present. And my time card would be removed from under the clock. Another time card with someone else's name would be there. And he would carry on my work. Not in my way but in his way. Of course, like many others, I had thought about plans for the future. Such as taking a trip around the world. Buying a small country home. Doing some things I always wanted to do. And then my wife came up with an unexpected practical suggestion.

"WE HAVE met retired people. Don't you think it is time you talked to some of them? About problems involved in being retired?" Funny thing, but the question of "problems" had never been in my calculations before.

Yet it seemed to me a very sensible concern. So below are



COVER ILLUSTRATION

HAROLD GLUCK and his wife, Jeannette, are depicted engaging in aid to skiing victims, one of the activities they assumed after retirement. Harold would bring in the victims, Jeannette would apply first aid. The story begins on this page. (CRANBERRIES drawing by Joy)

some of the things I learned from different people who had left the world of active employment.

I HAD known Mike very well and he had retired a year previously. We still saw each other from time to time.

"I made one big mistake," he began. "And don't you make it. I was prepared for retirement. A lot of things I wanted to do and did. But my wife wasn't exactly prepared for my retirement. It bothered her a lot to have me around the house at first. And we had some fights over meaningless things that suddenly became of vital importance. So she didn't want me around. I got up early in the morning. Went to the public main library. Took one topic and followed it through. I did that for two months. Then my wife decided she did want me around. We would do things together, such as going to the opera, taking short trips to the country, increasing our social life, and even doing some studying together. So check out your missus and you can avoid a lot of unpleasantness."

I HAD done Frank a very big favor. And before retirement he had made things clear to me. Any time I wanted anything



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from him—just ask. So I called him up on the phone. Operator gave me an out-of-town number. I got in touch with him and he invited the two of us to spend a weekend with him and his wife in the home he had bought. Which we did. I told him when we were alone that I wanted to know how retirement had affected him.

“I was born in the country,” he smiled. “And so was Elsie. Deep down in our hearts we really never enjoyed living in the big city. Something we always wanted to do. So we saved money and this is what we bought. Keeps me busy taking care of it. And we raise our vegetables. We are integrated into the community’s life. Go try it when you are retired.”

Seems to me that what was important with Frank is that

his dream was real. He and his wife did what they had thought of doing. And they weren’t a bit disappointed over it.

I HADN’T seen Dave for a year. He was a police officer who had retired. We had been fishing partners over the years. I told him about my future retirement. Could he and his wife visit us? So they came to see us on a Friday evening. And I came right to the point of my invitation.

“How do you like retirement? I am going to retire soon. What can you tell me that might help me?”

His wife laughed and I was a bit puzzled. Then she made things clear to me.

“Dave really isn’t retired at all. He went from one job to another. And guess what he is doing? All his life he really

wanted to be a teacher. They gave him a special test. He took some courses in education. You know he has his bachelor’s degree.

And now he is even taking some work towards his master’s degree.”

This came as a shocker to me. What then is retirement? From one job to another? Nothing doing. Right then and there I made myself an inward promise: not to go to any other job, regardless of how tempting the offer may be.

WE HAD met Donald and his wife, Theresa, at the golf driving range. And we went there over the weekends during the past year. She worked for the phone company. And he worked for a big restaurant chain. Both had talked about retirement soon. So this trip to the range we were determined to wait and meet them.

(continued on page 6)

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The swan dilemma

Any suggestion that the tundra swans destroying cranberry vines in New Jersey be shot is a sure guarantee for drawing return fire.

A lady in Mountain Lakes, N.J., wrote to Philip E. Marucci of the Cranberry and Blueberry Laboratory in Chatsworth: "I used to look forward to using cranberries in a nut bread I would bake However, after reading that the cranberry farmers want a hunting season on swans, I have substituted raisins, prunes and dates for cranberries and will boycott all cranberry products and will advise others to do the same Given a choice between cranberry farmers or swans, I easily opt for the swans."

I share with the lady a discomfiture over the mental picture of these alabaster beauties with six foot wingspreads tumbling to earth after being filled with lead.

But there is the grower's side of the story.

Grower William Haines III told *Good Morning America* that the swans are beautiful, "but then I saw pieces of vine floating in the bog." The swans have an appetite for red root and damage the vines while foraging for the weed.

The Fish and Wildlife Service has recommended firing firecracker shells and floating red balloons to scare off the huge birds. Neither recommendation has worked.

To grower pleas for a hunting season, John P. Rogers, chief of the Fish and Wildlife Service's Office of Migratory Bird Management, has probably given the last word:

"There is a lot of public interest in swans. We would have to consider the public response to any proposal for a hunting season, and I suspect it would be negative."

So what to do? Obviously, things can't just be allowed to continue as they have been going.

Janet Jackson, spokeswoman for the New Jersey Audubon Society, has suggested that perhaps the state could find a way to attract the birds to a state bird sanctuary in the cranberry growing region.

New Jersey correspondent Elizabeth Carpenter says it might be a good idea for the U.S. Fish and Wildlife Service to finance research aimed at discovering "a humane, scientific procedure for relocating these beautiful birds."

And how about you? Any ideas? If you have one, send it to CRANBERRIES, P.O. Box 249, Cobalt CT 06414, and we'll print it.



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WISCONSIN—Tod D. Planer, Farm Management Agent, Wood County; Dan Brockman, Vesper; Joan E. Humphrey, Friendship.

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RETIREMENT . . .

(continued from page 4)

And after we finished our two buckets of balls and rested on the bench, I told them the news. What were their retirement plans?

"I can retire now," explained Donald. "But Theresa has one year more to go. On our combined pension money we will have no financial problems. We are going to Florida. A community we have visited before. A lot of retired people live there. And the activities are sort of built around this age group. So we will play golf together, swim, be lazy on the beach, dance, see the country, and perhaps even register for some courses at the state college."

AND, FINALLY, for the highlights from some other people with whom we talked about retirement:

There was a female teacher who pointed out something very important—be certain you have good medical and hospital coverage. Check out whether you can continue your policies on your own after retirement. For hospital and medical costs could go up. (That was the understatement of the year.)

One man was very bitter. What had happened to his so-called friends at the plant? Out of the job—out of sight—no longer a friend. What kind of world was this? Felt deserted.

One man was devoting his time to volunteer activities at the local hospital. He pointed out that you just had to be busy doing something—or you could go nuts. And he seemed contented in what he was doing. Sort of got a satisfaction out of feeling he was really helping others—and not for money.

SO IN view of what we had learned from these people, my wife and I looked into the future, knowing we would have to make our plans and soon. What would we do?

As far as my wife was

concerned, her life would go on almost about the same. Taking care of the home, shopping, cooking, seeing relatives and friends—and taking care of me. Now what about my plans? First thing I would do was to smash the alarm clock. I wanted to

remain in bed as long as I cared. Let the rest of the world go off in a rush. Next, I would continue my sports activities. Among them, fishing, swimming, skiing, tennis, hiking and table tennis. I was very much interested in firearms. I'd do more shooting and perhaps

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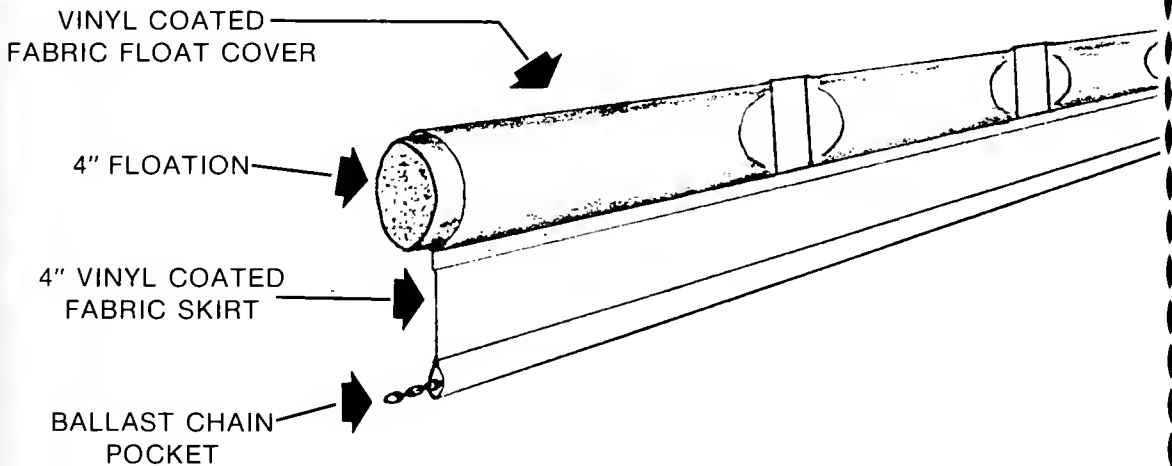
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the sport jacket I just bought for next year. And my wife does the same. She even comes back with shirts and ties for me from sales she attends.

We do not go away to hotels over weekends. We go during the week when the rate is lower and we find the service is better. One big change: We never thought much of the facilities for recreation offered by the city, county or state. But now we use them to the fullest extent. We enjoyed a county pool—one of the finest in the state. And we located a delightful picnic park. For ice skating, we found two community setups. The party fishing boat is out for us. We use river, lake and beach fishing—all free, of course. We take picnic lunches with us. But for morale building, we still eat at least once or twice a week in a top restaurant.

We did try volunteer activities to keep ourselves busy. We took the first aid course, the advanced first aid course, and the instructor's course with the Red Cross. We told them we would teach for them—provided it would be as “a husband and wife team.” This they agreed to and so we spent many a delightful evening teaching Red Cross courses.

I continued my ski patrol work for a number of years after retirement. This, too, was on a volunteer basis. And my wife sat in the first aid hut, ready to help any victim I brought in for treatment.

THERE WAS one unexpected change brought about by my retirement. It stemmed from our going to see an art exhibition. There I came across someone I hadn't seen since my youth. He took a few looks at me, then asked, “Could it be you? Is it you?”

He wanted to know whether I had gone to Paris, lived in that attic room, survived on bread and cheese, and studied art. Alas, no! But my wife then

became aware of something important to me. Later, I resumed my art work. I will leave no masterpiece behind to hang in the national museum. But I am very happy in my creative work. My enthusiasm inspired her. She turned to needlework and created her own “masterpieces.” Even hangs both of our works on the wall.

We have also attended night adult courses, ranging from automobile mechanics to Russian. All in all, I would say our expectations about retirement did jibe with the reality of it. I am very glad I spoke to people who had retired. They had a lot of suggestions to make. However, one warning: What might apply to a specific individual might not apply to a person with a different type of personality.

I AM sorry for my friends who put off retirement. Why? They talk about having more money in the pension fund if they work just “a little longer.” I suspect they are really afraid of retirement. So long used to being in harness, they are scared of being very free. They are like the bird in the old story who escaped from its cage only to meet destruction.

We find we are intellectually alert. We enjoy the company of different kinds of people. During my retirement, two offers of employment came to me. Each was in a different field of activity. And the salary offer in each was tops. Each was a strong temptation to go back to work. Took some will power to turn them down. And I am glad I have continued in my—an my wife's—life of retirement.



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Insecticide field trials against the cranberry fruitworm in Massachusetts, 1980 - 82

By CHARLES F. BRODEL¹
Assistant Professor
Massachusetts Cranberry Station

The cranberry fruitworm, *Acrobasis vaccinii* Riley, is an economically important pest on almost every bog in southeastern Massachusetts. Crop reductions of 5 to 25 percent can be expected unless insecticide applications are carefully timed 2 or 3 times each growing season. The selection of insecticides approved for this use is rather limited. Some of the choices are highly toxic and very hazardous to the user. All have been on the market for more than 15 years.

The purpose of the 3-year study described herein was to test a range of more recently developed insecticides, several of which pose fewer hazards to the user and/or environment. The results are rather encouraging.

METHODS AND MATERIALS

Procedures. Field trials were conducted on uniformly vined sections of State Bog in East Wareham, Mass. The experimental design was a randomized complete block with 8 or 10 treatment plots. Plots of 15 X 7 ft were separated within blocks by 5-ft pathways and between blocks by 10 to 30-ft pathways. Two post-bloom insecticide applications were made with a 10-gallon, powered

ground sprayer delivering about 0.6 gallons per minute at 50 lb per square inch. All treatments were diluted to the rate of 400 gallons per acre, but control plots were left untreated. A spray disc (4/64 inch orifice) and long distance nozzle tip allowed the applications to simulate those achieved commercially with overhead sprinkler systems. Difolatan R was applied 2 or 3 times each year to prevent infection by fruit rot organisms. At harvest, berries from 5 randomly selected, square-ft areas within each plot were picked by hand and frozen. These were later inspected for injury by *A. vaccinii*.

Differences in the experimental conditions from one year to another are shown in Table 1.

Insecticides tested. Representatives of 4 different classes of

insecticide were tested². Bolstar, Diazinon, Guthion, Imidan, Lorsban, Orthene, and parathion are organophosphorus insecticides. Lannate and Sevimol are carbamates. Pounce and Pydrin belong to a relatively new class

²Mention of a brand name does not imply endorsement of the product or discrimination against other products which contain the same generic insecticide.

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¹The author is Research and Extension Entomologist at the U Mass Cranberry Experiment Station and IR-4 Liaison Representative for Massachusetts.

Table 1. Conditions pertaining to insecticide field trials on State Bog, East Wareham, Mass., 1980-82.

<u>Year</u>	<u>Variety</u>	<u>Age of bog(yr)</u>	<u>No. reps.</u>	<u>Spray dates</u>	<u>Weather conditions</u>	<u>Time of harvest</u>
1980	Early Black	12	3	7/18,30	<u>Temperature</u> Jul: normal Aug: " <u>Rainfall</u> Jul: well below normal Aug: "	4th wk Aug
1981	Bergman	19	3	7/7,22	<u>Temperature</u> Jul: normal Aug: well below normal <u>Rainfall</u> Jul: normal Aug: well below normal	2nd wk Sep
1982	Franklin	35	4	7/21,29	<u>Temperature</u> Jul: well below normal Aug: " <u>Rainfall</u> Jul: slightly below normal Aug: "	3rd wk Oct

of insecticides called the synthetic pyrethroids. Thuricide contains bacterial spores and crystalline toxins and is known as a microbial insecticide.

Three organophosphorus and one carbamate insecticide are currently recommended to control cranberry fruitworm larvae in Massachusetts. All of these were tested concurrently at their recommended rates in 1981 to rank them according to efficacy, if possible, and to get an indication as to whether any might be giving less than adequate levels of control on commercial bogs.

Additives were used with two of the insecticides. Pounce was combined with Tween 80, an adjuvant which helps spread water evenly over waxy surfaces. Theoretically, a greater kill of larvae would be expected to result with the adjuvant because Pounce residues should be more evenly distributed on leaf and berry surfaces. Gustol is a feeding stimulant which, once ingested, increases the appetite of larvae. It was combined with Thuricide in the hope that it would increase larval intake of bacterial spores and toxins, and cause greater larval mortality.

Statistical tests. The data were transformed to arcsin proportion and subjected to analysis of variance. Treatment means were separated using the Duncan's multiple range test (1980) and the Student-Newman-Keuls test (1981, 1982), both at the 5 percent probability level. Means were back-transformed for presentation purposes. Abbott's formula was used to calculate percentages of control.

RESULTS AND DISCUSSION

Results of the 3 years of field trials are presented in Table 2. For each treatment, the average percentage of infested berries at harvest is listed under the appropriate year or years. The percent control, shown in parentheses, is based on the difference in percentage of

infested berries in the treated versus untreated plots.

To determine whether a treatment was inferior or superior to another in a given year, refer to the alphabetic characters next to each treatment average. If the 2 treatment averages being compared have one or more characters in common, the treatments should be considered equally effective. If they have none in common, one treatment is better than the other. For example, in 1981 the average percentages of infested berries were 1.4 for Pounce and 3.0 for Imidan at the 1.5-lb rate. Because both numbers are followed by the character "c", Pounce and Imidan should be considered equally effective.

On this basis, it may be

concluded that Pydrin and most other treatments were superior to one or both Thuricide treatments in 1980. In 1981, Lorsban gave better control than Imidan and parathion. Pydrin was more effective than parathion in 1982.

All recommended insecticides except parathion, i.e., Diazinon, Guthion, and Sevimol, provided better than 88% control in 1981. Parathion, the standard in the industry, performed well in 1980 and relatively poorly in 1981 and 1982. These results tend to support the contention of several growers that parathion is not as effective as it once was.

Regarding the synthetic pyrethroids, Pydrin gave apparently higher levels of

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Table 2. Efficacy of insecticides against the cranberry fruitworm on sections of State Bog, East Wareham, Mass., 1980-82. a

Treatment and lb a.i./acre	Avg percent infested berries ^b	
	1980	1981
Pydrin 2.4EC 0.2	0.4 a (95)	0.2 a (98)
Lorsban 4E 1.5		2.4 ab (94)
Guthion 2S 1.0		0.4 ab (97)
Lannate L 1.8	1.8 ab (80)	0.6 ab (95)
Lannate L 1.0	0.9 ab (90)	
Orthene 75S 1.0	1.3 ab (85)	
Pounce 3.2EC 0.2		1.4 abc (89)
Pounce 3.2EC 0.15		
Pounce 3.2EC 0.15		6.6 ab (85)
+ Tween 80 (2 pt)		
Diazinon AG500 2.0		4.1 ab (91)
Sevimol 4 2.0		2.6 ab (94)
Bolstar 6E 1.125	1.4 ab (84)	
Imidan 50WP 2.0		1.8 bc (86)
Imidan 50WP 1.5		3.0 c (76)
Imidan 50WP 1.0	3.9 abc (56)	
Parathion 8E 1.0	0.6 ab (94)	
Thuricide-HPC 8 biu (2 qt)	5.1 bc (42)	2.9 c (77)
Thuricide-HPC 8 biu (2 qt)		
+ Gustol adjuvant 1.0	10.6 c (0)	
Untreated	8.9 c	12.5 d
		43.4 c

a See text for procedures, cultivars, and statistical tests.

b In each column, numbers followed by a common alphabetic character are not different; each number in parentheses indicates the percentage of control effected by a given insecticide in a given year.

control than Pounce when applied at the 0.2-lb rate. Pounce at the 0.15-lb rate in 1982 seemed to perform as well as Pounce at the 0.2-lb rate in 1980 and 1981. In 1982, Tween 80 apparently enhanced the efficacy of Pounce at the 0.15-lb rate by about 6 percentage points. If enhancement could be demonstrated statistically by repeated experimentation, it would mean that a grower could achieve an acceptable level of control while using less Pounce per acre. This phenomenon might apply to most insecticides in Table 2, but extensive testing would be needed to show it.

The microbial insecticide, Thuricide-HPC, produced rather disappointing results, probably due to larval feeding behavior. When a larva burrows into a berry, it consumes a circular area whose diameter approximates that of a larval head capsule. If there are a few or no bacterial spores or crystalline toxins in that small area, larval mortality will not ensue. The feeding stimulant, Gustol, seems to have increased the appetite of larvae, but any surmised increase in the number of ingested spores and toxins did not lead to a concomitant increase in larval mortality.

Lannate and Imidan were effective, but at rates which their manufacturers and the author feel are unacceptably high. A grower would have to use one gallon of Lannate L per acre through his sprinkler system to obtain good control. In contrast, New Jersey researchers have found that only one quart of Lannate L, when applied by air, results in good control of many cranberry and blueberry insect pests. Concerning Imidan, there are very few commodities which have as high a rate as 2 lb active ingredient per acre approved for use, and it is not anticipated that cranberry will be added to that select few.

Of the insecticides tested,

Lorsban, Orthene, and Pydrin appear to be the most promising for the control of the cranberry fruitworm in the near future. A national clearance for the use of Lorsban on cranberry was recently approved, almost four years after the author's first attempt to renew interest in this effective insecticide. Efficacy and residue trials pertaining to Pydrin are in progress as part of another cooperative effort undertaken at the request of the author. Orthene will receive a national clearance on cranberry within a year or so. The label, which will specify pre-bloom use only, might be amended in the future to include limited, post-bloom use.

It should be said, in conclusion, that clearances of the above three insecticides will have been made possible by the existence of a national agricultural program called Interregional Research Project No. 4 (IR-4). This program helps insecticide manufacturers to obtain clearances of their

products for so-called minor uses, such as those on cranberry. Without the assistance of IR-4, manufacturers could not afford the expense of gathering all the efficacy, residue, phytotoxicity, and environmental data requested of them by the Environmental Protection Agency and the Food and Drug Administration. It is IR-4 which arranges for researchers at state universities in all cranberry-growing regions to do the field and laboratory work needed to obtain clearances. Fortunately, for the cranberry industry, additional coordination of research work being done in different regions of the country results from the diligent efforts of the horticultural specialist at Ocean Spray Cranberries, Inc.

Acknowledgments

I wish to thank the following individuals for their assistance during one or more years of this study: C. Foote, D. McKiernan, M. Ramsey, P. Tarpey, B. Watt, and M. Yellope.

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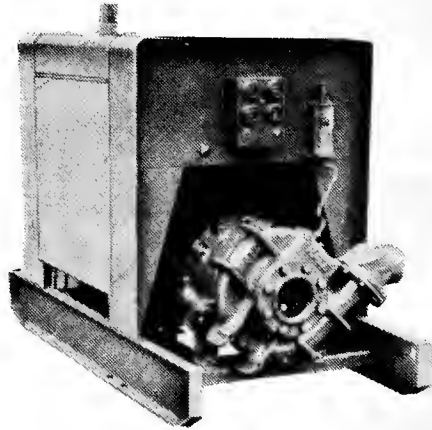
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was only 1 inch, much below our usual amount and the least since February 1960.

I.E.D.

NOVA SCOTIA

Activity is at a minimum right now on the cranberry bogs. Our winter snow was taken by a big rainstorm which occurred about mid-March. The end of March was plagued by below seasonal level temperatures.

I.V.H.

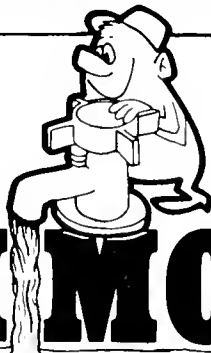
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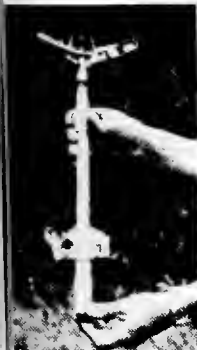
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regional news notes

Massachusetts

By IRVING DEMORANVILLE

Dr. Charles Brodel attended a planning meeting of the public information committee of the eastern branch of the Entomological Society of America in Hershey, Pa., recently. Chuck is chairman of the committee.

Dr. Robert Devlin attended the annual meeting of the Weed Science Society of America in Miami. Bob presented a paper and served on the committee for minor use herbicides.

Dr. Devlin also attended the CAST board of directors meeting in Washington, D.C., from Feb 28-March 1.

Oregon

Trish Freitag is winner of the Bandon, Ore., Cranberry Festival button design contest. Her design:

A cranberry thumbing through a history book. There were 50 entries.

LORSBAN CLEARED FOR USE

Charles F. Brodel, entomologist at the Massachusetts Cranberry Station, announces that Lorsban 4E has been cleared for use on cranberry.

Dr. Brodel says the insecticide is effective against most cranberry insect pests and may be applied through a

sprinkler system or by air.
He notes that Lorsban 4E "is

highly toxic to honeybees and very toxic to fish."

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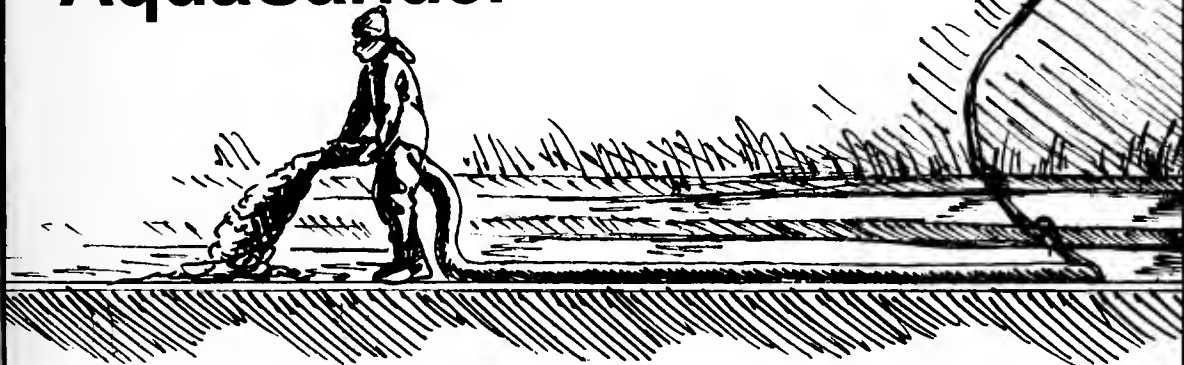
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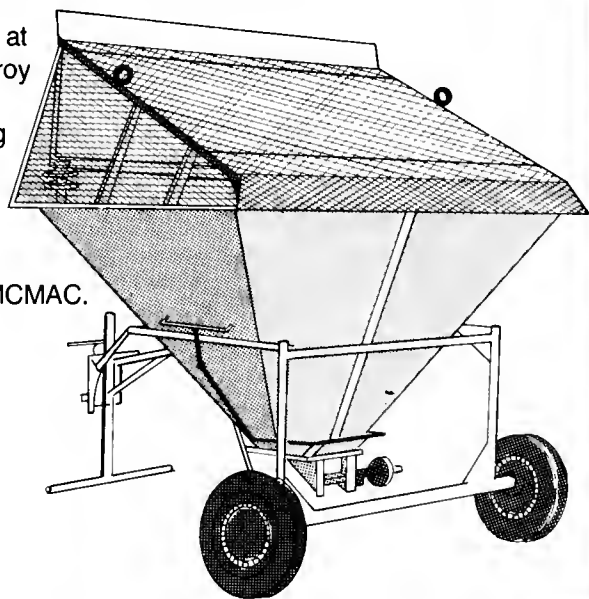


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- 1 tsp vanilla
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- ½ cup chopped nuts

Cream butter and sugar. Add eggs, beat well. Mix dry ingredients together, then add to batter. Now add sour cream and vanilla. Beat well.

Grease angel food cake pan or tube pan. Put layer of batter on bottom, then cranberry sauce and nuts. Then add more batter, then more cranberry sauce and nuts. Top with remaining batter. Bake 350 degrees F for 55 minutes. Cool 5 minutes before removing from pan. Drizzle a mixture of confectionary sugar and cranberry liqueur over top.

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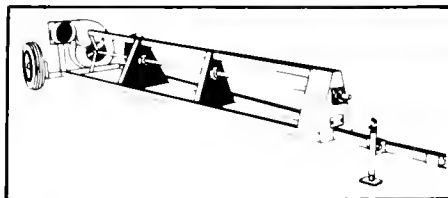
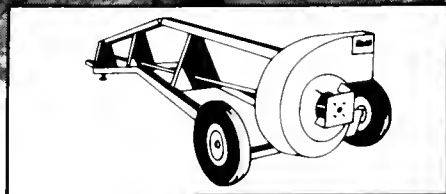
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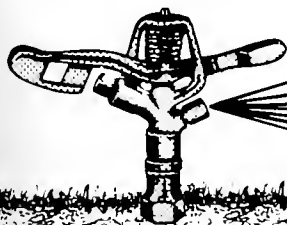
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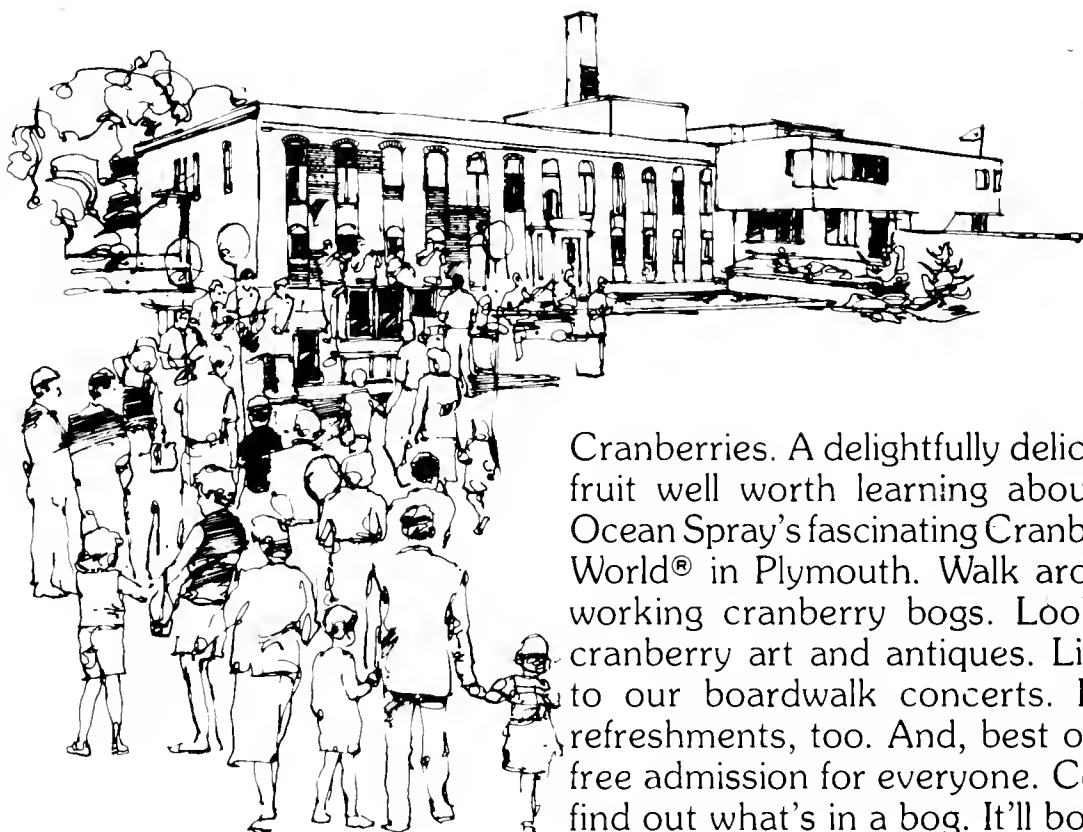
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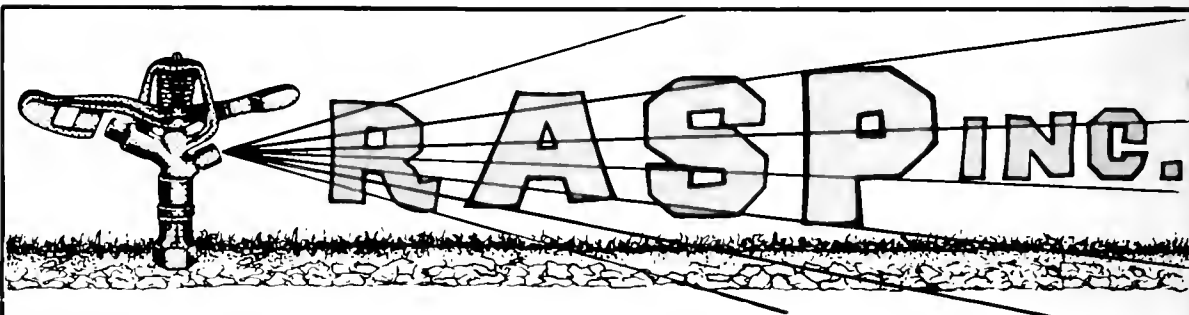


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- History buff . . . 3**
- Berry tipworm 6**



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Fritz Miller: grower, builder & history buff

By ELIZABETH CARPENTER

Kindness, courtesy and a gentle sense of humor. To me, these are just some of the words that describe New Jersey cranberry grower Frederick D. Miller, known as Fritz to his many friends, and his wife, Katherine.

They quickly made me feel at ease in their Shamong Township home, a home constructed by Fritz in 1941. Family antiques surrounded us as we sat in their cozy living room enjoying the warmth given off by a wood burning stove. Our conversation covered everything from cranberries and blueberries to John Coolman, the 18th century Count Holly, N.J., Quaker humanitarian and Katherine Miller's ancestor. As we talked, I realized I was getting a delightful lesson in Pinelands story.

THE MILLER home is just around the corner from the family farm where Fritz grew up and within easy walking distance of this country's first Indian Reservation, the Mottsherton Reservation founded in 1758. Long abandoned, the settlement was once home for members of the Lenape Tribe and originally covered 3,284

.....
COVER PHOTO

FREDERICK O. Miller, cranberry grower from Shamong Township, N.J., shows off his collection of Lenape Indian pestles, arrowheads and ax heads. His story starts on this page. (CRANBERRIES photo by Elizabeth Carpenter)

acres in Shamong Township. Fritz's collection of Lenape artifacts dates back to the Sunday afternoon hikes of his childhood and includes arrowheads, pestles and ax heads—proof that Indian culture thrived in New Jersey's cranberry and blueberry country.

Like so many "Pineys"—lifelong residents of New Jersey's Pinelands—the Millers have an innate appreciation of the region's history. Recollections of bygone events and notable characters are easily woven into the thread of their present day conversation, giving discussion a timeless quality and reinforcing the sense of the continuity of life that can be found in New Jersey's last, vast forested area. A chair with worn rungs from Braddock's Tavern—once a stage-

coach stop dating back to 1844 and now a fashionable Medford, N.J., restaurant—a rare glass flask made by the 19th century Hammonton, N.J., glassworks of Coffin and Hay, an early 20th century postcard depicting the once elegant Tudor style Chatsworth Country Club, the ledger from a country store in Shamong, N.J., and a carefully handwritten property deed all are integral parts of family life for the Millers.

LOVE of the land is part of Pinelands' agricultural tradition, one the Millers espouse. A family anecdote recalls that Fritz became "immersed" in farming at the age of 2 when he accompanied his mother to the hand harvesting of a cranberry bog near his home.

(continued on page 11)

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editorial



A MARRIAGE THAT SHOULD LAST

Let's hope the Plymouth town meeting vote against the expansion of Ocean Spray headquarters in that town is not the last word on the subject.

Ocean Spray is now considering other options, including relocation.

In our opinion, both parties—the town and the cooperative—have much to gain by the continued presence of Ocean Spray. Aside from the obvious advantages of jobs and tax revenues, it is fitting that such a historic town is home for such a historic berry, the berry that was served at the first American Thanksgiving dinner.

There are environmental considerations in connection with the proposal to fill in the tidelands adjacent to the present headquarters. Let us hope they are reviewed in the light of the most modern engineering techniques. Let us hope, also, that alternative building plans are looked over. Most of all, let's hope that positions are not frozen.

Plymouth and Ocean Spray belong together.



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Host plants of cranberry tipworm

P.E. MARUCCI and
HOWARD P. BOYD
Rutgers Cranberry and
Blueberry Laboratory

Cranberry tipworm is one of the most important economic insects of cranberries in New Jersey and is also regarded as a pest in other states. It is a native insect which has been well studied. Its life cycle has been worked out and its adverse effect on cranberry production is well established. Although much is known about this insect, perhaps the information on its host plants, the plants on which it feeds and breeds, needs more checking and confirmation.

In Franklin's classic work on

cranberry insects, "Cranberry Insects in Massachusetts" (Massachusetts Agriculture Experiment Station, Bulletin 545, 1948) the statement is made in regard to the host plants of cranberry tipworm: "It is said to feed on other heaths, and Loosestrife (*Lysimachia sp.*)."

Cranberry growers in New Jersey for many years have been led to believe that loosestrife on bogs was not only a pernicious weed but also harbored cranberry tipworm. The implication was that the presence of loosestrife on bogs increased the potential for damage by the insect, which fed upon both cranberry and

loosestrife interchangeably and was therefore able to build up higher populations when loosestrife was abundant.

Cranberry tipworm belongs to an order and family of insects (Diptera: Cecidomyiidae) commonly called "gall gnats" or "midges." Many of these insects live in the larval stage in enlarged tumor-like plant tissues, called galls, which are caused by the stimulating effect of enzymes which the adult insect may inject into the plant during egg laying or which the larvae may secrete after hatching from the eggs. The galls continue to grow as the larvae progress in size. Pupation generally occurs in the

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gall but some larvae may drop to the ground before pupating. Delicate fragile flies, with two wings and long, slender antennae, emerge from the pupae, which may be bare or enclosed in a flimsy, silken cocoon, as is the cranberry tipworm.

The cranberry tipworm causes only a very slight enlargement of the terminal leaves of an upright or runner but it is still considered a gall. The larvae in loosestrife cause much larger galls and this provides the first suspicion that it is an entirely different insect. The appearance of the larvae and cocoons in the weed is quite similar to those found in cranberry, except that the larvae in the loosestrife are distinctly larger. However, these appearances could easily be attributed to better nutrition in the weeds and the size of the gall could be the result of stronger reaction to the same stimulants injected into loosestrife by adults or larvae.

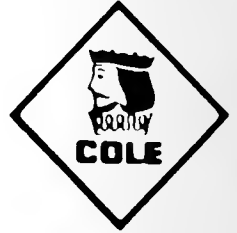
In June 1982, we collected galls on loosestrife just before the larvae in them were about to form cocoons. The galls were placed in a battery jar tightly covered with cheesecloth and held at room temperature. A number of adults emerged in July and they were

carefully mounted and sent to a taxonomic specialist, Dr. Ray Gagne, of the Systematic Entomology Laboratory, USDA. He identified the flies as *Dasyneura lasimachiae*. This is very closely related to the cranberry tipworm, *Dasyneura vaccinii*, but is an entirely different insect, which can feed only on loosestrife. We are now certain that cranberry tipworm cannot live on loosestrife. We are also doubtful that cranberry

tipworm may feed on other heaths, as suggested by Franklin. A thorough search of ericaceous plants surrounding the Rutgers cranberry bogs has been made and no cranberry tipworms have been found. A gall forming larva, very similar in appearance to cranberry tipworm, was found very abundantly in flower buds of wild highrush blueberries. This also proved to be a distinctly different insect.

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management program, it is necessary to make an estimate of the population of an economic insect per unit area. When more than one host plant is involved, and especially when there is more than one generation per year, a count of the insects on the weeds, as well as on the agricultural crop, must be made. In the case of cranberry tipworm, it is clear now that loosestrife infestations need not be included in the counts.

There may actually be some slight advantage to having loosestrife weeds infested with the loosestrife gall gnat. Since it is obviously a native insect, it undoubtedly has a series of parasites and predators which exert some biological control on it. Since it is so closely related to cranberry tipworm, some of its parasites, especially some tiny wasps, *Tetrastichus*

(Hymenoptera: Eulophidae), very likely can live on the cranberry tipworm as well as the loosestrife gall gnat. High populations of loosestrife gall gnats would encourage high populations of parasites, which could help bring down the population of cranberry tipworm. Such relationships are not uncommon in nature.

The New Jersey pioneer cranberry grower, Andrew Rider, who

was also a philosopher and the founder of Rider College, was noted for sage remarks. In regard to the state of the art of cranberry culture, he once said: "It is not bothersome that so little is known but that so much of what is known is not true."

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FRITZ MILLER . . .

(continued from page 3)

While she picked, he found his way to the edge of a muddy ditch and tumbled into it. The mud-covered boy grew up to become the owner of these bogs located just west of the intersection of Jackson and Atsion roads in Shamong Township. This 1945 acquisition was preceded by his purchase of the Mingin Pond bog along Atsion Road that was planted in 1863. The family also has bogs near Dutchtown, along Sleeper Branch, off Route 206.

Today, the Mingin Pond bog has been converted into 16 acres of blueberry fields that include the Elizabeth and Blue Crop varieties. Fred (Frederick D. Miller), Fritz's son, manages these fields and both father and son work together on their cranberry bogs, some of which they are currently renovating. Their long established cranberry varieties include Early Black and Lowbe. Last year they introduced additional varieties to their bogs Cropper, Crowley, Ben Lear and No. 35. Though he began as an independent grower marketing cranberries under the Ironstone label, Fritz has been a member of the Ocean Spray Cooperative for the past 30 years.

ALTHOUGH a farmer much of his life, Fritz also can look back on a successful building career.

"I've done carpenter work all my life," he says.

In 1927, at the age of 18, he assisted with the construction of log cabins, originally meant to serve as summer homes, around Petna Lakes, in what is now the community of Medford Lakes, N.J. Today this is a much sought after residential section on Burlington County's western edge of the Pinelands.

Fritz also was part of the team that constructed Settlers' Inn, the Medford Lakes restaurant touted as one of the largest log structures in the U.S. and included in the

National Historic Register.

His part in building barracks at Fort Dix, N.J., in 1939 reflected changing times and was followed by four years as a shipfitter for the war effort in Camden, New Jersey's shipyard. During the 1960's, Fritz rounded out his career as a builder when he constructed custom built homes in Haddonfield, N.J.

IT only seems fair that active people like the Millers have some

free time but, when asked where they liked to vacation, Katherine Miller laughed and quickly answered, "I can't get him (Fritz) away from the bogs!"

The Millers, their son and daughter—Fred and Kathleen—and grandchildren—Shawn, Kathy, Holly, Kim, Jenny and Melissa—are an integral part of the area's tradition; a tradition that believes a great deal of pleasure can be derived from a job well done.

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AT left, Miller displays part of his collection of old cranberry equipment. At bottom is one of the old grave-stones that reflect the history of the Pinelands region of New Jersey.

(CRANBERRIES photos by Elizabeth G. Carpenter)





TOP: Fritz and Katherine Miller and their collection of turn-of-the-century greeting cards. **BOTTOM:** Once the cranberry sorting house at Mingin Pond, this structure was converted into the family home by skilled carpenter Fritz Miller. (CRANBERRIES photos by Elizabeth G. Carpenter)

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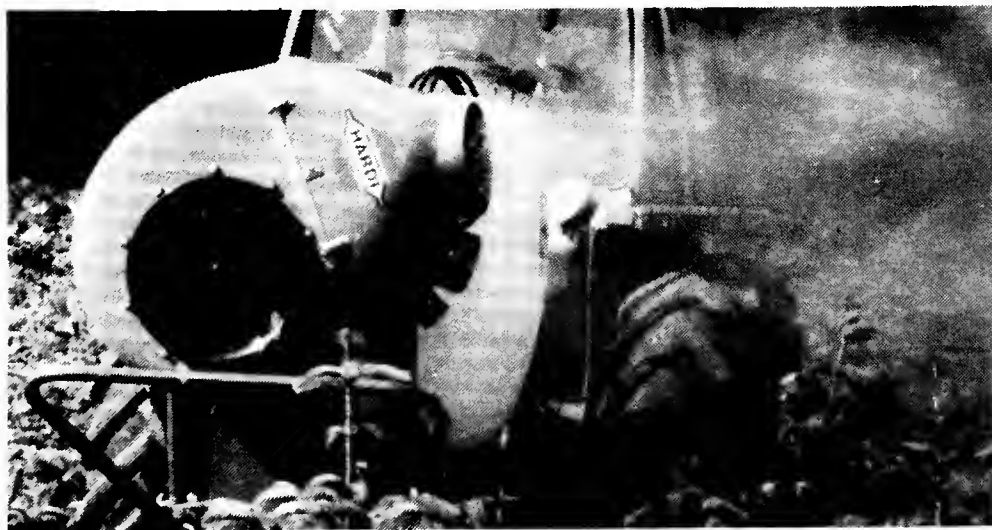
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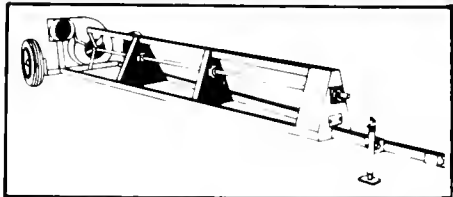
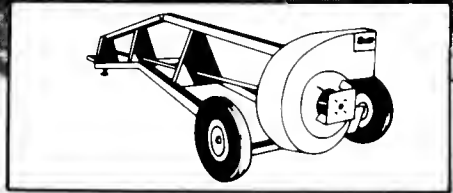
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uffy. Gradually beat in sweetened condensed milk until well blended. Add in cranberry sauce, pecans and heavy cream. Add pineapple chunks. To serve: Chill mixture thoroughly and then gently spoon into pineapple shells. Serves 10 to 12.

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RECIPE:

1/2 (16 oz.) cans whole berry cranberry sauce
1/2 cup brandy
Sprinkle gelatine over water in a cup; stand 5 minutes to soften. In a heavy saucepan, heat cream, heavy cream and sugar over moderately low heat, stirring until sugar is dissolved. **DO NOT BOIL.** Add softened gelatine to cream mixture and continue to heat and stir until gelatine is thoroughly dissolved; do not boil. Place sour cream in a large mixing bowl and gradually stir in hot mixture. Stir in vanilla. Pour into an 8-cup decorative mold that has been rinsed in cold water but not dried. Chill 2 hours or overnight. To prepare Candied Cranberry Sauce: Puree 1/2 can of cranberry sauce in a container of electric blender or press through a food mill; stir in brandy and remaining can of whole berry sauce. Chill until ready to serve. Serve with Molded Swedish Cream. Serves 12.

CRANBERRY WALNUT-EMPANADAS
Recipe:
1/2 (16 oz.) whole berry cranberry sauce
1/2 cup dark seedless raisins
1/2 teaspoons cornstarch mixed with 1/2 teaspoons water
1/2 cup finely chopped walnuts
Filling:
1/2 cups all-purpose flour
1/2 cup plus 2 tablespoons granulated sugar
1/2 teaspoon baking powder
1/2 teaspoon salt
1/2 cup solid vegetable shortening
1/2 cup milk

1 egg beaten with 1 tablespoon water
1/4 cup granulated sugar mixed with 2 teaspoons ground cinnamon

Filling: In a medium-sized saucepan, mix cranberry sauce and raisins. Heat over moderately high heat, stirring constantly until mixture comes to a simmer. Stir in cornstarch-water mixture and simmer 2 or 3 minutes longer; stirring constantly until mixture thickens. Remove from heat and stir in walnuts; cool completely.

Pastry: In a large bowl mix flour, sugar, baking powder and salt. Cut in shortening with two knives or a pastry blender until coarse crumbs form. Add milk and stir with a fork until dry ingredients are moistened and mixture forms a ball. Turn out onto a lightly

floured surface and knead 4 or 5 times until smooth. Heat oven to 375 degrees. Divide dough in half and roll one half on a floured surface to between 1/16 and 1/8 inch thick. Cut into 3 inch circles. Top each circle with about 1 tablespoon cranberry filling. Brush edges of circle with egg-water mixture; fold circle in half and pinch edges with the tines of a fork to seal. Brush tops with more egg mixture and sprinkle with sugar-cinnamon mixture. Repeat with remaining dough and filling, rerolling pastry scraps. Place on ungreased baking sheet and bake 18 to 20 minutes or until pastry is a light golden brown. Good served warm or at room temperature. Makes about 50 empanadas.



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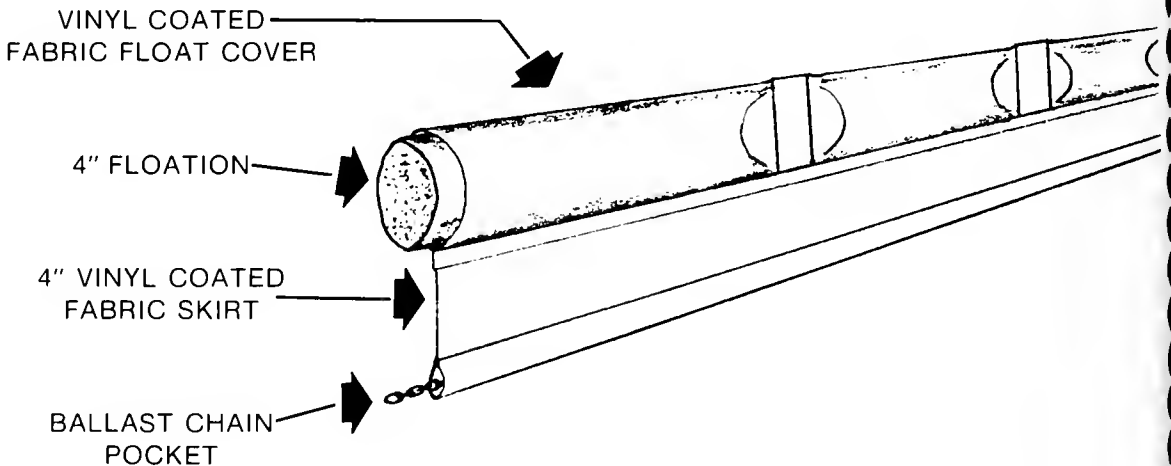
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regional
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notes

Washington

By AZMI Y. SHAWA

During the past several months, the author has attended workshops and national meetings to enhance his understanding and also the awareness of others regarding cranberry culture.

The herbicide action course at Purdue University, West Lafayette, Ind., provided a good understanding of the activity, selectivity and behavior and fate of herbicides in both plants and soils.

The Weed Workers of the Pacific Northwest met in Oregon. The National Weed Science Society convened in Miami and a paper, "Control of Certain Resistant Weeds in Cranberries," was

presented. The farmers of Whatcom, Skagit and Snohomish counties in Washington learned of cranberries, along with other small fruits, at the Northwest Small Fruits Shortcourse at Mount Vernon in March.

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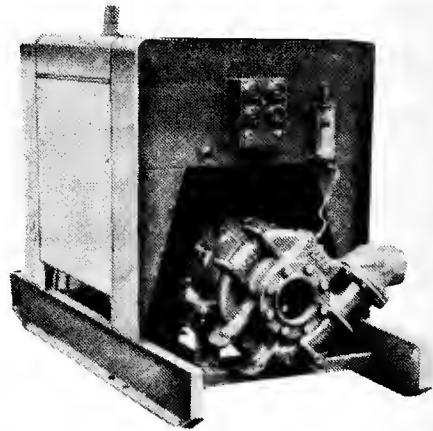
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DAVID MURPHY, food service business unit manager at Ocean Spray Cranberries, shakes hands with Nora Daley, culinary arts student at Minuteman Regional Vocational Technical High School of Lexington, Mass., as Rene Arend, McDonald's product development chef, and Paul Denaro, Minuteman instructor, look on. What's their connection? Working in conjunction with Ocean Spray and McDonald's of Lexington, Minuteman students created several cranberry dipping sauces for McDonald's Chicken McNuggets. Students Nora Daley and Joyce Smith created the prizewinning sauce.

Murphy and chef Arend, along with other judges, chose the Daley/Smith sauce as winner during the celebrity taste test at Great Chef's Day. As a fundraiser for the National Kidney Foundation, Great Chef's Day raised proceeds of over \$10,000.

McDonald's of Lexington opened in the fall of 1982 as a part of Minuteman Voc-Tech's culinary arts program.

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Ocean Spray dedicates New Jersey facility

Bordentown, New Jersey's mayor, Joseph R. Malone, joined executives of Ocean Spray recently at a dedication and ribbon cutting ceremony to officially open a new multi-million dollar warehouse and distribution center.

The 210,000 square foot facility is located adjacent to the marketing cooperative's processing plant here, which processes all of the cranberries produced by Ocean Spray growers in the Garden State.

According to Louis J. Galgano, Ocean Spray's southeast area manager, the warehouse and distribution center is "the size of four football fields with plenty of room for expansion." In addition to storage, it will serve as the loading point for shipments of Ocean Spray products to markets on the East Coast.

"This major capital investment illustrates Ocean Spray's commitment to the Bordentown area and the State of New Jersey," Galgano said. "Over the last five years, plant production at Bordentown in terms of product volume has more than doubled."

The Bordentown facility processes cranberries delivered by New Jersey based growers, Galgano said. The state was the third leading cranberry producing area in the nation, accounting for more than 233,000 barrels in 1983.

"The warehouse and distribution center represents the first phase of an extensive capital improvement plan to rehabilitate the entire Bordentown complex," Galgano added. "Eventually, this will also include the original Park Street plant."

Located at the corner of Elizabeth and Lucas streets, the new facility currently occupies 12.5 percent of a 39 acre site, which Ocean Spray has purchased over the years from the former Bordentown Military Institute.

The new facility will provide

both refrigerated and room temperature storage for more than 1 million cases of canned, bottled and aseptically packaged (Paper Bottle) products. Galgano said that this increased capacity will eliminate the need for Ocean Spray to lease outside storage facilities.

Truck traffic will also be reduced in the area, particularly during Ocean Spray's peak season in the fall. Cranberry receiving and packaging will continue to be handled at the main plant. Storage, loading and shipping operations will take place in the new facility.

A specially designed conveyor system has been erected over the railroad track separating the plant from the new distribution center. Five conveyor belts carry millions of cases of canned and bottled products over the new bridge to the new facility, where a materials handling system automatically assembles the cases onto pallets. Electronically powered fork lifts then transfer the cases into the appropriate storage areas.

Mayor Malone said: "The new facility is a tremendous asset to Bordentown, as city revenues will increase significantly and Ocean Spray will continue to be the city's largest employer."

Ocean Spray plans to tear down the old Zipmark Building, which it had been using for some product storage, to create more parking space near the plant.

Before fully deciding to build the new warehouse and distribution center, Hal Thorkilsen, Ocean Spray president said, a number of other locations in the state were also considered. However, to further emphasize Ocean Spray's commitment to the people of Bordentown and its employes, 80 percent of whom live within a 12 mile radius of the city, Thorkilsen added, "we decided to incur the extra expense of the rail bridge and expand in Bordentown."

Thorkilsen further said: "The new Bordentown facility is part of a major capital expansion program that is being carried out in the cooperative's manufacturing plants nationwide during fiscal 1984."

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Letters

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James Ware
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weather watch

WASHINGTON

Following a very cold Christmas holiday period on the Washington bogs when the temperature dropped to 2 degrees F at Long Beach on the 23rd, with a strong East wind sweeping across the open bogs, the measured injury ranged from 13.24 to 44.4 percent on the eight bog areas tested.

January moved into a warming trend, with a high of 60 degrees on the 31st and a minimum of 18 degrees on the 17th-19th. The bog minimum was 12 degrees. Precipitation was 9.67 inches, the 20 year average is 12.3 inches for January.

The February maximum temperature was 69 degrees on the 5th and the minimum of 28 degrees came on the 2nd. A bog minimum of 24 degrees was recorded on the 1st-3rd. Average rainfall for February is 9.45 inches, the actual rainfall for this month in '84 was 12.20 inches.

March continued with a 69 degree maximum temperature on the 5th and a minimum of 30 degrees on the 3rd. The bog minimum of 26 degrees came on that date also. Precipitation total was 8.61 inches, with 8.78 inches the average.

Up to April 10 we had 4.17 inches of precipitation and a maximum temperature of only 56 degrees, with a bog minimum of 27 degrees. The abundance of precipitation has slowed cultural practices needed before buds can be injured. For those planting this spring, the moisture has been helpful.

A.Y.S.

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41 percent of its budget on food. In China the figure is 60 percent; in Britain 17.9 percent; in Italy 30.3 percent, and in the Soviet Union 31 percent. The figure for the U.S. is 13.3 percent.

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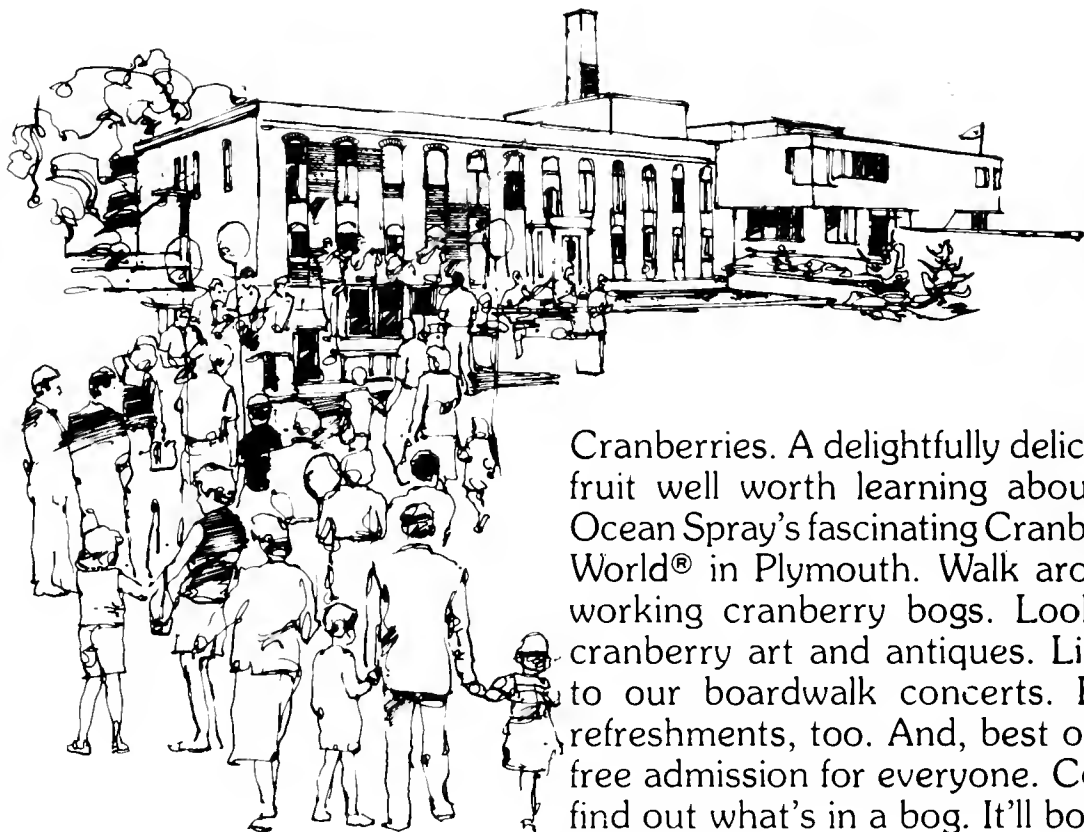
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IPM program . . . 3
Cape Cod tea . . . 16

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Integrated pest management on cranberries in Massachusetts, 1983 results

By SHERRI L. ROBERTS
Massachusetts Cranberry
Experiment Station
IPM Coordinator

The 1983 growing season was the first year of operation for the Massachusetts Integrated Pest Management program on cranberries. The major objectives of the program are: To train and educate the grower to better understand the cranberry pest complex, including appropriate monitoring methods, and to update economic threshold levels in order to accomplish economically and environmentally sound pest management.

Information reported here resulted from intensive weekly scouting of 10 commercial cranberry bogs in Massachusetts. In-depth scouting is the keystone of every IPM program, for it enables IPM personnel to advise growers as to the need for and optimal timing of pesticide applications.

Operation and Procedures

Financial support

The program was funded in FY83 by a USDA-Extension Service, IPM grant. In addition, the Cape Cod Cranberry Growers Association, Ocean Spray Cranberries Inc. and Chemapco

COVER PHOTO

MINDY, left, daughter of writer Sue Barancik, and Mindy's friend, Jenny-Lu, are about to sample some Cape Cod iced tea. See the Confessions of a Cranberry Cook column on page 16.

Inc. made contributions earmarked for specific purposes.

Number of cranberry bogs scouted

Each week, 5 IPM & 5 Check bogs were scouted throughout the major cranberry growing region. Bogs ranged from 1 to 4 acres apiece. IPM growers received a scouting report and were contacted either in person or via telephone by the IPM coordinator and advised about the need to treat, when to treat, and materials to use. Check bog growers followed their own pesticide application programs with no advice from the IPM coordinator.

Sampling methods

Weekly, intensive bog monitoring provides the soundest basis for accurate pest management decision making and grower advisement. Bogs were

divided into 1/2-acre scouting sites. At each site, one sample was taken (sample=25 180 degree sweeps using a 12 inch insect net, depth into canopy 4 to 5 inches) and insects counted were beneficials, such as spiders and hymenopterous parasites, and pests, such as cranberry weevil, spanworms, cutworms, gypsy moth, fireworms and Sparganothis fruitworm.

Visual sightings were made for cranberry tipworm, cranberry girdler and blackheaded fireworm and damage resulting from all previously mentioned pests.

Upright samples (sample = 10 uprights in 1/2-acre station) were used to monitor the presence of southern red mites, both eggs and motile forms.

Pheromone traps were used to monitor cranberry girdler flight.

(continued on page 6)

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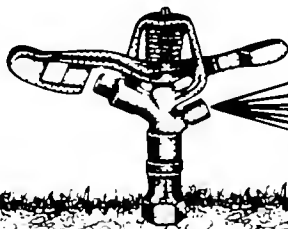
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editorial



Wolf cries hurt public

Having spent so much time around newspaper and magazine offices, this writer tends to react with skepticism when news subjects charge inaccurate and unfair reporting.

Just before sitting down to write this editorial, I listened to racist fanatic Louis Farrakhan tell a network newscaster that his words had been taken out of context by the media. His words hadn't been taken out of context. He had plainly threatened the life of a Washington Post reporter. He seized upon the "context" canard because of the chorus of disapproval that greeted his threat. Funny. I always thought you got clapped in jail for publicly threatening the lives of other people. But I digress.

A recent meeting in Wareham, Mass., on pesticides and health—not Farrakhan—is the concern of this piece. While Farrakhan exemplifies the phony charges heaped upon the press, the participants in the Wareham meeting seem to have a legitimate gripe.

A story that appeared in a local newspaper the day after the meeting carried the headline, "Toxic Shocks: Study Warns Bog Workers on Insecticide Use."

First of all, use in the headline of the words, "Toxic Shock," was unfortunate because of their too obvious association with Toxic Shock Syndrome.

Without nit-picking at the story, its tone gives the impression that the spokespersons were out to warn growers about the dark and dire dangers of pesticides and it ignored the safety aspects discussed. It's a little as if a story about a meeting on handling electrical equipment safely dealt exclusively with death and shock caused by hot wires.

As Dr. Rose H. Goldman, occupational health physician, Massachusetts Division of Occupational Hygiene, put it, the article missed the point, "which was that insecticides can damage the central nervous system *only* when there are overexposures. These overexposures *can be prevented* through the use of protective measures when spraying."

In a letter to the newspaper, she wrote: "It is the inaccurate reporting found in this article that only serves to confuse further the issues around pesticide usage and, in fact, slows progress towards improving health and safety."

— Wrote Dr. Charles F. Brodel, research and extension

(continued on page 18)

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INTEGRATED PEST . . .

(continued from page 3)

One trap was used on each bog (1-4 acres) and captured girdlers were counted weekly.

The cranberry fruitworm is an annual problem plaguing every cranberry grower, and the timing of pesticide applications is all-important if this pest is to be properly managed. Based on past research findings, pesticide application was made nine days after the 50 percent out of bloom date. The second application was made 10 days after the first, as a standard procedure. After the second application, fruit samples (sample = 25 berries per 1/2 acre) were inspected for unhatched, nonparasitized cranberry fruitworm eggs to determine a need for a 3rd or 4th treatment.

Fruit and vine injury at harvest was determined in each IPM and Check bog on the basis of 5 lbs of berries scooped per scouting site and 10 handfuls of vines pruned per scouting site.

Cranberry weeds were surveyed in August before clipping or harvest. Recommendations for spring herbicide applications were made, based on the most numerous or serious weed species and past herbicide use.

Results

Injury was divided into categories: 1) direct (= injury to the berry); and 2) indirect (= injury to the vine). Sparganthis and cranberry fruitworms cause direct injury (Table 1). These two types of damage are separable and can be combined for total percent injury. IPM bogs had a combined direct

injury level of 7.74%, whereas the value for Check bogs was 35% greater, or 11.91%.

Indirect injury was subdivided into "types of injury"

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Table 1. Average percent of direct insect injury on fruit at harvest in IPM and Check bogs in Massachusetts, 1983

<u>Pest</u>	<u>Damage type</u>	<u>% Damage</u>	
		<u>IPM</u>	<u>Check</u>
Sparganothis fruitworm	Fruit damage	4.52	9.35
Cranberry fruitworm	Fruit damage	3.22	2.56
Total % of Insect Injury to Fruit		7.74	11.91
Average number insecticide applications		2.8	3

Table 2. Average percent of indirect insect injury on vines at harvest in IPM and Check bogs in Massachusetts, 1983.

<u>Pest</u>	<u>Damage type</u>	<u>% Damage</u>	
		<u>IPM</u>	<u>Check</u>
Cranberry tipworm	Terminal cupping	.62	1.84
Southern red mite	Leaf bronzing	4.95	36.66
Cranberry weevil	Cut blossom	18.29	16.25
Gypsy moth	Tip damage	14.80	11.53
Blossom worm			
False Armyworm			
Cutworm			
Green spanworm			
Brown spanworm			
Gypsy moth	Leaf feeding	3.83	8.99
Blossom worm			
False Armyworm			
Cutworm			
Green spanworm			
Unknown spanworm			
Brown spanworm			
Average number insecticide applications		1.8	2.2

and "separable injury" attributable to one pest (Table 2). "Types of injury" included tip damage and leaf feeding damage. "Separable injury" consisted of tipworm damage, bronzing due to southern red mite feeding, and cut blossoms due to cranberry weevil activity. All indirect injury could not be combined numerically because individual uprights sometimes exhibited more than one type of injury.

Tip damage was 22% lower on Check bogs than on IPM bogs.

Leaf feeding was 57% lower on IPM bogs than on Check bogs.

Cranberry tipworm damage, consisting of cupped terminal leaves, was 66% lower on IPM than on Check bogs. This difference was due primarily to one Check bog that had a serious cranberry tipworm problem.

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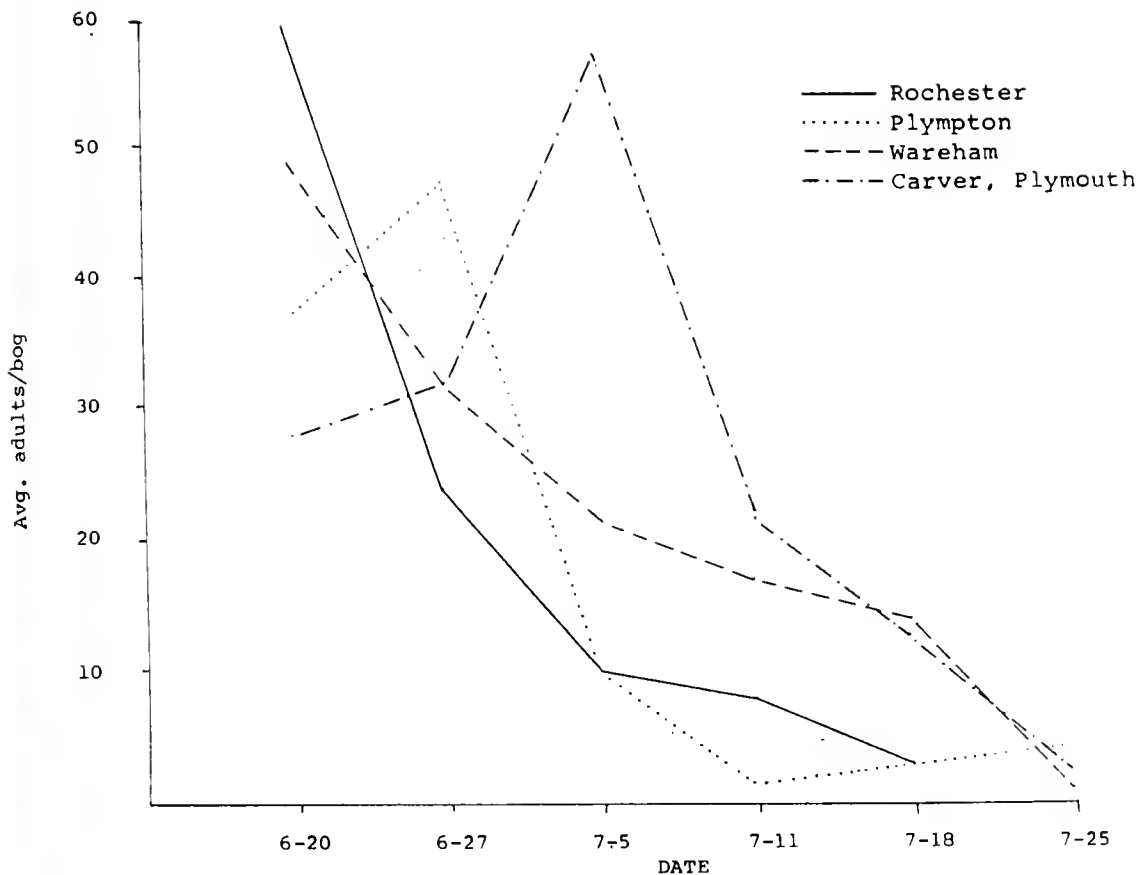


Figure 1. Average weekly adult catches per IPM bog (including check bogs) for 1983 in the Rochester, Wareham, Plymouth-Carver, and Plympton area for Chrysotcuchia topioria.

Southern red mite injury, observed as leaf bronzing, was 86% lower on IPM than on Check bogs. None of the Check growers treated for southern red mite.

Cranberry weevil damage, consisting of severed blossom buds, was 11% lower on Check than on IPM bogs.

Cranberry girdler moth flight was monitored, using commercially available pheromone traps. Monitoring peak flight and end of flight on selected bogs enabled growers throughout the region to make more timely insecticide treatments to manage larval populations. In the Rochester area flight ended the week of

July 25. In the Plymouth, Plympton, Carver and Wareham areas, flight ended the week of August 1 (Figure 1).

A weed survey was conducted in late August on IPM and Check bogs. The weeds were divided into four categories: (1) grasses and sedges; (2) annuals; (3) perennials, and (4) woody perennials. The most serious problem in each category was rattlesnake grass, dodder, narrow-leaf goldenrod, and brambles, respectively. The weeds found more often in each category were poverty grass, marsh St. Johnswort, narrow-leaf goldenrod, and brambles, respectively (Tables 3,4,5,6). Spring herbicide recommendations were made for

the IPM bogs.

Insecticide use

IPM bogs received 15% fewer insecticide treatments than the Check bogs. IPM bogs received 39% fewer dosage equivalents than the Check bogs (Table 7).

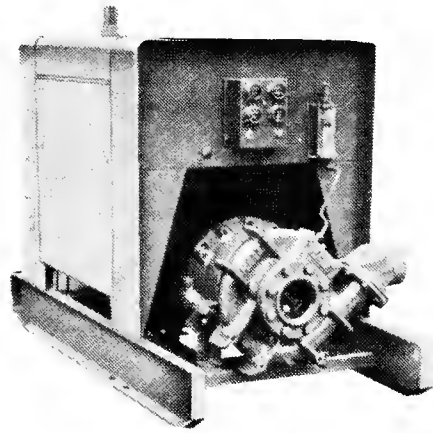
WANTED: Manager for a cranberry bog, must have hands on experience and be able to operate the necessary equipment. Reply to Ardisonn Industries Limited at 22671 - 16th Avenue, R.R. 9, Langley, British Columbia, V3A 6H5, Telephone (604) 530-5542.

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Table 3. Percent of 10 cranberry bogs participating in the IPM program with grass and sedge weeds in Massachusetts, 1983

<u>Weed Species</u>	<u>% of bogs</u>	<u>% of bogs with problem</u>
Poverty	50	10
Manna	50	10
Cut	50	10
Wool	30	10
Smoke	30	10
Rattlesnake	30	20
Spike rush	30	0
Summer	20	10
Sedges	20	0
Nut	20	0
Shore	10	0
Wood	10	0
Warty panic	10	0
Needle	10	0
Upland	10	0
Meadow	10	0
Three square	10	0

Table 4. Percent of 10 cranberry bogs participating in the IPM program with annual weeds in Massachusetts, 1983.

<u>Weed Species</u>	<u>% of bogs</u>	<u>% of bogs with problem</u>
Marsh St. Johns wort	60	0
Dodder	40	40
Fireweed	40	0
Tearthumb	10	0
Pitchfork	10	0

Cost benefit comparisons

Table 8 summarizes the cost benefit analysis of IPM vs Check bogs. IPM growers made 15% fewer insecticide applications and realized a cost savings of \$11.01 on materials and their application. IPM growers used more costly insecticides that are

less harmful to beneficial insects and to the applicator than did Check growers. The average value of fruit loss per acre was \$236.25 lower on IPM bogs, resulting in an average net benefit per acre of \$247.26 from IPM scouting and grower advisement (Table 8). It should be emphasized that this analysis is intended to show

relative instead of *absolute* numerical or percentage differences, and that the values herein are *average*. As such, they do not reflect grower wholesale prices for pesticides, per acre yields higher or lower than the Massachusetts average of 125 barrels per acre, or fruit prices substantially different from those

Table 5. Percent of 10 cranberry bogs participating in the IPM program with perrenial weeds in Massachusetts, 1983

<u>Weed Species</u>	<u>% of bogs</u>	<u>% of bogs with problem</u>
Narrow leaf goldenrod	80	30
Aster	50	0
Wild bean	20	0
White violets	20	0
Loosestrife	20	10
Meadow beauty	20	0
Joe Pye weed	20	0
Moss	20	20
Sorrel	10	0
Smartweed	10	0
Feather fern	10	0
Bell wort	10	10
Soloman seal	10	0
Arrowhead	10	0

Table 6. Percent of 10 cranberry bogs participating in the IPM program with woody perrenial weeds in Massachusetts, 1983.

<u>Weed Species</u>	<u>% of bogs</u>	<u>% of bogs with problem</u>
Brambles	100	50
Chokeberry	60	0
Hardhack	60	10
Maples	50	0
Blackberry	40	10
Bull brier	40	10
Poison ivy	40	10
Leatherleaf	30	10
Silverleaf briars	30	20
Green brier	20	10
Saw brier	20	10
Sweet pepperbush	20	0
Willow	10	0
Sheep laurel	10	0

Table 7. Numbers of pesticide treatment and dosage equivalents of pesticide applied for insect control in IPM and Check bogs, 1983

<u>Pesticide</u>	<u>Number of treatments</u>	
	IPM	Check
Parathion	7	18
Guthion	9	5
Sevin	3	6
Diazinon	5	1
Orthene	0	1
Lannate	1	0
Malathion	0	1
Pyrenone	1	0

	<u>Number of Dosage Equivalents</u>	
Parathion	7	22.67
Guthion	8.25	4
Sevin	3	6
Diazinon	5	1
Orthene	0	1.7
Lannate	1	0
Malathion	0	1
Pyrenone	1	0

Dosage equivalent = Actual pesticide rate/Massachusetts recommended pesticide rate.

<u>Crop Spray</u>	<u>Number of Treatments</u>	
Pyrenone	8	5

	<u>Number of Dosage Equivalents</u>	
	8	5

used in this analysis.

It also should be noted that savings in pesticide and application costs seen in 1983 are only the most immediate benefits of IPM.

IPM has essential, long-term benefits as well in reducing selection pressure for pesticide resistance and thus greatly

delaying development of resistance, while prolonging the period of usefulness of currently available pesticides.

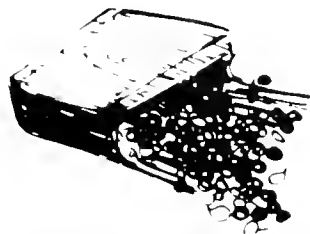


Table 8. Cost benefit analysis of insect results in 5 IPM and 5 Check commercial cranberry bogs in Massachusetts, 1983

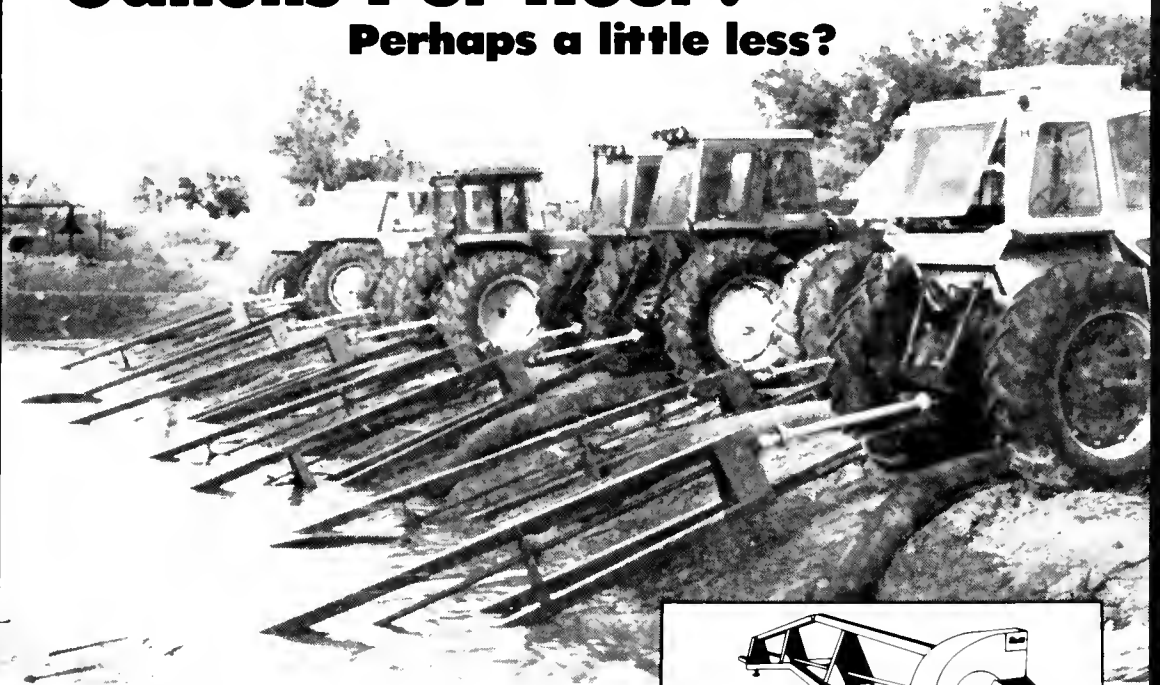
	<u>IPM</u>	<u>Check</u>	<u>Difference</u>
Average number of spray dated per acre	4.6	5.4	
Average number dosage equivalents per acre ¹	4.45	7.28	
Average cost/acre spray materials for:			
Insecticides	\$41.97	\$45.90	-\$3.93
Pyrene crop spray	\$ 1.81	\$ 1.29	+\$0.52
Spray application cost:			
Sprinkler ²	\$15.30	\$15.30	
Helicopter ³	<u>\$11.40</u>	<u>\$19.00</u>	
	\$26.70	\$34.30	-\$7.60
Average % of insect injury ⁴	7.74	11.91	
Average value per acre of fruit loss due to insect injury ⁵	\$433.35	\$669.60	-\$236.25
Average net benefit per acre from IPM	---	---	\$247.26

1. Dosage equivalent - actual pesticide rate/MA recommended pesticide rate.
2. Based on 20 min. time to spray 1 acre, labor cost \$3.50 and 1.00/acre/application for fuel and oil.
3. \$9.50/acre/application - included nurse truck, loading, and labor.
4. Does not include cut-blossom, leaf-feeding, and tip damage which does not directly effect the fruit.
5. Based on pool price for Ocean Spray, as of Jan. 30, 1983: \$45/bbl and MA 1983 average yields of 125 bbl/acre.

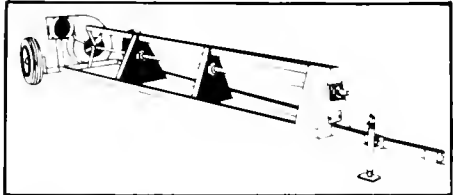
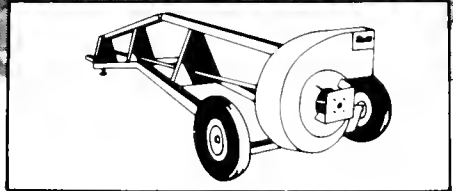


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Cape Cod iced tea

By SUE BARANCIK

It was our last dinner with this family of seven. New Englanders all their lives, the father, mother and five children had arrived in our small Midwestern city a year earlier through a corporate transfer.

Although the job had worked out, the move had not. Their longings for Connecticut's salt-box houses, ocean and hills and autumn briskness proved stronger than the pull of career. They decided to return to their hometown, where roots were firmly entrenched, where family and lifelong friends beckoned.

We, their friends in the Midwestern city, hosting them at a farewell dinner, were trying to give them a taste of the New England to which they would

be returning.

We served a variety of regional specialties at our midsummer barbecue. There were succulent blueberry muffins and slices of brown bread bursting with golden raisins. The barbecue grill sizzled with chicken basted in a lemony butter sauce. Creamy cabbage salad studded with carrots was heaped in bowls. And frozen strawberry mousse served with a fresh berry sauce was the first touch.

To accompany our family meal and quench our thirst, we drank pitchers of *Cape Cod Iced Tea*.

Flavored with cranberry juice, this unusual iced tea provided a delicious and novel alternative to the more

conventional tea. The club soda added at the end provides the special partytime zest.

Nothing could be easier than Cape Cod Iced Tea at your next picnic. And here are the simple steps involved.

In a small saucepan, bring 2 cups of cold water to a boil. Remove from heat. Add 4 tea bags, ½ cup of sugar, ½ teaspoon ground allspice and 3-4 whole cloves. Stir until sugar is dissolved. Cover. Let steep 4 minutes. Strain into 2 quart container. Let cool.

When cool, stir in 2 cups of cranberry juice and ¼ cup of lemon juice. Chill 1-2 hours.

To serve, add 14 ounces of club soda. Pour into glasses. Serves 6.

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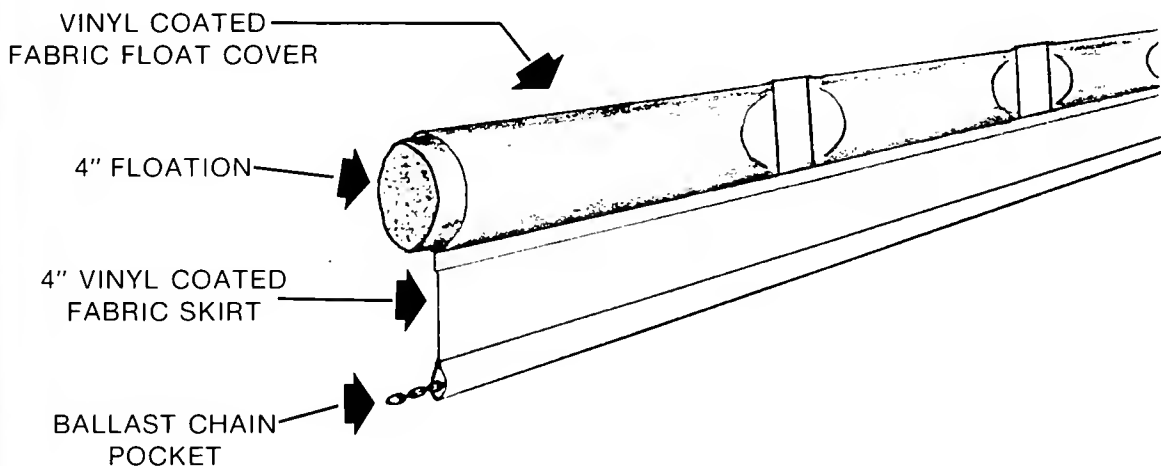
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EDITORIAL . . .

(continued from page 5)

entomologist, Massachusetts Cranberry Experiment Station: "Misrepresentation, inaccuracy and sensationalism by the media only serves to polarize agriculturists and other segments of society."

The chief problem of bad treatment of scientific and technological stories is that there are *real* dangers in our chemistry soaked, polluted world. If the press cries wolf recklessly, the public won't pay attention when genuine threats are pointed up.

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weather watch

MASSACHUSETTS

March was cold, averaging 3.1 degrees below normal. This was the coldest month since 1978 and the eighth coldest in our records. Strangely enough, March temperatures averaged colder than February's, only the second time that this has happened at East Wareham. The other occasion was in 1960 and the differential between the two months was not great as this year. Maximum temperature was 52 degrees on the 31st and the minimum was 7 degrees on the 10th. The only warmer than average day was the 31st. Cooler than average periods occurred on the 1st-4th, 8th-12th, 18th, 19th and 29th.

Precipitation totaled 6.84 inches or about 2 inches above normal. There was measurable precipitation on 15 days, with 2.44 inches on the 30th-31st as the greatest storm. We are now about 2½ inches above normal, but about 3½ inches below 1983 for the three month period. Snowfall totaled 12.5 inches or about double our norm.

April was just slightly on the cool side, averaging 0.3 degrees a day below normal. Maximum temperature was 70 degrees on the 29th and the minimum was 20 degrees on the 1st. Warmer than average days were the

1st, 2nd, 17th, 18th and 28th-30th. Cooler than average days were the 8th through 15th and the 19th.

Rainfall totaled 4.86 inches or about 0.6 inch above normal. There was measurable rainfall on 10 days,

with 2.48 inches on the 14th-16th as the greatest storm. We are 3 inches above normal but nearly 6½ inches behind 1983 for the period.

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NOVA SCOTIA

Plant development was about normal for May 9.

We got through the winter reasonably well.

March had considerably more rain than usual, with 93.6 mm compared with the 30 year average of 45.9.

I.V.H.

regional
news
notes

Oregon

By ARTHUR POOLE

The Oregon Cranberry Farm Review will be July 31.

* * * *

A special advisory giving the latest twig blight control recommendations was mailed to all growers during the first week in June.

Preliminary findings from research indicate that the major period of infection occurred between the last week of June and mid-August in 1983.

Washington

The Cranberry Field Day will be held at Long Beach on June 29 starting at 10 a.m.

IPM INFO IS GIVEN

Sherri L. Roberts, Integrated Pest Management coordinator, reports that the IPM code-a-phone number is 295-4761. Messages range from 3-6 minutes in length. Messages will be changed once a week, on Monday's. They will include information on insects, weeds and miscellaneous information on cranberries.

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We are manufacturers of jam and jellies and would like to introduce cranberry production into (Argentina).

We would like to know what literature is available (for purchase, agricultural extension or any other means) concerning the implantation of cranberries.

We are not familiar with the difference between Northern cranberry "vaccinium oxycoccos" and the American cranberry of the "macrocarpon." We understand there are even other varieties which are sometimes mistaken as substitutes.

Our interest concerns berries which are used in pies, as fresh fruit, in beverages and sauce.

Please let us know what has to be done on our part to obtain literature and eventually the purchase of plants.

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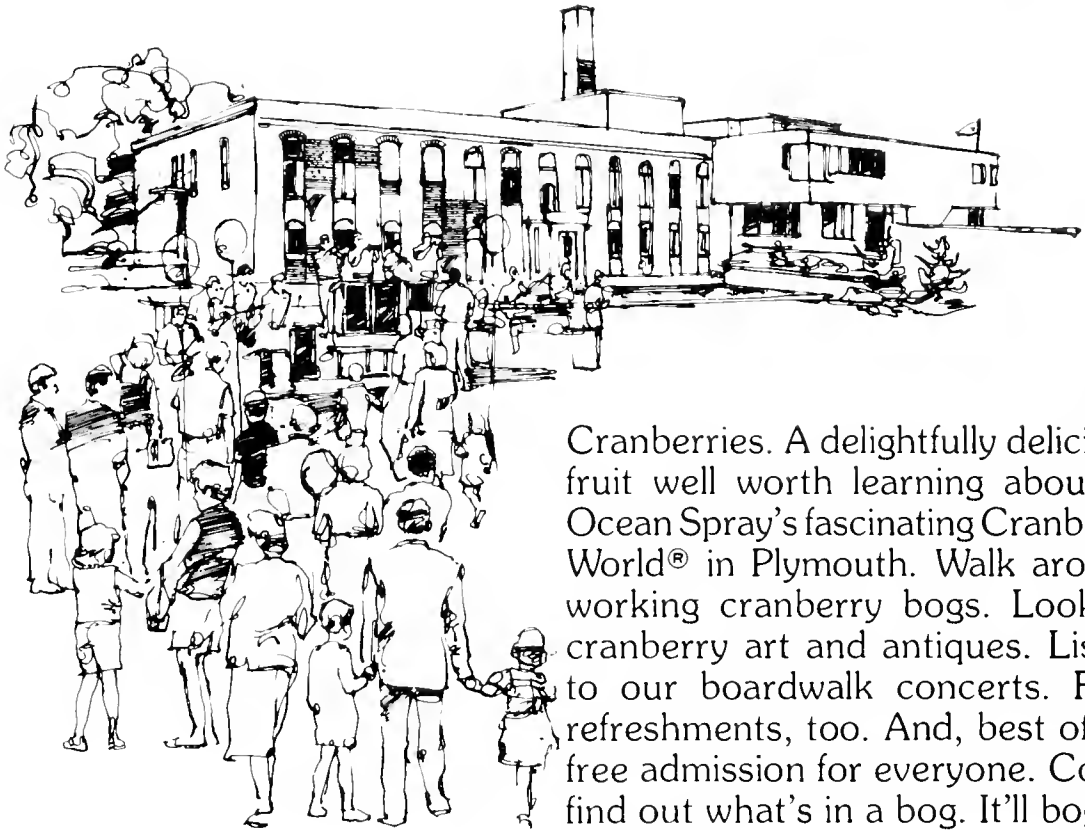
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WHAT'S IN A BOG?

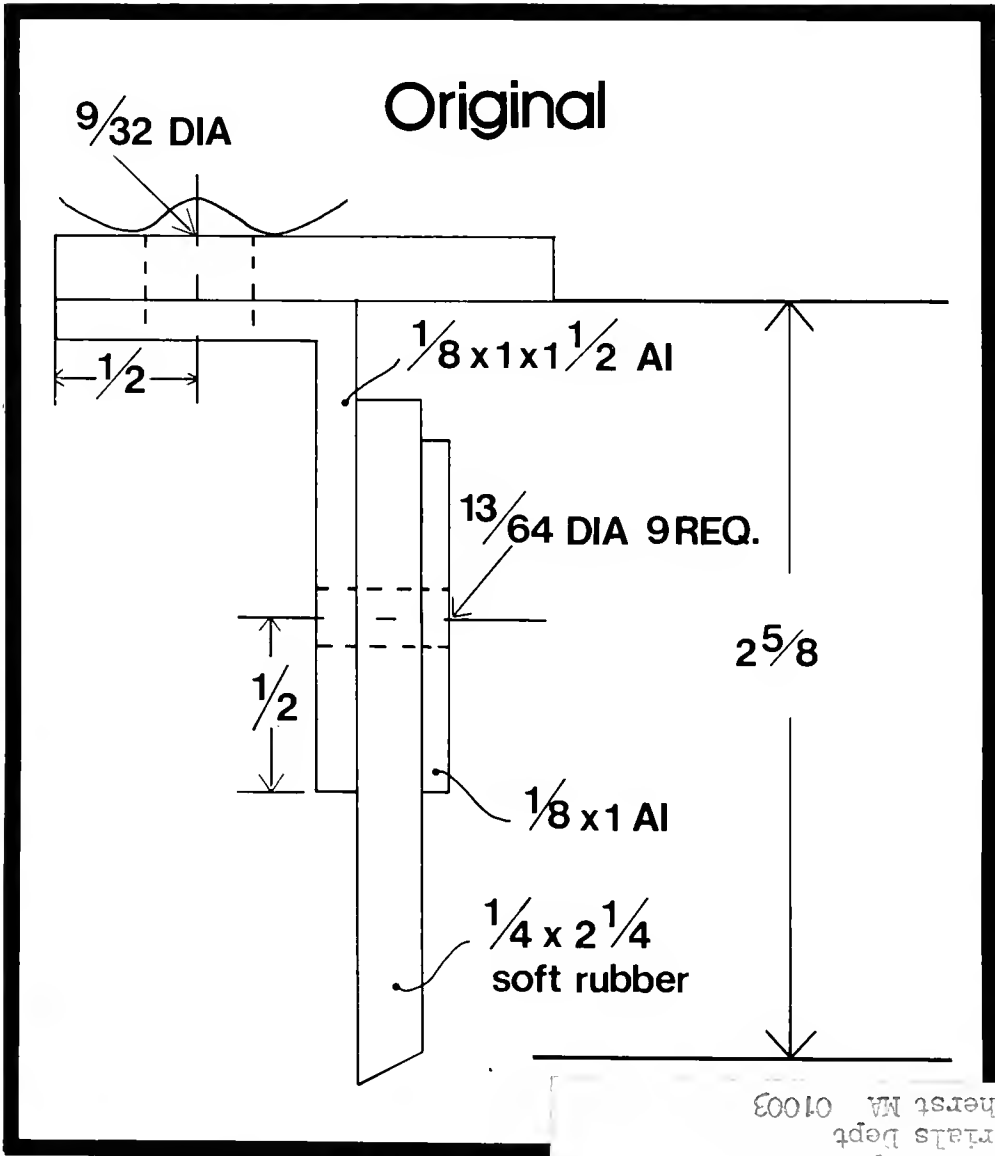


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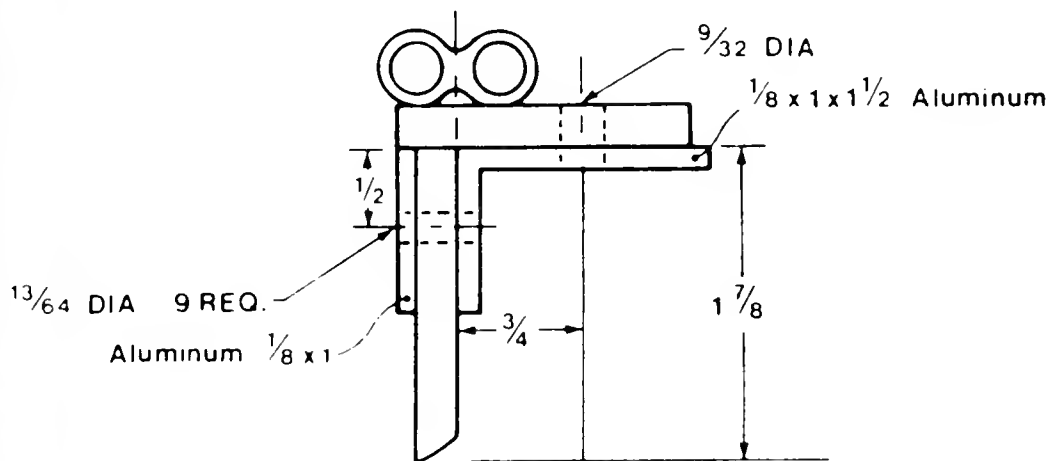


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Furford harvester modifications

1983



ELEVATOR paddle end view of the Furford Picker-Pruner as modified in 1983.

By DENNY C. DAVIS
Agricultural Engineering Dep't
Washington State University

Fresh market cranberries

yield premium prices but also require special care in harvesting and handling to minimize berry injury and maximize their shelf life. Cranberry injury caused during dry harvest has been a major concern during recent years. In harvester tests, up to 50% of the cranberries taken from the sack on the harvester had visible injury. Primary sources of this injury were the crushing of berries by elevator

paddles and the dropping of berries into the collection sack.

Because the Furford Picker-Pruner is used widely in

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COVER ILLUSTRATION
ELEVATOR paddle end view of the original Furford Picker-Pruner. The story about the modification of the machine begins on this page.

injury. During the years 1981 through 1983, modifications of this harvester have been field tested and have been proven beneficial in reducing cranberry injury. This article describes the harvester changes and their effects on harvesting injury.

1981 and 1982 Tests

In 1981 the Furford harvester was modified by moving the elevator forward and down on the harvester. This moved the contact point for the elevator paddle on the elevator surface ahead of the cutter (shaker) bar but also required shorter paddle heights. This modification reduced injury on the elevator from over 15% to 6% but also decreased the harvester capacity due to the shorter paddles. The harvester also cut more tips (for next year's crop) than did the original machine.

In 1982 the harvester as

modified in 1981 was tested using different elevator speeds. Results verified that this harvester design reduced berry injury significantly from the unmodified machine. At the original speed, only 5% of the cranberries leaving the elevator had visible injury. Increased elevator speeds, however, caused greater berry injury and could not be used to provide the desired harvester capacity with minimal berry injury.

1983 Tests

In 1983 the elevator was redesigned to increase its capacity while keeping features that reduced berry injury. The illustrations on the cover and page 3 show details of the elevator paddles used in 1983 and in the original machine. (The same aluminum parts and rubber are used in both designs.) The 1983 paddles are shorter in height but

have approximately the same capacity as the original paddles.

The illustration on page 7 shows the locations of the front elevator shaft in 1983 and in the original machine. The 1983 position is farther forward and lower than the original position so that the elevator paddles contact the elevator surface ahead of the cutter bar, yet avoid contact with the feeder reel. The 1983 position is between the original and 1981-82 positions.

Results of field tests showed that the 1983 design was successful in reducing cranberry injury while providing the desired harvester capacity. Cranberries leaving the elevator had less than 5% visual injury on the 1983 harvester and approximately 10% on the original harvester. The 1983 harvester did not remove

(continued on page 6)

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editorial



RESPONDS TO QUERY ON SWAN DILEMMA

In the May CRANBERRIES, we published an editorial about the swan dilemma in New Jersey. In that editorial, we recalled that the tundra swan was destroying cranberry vines in flooded bogs in its search for red root.

On the one hand, growers were frustrated by the threat of huge economic loss and by the ineffectuality of efforts to discourage the swans through humane means. On the other hand, animal lovers became alarmed at any suggestion that the swans be disposed of through inhumane means, such as shotguns.

In the editorial, we asked if anyone out there had a remedy. We received the following reply from Jere D. Downing, Horticultural Coordinator, Ocean Spray Cranberries Inc.:

"I am writing in regard to your editorial on the swan problem in New Jersey cranberry bogs. As I view it, the situation was grossly exaggerated by the New York Times article, and particularly by the accompanying photo of the grower with a shotgun.

"You asked for suggestions, and I want to fill you in on the progress being made to solve the swan problem. The cause is the red root weed that occurs in New Jersey bogs. The way to swan control is through red root control. Dr. Bill Welker, USDA weed scientist for cranberries, has identified a very promising herbicide that would hopefully eliminate the swan feeding in the flooded bogs.

"Your statement regarding 'grower pleas for a hunting season' is inaccurate from my contacts with those at the meeting. This was discussed as a last resort, but not a plea from the growers.

"Prof. Phil Marucci is most eloquent in pointing out the role that cranberry growers have played in preserving the integrity of the New Jersey pinelands and in providing vast areas of wading and resting habitat for migrating water fowl and other forms of wildlife. All of that important area is provided at the total expense of the cranberry growers; the reservoirs, the wooded uplands, the dike ridges, and ditches.

"The New Jersey cranberry industry richly deserves praise for its environmental contributions. The swan problem is a temporary pause in the evolution of environmental compatibility between cranberries and the surrounding wildlife."



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more tips from the vines than did the original harvester.

These results indicate that the 1983 modification may be used by growers to reduce harvesting injury without decreasing capacity or removing excess tips. If 5% more of the harvested berries are suitable for fresh market, a \$7.50 per 100 pound incentive for a 10,000 pound per acre yield would increase a grower's income by \$37.50 per acre per year. Increased income and higher quality cranberries reaching the consumer should encourage adoption of these machine changes.

Current Developments

The 1983 modifications have reduced harvest injury and maintained desirable attributes of the Furford Picker-Pruner. Additional improvements could be made to reduce berry injury

in the bag and eliminate berry crushing by the elevator paddles, but these changes require major changes in the current machine or design of a new machine.

Since September 1983 a group of students in the Agricultural Engineering Department at Washington State University have been designing a new cranberry harvester that minimizes harvesting injury. This machine should be built and ready for testing in the 1984 harvest season.

Even with harvester redesign, some cranberry injury will continue to occur during harvesting and handling. Removal of injured berries and those with rot or other defects is critical for high quality fresh berries and long shelf life. To aid in efficient sorting of cranberries, a second group of agricultural engineering seniors is designing a system for detection and

removal of cranberries with insufficient red color, rot or surface injury. The testing and development of a system of this type may take several years.

Acknowledgements

The harvester modification and testing work through the 1983 harvest season has been supported in part by the Washington State Cranberry Commission and contributions from individual growers, John C. Decas, and Ocean Spray Cranberries. This support and the availability of Thurley Long's bog for field testing are greatly appreciated.

WANTED: Manager for a cranberry bog, must have hands on experience and be able to operate the necessary equipment. Reply to Ardisonn Industries Limited at 22671 - 16th Avenue, R.R. 9, Langley, British Columbia, V3A 6H5, Telephone (604) 530-5542.

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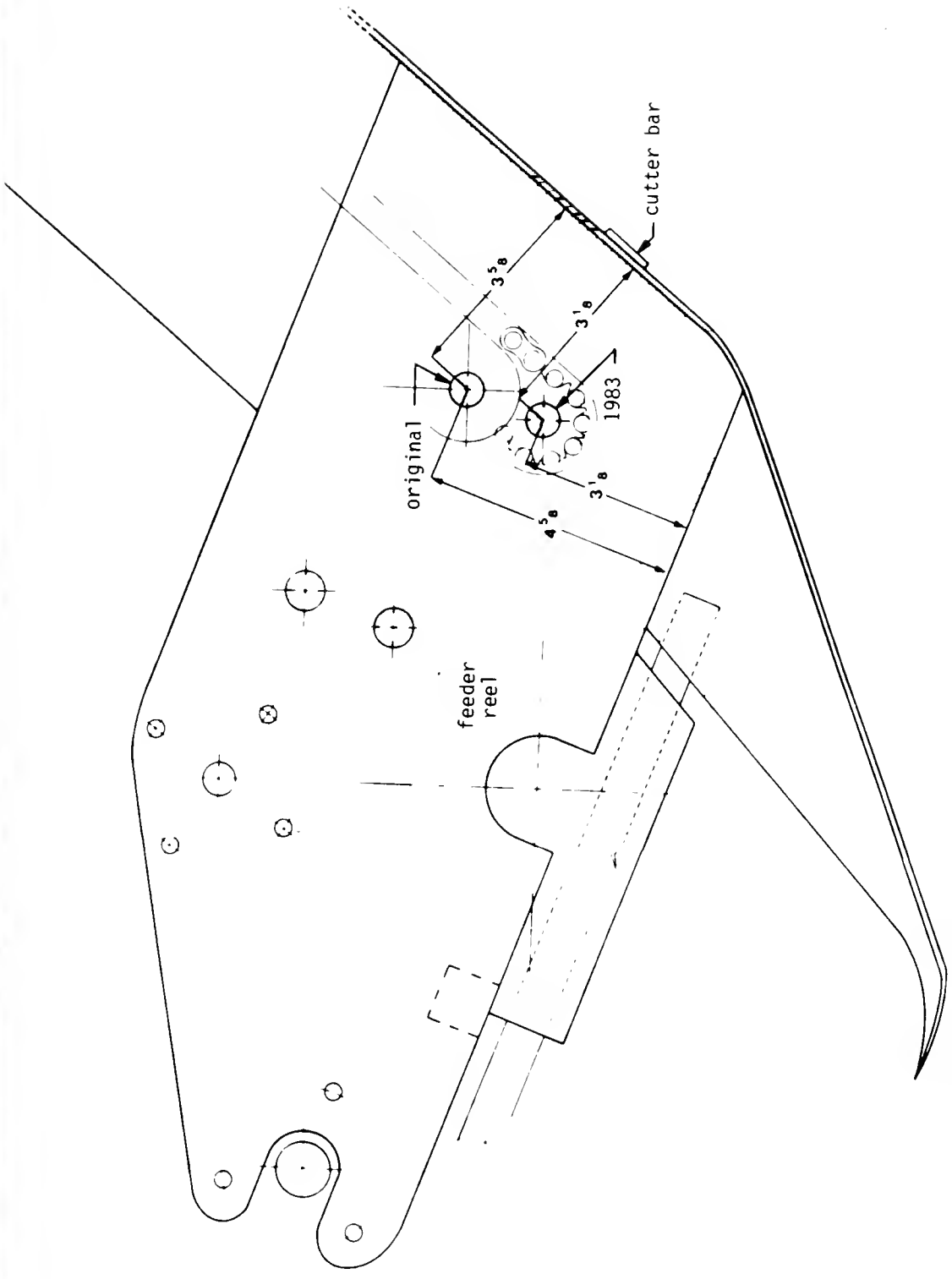
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~ ELEVATOR front shaft positions for the 1983 modification and the original Furford Picker-Pruner.

Do you need that computer?

By DR. HAROLD GLUCK

This decade will probably go down in future history books as the "Computer Revolution." The computer is affecting all aspects of our lives, from banking to teaching, from medicine to law enforcement and from writing to billing. Whether we like it or not, we are all caught up in it. And, no doubt, the question has already entered your mind: "Should I get a computer?" Perhaps we should change that to: "Do I really need a computer?"

WE ARE going to make an analysis of the situations concerning the Cranberry Grower to see if he/she needs that computer. You may just be a small grower, a medium sized one, or one that is very large. It makes no difference basically because you all have about the same problems to face. Just follow us and each of you can make a similar study or analysis of your needs for that computer.



Based on past experience, can you judge how big or small this coming harvest of cranberries will be? Do you keep records for the past years? Do those records include comments concerning why one year's harvest was bigger or smaller than the previous year's? Your key words here are RECORD KEEPING. Can you quickly tell what may have gone wrong in a previous year? Using a computer setup, you should be able at any given time to get a clear and accurate history of your cranberry

harvests.

What you want to be able to do is to isolate the favorable factors from the unfavorable ones. And then you want to be able to take those measures, if possible, to eliminate the unfavorable factors. While you're viewing the data on your computer screen, there may come to mind some items you forgot to list. So you can add them to make the picture more complete.

DO YOU know just what it cost you to produce your latest crop of cranberries? What figures do you have in the present records you keep? You want a complete list of all the expenses. This serves two purposes. One is to see just how profitable the raising of cranberries is. And the second is to have an accurate record for your federal, state and city taxes. If there should be a challenge by the tax bureau, can you quickly find all of the figures to substantiate your claims?

You have a list of all the equipment used in raising cranberries, right? This would include the tractor, the truck and even your personal car when used for business. And phone



bills to box expenses. Nothing is more frustrating, two months after you have filed your income tax reports, than to find a sheet with additional expenses. And you forgot to include them! So that means a headache with amended tax returns.

You have accounts payable as well as some accounts receivable. You can actually use the computer setup for all of your

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bookkeeping. Does it follow that the computer would be better than your present system of doing things?

Well, consider that when rushed we all tend to forget to pay a bill or two. Or even to collect an account receivable. On the screen, you can quickly see if all outstanding bills have been paid. And if you have collected all debts due you. Your bank may even offer a service connected to the computer.

NOTICE that I use the expression, "computer setup." That setup can also include a printer. You have a list of all the people with whom you deal. You send out a letter to each during the holiday season. Do you copy each name and address by hand? Or do you or one of your employees type out each name and address on a typewriter? Would it be easier to have the name labels stored and spit out by a printer?

What about the letters you are going to send out? Will they be all the same and hence done by a printing shop or done by offset? Will there be, instead, changes in some of the letters? How do you presently determine to whom special letters will be sent? You have to figure out time and cost with your present method as against using a computer setup.

You may have one or more people working for you. And, during your busy season, several parttime workers. You keep a record in your books of all salaries paid. Remember, this is to be part later of your income tax returns. What is the best way to store and retrieve those records?

If you are big, you may have a fulltime secretary/typist. If you were to get a computer setup, would she do most of the work? If the answer is yes, this means she would have to learn how to operate it. She may like it. She may not. So, if you decide to get a computer,

let your secretary in on the idea. Who knows? She may like it very much.

BEFORE you make a final decision concerning the purchase of a computer setup, it is suggested that you do the following:

Contact other cranberry growers and see if they use a computer. If so, could you pay a visit and see just how it is used. They may hesitate because they have some important, confidential data stored in the computer. But that you need not see. What you want to find out is just how they use it in specific situations. You want to know the good points as well as the bad ones and about any headaches connected with the computer.

If there is a computer show in your area, go to it even if you have to travel some. Take some of your data with you and ask how it can be set up. And wait until it is done. You also want to find out if anybody has devised a program or programs that can be used by you. But if you are asked to sign any kind of paper: Don't!

Thank the demonstrator and go on to the next exhibition.

Visit some of the stores that sell computers. You want to see how you would operate one if you did decide to purchase it. If the salesman isn't too busy, he may demonstrate the procedures himself or turn you over to their "computer specialist" for that demonstration.

You may be able to locate a computer club composed of those who use the same make computer. If you can visit the club, you are lucky, for you will get the answers to your questions from those who use that specific computer.

Your mate might even suggest that the computer can be used for home as well as business purposes. Can it, for example, also be used to manage household expenses?

I can't make the final decision for you about buying a computer. However, I can suggest you weigh all the facts. Then it's up to you.

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Oh Harry, we found our perfect Little stove!!

Give me that no-frills stove

By CENA GOLDER RICHESON

Purchasing a new stove is a serious undertaking. The varieties of models with their available grocery list of options could confuse and cause a person to drive hither and thither in pursuit of "the perfect stove."

Unless the person is like me. Budget-minded ("cheap," I've been called by some couthless individuals) and almost unconcerned about the luxury accessories (clocks, timers, and a whole glassed-in panel of gadgets). Oh sure, I've had all those items under glass. I've also suffered pangs of guilt at not being able to get inside those airtight windows and clean them when the greasy

gunk and dust collect on the inside, smogging them up.

The sealed-in clocks invariably stop working the first month (if you bother to notice them; we have a kitchen wall clock which we would tend to consult for the time). As for the timer, I have one of those portable hand-set ones which works just as well, and I can take it outdoors with me so that I don't forget what's cooking. As for the pre-programming feature, I wouldn't dare pre-set a meal to bake while I was somewhere else, because with my luck both the supper and the house would burn up.

Actually, my present stove is probably the first no-frills one

I've ever owned. It's sort of plain in its pristine, white blandness, but I know it will do the job. I might miss the oven light, which I had

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(William Chamberlain)

gotten used to with my former oven. Still, absence of the oven light would have it advantages.

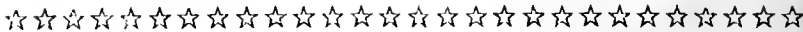
Whenever I'd bake a "surprise" dessert, it would truly be a surprise when I removed it from the oven. Today, when everybody steals a glance through the lighted stove window, all the mystery vanishes. Besides, if my concoction turned into a disaster, I could hide it and nobody'd be the wiser. Once it cooled, I could feed it to the dog while I quickly tucked another "creation" into the darkened oven.

Self-cleaning ovens? Who needs one? It would be a crime to deprive myself of the challenge of removing baked-on sludge and the joy of pitting one oven cleaner against the other, hoping the "winner" will miraculously melt away all those layers of boiled-over fruit pie fillings and charred casserole bubble-overs. In the end, one learns that none of them really works without a good dose of elbow grease.

Alas, this new stove is not only a resource for our sustenance but a target of future abuse. You see, I have decided to teach my teenage son to cook, especially since he refused to take home-

making in school. Also, my husband has been watching a television chef with me lately and figures he's up to popping

that one-dish meal into the oven on those nights when I'm not at home.



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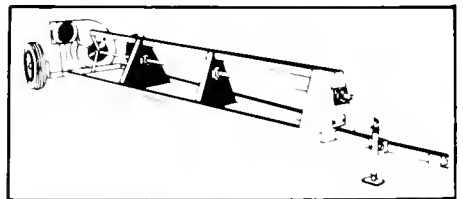
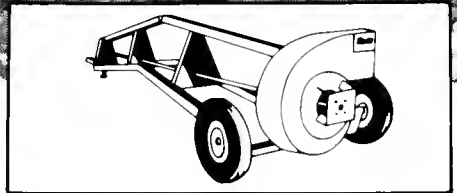
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weather watch

MASSACHUSETTS

May was slightly on the warm side, averaging 0.6 degrees a day above normal. This was the warmest May since 1979; however, the bogs appear to be progressing at a normal pace. Maximum temperature was 74 degrees on the 27th and minimum 36 degrees on the 17th. Warmer than average days were the 7th, 24th, 25th, 27th and 30th. Cooler than average days were the 9th and the 14th through 18th.

Rainfall totaled 3.49 inches, which is about exactly normal. There were 12 days with measurable precipitation, with 0.84 inch on the 4th as the greatest storm. We are 3 inches above normal for the five month period and about 6½ inches behind 1983 for the same period.

We had a total of nine frost warnings on six days, even though May was a little warmer than usual. Actually, all but one frost night was border-line. There were four successive nights from the 14th through the 17th with warnings, but the 16th was the only extremely cold night with temperatures ranging from 20 to 24 degrees. To compare with other years, there were 0 warnings in 1983, 1 in 1982, 3 in 1981, 9 in 1980 and none in 1979.

There was very little winterkill and only a slight amount of leaf drop due to oxygen deficiency last winter. A few bogs are showing spotty leaf drop from wind burn or perhaps some hail that occurred during late March. Bogs are progressing beautifully and the potential is for another excellent crop. The usual spring insects are showing up with high counts of weevil and cut worms (particularly blossom worm) and lesser numbers of Sparganthis fruitworm and blackheaded wireworm. Gypsy moth has general distribution but populations are low. Early reports indicate that Lorsban is producing excellent control of all insects listed on the label.

Weather data to June 1st gives us a total of 5 points of a possible 16

in favor of the keeping quality of the 1984 cranberry crop. The prospect is for fair to good keeping quality this year. The spring has been extremely wet, which is not favorable; therefore, we recommend that growers apply fungicides as noted on the Insect and Disease Chart.

I.E.D.

NOVA SCOTIA

The early part of May was cool and backward but a recent warm spell has brought the vegetation along rapidly. Apple trees were in full bloom May 30. At that point, the soil was quite dry and a good rain would have been much appreciated.

The early part of June was warm and relatively dry. A heavy rain on the 20th and another during the early morning of the 22nd restored moisture conditions nicely.

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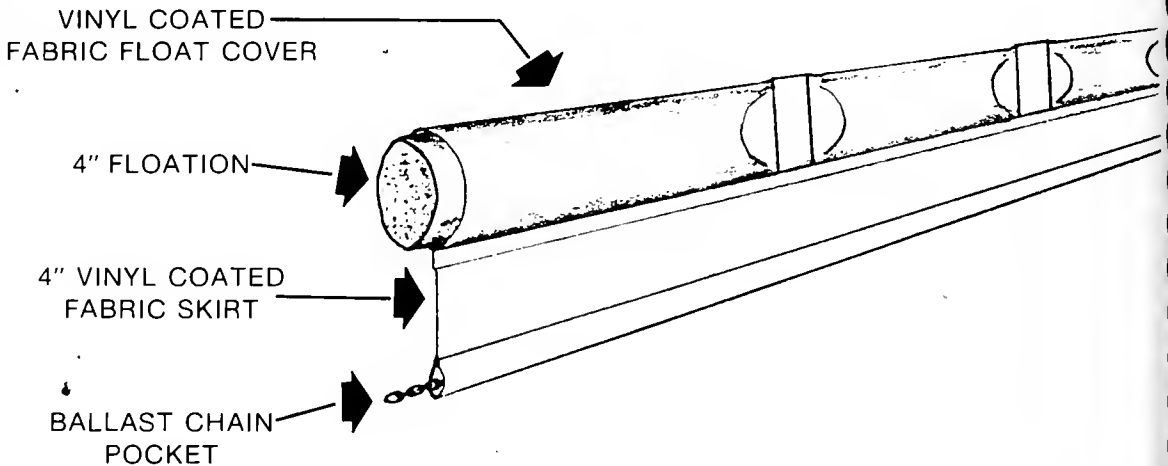
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How and where to get building mortgage money

By JOSEPH ARKIN, CPA, MBA

The business owner or farmer who wants to expand and add to physical facilities once again finds that there is a critical shortage of loan money available at reasonable rates.

Administration officials are trying hard to ward off the "tight money" debacle experienced in 1966.

However, no matter what money does cost, you need it to finance construction costs. Money is a commodity and you "rent" or "buy" it like everything else. The price you pay is not only dependent on current economic conditions, but also on how astute a shopper you are. Remember, price tags are not always the same.

As a grower, you might want to make the Farm Credit Service your first stop. The FCS's Federal Land Bank rates generally are lower than what you can get elsewhere, reminds Allyn Lamb, general manager of the Taunton, Mass., office of the farmer's cooperative. There also is the U.S. government's Farmer's Home Administration, but most growers make too much to qualify for FHA loans, adds Lamb.

Listed below are other places where you might obtain construction loans and pointers on how to shop for the lowest rates.

Commercial banks: The bank with which you carry your check account and have a history of borrowing is the most logical place to start after FCS. Meet with bank officials and inform them of your plans and show them your need for expansion.

Bring along your accountant's statements for prior periods to show the increase in business and be prepared to talk about the expected growth figures if the additional facilities are built.

In reality there are no "fixed" rates and the amount you pay will depend on your bargaining ability (consider bringing along your accountant or lawyer or both), your past relationship, the size of your average balance, and your personal relations with bank officials.

To cut costs of long term borrowing, offer to give a personal bond (or note) in addition to the usual real estate mortgage.

Savings banks and savings and loan associations: These are an excellent source of mortgage money because for the most part these institutions are prohibited from making personal loans or ordinary business loans.

Arrangements can be made for a "mortgage commitment"—an arrangement wherein you contract for a contractor to erect your building (or addition to present structure) and have monies released by the bank as construction progresses. Your interest obligation is based on the monies actually advanced, not on the amount of the commitment. And,

usually, you don't have to make any payments on account of principal until the completion of construction.

Rates are negotiable and again you have to do some rate comparison with neighborhood institutions and thus some haggling.

Insurance companies: Most insurance companies have a loan department specifically set up for the purpose of making loans on real estate. These companies have an endless supply of money coming in and

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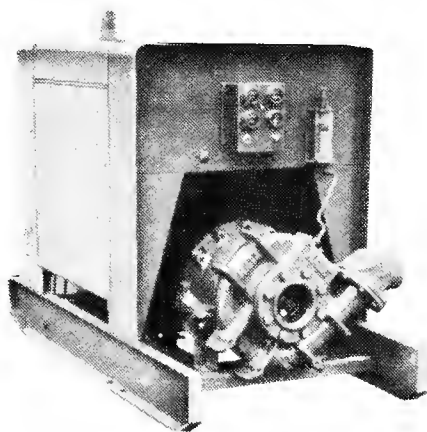
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they must seek out places for investment. Because of regulatory laws, they cannot invest more than certain percentages into common or preferred stocks, hence your chances of obtaining money are good. One kicker has been introduced. In exchange for a reasonable rate, you might have to sign an agreement to share in any profits made on the sale of the mortgaged premises.

State or local agencies: In many communities, you'll find municipal or state development agencies. These agencies want to increase local employment, enlarge production and sales facilities, and generally generate dollars for spending.

If you can prove that the building or addition you want to construct will increase employment and generate purchasing power in the area, you'll be eligible for low cost, long term development loans. An added feature: in some localities, you can get a special exemption from real estate taxes.

For information on programs in your community, call your local municipal offices for information, and call or write to your state's department of commerce.

Rates are set by law and you can't "shop"—but there is no need to. The development program is geared to offer a rate that is subsidized.

Charitable organizations and colleges: Many institutions of learning have large endowment funds, restricted as to how to be invested. Usually, the income has to be used for student aid or for general educational purposes. Great emphasis is placed on safety of the principal and a mortgage on your real estate as a great element of safety.

Much the same can be said of charitable organizations, especially those of national prominence. They, too, have huge funds for investment.

These organizations have loan committees and boards of trustees that have to be "sold" on the merits and safety in granting a loan on your particular piece of real estate.

A proper presentation must be made—a copy of the architect's drawings (or renderings) plus a report of estimated building costs after you've advertised for bids, plus reports of qualified appraisers. (Note: Building costs are estimates because, even with a firm bid, there are change orders and other items which add to original

30 Year



\$50,000 Mortgage

Rate	Monthly Payment	Total Cost
11%	\$476.17	\$171,421
10¾%	\$466.75	\$168,030
10½%	\$457.37	\$164,653
10¼%	\$448.06	\$161,302
10%	\$438.79	\$157,964
9¾%	\$429.58	\$154,649
9½%	\$420.43	\$151,355



cost.)

Most educational institutions and charities are tax exempt under Section 501 of the Internal Revenue Code. Because they don't have to pay income taxes on the interest earned, they can afford to give all borrowers a lower rate than other sources.

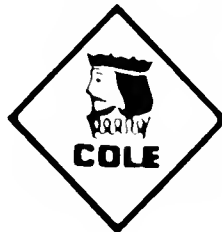
Pension funds and/or unions: Because of their size, nationwide

unions have enormous treasuries. The industrywide pension funds they administer also have quite a bit of money to lend. Much of their cash reserves finds its way into the mortgage market.

Pension funds established by corporations are another source of mortgage money.

In both situations, you'll find that

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the trustees must use the "prudent man rule," hence they are very apt to put available funds into real estate mortgages. The fact that the interest earned is not taxable (in most instances exempt under Section 401 of the Internal Revenue Code) means that you can have a chance to secure a lower rate than that offered by commercial lenders.

The Small Business Administration: The Small Business Administration was established by Congress by the Small Business Act of 1953 as the first independent agency created to serve and represent all small business both in peacetime and in period of national emergency. The agency is now permanent and operating under the Small Business Act of 1958, as amended.

As an essential part of its financial assistance program, SBA gives counseling assistance to small firms, directing them whenever possible to available sources of credit and thus minimizing the need for Government credit. SBA makes direct loans to businesses only after all other possibilities for assistance have been exhausted.

Under Section 7 of the Small Business Act of 1958, as amended, SBA is empowered—"to make loans to enable small business concerns to finance plant construction, conversion, or expansion, including the acquisition of land; or to finance the acquisition of equipment, facilities, machinery, supplies, or materials; or to supply such concerns with working capital to be used in the manufacture of articles, equipment or materials for war, defense, or civilian production or as may be necessary to insure a well balanced

national economy."

Mortgage or money brokers: Because of their expertise and contacts, a legitimate broker can earn the fee charged to find available money. However, a word of caution. The tight money situation has created a corps of con men who prey on those who need money. Their usual ploy is to charge an advance fee and disappear or charge an advance fee and furnish a fraudulent commitment for the balance of the fee. Check all money brokers with your local Better Business Bureau,

Mortgage Loan (for 30 years)	Monthly Payment of Principal and Interest at:					
	8%	10%	12%	14%	16%	18%
\$30,000	\$220.13	\$263.28	\$308.59	\$355.47	\$403.43	\$452.13
40,000	293.51	351.03	411.45	473.95	537.91	602.84
50,000	366.89	438.79	514.31	592.44	672.38	753.55
60,000	440.26	526.55	617.17	710.93	806.86	904.26
70,000	513.64	614.31	720.03	829.42	941.33	1,054.96
80,000	587.02	702.06	822.90	947.90	1,075.81	1,205.67
90,000	660.39	789.82	925.76	1,066.39	1,210.29	1,356.38
100,000	733.77	877.58	1,028.62	1,184.88	1,344.76	1,507.09

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your chamber of commerce, local law enforcement agencies, the district attorney and the state attorney general.

All of the foregoing suggestions are those that you as a grower or business owner can handle yourself, with the aid of your staff and your outside professionals—accountant and lawyer. But there is some free help available. You can use the Government program SCORE (Service Corps of Retired Executives). There are more than 2,000 talented, trained retirees available to help business owners with problems. There is no charge for the first 90 days of counseling. More information about this organization can be had from your local office of the SBA.

Bandon, Cranberry capital of Oregon, has received a national certificate of merit from the federal Department of Housing and Urban Development for its Old Town renovation.

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The Massachusetts Pesticide Subcommittee recently approved a single, pre-bloom application of Orthene 75S Soluble Powder to control green and/or brown spanworms, fruitworms and Sparganothis fruitworms as well as the aerial

application of Difolatan 80 Sprills to control fruit rot organisms.

WISCONSIN FIELD DAY SET FOR AUGUST 7

The 1984 Wisconsin Cranberry Field Day will be held Aug. 7 at the Fifield Cranberry Co. Frank Koller is owner and host, Peter Martenovich is manager.

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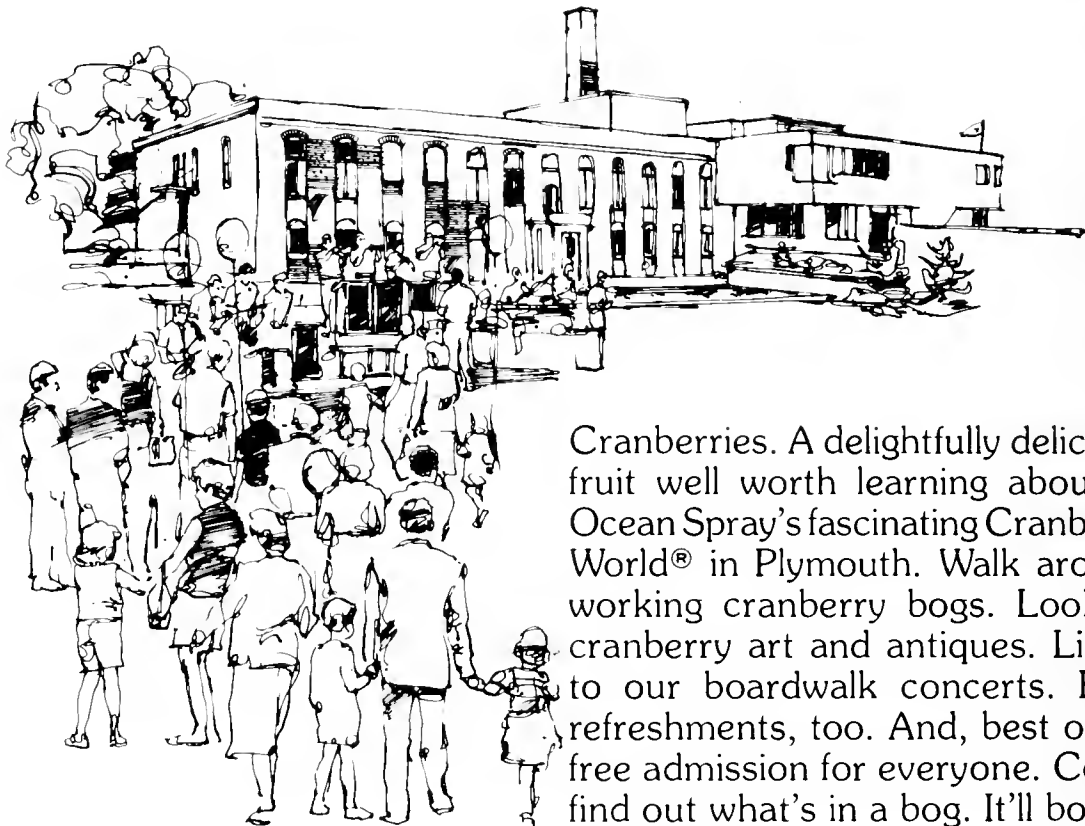
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WHAT'S IN A BOG?



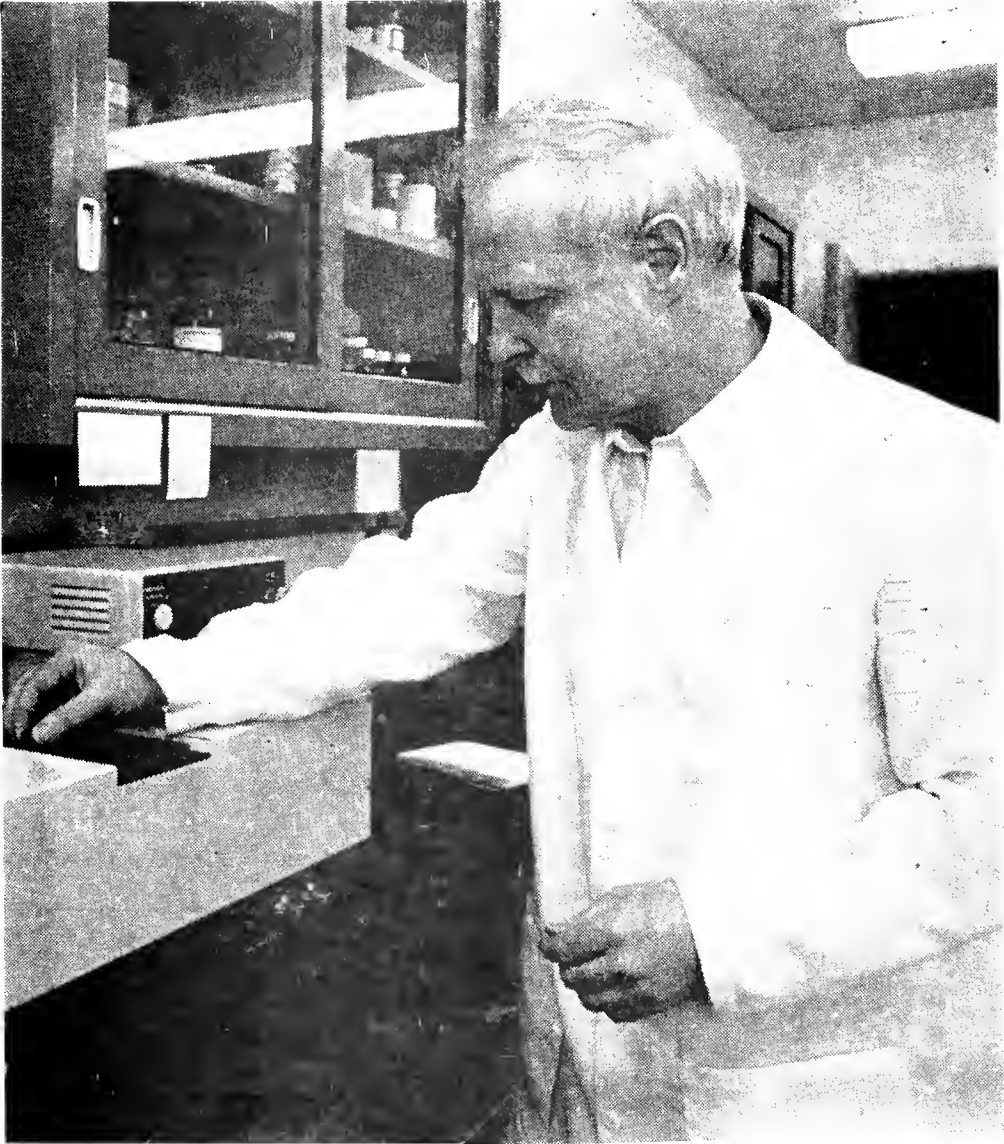
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Cranberry scientist, actor: all in a day's work for 'Rip' Devlin

By MICHAEL COUTURE
 Massachusetts cranberry growers know plant physiologist Robert M. Devlin as a man of many parts, but many are unaware one of those parts is actor.

That's right, actor. "Rip" Devlin will make his TV debut in "Robert Kennedy and His Time," a CBS mini-series that will be aired this season in November or later and that stars Jack Worden, Brad Davis, Beatrice Straight and Cliff DeYoung. Although Devlin, whose co-workers have dubbed him with the stagey sobriquet, "Rip," is relegated to an extra's role, he made the best of it, assuring himself that at least one major scene is likely to feature him.

"When we played touch football, I made sure that I was in the scenes because I blocked Jack Kennedy," Devlin says, with a chuckle. "When Bobby Kennedy gets a bloody nose and runs to the sidelines to talk to



COVER PHOTO
 CRANBERRY scientist Robert M. Devlin doffed his lab coat and applied grease paint for a small role in the forthcoming CBS special, "Robert Kennedy and His Time." A story about Devlin starts on this page. (CRANBERRIES photo by John Baptista)

Joe (the patriarch of the Kennedy clan), I was on the sidelines."

With a mock warning, he laughs: "If you blink, you might miss me. And who knows? That part could wind up on the cutting room floor."

Dr. Devlin was picked for the role of a cook at the Kennedy Compound in Hyannis, but does no cooking, instead appearing in the touch football game, a pastime for which the clan was well known.

A man who enjoys ribbing himself, Devlin said when he first heard he would be part of the Kennedy staff, he told his wife, Wendy, that he fancied he'd be portraying some key diplomatic figure.

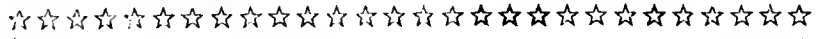
Securing the role was a matter of happenstance.

Accompanying his daughter, Kristin, to a Hyannis hotel, where auditions for extras were being held, Devlin was spotted by two directors.

"I saw one of the directors looking at me, then turn to another director and say, 'definitely.' Then he asked me if I would shave off my moustache and adjust my hair if I were given the part."

The 52-year-old, athletic looking Devlin—he was a light heavyweight service boxer during the Korean War—had qualms about removing his prized moustache but acquiesced to stage demands. In addition, Devlin, a good natured type, agreed to have his hair cut in a 1950's style. Then he was set

(please turn page)



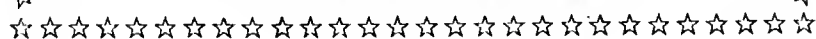
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for the cameras to roll.

"They started working at 7 a.m. and worked until 7 p.m.

Actors don't work all the time on the set, but they certainly put in their hours when they do."

Although there wasn't a lot of contact between the stars and the bit players, Devlin did get to talk to them. A man who enjoys the company of those from all walks of life—cranberry growers, scientists, students, boxers, etc.—he says: "Actors fall into the same category—they are ordinary people when the camera stops."

Devlin threw himself into his minor role with the same enthusiasm he brought to the writing of three textbooks used in colleges and universities throughout the world.

This was his first experience with professional acting (he got

the extra's pay of—"I think"—\$40 a day) but not his introduction to performing. Involved in the past with community theaters, such as the Barnstable Comedy Club, among his roles has been the male lead in "The Prime of Jean Brodie."

One big plus of the project for Devlin: He has been a long-

time admirer of John F. Kennedy and felt good about working in a film that dealt with the late President.

These days Dr. Devlin is back in his white coat, performing his scientific duties at the cranberry lab. But if the Muse of Drama taps him on the shoulder again, he's ready.

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editorial



What Farm Bureau does

What does the Farm Bureau Federation Inc. do? Well, let's take the Farm Bureau of one state, Massachusetts. The Bay State's Farm Bureau issues a brochure that cites its accomplishments.

Those accomplishments range from proposing a bill that was approved that requires towns to use a statewide agricultural yardstick when assessing farmland to setting up an affordable member health plan to successfully fighting legislation that would have repealed the exemption for roadside stands in the zoning law.

The Farm Bureau provides vital information through the weekly "This Week in Farm Bureau" and the monthly "Northeast Agriculture."

And, among other functions, the Farm Bureau provides members with accounting and tax services.

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What does your marsh vehicle operation cost?

By BESS RITTER MAY

Editor's Note: Ms. May's business articles have appeared in a wide variety of farming publications in the U.S. and Canada, including *Successful Farming*, *Toronto Star Weekly*, *Wisconsin Agriculturist*, *Canadian Poultryman*. Well over 1,000 articles have appeared under her byline. This is her first piece for CRANBERRIES.

Regardless of the size of your bog or marsh, vehicle operation is a vital necessity. But do you know exactly what it is costing you?

Some obvious factors which are overlooked are to-the-penny costs of gas and oil, tires, the payload and the routes traveled. Yet these expenses—which must be known before they can be cut—are easy to determine by finding your own answers to questions like these:

How much gas and oil does each tractor, truck, etc., consume?



BESS RITTER MAY

To learn this, keep a record of the number of miles each vehicle travels within a given period, the number of gallons of fuel and quarts of oil required for this mileage, and their cost. Be sure to include everything on wheels—even your little 46-inch wide loader. Because it is so versatile, and will work both indoors and out, it may be consuming more fuel than you realize. You must know this figure or you cannot cut it.

How much do different types of fuel influence costs for

different vehicles? Because a tractor's cold-hot-cold life, for example, invites sludge and corrosion, you should ask yourself whether the fuel you are using for your tractors keeps cold running engines and idle ones out of possible trouble.

What is the payload of each truck? Here again, if a record is consistently kept, especially when payloads are the same on trucks of different age and type, you have the best clues as to whether a difference in fuel costs is

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caused by the vehicle. The truck which requires the most fuel is the one which can't really handle the necessary power requirements to the best advantage, very probably because it needs more operation in gears and at full throttle.

What route is taken by each truck? Whether the road involved is level, hilly or mountainous obviously influences the consumption of fuel. Another factor is whether the route requires travel along city streets with their fuel-consuming stop and go traffic. You should also know how many stops each truck makes within city limits, in the course of each trip, and the dollar value of each stop, before you can make plans for consolidating stops, minimizing stops, and eliminating some completely.

What is the cost of vehicle

tires? To determine this, deduct the cost of the original equipment from the purchase price of each vehicle. Now add on all subsequent replacement and repair tire costs as they occur within a particular, predetermined record keeping period.

This record can be especially useful with farm vehicles if you want to experiment with different types of tires, such as the new wide oval tire system which is designed for pickup trucks. Although the initial price of such tires is higher, they are reputed to deliver far more mileage.

Wear and Repair. What is the cost of vehicle wear and repair? This figure should include all repairs to all vehicles, all replacement parts, all materials and all labor such as the chassis and body of each, no matter whether they are needed because of ordinary work wear and tear

or because of an automotive accident. The "vehicle hours" that are lost because each vehicle is out of service for such reasons should also be

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What is the cost of essential garage supplies and services? This should include routine truck expenses, such as washing and painting each vehicle, and miscellaneous expenses, such as grease, soap and water trucking tools.

What are your vehicles' fixed costs? These include state and city licenses, insurance and any property tax on your trucking equipment. You should also include garage, light and heat, and, when a delivery truck must remain on the road overnight, any garage rent and parking fees.

Other farm vehicle fixed expenses should not be overlooked, such as routine maintenance.

Depreciation. Depreciation should also be considered. For accounting purposes, you can decide that each farm truck has a five year life, then depreciate one-fifth of its cost each year. (You may want to use a longer or shorter life span for other equipment, such as your loader and your tractor.)

Example: If you decide on a five year life for one of your trucks, and its original price was \$18,000, the yearly depreciation is \$3,600. Or you can determine its trade-in value more closely by depreciating 5/15ths of the purchase price the first year, 4/15ths the second year, and so on, and on this basis the depreciation yearly on an \$18,000 truck would be:

- \$6,000 the first year.
- \$4,800 the second year.
- \$3,600 the third year.
- \$2,400 the fourth year.
- \$1,200 the fifth year.

However, if you believe that a farm truck should have a "book value" as long as it is operated, the truest way to depreciate it would be to take a certain percentage of the book price every year. Thus, if 30 percent is used, the depreciation the first year would be 30 percent of \$18,000. The second year

the depreciation would be 30 percent of the first year's figure.

But no matter how the depreciation is figured, don't depreciate all the vehicles on your farm on the same basis, because they will vary. A new model quality truck will have more years of service than a cheaper grade, lower priced vehicle which is already four years old.

What about "man power" costs? They should include all wages paid to all drivers and helpers exclusively for time that is actually spent for operation of farm automotive equipment. This means that if a man spends only half his work week in the driver's seat of a farm truck and the rest of his time performing other duties essential to the operation of your agribusiness, only half of his salary should be included in the estimate. However, be sure to include his full salary. Don't deduct social security, paid

holidays and vacations, and welfare benefits.

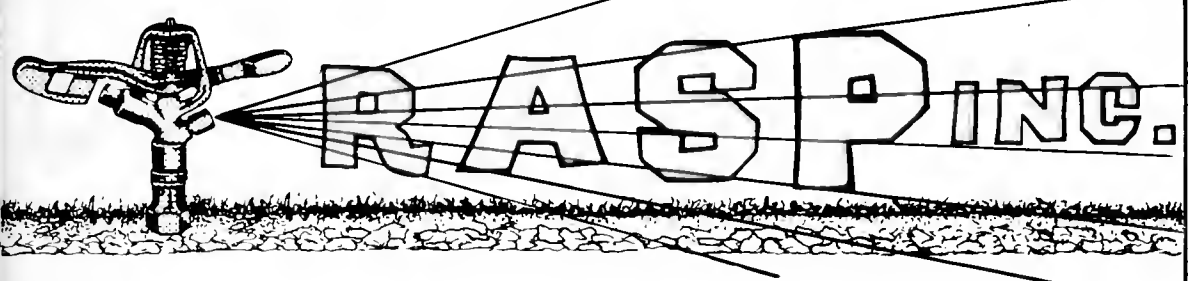
To make sure that records are properly maintained, set up a formal "cost sheet" table. This should list all expenses, with a different sheet used for each truck loader, tractor and other automotive equipment. Now, in the case of trucks, for example, when a driver returns from a trip, he records the mileage, fuel and any other expenses. When depreciation is estimated at income tax time, the figure is recorded on the cost sheet also. When salaries are paid, when bills come in from the service station or auto body shop, notations should be made on the cost sheet, too, along with any other costs as they occur. File this information separately because it is now a rich store of vital information when you ask yourself this question: "How can I cut the operation costs of the vehicles I use on my farm?"



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Tony Neill Powthress of Carver, Mass., took first prize in the one-crust pie contest at the 1982 Massachusetts Cranberry Festival with the delicious sounding entry below.

CRANBROOK FRUIT STREUSEL PIE

- 1 unbaked 9 inch pie crust
- 2 cups cranberries
- 2 cups sliced, pared apples
- 1½ cups sugar
- 2 tablespoons quick cooking tapioca

- 2 tablespoons cornstarch
- 1 teaspoon grated orange peel
- ¼ cup blackberry flavored brandy

Mix the above seven ingredients together and spoon into pastry lined pie plate. Combine the following five ingredients and crumble over top.

- 1 cup flour
- 1/3 cup brown sugar
- 1/3 cup grated sharp cheese
- ¼ cup butter, softened
- ¼ cup chopped, blanched almonds

Bake at 425 degrees for 20 minutes. Reduce heat to 350 degrees, cover with foil and bake 25 minutes longer.

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History

'An accidental discovery'

By FREDRIKA A. BURROWS

Editor's Note: Ms. Burrows is the author of the books, *Cannonballs and Cranberries* and *The Yankee Scrimshanders*, and has written for *Good Housekeeping* and *Yankee*.

The great cranberry industry had its beginnings on Cape Cod. A patch of wild cranberries, snuggled behind protective sand dunes in North Dennis, gave the first hint of successful cultivation.

About the year 1816, Henry Hall, a Revolutionary War veteran, cut some small timber on a knoll near land on which wild cranberries grew. The removal of the brush permitted sand to blow over the vines, nearly burying them. Hall fully expected that they would die. Instead of being suffocated or injured, the plants sprang up through the covering sand and seemed to thrive. Indeed, they produced more and more berries. In his *History of Barnstable County*, author Deyo calls this incident "an accidental discovery." It was the origin of successful cranberry cultivation.

In East Dennis, Elkanah Sears, also a veteran of the Revolution, and his son, William, noted Hall's thriving vines and set out some plants in an area where they would receive the benefit of the drifting sand, and started growing fruit for their own use. In 1840, Isaiah Baker decided to "set a few rods of cranberries" in the neighboring town of West Harwich.

The practice caught on. In 1845, Capt. Alvah Cahoon, then sailing a vessel out of North Dennis, noted Hall's sturdy, productive plants as he passed by

on his way to the harbor and determined to "set out eight rods to berries" at his home on Pleasant Lake in Harwich.

Cahoon's neighbors scoffed and belittled his modest attempt to cultivate the wild cranberry, but when they saw the resultant product, they recognized the possibilities and hastened to turn their own waste land into cranberry bogs. Mr. Cahoon lived to see the cranberry market expand and become worldwide in its distribution.

About this time Zebina Small started a plot at Grassy Pond but it was not successful (due to location, possibly) and he lost his \$400 investment—a sizable amount for those days. On the other hand, Nathaniel Robbins, of Harwich, started a bog in 1852 and became a major grower. Jonathan Small sanded a bog at South Harwich, known as Deep Hole Bog, which flourished.

Deacon Braley Jenkins of West Barnstable cultivated a bog at Sandy Neck.

These men were the leaders and these dates mark the period from which the culture of cranberries may be dated in Barnstable County. For over 100 years, the cranberry industry in Dennis and Harwich was carried on by former sea captains whose names were Atwood, Doane, Hawes, Nickerson, Sears—names as

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THE wild cranberry thrived on the sands of Cape Cod.

familiar in Hong Kong as they were on Cape Cod.

As early as 1854, cranberry growing had become important enough to warrant an official

census. The *Abstract*, compiled by the Massachusetts Department of Agriculture, showed the number of cranberry producing acres, value of crop, value of

crop per acre and value of land per acre. This information is still compiled and released periodically.

As the cranberry industry

became more profitable in other parts of Southeastern Massachusetts, and in New Jersey, Wisconsin, Washington and

Oregon, it declined on Cape Cod, which became subject to the pressures of tourism. It does remain, however, an

important part of the Cape's agriculture and a pleasant reminder of Cape Cod's early history.

weather watch

MASSACHUSETTS

There were a total of 10 warnings issued on seven days during the 1984 spring frost season. The first was on April 28, then a stretch of eight from May 1 through 17 and a final one on June 15. Generally, the nights were of the borderline variety. Very little injury reported, except where sprinkler heads were blocked.

June was a very warm month, averaging 2.3 degrees a day above normal. This was the warmest June since 1976 and tied for the sixth warmest in our records. Maximum temperature was 90 degrees on the 8th and minimum 46 degrees on the 16th. This was not the earliest date that we have recorded a 90 degree reading. Warmer than average days were the 4th, 5th and 7th through 14th. Cooler than average days were the 1st through 3rd, 25th and 26th.

Rainfall totaled 7.65 inches or about 4.4 inches above normal. This is our fifth wettest June, exceeded only by June 1938, 1972, 1977 and 1982. There was measurable rain on 14 days, with 3.32 inches from May 31 through June 2 as the greatest storm. A storm on June 25 did not measure as much at East Wareham but other spots in the cranberry area measured 4 or 5 inches, which put a light flow on some bogs, causing some blossom injury in low areas. We are about 8½ inches above normal for the first half of 1984 and about 1½ inches behind 1983.

Reports and observations indicate that our bogs came through the winter with flying colors. No injury from winterkill and precious little oxygen deficiency injury. The spring frost season was active and,

although growers and foremen lost a lot of sleep, frost injury was less than in the past year or two.

Spring insect populations were generally lighter than usual, according to our reports. There were some heavy infestations of brown spanworms and weevils but only in localized areas. Cutworms were more abundant but the usual insecticide sprays controlled them nicely. Gypsy moth was general but populations were small.

Abundant rainfall and warm temperatures have pushed the season ahead and we are probably a week ahead of normal. Probably the heaviest bloom in recent memory and the flowers are setting fruit rapidly. I hesitate to predict record crops but this appears to be well on the way.

I.E.D.

NOVA SCOTIA

We have had warm, sunny weather for cranberry pollination. Recently I visited a new grower in New Brunswick who was planting 5 acres of Howes at Oromocto West. Last year he planted 5 acres of Early Black

and next year he plans to plant the same acreage of Stevens.

I.V.H.

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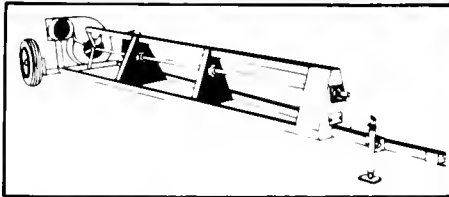
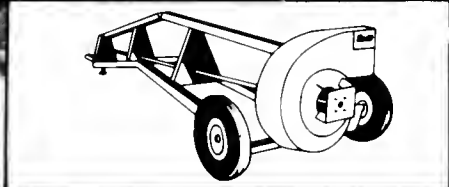
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ANSWER: The larvae seen in May

have completed their growth and will be much harder to kill than when they were smaller during the previous July and August. Even if they were all killed, there would probably be adult weevils surviving from the previous summer or migrating into the bog. They will lay eggs and, thus, the June and July treatments will still be needed.

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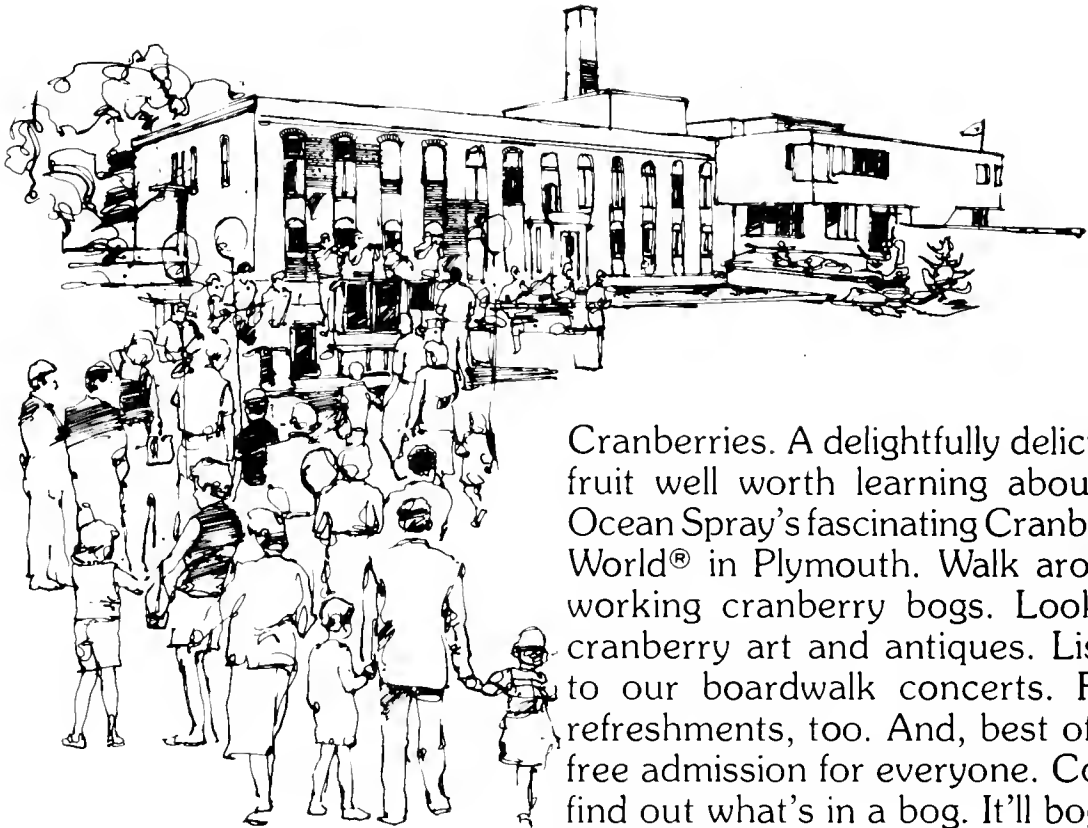
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Record crop . . . 3
Annual fete . . . 11

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Another record crop

By CAROLYN GILMORE

The Cranberry Marketing Committee crop estimate for 1984 is 3,215,000 barrels nationwide, about 6 percent above last year's production and another record in cranberrying's seemingly ever upward trend.

The only one of the five cranberry states expected to have fewer berries this year is Washington.

The predicted breakdown by state is: Massachusetts, 1,431,250 barrels; New Jersey, 83,750; Oregon, 85,000;

COVER PHOTO

...O, that's not an ultra-light ...r a new space age vehicle, ...ut one of a number of ...ater pickers on display at ...e annual meeting of the ...ape Cod Cranberry ...rowers Association. For ...e story and more photos, ...urn to page 11.

CRANBERRIES photo by (irby Gilmore)

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Washington, 122,500; Wisconsin, 122,500.

The total expected demand is 4,272,400 barrels.

"The amount of product available for sale is way under the demand," said committee member John C. Decas. "Our message to the industry is to keep producing and to produce more."

The CMC has issued a 1984 policy statement emphasizing that demand is greater than production.

According to the Crop Reporting Board of the U.S. Department of Agriculture, the 1983 nationwide crop was 3 percent above that for 1982.

According to the USDA, the lower Washington crop can be blamed on a cool, wet spring which delayed bloom about two weeks this season and limited bee activity.

Some bags were damaged by the hard December freeze. Insects and disease were a problem, with black vine weevils and girdlers being common and fungus infestations reported.

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weather watch

MASSACHUSETTS

July was just slightly on the warm side, averaging 0.2 degrees a day above normal. Maximum temperature was 88 degrees on the 13th and minimum was 52 degrees on the 9th. Warmer than average days were the 13th and 15th. Cooler than average days were the 5th, 6th, 8th, 9th, 16th, 18th, 27th and 28th. Generally daytime temperatures were low but night temperatures were high.

Rainfall totalled 4.86 inches or about 2 inches above normal. This was our wettest July since 1973 and sixth wettest in our records. There was measurable rain on nine days, with 1.64 inches on the 8th as our greatest storm. We are about 9-3/8

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inches above normal and 1 1/4 inches ahead of 1983 for the seven month period.

I.E.D.

NOVA SCOTIA

Recently I returned to Kentville after attending meetings of the Canadian and American Society for Horticultural Sciences in Vancouver. The weather in southern British

Columbia was warm and sunny during July, much the same as ours. In fact, they said that Victoria had had the sunniest July on record.

Since returning home, we have had some much needed rain and the outlook for the next few days is for more wet weather. At the present time, we are looking at an early harvest. I.V.H.

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In the last four years, only six new species have been granted this privilege. Yet, USDA is seriously considering opening up the floodgates on Quarantine 37 and throwing pest exclusion doors wide open. The list of pests that could hitch a ride on these new plant imports includes a wide variety whose appetite is satisfied by grain, vegetable and deciduous fruit crops.

Government scientists have been sent searching for documented cases of pest risk, with a common attitude being, "If it hasn't been documented as risky, then it must be safe." It is estimated that in Columbia there exist over 1,000 species of leafminer who feed on everything from apple trees to celery to chrysanthemums. Only about 300 species have been identified. By USDA's reckoning, the other 700 must be safe! Not too logical from where we're sitting.

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WISCONSIN—Tod D. Planer, Farm Management Agent, Wood County; Dan Brockman, Vesper; Joan E. Humphrey, Friendship.

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Wisconsin field day filled with displays



WISCONSIN growers had the opportunity to see many equipment displays at the annual field day.

(CRANBERRIES photo by Dan Brockman)

By DAN BROCKMAN

A very hot Aug. 7 saw the cranberry growers from across Wisconsin converge on the northern part of the state for the annual Summer Field Day and Growers Association meeting.

The Fifield Cranberry Co., located about seven miles southeast of Fifield, did a fine job of hosting this year's event, with plenty of room for parking, equipment displays and for the growers to visit with each other.

The morning was spent looking over the many displays, taking tours of the marsh and talking with the other growers present. The displays included everything from pesticides and herbicides to chain saws to heavy equipment. I think there was

about one piece of equipment for every grower present. Many of the displays were accompanied by raffles for various prizes: a sure way to get someone to look at your display.

The Fifield Marsh is a very scenic location, situated in the

heart of some beautiful northern forest. The marsh is surrounded by bogs, spruce/balsam swamps and hardwood ridges. Marsh tours, conducted from the back of a truck, were a very popular activity.

With the day being so hot, the

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soda and beer dispensers were very popular spots, as was any patch of shade available.

The Cranberry Queen and her Court were present throughout the day to talk with growers and sell promotional items. Every grower in the state benefits from the fine work these young ladies do.

A fine lunch was followed by the Growers Association meeting, although I believe most people preferred to be outside in what breeze there was rather than sit through the meeting.

I always enjoy the Summer Field Day as it gives everyone a chance to get together, visit and exchange ideas. Every grower across the state has a little different way of doing some things. By comparing ideas and methods, it's possible to learn, as well as teach, better ways of doing things. The benefit of these field days is best derived through

participating and the strength of the cranberry industry rests, in

part, with cooperation and cohesion among the growers.



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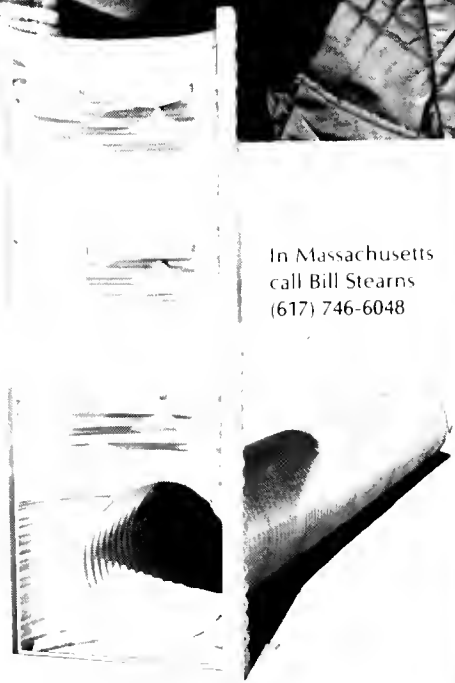
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regional news notes

Massachusetts

By IRVING DEMORANVILLE

Dr. Robert Devlin of the Cranberry Experiment Station attended the CAST directors meeting at the University of Georgia from July 23-25.

He also was chairman of the local arrangements committee for the annual meeting of the Plant Growth Regulator Society of America held in Boston July 29-31. Bob also presented a paper at the meeting.

Oregon

The weekly Bandon (Ore.) Western World won four awards at the recent Oregon Newspaper Publishers Association convention, including a third place award for general excellence. The newspaper's coverage of the 1983 Cranberry Festival earned a third place in the special sections or issue competition.

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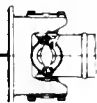
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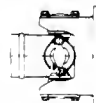
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Good news, good humor, good displays at '84 fete

By CAROLYN GILMORE

Big news at the annual Cape Cod Cranberry Growers Association meeting was the announcement of an opening for an extension plant pathologist at the UMass Cranberry Experiment Station. A candidate with an MS in plant pathology could be selected to fill the position this year, according to Dean Bruce MacDougall of the Department of Food and Natural Resources.

The announcement comes on the heels of growing concern over a recently identified fungus, fast growing *Guignardia*. While this particular strain does not normally cause rot, said

Ocean Spray's Jere Downing, it nevertheless is a source of concern, particularly with respect to new plantings.

Cranberry researchers in the state have been calling attention to the need for a pathologist to help growers get a handle on disease problems such as this.

Also at the meeting, awards were presented to Dr. Chester Cross and Stan Norton. Cross, retired head of the Experiment Station, was acknowledged for his 40 years of service. Norton, retired engineer, was cited for his work in agricultural mechanization at the station.

Gordon Conklin, editor of the American Agriculturist and the guest speaker, kept cranberry growers in stitches by poking fun at "Megatrends." He jabbed at everything from protectionism to the American trend toward lighter diets.

The speaker cited the Conklin Birdseed Index, by which he measures the wealth of a society. At an annual purchase of \$517 million worth of

THE STORY CONTINUES ON PAGE 14 AND THERE ARE MORE PHOTOS BY KIRBY GILMORE ON PAGES 12 and 13.

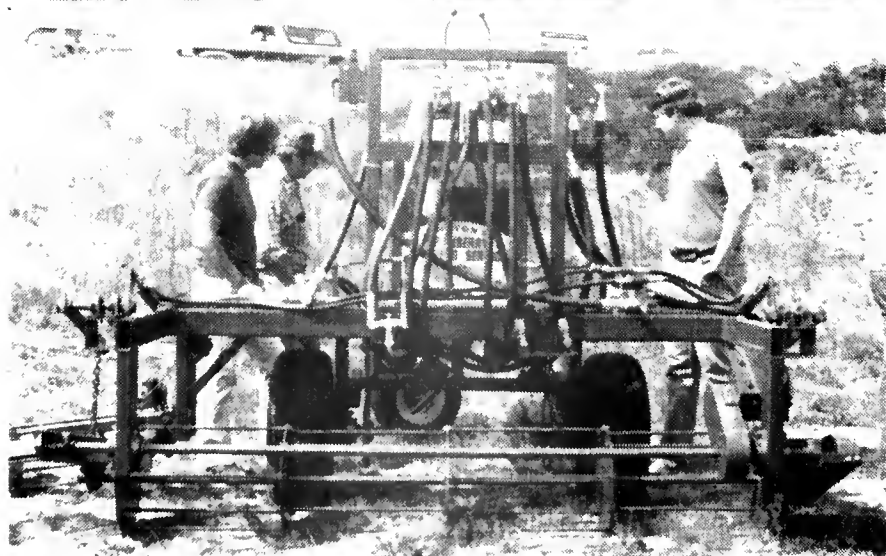
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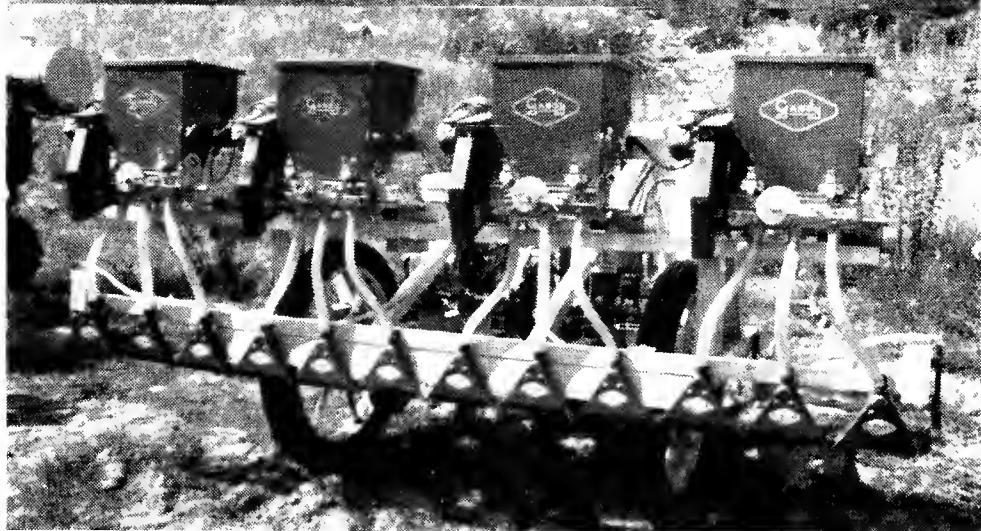
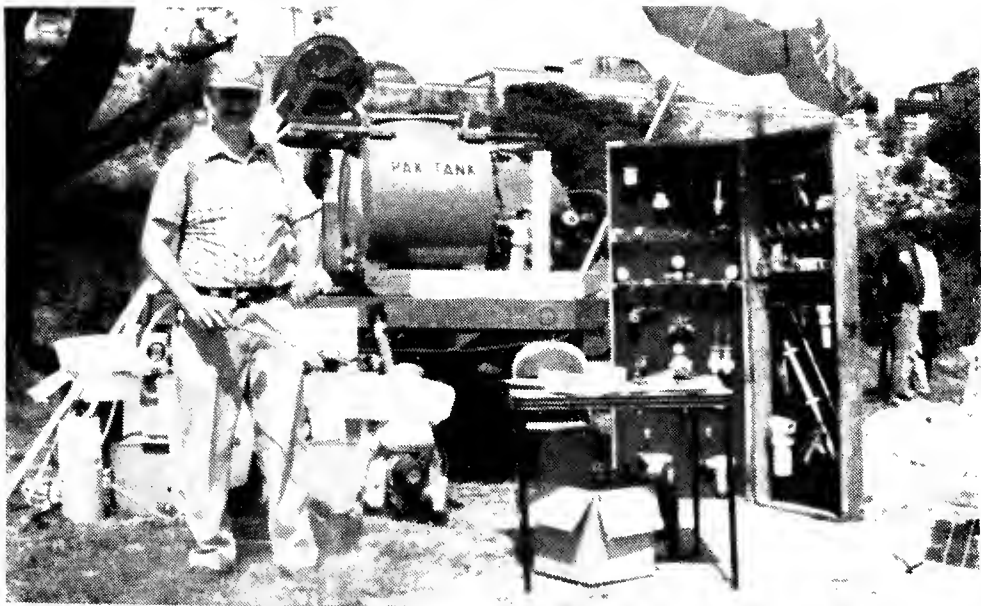
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birdseed, Americans must be pretty well off, he quipped.

The Agriculturist editor praised the cranberry industry and advocated "support for those who work on the marketing."

"The market is not a homogeneous mass," Conklin said. "It's a lot of strata. You have to tailor the market to this."

The morning of the all-day meeting was devoted to examining equipment and displays and touring the state bog. Some 650 attended the chicken barbecue.

A first prize plaque was awarded to Williams Stearns for his "outstanding achievement in developing commercial machinery for the cranberry industry." Stearns' polyethylene welding machine makes possible a continuous welded pipe from

the pump house all the way out through the bog.

Douglas Beaton's water picker earned him the non-commercial first prize of \$100.

Also notable was Jim Ashley's compact, hydraulically driven water picker and Decas Cranberry

Company's helicopter sanding.

In another contest, Kelly Lameroni received \$100 for first place in the 100th anniversary cup/plate design for the CCCGA. The CCCGA will mark its 100th birthday next year.

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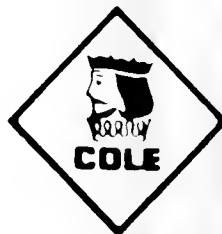
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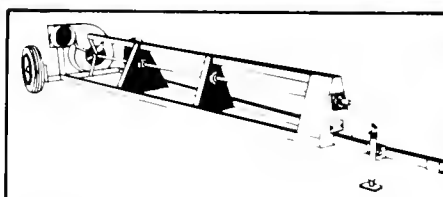
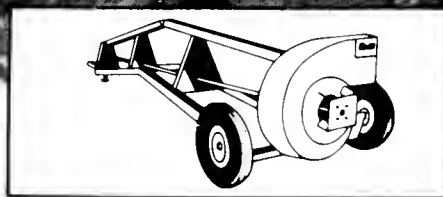
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Fancy mold and festival salad

By SUE BARANCIK

*Over the river and through the woods,
To Grandmother's house we go.
To eat turkey, pie, yams of gold
and tasty cranberries in a mold!*

Every family has a favorite cranberry salad to grace its Thanksgiving table. Some like it cool and creamy. Others prefer their cranberries tart, crunchy and distinct in their taste.

Now our family is torn between both varieties of cranberry mold, so we just alternate them each year.

Going back several generations in my family is a smooth and rich cranberry mold made with canned, jelled cranberry sauce and sour cream. It's quite satisfying and provides an excellent, shimmering accompaniment to the roast turkey, bread stuffing and brown, sugar glazed sweet potatoes. Whenever I make this dish, I picture the female members of my family—my mother, Maxine, my Aunt Phyllis, Grandmother Elsie and even Great Grandmother Annie—making the same recipe. We just call it Fancy Cranberry Mold. And here's the recipe.

1 can smooth, jelled cranberry sauce
1 pint sour cream
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½ cups water



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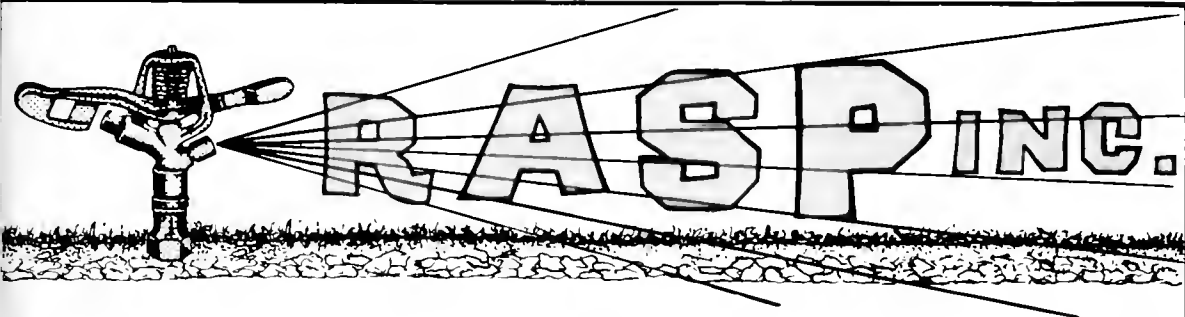
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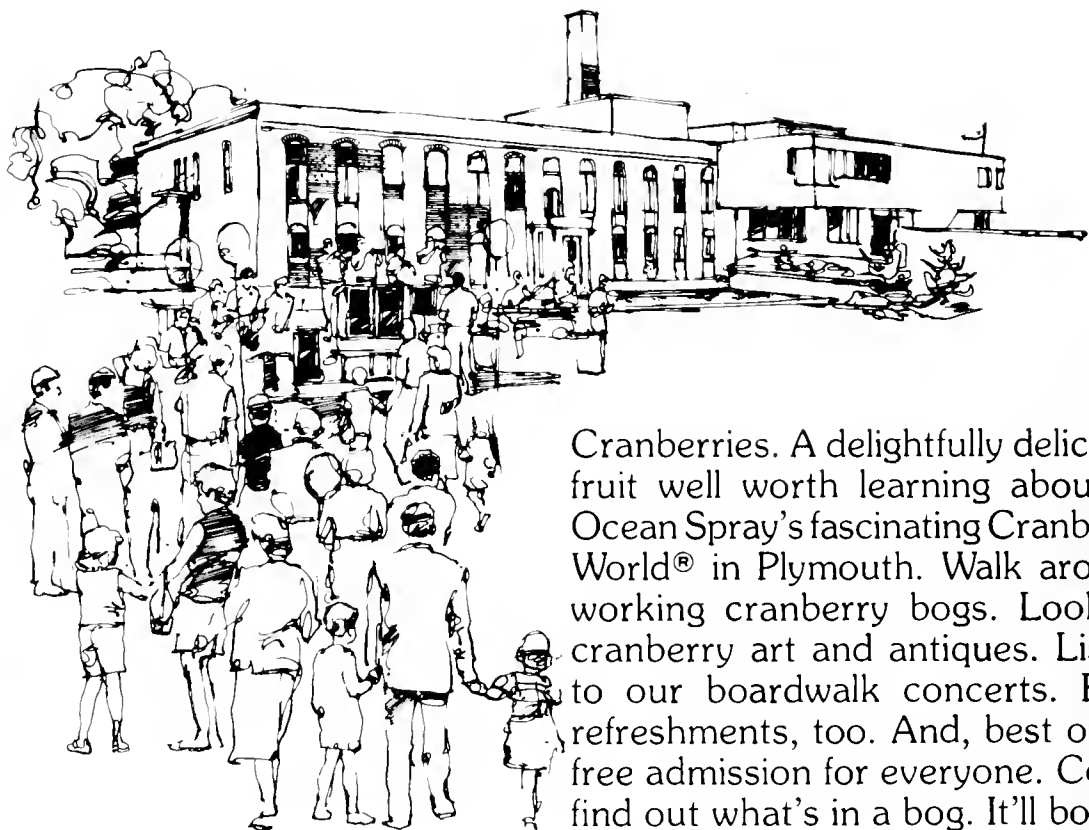
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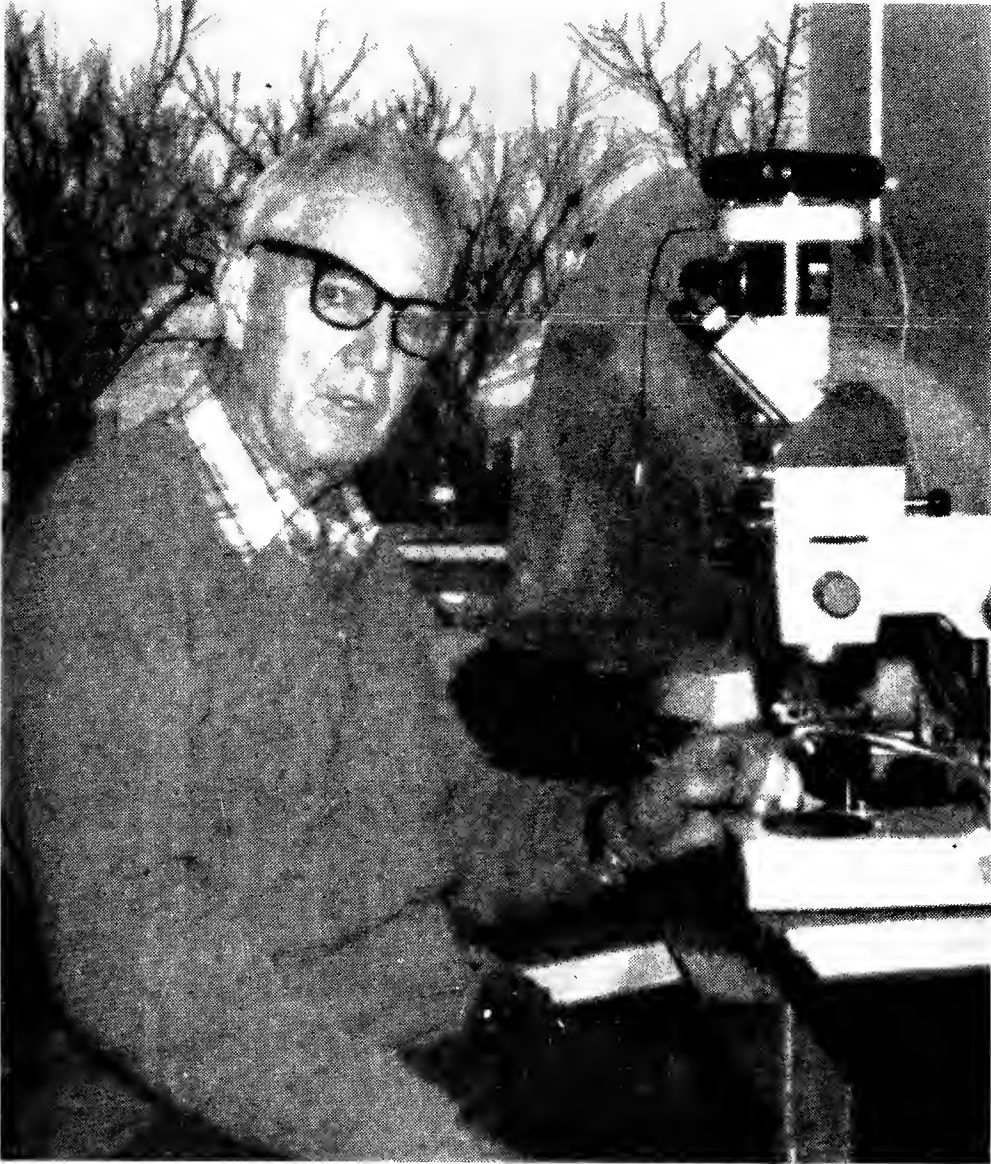
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Gall mystery . . . 3

Trade groups . . . 6

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Researcher helps unravel blueberry bud gall mystery

By ELIZABETH CARPENTER

The sound of a clipped Massachusetts accent, complete with the often parodied Boston r, alerted me to the fact that we had a new addition to the research team at New Jersey's Cranberry/Blueberry Research Center.

The voice belonged to Howard Boyd, editor of *Entomological News*, author of entomological articles, co-author of "Arthropods of the Pine Barrens," entomologist, ornithologist, lecturer, and retired Boy Scouts of America (BSA) executive. Boyd had agreed last year to assist Phil Marucci, research professor of entomology and cranberry and blueberry

specialist at the center, in attempting to resolve the mystery of what they decided to call the blueberry bud gall.

During the months Boyd's efforts brought him to the center, staff members became



COVER PHOTO

HOWARD Boyd, editor of *Entomological News*, puts many of the subjects about which he writes under the microscope for study. This time it's a grasshopper with distinctive markings. Boyd's story begins on this page. (CRANBERRIES photo by Elizabeth G. Carpenter)

increasingly impressed with his precision, dedication and devotion to scientific accuracy.

ONE AFTERNOON Boyd took time to explain to me that the first step in this research effort was to resolve with Marucci "the identification, life cycle and biology of what we're calling a blueberry bud gall, which is caused by a small fly that belongs to the family *Cecidomyiidae*." This initial project necessitated the collection of 4,000 to 5,000 galls in 1983, as well as an effort to simulate natural conditions so that, hopefully, larvae might pupate and emerge as adults the following year.

Boyd went on to say: "We (Boyd and Marucci) are concerned

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it may have the potential to become a pest of cultivated blueberries and indeed we know of isolated cases where there are infestations of these in cultivated blueberry fields." Conceivably, the fly causing this troublesome gall is a new species that will have to be described by the two scientists.

The matter was of concern to cranberry growers in the region. About half of them also grow blueberries.

Although Boyd is no longer regularly based at the research center, he is continuing to assist Phil Marucci, the center's director, with their blueberry bud gall project. I will miss Boyd's noon hour visits, often prefaced by the question, "What's new?" Many times I felt like a real beneficiary in the ensuing information exchange, for our conversations would range from the migratory bird life of Churchill, situated on Hudson Bay's coastline in Manitoba, to global population concerns, with Boyd's insights lending new perspectives to each topic.

BOYD, born in Hyde Park, now a Boston suburb, attended the University of New Hampshire and graduated from Boston University with a BS degree in biology. Although much of his course work was devoted to botany, he did have some courses in entomology and ornithology, background that would prove invaluable in the future.

Marriage, the birth of a son, Stanley, and a daughter, Gwendolyn, and a career with the Boy Scouts of America followed college. Over the years, Doris, Boyd's artistic wife and his collaborator in several nature oriented lecture series, including the National Audubon Society's Wildlife Screen Tours, accompanied him on job related moves to Philadelphia and Queens and Glens Falls, N.Y., as well as New Jersey. What, for

Boyd, began as a boyhood love of scouting developed into executive responsibilities with BSA. This included a 10 year stint, 1952-62, as scout executive for Camden County, N.J., followed by seven years as national director of registration service, based in New Brunswick, N.J.

In 1969, at age 55, Boyd elected early retirement, moved with his wife to Tabernacle, N.J., built his own home and became actively engaged with organizations concerned with the environment, including both the New Jersey and national Audubon societies and the Conservation and Environmental Studies Center at Whitesbog, a center devoted to the study of the New Jersey Pinelands. Typical of his customary vigor and inquisitiveness, Boyd also returned to college, where entomological research introduced him to Phil Marucci's work and prompted a meeting between the two scientists.

Boyd, well respected in entomological circles and recipient of an MS degree in entomology from the University of Delaware, has, for a decade, served as editor of the professional journal, *Entomological News*, a publication of the American

Entomological Society. From 1977-81, Boyd served as president of this society, which was founded in 1859 and is the oldest continuously operating entomological society in the new world. The society has its offices in the Academy of Natural Sciences building in Philadelphia and Boyd is an honorary associate of the department of entomology of this academy. His independent publications have dealt with Tiger Beetles (*Coleoptera: Cicindelidae*) and he also has authored the current *Annotated Checklist of Cicindelidae of North America*.

PLEASURE and research are often intertwined for the Boyds. Once or twice annually, they travel to places where they can study interesting phenomena. In December 1982 they sailed around and explored the Galapagos Islands, while the following summer found them leading an ornithological expedition to Churchill. Again, love of bird life prompted their attendance at an ornithological seminar in Colima, Mexico, this spring.

Happily, Howard and Doris Boyd share their interests and talents with friends and colleagues. It is this cooperative sharing of expertise that may, using Boyd's words, help us "get a handle on it (the blueberry bud gall) before it becomes a major problem."

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editorial



THERE'S A FUNGUS AMONG US

It's the age-old story of agriculture: tackle one pest and another knocks on your door.

In Massachusetts, several growers looking to a first crop on new bogs were dismayed to discover a type of side rot appearing on their berries.

Dr. Alan Stretch, USDA pathologist in Chatsworth, N.J., analyzed half dozen samples from infected Massachusetts bogs and found primary infections of fast growing *Guignardia*.

Normal fruit rot is slow growing *Guignardia* and the fast growing rain has not been a problem until now, said Jere Downing, Ocean Spray horticultural coordinator.

Another Massachusetts problem is twig die back disease. This may be a chronic disease in which individual uprights die as if they've been killed.

Phomopsis, a vine disease in both Massachusetts and New Jersey, is much like the Dutch elm disease, causing internal infection of conductive tissue. It clogs the tissue and kills above the blockage. Systemic fungicides are in order here.

Western growers have concern over twig blight, *Laphodermium*. This fungus forms fruiting bodies on leaves but damage is done to the new growth. Damage is not apparent until the spring following infection when the bog doesn't green up.

Timing is critical for control. Bravo was registered on an emergency basis for mid-June and followup applications.

In Wisconsin, a canker-like disease called Black Knot resembles choke cherry black knot. The causal agent may be a nematode that forms a gall in the vine which kills plant material above the canker. It was only just been reported, but the disease causes a poor crop and weakens the bog where it hits.

Cranberry researchers met in New Jersey in mid-September to discuss these and other disease problems. It is good news that a plant pathologist will soon join the cranberry extension team in Massachusetts. One simple disease prevention program the industry could implement is to ban importation of vines from outside each growing area. At the very least, we could avoid contaminating each other.

—by Carolyn Gilmore



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How a trade association can help you, the grower

By RICK KREPELA

At last count, according to Department of Commerce figures, there were about 15,000 trade associations in this country. This figure swells to 40,000 if local chapters, affiliated groups and professional organizations are added.

Membership in one of these groups can be extremely rewarding if you take the trouble to avail yourself of just a fraction of the services offered.

Perhaps you are one of the estimated 4 million businessmen who already have joined a trade group. If you joined out of the desire of "belonging," ask yourself if you are really getting your money's worth. Your membership

can be a valuable business asset. It matters not if your group is small in size with a minimal staff or has thousands of members and a large staff. You will benefit if you use any or all of the 10 ways outlined to get the *most* from your membership dollar, whether it costs you \$10 to thousands per year.

1-Center of Information: Your trade association has the overall picture of your industry. It collects and disseminates business facts pertaining to its membership. Whether your group meets informally over a cup of coffee or, because of its geographic scope and size of membership must hold "meetings" via a monthly publication, this exchange of business information

is a primary function.

Learning how others in your line of work handle problems pertaining to purchases, employees, customer relations and so on, can give you ideas on how to improve your own business. This exchange—and it must be a swapping of pointers to be truly effective—sharpens your business sense and makes you aware of what is good or bad in your own methods.

Passing a business tip on to your trade association does not give your competition an unfair edge . . . instead it helps your entire industry. The least effective associations are those where the membership sits back and passively listens to a stream of platitudes issuing from headquarters. By contrast, the most active and effective associations are usually those where the membership participates vigorously in a give and take of industry information.

2-Government Relations: Few individuals can keep up with the changing laws and regulations emanating from local, state and federal governments. A trade association sifts through the mass of government dictates, passing on those pertinent to your type of business. Large trade groups have professional legal staffs to report and interpret new legislation. Often they press for, suggest, or support proposed regulations and legislation.

On the local level, a single member may be appointed to go to the town hall and check on the status of a new tax ordinance. In either case, the function is the same and the member who receives and uses this information is miles ahead of a competitor who does not belong to the association.

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3-Public Relations: Your association builds good will for your business. It works whether you belong to a merchant's association where the cooperative efforts attracts customers to *all* the stores in your area, or whether you belong to an industry group and the object is to get customers to use a particular product or service.

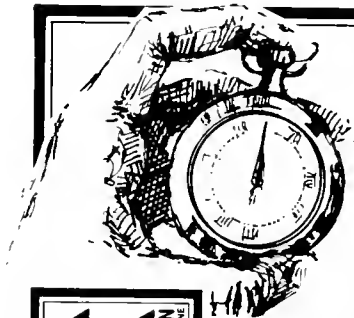
In a very real sense, your association's public relations effort represents your business. By laying the basic, institutional type groundwork for your industry, this function of an association makes your own advertising that much more effective. It is much better to spend the bulk of your advertising budget to tell people about your better service, than to use your advertising dollars to tell people about the product you sell.

Associations vary greatly in their programs and effectiveness on this point. If your group has an active public relations schedule, it is in your own best interest to support it. If it has none, then it might be a good idea to try to get one started.

4-Business Statistics: An association gleans through all sorts of dull statistical data to

extract those figures of interest to you. It will help you to know what percentage of the population is of a certain age bracket; what teenage markets exist and teen buying power; what is the current vogue in a specific area of the country, etc.

A trade association can ferret out and classify statistics of this type with greater ease than an



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5-Labor Relations: Many associations act as a clearing house for general information regarding industrywide labor practices. Salary levels, job classifications, hours worked and vacations granted are types of general knowledge you need to know about to stay competitive. Are pension plans common in your industry? Is there pressure for them? What are the new fringe benefits being sought by labor? You need to know where your industry stands on such vital points in order to determine your own course of action.

6-Business Ethics: Virtually every trade association sets some standards for what is considered "fair" and "unfair" in the particular industry. These ethical dictates may range from a formal code of good practice or ethics, to a statement in the bylaws of a local merchant's group. The self-policing wards off government interference and breeds confidence for consumers.

Other typical codes spell out bidding practices, caution against defaming competitors, set up advertising guidelines and set up safeguards against collusion in fixing prices.

The ethical standards set by you through your membership in an organization provides a rule of thumb for all business firms in your field.

7-Market Research: You should naturally want to know about new or unique uses for your products. The principle holds true no matter what business you are in. News about potential or unexplored markets is always an opportunity to expand.

8-Uniform Accounting: Most associations prescribe preferred methods of accounting, inventory record keeping and cost analyses. Not only do these standards help simplify bookkeeping and aid in keeping your methods in line with those acceptable to tax officials. They also aid in determining your

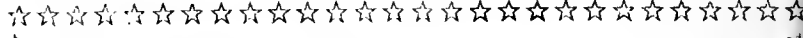
position in relation to the rest of the industry.

If, for example, you learn others in your industry have a labor/materials cost ratio of 3 to 1, you can compare this to your own figures as furnished by your accountant.

Where members within an industry are to have meaningful information which can provide a comparison gauge, all the

members must speak the same language. Trade associations help set the standards for these accounting techniques so that the information has full value.

9-Meetings and Conventions: Aside from the purely social aspects of getting to know others in your line of work, the meetings and conventions your association schedules give a forum to those who have something important



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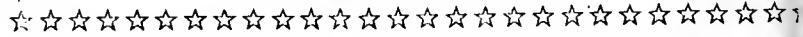
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to say to membership. It might be a government official speaking about new legislation or a researcher discussing a new product. Whatever the subject, it is pertinent to your particular group of businessmen to have a question and answer period to permit active participation by membership for clarification.

Many conventions are combined with trade shows where manufacturers or suppliers display new products or machinery. This gives you a chance to meet with factory representatives and ask direct questions or to meet with potential customers. No other form of get-together actively gives the individual member a "feel" for his industry as does attendance at meetings or conventions. If your association did nothing else but bring you and your fellow businessmen together for a free-wheeling discussion of common interests, your membership would probably be worth every penny.

10-Publications: Many trade associations publish an official journal. Others are affiliated with monthly magazines which cater to a particular industry group. Still others present their views through entirely independent trade journals. Whatever the practice in your industry, the trade journals, magazines and bulletins covering your field of interest are a vital avenue of communication between you and the rest of the industry. Through this medium, a dealer in Fruita, Colo., a distributor in Griffin, Ga., or a shop owner in Utica, N.Y., can keep their fingers on the pulses of similar businesses all over the country.

Depending on their special interests, trade associations sometimes engage in the development of foreign markets, in cooperative buying or selling, and a few even engage in basic scientific research. The 10 functions listed here are common

to almost every trade group.

If you are paying membership dues, you are likely receiving most of these *basic* services. Whether or not you use them is another matter. If you don't attend meetings, fail to read the publications covering your field, never "swap" business tips with others and consider your membership check as simply a "deductible item," then the chances are that you are NOT getting your money's worth.

Worse yet, you are operating in a vacuum with no way to tell whether the conditions you face are local or national, whether a recent sales spurt was due to an industrywide increase or the result of some special sales or advertising technique you tried.

Actually, the small business person needs his/her association membership more than does the giant corporation. Many large concerns maintain research and public relations staffs which, in part, duplicate some of the work done by a trade association. Yet even the largest companies belong to trade groups! Often

they support a variety of groups which reflect the diversity of products or services they offer.

And rather than stifling competition, the association encourages it by assuring the business health of each member.

Herbert Hoover, when he was Secretary of Commerce, called the trade associations the "safeguard of small business . . . a prevention against the extinction of competition."

The key to getting the most from membership in any trade association is active participation. It requires much more than keeping dues payments up to date.

A full return on your investment requires attendance at meetings or conventions, reading rather than scanning through official and related publications, carefully voting on issues, and being an active participating member to make sure the association reflects *your* views.

Anything less reduces your membership check to little more than a tax deductible donation.

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Who is greatest woman athlete?



THE FIVE NOMINEES for the title, "Greatest American Female Athlete of the Last 25 Years," are all very recognizable and are seen above with Jack Llewellyn, Ocean Spray's senior vice president, marketing. They are, l. to r.: Wilma Rudolph, Martina Navratilova, Chris Evert Lloyd, Billie Jean King, Mary Decker.

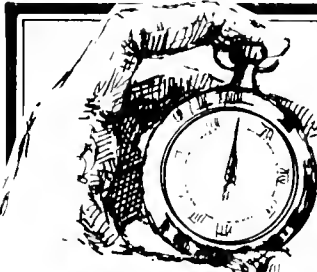
With the effort to select the "Greatest American Woman Athlete of the Last 25 Years," Ocean Spray Cranberries has launched its second national promotion with the Women's Sports Foundation within the last two years.

THE FIVE ATHLETES nominated for the award by some 92 sports reporters and broadcasters this summer include Mary Decker, Billie Jean King, Chris Evert Lloyd, Martina Navratilova and Wilma Rudolph.

The national winner of the award will be announced in

April 1985 following a six month poll of millions of American consumers. Ocean

Spray is issuing 20 million ballots through four color advertisements in health, sports



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and women's magazines. Some of the magazines on the schedule include Self, Family Circle and American Health.

An eight page insert with biographical sketch and photos of the nominees appears in the October issue of Women's Sports and Fitness magazines. It includes ballots for the magazines's 100,000 plus readers.

Some 40 million ballots also are being offered in free standing inserts in more than 300 Sunday newspapers. A 15 cents off coupon is being included in the newspaper insert, good on any size bottle of Ocean Spray Cranapple or Cran-grape.

And through March 1985, another 40 million ballots will also appear on specially marked bottles of Ocean Spray drinks with a Women's Sports Foundation Greatest Athlete award symbol on the label.

In addition, consumers have the option of sending in their votes on a 3 by 5 inch postcard.

To further encourage consumer participation, Ocean Spray is conducting a corresponding sweepstakes. Consumers submitting ballots will automatically become eligible for a sweepstakes' grand prize trip for two to any sporting event in the

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world. More than 10,000 other prizes will be offered, including Nikon cameras and binoculars, Timex quartz watches and copies of the Women's Sports Foundation *Fitness and Sports Resources Guide*.

THREE OF the five nominees for the Greatest Women Athlete award, King, Evert Lloyd and Navratilova, have earned their place in the spotlight through their tennis achievements. Decker and Rudolph have achieved their fame in track.

According to former swimming star Donna de Varona, president of the Women's Sports Foundation, the award winner will be the first contemporary woman to be honored in this manner. A silver trophy representing an artist's

rendering of the five symbols of the Foundation's logo will be presented to the winning athlete later this spring.

Founded in 1974, the Women's Sports Foundation is a nonprofit organization based in San Francisco. It is dedicated to educating the public on the value of sports for girls and women and to promoting opportunities for their participation.

"**THE SUPPORT** which Ocean Spray has lent our organization has been invaluable," explains de Varona, a two-time Olympic gold medal winner and now the assistant to the president of ABC Sports and a sports commentator. "The Greatest Athlete award will go a long way towards supporting the cause of women's sports in this country."

The award program marks Ocean



THE SILVER TROPHY above will be awarded to the athlete selected as the most outstanding woman athlete over the last 25 years through a poll of millions of Americans. The trophy is an artist's three-dimensional rendering of the Women's Sports Foundation logo.

Spray's second national promotion with the Women's Sports Foundation. Last year's program involved a coupon redemption drive which raised more than \$75,000 for the Foundation's Travel and Training Fund. Ocean Spray donated five cents to the fund for every product coupon redeemed. The company supported last year's program with an Olympic sweepstakes, free standing newspaper inserts and retail displays.

Richard J. DiBlasio of the Nielsen Clearing House, which tabulated the redemptions, cited the promotion as the most successful program his company was involved with in 1983.

Kevin McNamara, assistant business unit manager of Ocean Spray, said that the Greatest Women Athlete promotion will probably be even more successful than last year's program.

"It's the largest promotion of its kind in the company's history," he said.

"Two years ago, our initial decision to sponsor the Women's Sports Foundation came from the 'Good For You America' theme of our advertising campaign, which supports health, fitness and good nutrition, while positioning our juices and juice drinks

with this contemporary theme," McNamara added. "We quickly realized that Ocean Spray's primary consumers (women, ages 25-49) are in need of support for their organized sports.

"Women's sports is one area where

we can make an impact," he said. "Our involvement will hopefully go a long way toward improving the opportunities offered to all women in sports."

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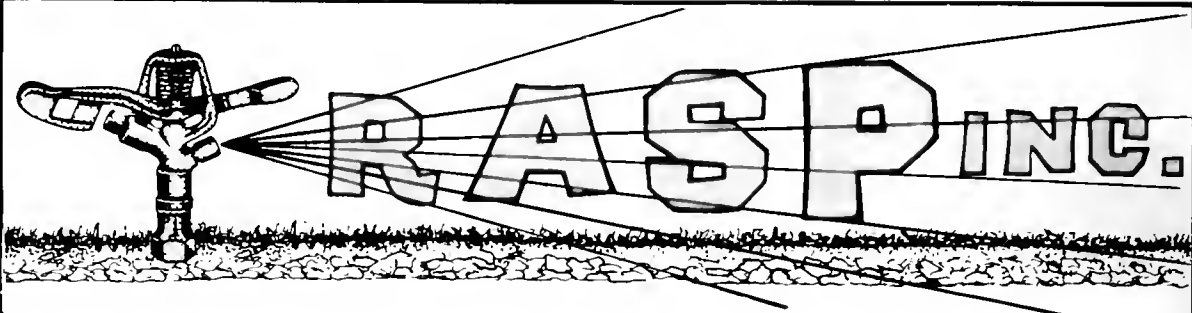
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August was very warm, averaging 2.2 degrees a day above normal. This was the warmest August since 1973 and the sixth warmest in our records. This was a continuation of a hot, humid summer, with all months from May through August above normal. Maximum temperature was 88 degrees on the 6th and 16th. Minimum temperature was 52 degrees on the 26th. Warmer than average days were the 4th, 6th, 16th and 23rd. Cooler than average days were the 8th, 13th, 18th and 25th. The reason for the month averaging as warm as it did was the nighttime temperatures which were nearly 5 degrees on the warm side.

Rainfall totaled a mere 0.48 inches, which is about 3¼ inches below normal. This was the driest August in our records of 60 years and replaced 1928, which was our previous dry. There was measurable rainfall on only five days, with nothing greater than 0.15 inch and nothing from the 15th on. We are about 5½ inches above normal for the eight month period in 1984 and nearly 2 inches less than the same time in 1983.

I.E.D.

NOVA SCOTIA

August was considerably warmer than usual for us. The maximum temperature (32.5 degrees C) occurred Aug. 6 and the minimum (8.0 degrees C) was on the 26th. Harvesting of cranberries began Sept. 7. Prospects were for a good crop.

I.V.H.

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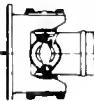
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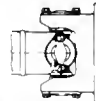
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MORSE DIES AT 80

G. Howard Morse Sr. died Aug. 31 at the age of 80 years.

A lifelong Massachusetts cranberry grower, he was a founder and treasurer of Morse Brothers Inc. In the late forties, he was influential in the formation and operation of Morse Brothers Fresh Fruit Packing Division. This division packed Eatmor's Eastern Fruit during the midfifties.

Morse is survived by a son, G. Howard Morse Jr.; a brother, Clarence (Finn) Morse, and two grandchildren.

regional
news
notes

Massachusetts

By IRVING DEMORANVILLE

Prof. Stan Norton attended the annual meeting of the North Atlantic Region of the American Society of Agricultural Engineers at the University of Maine in Orono, Me., Aug. 13-16.

The 97th annual meeting of the Cape Cod Cranberry Growers Assn. was held at the Cranberry Station on Aug. 21. This event keeps growing and every year we seem to have a

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bigger crowd and more commercial exhibits. The group numbered more than 600 and we served 620 dinners.

Officers reelected for the coming year were: George Andruk, president; Chris Makepeace, first vice president; Doug Beaton, second vice president, and this writer, secretary/treasurer. The board of directors also remains the same.

The official crop estimate released by the New England Crop Reporting Service indicates that Massachusetts should have a record crop of 1,480,000 barrels, which would exceed our 1983 record crop by 20,000 barrels. There are some excellent crops around and we should make estimate.

Wisconsin

By ELDEN STANG

This writer recently attended the 3rd International Symposium on Vaccinium Culture in Warsaw, Poland. Emphasis at the event was on crops in the Vaccinium plant family, including blueberries, cranberries and ligoberries, called cowberries in England.

At the symposium, I presented a paper on the preliminary work by Grahame Hawker, former graduate student, on the relationship of growing degree days to vegetable growth and fruiting of cranberry. Other North American scientists attending and presenting cranberry research papers were Azmi Shawa, Long Beach, Wash.; Paul Eck, Rutgers University, N.J., and several Canadian researchers.

The symposium was followed by a two day tour of central and northern Poland, with emphasis on tree and small fruit research, blueberry and cranberry research. Of particular interest was the cranberry research station at Radacz, Poland, near the Baltic Sea. Plantings at the station are patterned after those at the Massachusetts station.

Principal problems at the Radacz station appear to involve use of alkaline lake water and difficulty in getting plants established.

It appears significant cranberry production in Poland is years away from being a reality at this point.

Be sure to note the dates for the 1985 WCGA Annual Meeting and Cranberry School, Jan. 16-18, in Wisconsin Rapids. Plans are for the

WCGA to organize the program for the annual meeting while the Cranberry School will be coordinated primarily by UW-Extension and Wood County Extension as in the past. We would appreciate any program suggestions you feel would be helpful to all.

As many of you may know, Dr. Richard L. Lower, chairman of the UW/Madison Department of Horticulture, resigned recently to take

the position July 1 as associate dean and assistant director of the Experiment Station in the College of Agricultural and Life Sciences at UW/Madison.

We will all miss his personal enthusiasm, practical viewpoints and untiring efforts to promote the many horticultural industries in Wisconsin. We're also pleased, of course, that he chose to remain in Wisconsin.

Dr. John Schoenemann is currently serving as chairman until a successor is hired.

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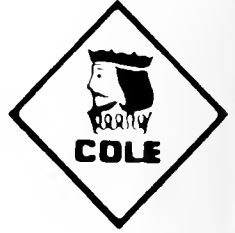
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By LAURA BOYLE
**CRANBERRY
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1 lb. fresh or frozen cranberries
 grate the rind of one lemon
 1 cup crushed pineapple, not drained
 1 cup sugar

Put cranberries, lemon rind and
 pineapple through food grinder;
 stir in sugar. Mix well and store
 in refrigerator overnight.

Experts answer Question Box

As usual at the Cranberry Field
 Day held in Long Beach, Wash.,
 a question box was available into
 which growers could deposit
 questions. Cranberry expert Carl
 L. Shanks Jr. answered the queries
 below:

Q: Normally, we have two fireworm
 broods, in May and July. What is the
 reason for three or four broods in
 certain years?

A: I could find no information on
 this in the literature so apparently no
 one has studied it. Overwintering
 diapause (dormancy) of insect eggs,
 larvae and pupae are usually controlled
 by factors such as temperature and day
 length. It seems probable that some of
 the eggs deposited by the second brood
 in late months are prevented from going
 into dormancy by some factor such

as warm temperature. Therefore, they
 hatch in August instead of the follow-
 ing May.

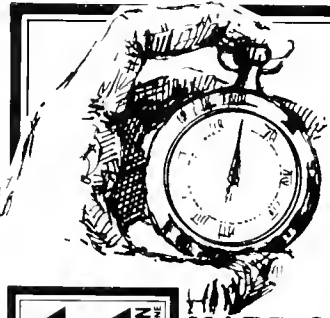
Q: Is the "Horn Faced Bee" a
 beneficial bee for pollination and is it
 found in coastal areas?

A: I do not know what species of
 bee this is. There are no references to
 it in any of my books and Dr. Carl
 Johnson, our bee expert at
 Washington State University, has not
 heard of it. I suspect that this is a local

name for a bee that is more widely
 known by another name. If anyone can
 give me information on this, I would
 be glad to have it.

Q: Is Lorsban going to be effective
 on cranberry girdler?

A: Lorsban is effective against the
 girdler in grass seed fields. I believe it
 should also be effective in cranberries
 but there are few data on this right
 now. Work will be done in Oregon
 this year and I will be interested in



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'Look, Hooper, I don't want you running up to me every five years asking for a raise!'

the results.

Q: Is Lorsban as toxic to people as parathion and malathion?

A: When taken into the body through the mouth, Lorsban is less toxic than parathion and more toxic than malathion. If absorbed through the skin, it is similar to malathion in toxicity and both are less toxic than parathion. Parathion is one of the most toxic insecticides that is used on crops. However, all insecticides are toxic to some degree and precautions should be taken to not swallow, breathe or absorb any of them.

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Q: Is it advisable to apply Lorsban through a spray rig or the sprinkler system?

A: I prefer that pesticides, especially those that have any degree of toxicity to animals, other than the target pest, be applied through a handgun or spray boom. The reason is that spray from sprinklers can go into the water ditches or ponds, onto roads or nearby houses or onto people or animals that get too near. However, I presume that Lorsban will work as well as a sprinkler application as other insecticides applied this way. I have no data on this.

Q: Ocean Spray sent an information sheet on Lorsban listing the control of "Cranberry weevil." Is that our black vine weevil and does Lorsban control the black vine weevil?

A: The black vine weevil and cranberry weevil are quite different. The cranberry weevil is closely related to the boll weevil which attacks cotton in the southern U.S. Cranberry weevil is a pest in the eastern U.S. It damages cranberries by adults feeding on buds and blossoms and the larvae feeding in

the buds. Black vine weevil feed on the roots. Lorsban will control cranberry weevil but not black vine weevil.

Q: Any new insecticides for black vine weevil control?

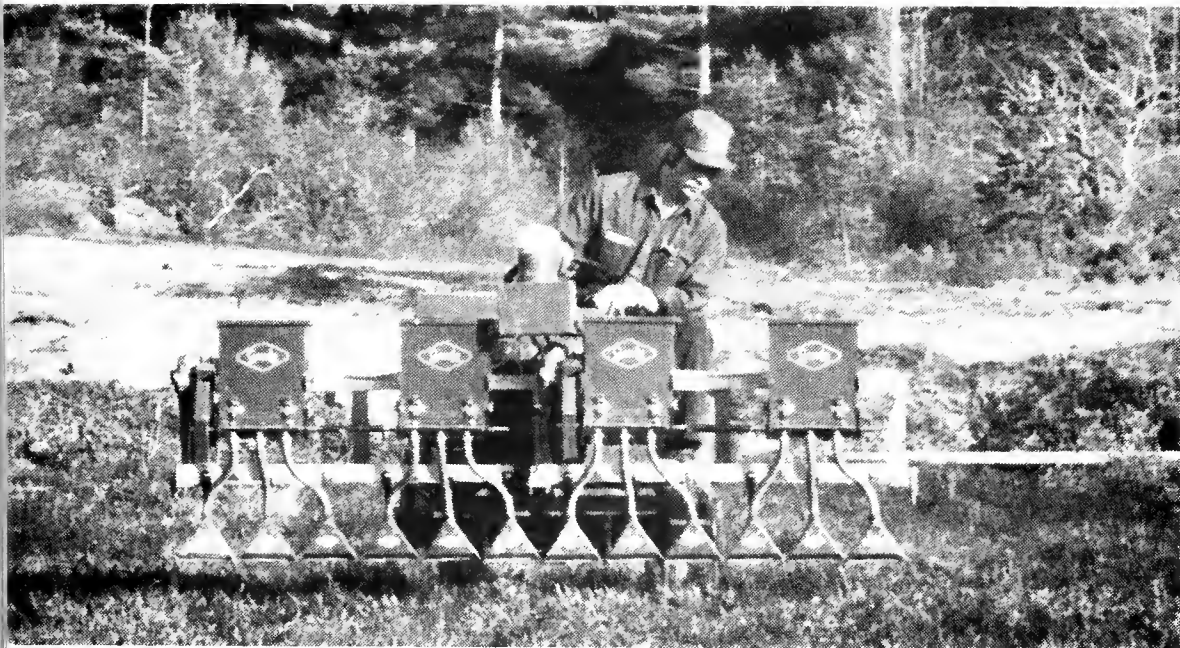
A: No, there is nothing new registered for control of this pest. We

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JOHN Bernier rides the granular chemical spreader he designed over a bog in Rochester, Mass.

(CRANBERRIES photo by Kirby Gilmore)

ave tested several insecticides the last two years and Furadan continues to be the best. One insecticide called Amaze gave nearly as good control in last year's trials as Furadan. It and one or two others will be tested further this year.

Q: Do we now have a new pest called a "nematode" in cranberries? How is it controlled?

A: Nematodes constitute a class of worms. Most are very small and many are parasitic on plants but there are few, if any, published reports of nematodes damaging cranberries.

In our 1983 black vine weevil plots at the cranberry station, we observed cranberry root and vine growth that could not be accounted for just by weevil larva control. We sent soil samples to Dr. William Haglund at the Northwestern Washington Research and Extension Unit at Mount Vernon for examination. He discovered high populations of two species of nematodes, *Trichodorus* and *emicyclophora*, in the samples. Both can be very damaging to plants.

We do not know how widespread this problem is. In May we collected soil samples around weak areas in

about 20 bogs in the Long Beach and Grayland areas. They were sent to Dr. Haglund who is examining them for nematodes. This should tell us whether the problem is just a local one at the research station or whether it occurs in many places. We also should learn whether the flood at harvest affects the nematodes. Preliminary data indicate that these nematodes do occur in both the Grayland and Long Beach areas. However, not all weak areas of bogs were associated with these nematodes. Black vine weevil and other factors also cause weak plants. More research is needed to determine how important these pests are and how widespread they are. It would be advisable to be careful about transferring cranberry plants, soil, etc., from one bog to another as the nematodes could be spread in this way.

It appears that Furadan is giving some control of these pests. However, this is based only on plant growth response, not actual nematode counts. We are conducting control studies to determine the effect of Furadan and other nematicides on the nematodes and cranberries.

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MORE LAND BOUGHT IN BERRY COUNTRY

Burlington County, N.J., recently added more than 100 acres of land under the Farmland and Pineland Preservation Program with the purchase of a farmland easement on a Tabernacle Township property, according to Freeholder Director Dr. Harold L. Colburn Jr.

He said this agricultural easement purchase brought the total number of acres of easement to more than 3,000 since the county first initiated the program.

Colburn said the property, owned by Bruce Haines, is 110.8 acres and is an active blueberry farm.

"This easement will also protect the headwaters of the Wading River, which is a significant requirement of our program," Colburn said.

In return for the permanent agricultural easement, the county has agreed to pay for Haines' 4.75 Pineland development credits. Each credit is valued at \$10,000, Colburn added.

Freeholder Robert Shinn, who has successfully directed the county's Pineland and Farmland Easement Program, said that by the end of September, the county will have completed several more easement purchases.

Shinn said: "There were many doubters when we first started this program in 1977, but I think most of the critics now realize the program is very effective and will preserve our vital resources for future generations."

The freeholder said the county would have 3,287 acres of pinelands and farmlands under easement when negotiations are completed on the remaining projects.

Shinn said all of this has been accomplished since the first purchase of 530 acres was made in 1978. That purchase involved the buying of an agricultural easement from the Rancocas Cranberry Company in Southampton Township.

"We have preserved precious farmland and kept vital pinelands from development through this innovative and effective program," Shinn said. "This was our objective when the program was approved by the voters."

He said that when the current projects are completed, the county will have spent \$2,995,580 for farmland and pinelands easement. About \$1.7 million of the total will be returned to the county to be used for other projects. He said the county's revolving fund receives money from shared costs from the state and

municipalities plus the selling of credits.

Said Colburn: "The six year program has resulted in the county taking the lead statewide in preserving farmland and the pristine natural resources located in our Pinelands."

FARM PRESERVATION PURCHASE MADE IN N.J.

County, local and state officials participated in the recent public signing of an agreement of sale for the purchase of the first farmland preservation project in the state, according to New Jersey Freeholder Director Dr. Harold L. Colburn Jr.

The signing took place at Chesterfield Commons, the site bought by the county and Chesterfield Township.

The purchase price for the 607 acre tract of prime farmland was \$195,000 with the county paying \$1.6 million and Chesterfield Township \$350,000, Colburn said.

"Once again Burlington County has taken the lead in an effort to preserve one of our most precious commodities," he added. "We are a leading agricultural community and we want to be able to make that same statement in future years."

Freeholder Robert C. Shinn, who has spearheaded the county's farmland easement program as well as its pinelands easement program, said the county has placed a perpetual easement on the parcel which will restrict the use of the land to farming.

He said the county will place the land on the auction block to recover a substantial portion of the sale price which will be returned to the farmland easement program for future purchases.

Subtracting the amount of money the county receives from the auction will determine the price of the easement. The price of easement will be shared by the state which will pay 50 percent with the county and township paying 25 percent each, Shinn said.

Shinn said county voters approved the farmland easement program in 1979 when they approved a \$1 million bond issue and again in 1983 when they approved an additional \$2 million in bonds. Voters approved a state program of \$50 million in 1982.

"It has taken almost five years to see this important program come to fruition. Without this kind of program, I feel our farmlands will continue to disappear and one of the greatest resources will be lost," Shinn added.

JAPAN'S AGRICULTURAL MARKET: A RISING TIDE OF OPPORTUNITY FOR U.S.

By SUZANNE HALE
Foreign Agriculture

Japanese consumers are affluent, spend a high percentage of their income for food and generally are willing to try new foods, from avocados to beef jerky. Consumers have broadened their diets to include more meats, imported fresh and dried fruit and a wide range of frozen, canned and other packaged convenience foods.

To help reduce Japanese food prices, the U.S. should continue to press for tariff reductions and the elimination of nontariff barriers. Cooperator programs to improve Japanese livestock production also continue to be important in reducing cost and increasing consumption and lowering trade barriers.

Japan's highly sophisticated

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market offers many opportunities for exporters of institutional and specialty foods. Importers especially seek new foods and new uses for foods.

There are really two markets for institutional foods in Japan, one for top quality foods for hotels, restaurants and caterers, and one for fast food and family restaurants. Health food sales are growing rapidly and demand is significant for gift packs of high quality processed foods such as jams and nuts. Expanding distribution of established foods outside Osaka and Tokyo will lead to additional export gains.

Thirty six Foreign Agricultural Service market development cooperators have been planning activities to get more U.S. agricultural goods on the Japanese market. Government funding for their work this year is pegged at \$4.6 million.

Programs of major significance are being undertaken by the following cooperators:

*The American Soybean Assn. is conducting a product identification campaign to get Japanese consumers to shop for soy oil by name—soy oil is frequently sold under the generic name "cooking oil."

*The California Raisin Advisory Board is promoting raisins in snack packs and baked goods in Japanese retail bakeries and supermarkets.

*Cotton Council International is advertising and promoting cotton sportswear and new cotton products as well as bringing a number of Japanese spinning industry representatives to the U.S.

*EMBA Mink Breeders Assn. is conducting trade and consumer advertising campaigns and conducting a fashion show.

*The Florida Department of Citrus is promoting citrus with advertising campaigns and in-store exhibitions.

JAPAN EXPANDS MARKET FOR U.S. AGRICULTURAL GOODS

By RICHARD BLABEY
and
DEBORAH ROSENDAHL
Foreign Agriculture

Trade expansion measures announced by the Japanese government last April will mean hundreds of millions of dollars of additional export sales to U.S. agricultural exports over the next four years.

The measures announced by Prime Minister Nakasone include the Brock-Yamamura beef and citrus agreement,

tariff reductions on numerous food products to take effect next April, import liberalization of some specialty items, expansion of a number of non-beef and citrus import quotas and importation of cigarettes by the private trade.

The agreement on beef and citrus reached between U.S. Trade Representative William Brock and Japanese

Minister of Agriculture, Forestry and Fisheries Shinjiro Yamamura successfully addressed the leading agricultural trade issue between the U.S. and Japan.

To clinch the agreement, Yamamura pledged that Japan would continue to increase at an accelerated pace high quality beef and fresh orange imports.

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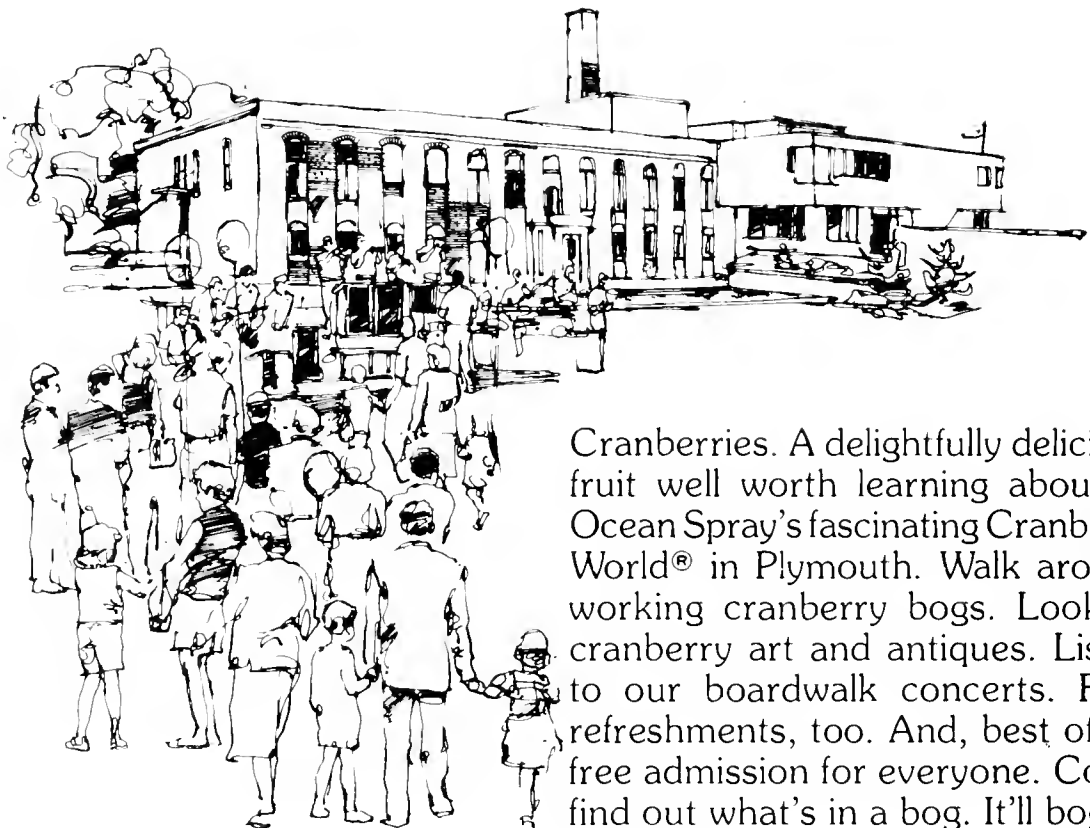
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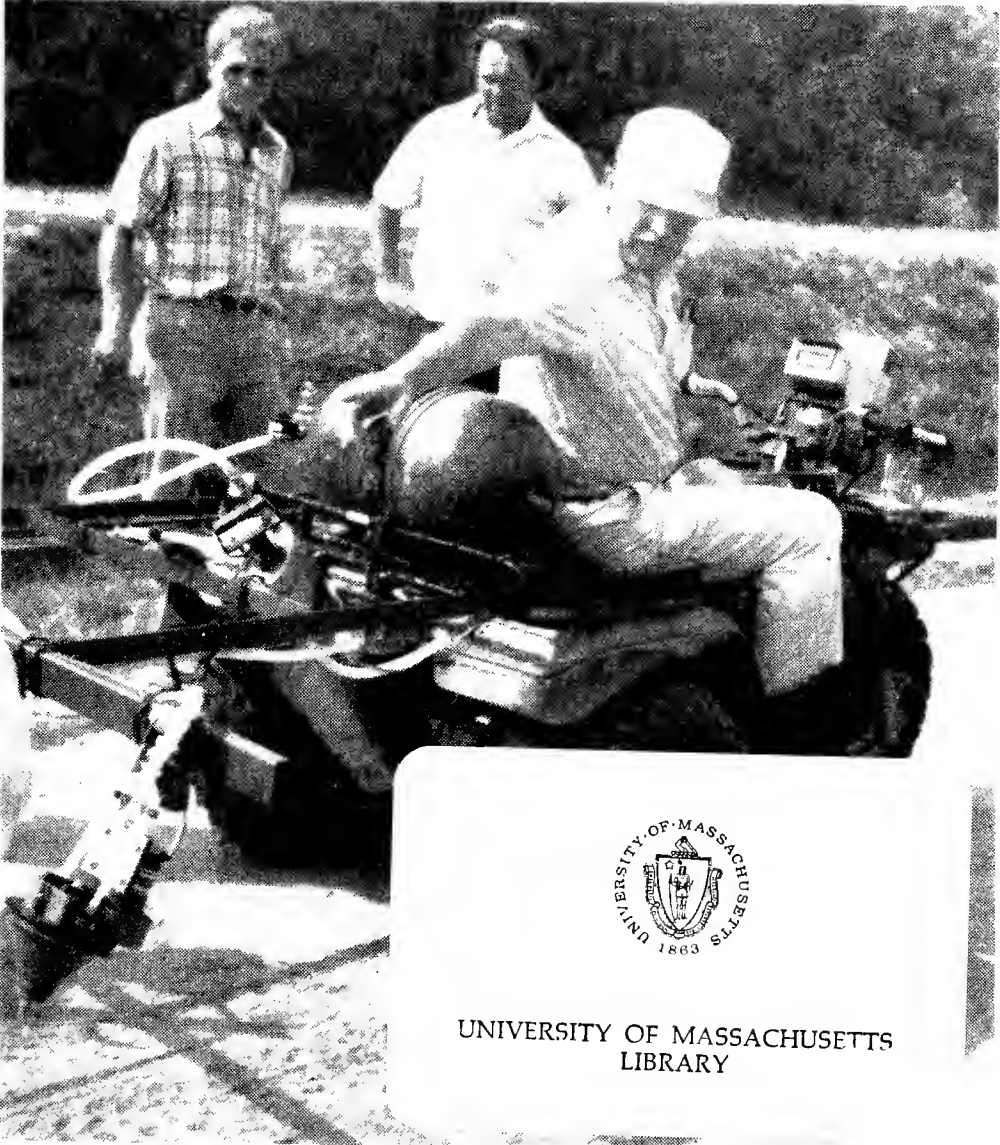
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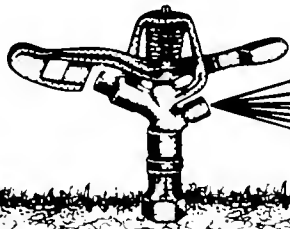


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Insecticides kill cranberry fruitworm eggs

By C. F. BRODEL
and B. A. WATT

Cranberry Experiment Station
East Wareham, Mass.

The cranberry fruitworm, *Acrobasis vaccinii* Riley, is a prevalent pest of cranberry in Massachusetts, New Jersey and Wisconsin. The larvae of this moth species consume five to eight

berries each, causing economically significant crop reductions even when present in low numbers. To minimize larval feeding, growers in all regions apply insecticide two or three times after the majority of blossoms have lost their petals. While doing so, they often question whether the insecticide treatments are killing

larvae only or eggs as well. A laboratory test performed in 1983 was designed to answer this question.

Materials and Methods

Eight insecticides (Table 1) were tested for their activity against cranberry fruitworm eggs. Orthene[®] and Pydrin[®] are the

Table 1. Rates of insecticides tested for activity against cranberry fruitworm eggs.

<u>Insecticide</u>	<u>Amt. formulation per acre</u>	<u>Amt. formulation per 100 mls water</u>
Diazinon AG500	6 pt	0.25 ml
Guthion 2S	4 pt	.17 ml
Lorsban 4E	3 pt	.125 ml
Malathion 50EC	4.5 pt	.19 ml
Orthene 75S	1.33 lb	.053 g
Parathion 8E	0.75 pt	.03 ml
Pydrin 2.4EC	0.66 pt	.027 ml
Sevimol	4 pt	.17 ml

COVER PHOTO

DR. WILLIAM WELKER points out features of his new herbicide sprayer at the meeting of the American Cranberry Growers Association in New Jersey. A story about the meeting starts on page 11. CRANBERRIES photo by Elizabeth G. Carpenter)



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only ones not currently registered for use on cranberry. Rates are given as the amount of formulation applied per acre and the quantity added to 100 milliliters (=3.3 ounces) of water in the laboratory. The latter figures represent a dilution equivalent to mixing the recommended amount per acre in 300 gallons of water.

Cranberries having a single, recently deposited fruitworm egg at the blossom end were collected on State Bog on July 13 and 14 and held at 60 degrees F. On July 14 and 15, berries were placed, stem end down, into moistened sand within petri dishes. Each of the 10 berries per dish was treated by placing a single drop of diluted insecticide on the blossom end with a pasteur pipet. Four dishes of berries were treated with each insecticide. Distilled water was used as the



CRANBERRY fruitworm egg (indicated by arrow) deposited at the blossom end of green berry. Magnification is 13 times. (Cranberry Experiment Station photo)

control treatment.

After the drops evaporated, all petri dishes were placed in an environmental chamber at 70 degrees F, 90 to 100 percent

relative humidity, and a 16-hour day length. Eggs were inspected for hatch and parasitism on July 22 and 25. Percent mortality

(continued on page 6)

Table 2. Efficacy of insecticides against eggs of the cranberry fruitworm in the laboratory, East Wareham, Mass., 1983.

<u>Insecticide</u>	<u>Percent egg mortality¹</u>
Diazinon AG500	99.4 a
Guthion 2S	95.6 a
Lorsban 4E	94.9 a
Malathion 50EC	100.0 a
Orthene 75S	97.1 a
Parathion 8E	94.0 a
Pydrin 2.4EC	98.5 a
Sevimol	97.1 a
Control	5.1 b

¹Back-transformed means followed by the same alphabetic letter are not different according to the Student-Newman-Keuls test at the 1% significance level.

editorial



Good promotion

There are promotions and promotions.

Ocean Spray backing the Women's Sports Foundation in its search for the greatest American woman athlete of the last 25 years is, indeed, a very sound promotion.

By the contest being associated with the epitome of healthy womanhood, the public is reminded of the healthful, beneficial effects of the cranberry.

The five nominees for the greatest woman athlete are all remarkably superb athletes. They are Mary Decker, Billie Jean King, Chris Evert Lloyd, Martina Navratilova and Wilma Rudolph.

Everybody will be able to make his/her choice between now and March 31, 1985. Millions of ballots have been scheduled to appear in women's, health, fitness and sports magazines, Sunday newspapers and on Ocean Spray drinks and juices. The public also can vote by simply writing down their choice on a postcard and sending it to: "America's Greatest Woman Athlete," Lowell IN 46356. Each selection must be addressed to an individual post office box: Mary Decker (Box 518), Billie Jean King (Box 532), Chris Evert Lloyd (Box 615), Martina Navratilova (Box 686) and Wilma Rudolph (Box 700). One can also cast a write-in vote and send it to Box 755.

We also like the contest because it gives a boost to women's athletics, which have been overshadowed for too long by men's athletics.

Nobody asked us but we're going to cast our vote for Martina Navratilova. This is to take nothing away from the fantastic achievements of tennis stars Chris Evert Lloyd and Billie Jean King or track stars Wilma Rudolph and Mary Decker. But few women athletes—or men athletes, for that matter—have dominated their sport as completely as Navratilova is dominating women's tennis.



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WISCONSIN—Tod D. Planer, Farm Management Agent, Wood County; Dan Brockman, Vesper; Joan E. Humphrey, Friendship.

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ISSN: 0011-0787

INSECTICIDES . . .

(continued from page 4)

data were subjected to arcsine transformation and analysis of variance. Differences among treatment means were determined by the Student-Newman-Keuls test.

calculating the percent mortality for each dish.)

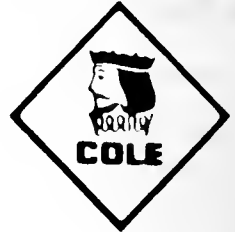
According to the data, two statements regarding cranberry fruitworm management seem justified: (1) An insecticide should be selected based on its performance against fruitworm larvae rather than its hearsay

superiority as an egg killer, and (2) A fruitworm egg in most cases is killed when a water droplet containing insecticide contacts it and evaporates. Whether this occurs more frequently when insecticide is applied by air than by sprinkler is still a matter for debate.

Results and Discussion

The results, presented in Table 2, indicate that residues of all eight insecticides killed a substantial percentage of fruitworm eggs. No insecticide was superior to any other in this regard. In contrast, only 5.1 percent of the eggs treated with a drop of distilled water failed to hatch. (On average, 6.2 of the 40 eggs in each treatment were parasitized, probably by a tiny wasp, *Trichogramma* sp., with the range being 3 to 9. Parasitized eggs were excluded when

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Deficit Reduction Act of 1984

How it will affect you

By **JOSEPH ARKIN, CPA, MBA**

The Tax Reform Act of 1976, the Economic Recovery Tax Act of 1981 and the Tax Equity and Fiscal Responsibility Act of 1982 were attempts to eliminate inequities and to provide incentives and tax cuts for certain classes of taxpayers by providing special exclusions and tax credits.

Faced with massive deficits expected to reach upwards of \$200 billion yearly, the Reagan Administration had to face reality—reduce spending and raise tax revenues.

Congress has, seemingly with bipartisan support, enacted a new tax act which is expected to raise over \$50 billion in the next three years, while granting tax relief of some \$6.5 billion in the same period.

All tax acts passed by Congress run into thousands, even hundreds of thousands of words. This article will attempt to summarize the highlights affecting the average business owner as well as pinpoint the new rules affecting all individual taxpayers.

Automobiles—Depreciation and Investment Tax Credit: Perhaps an item of foremost concern is the deduction for use of automobiles. Under prior law, a taxpayer purchasing an automobile for \$25,000 could deduct depreciation under Accelerated Cost Recovery System of \$6,250, \$9,500 and \$9,250 over a three year period and also be able to deduct investment credit (with adjustments for depreciation) of up to 6 percent in the year of purchase. Also, the first \$5,000 of the purchase price

could have been “expensed,” with corresponding adjustment

for depreciation and ITC. Of course, an allocation had

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to be made for personal use, such allocation not being a deductible business expense.

The new law sets up a 50 percent rule. If an automobile is not used at least 50 percent for business purposes, the cost must be depreciated on a straight line basis over a period of five years and no investment tax credit can be claimed.

Where the 50 percent test is met, depreciation will be limited to \$4,000 for the first year and \$6,000 each year thereafter. Also, the ITC will be limited to \$1,000.

If you're operating your business as a corporation (or if you are the employee of an unrelated party), there is a requirement that the automobile be for the convenience of the employer and must be a condition of employment.

The new strict rules apply to vehicles placed in service after June 18, 1984, or where a binding agreement was in effect on or before such date and the vehicle was actually used before Jan. 1, 1985.

A get tough policy has also been put into the law. No longer can you show an IRS agent your beginning and end of year mileage, subtract personal use and claim the balance as business usage. Now you'll have to keep a daily log of each trip to get any pro-rata deduction for depreciation and ITC. The record will have to be contemporaneous and will also apply to entertainment expenses and gifts.

Because so much of the year 1984 has already elapsed, the stringent "log" rules will go into effect for taxable years beginning after 1984.

Commuting—and this includes going from your home to your place of business and returning home from your place of business—was never tax deductible. But to make sure that there is no doubt about this, the 1984 Act specifically reiterates that commuting expenses are personal.

You might check with your C.P.A. as to the advisability of stopping at a customer's place of business, your bank, the post office, etc., while on your way to your place of work. Under most circumstances this should increase the percentage applicable to business use.

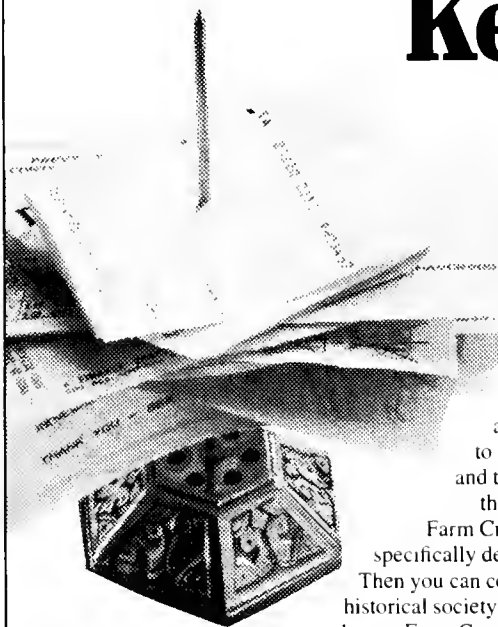
Leasing: Companies involved in equipment leasing generally face a four year delay, until 1988, in the phasing in of liberalized tax rules. Under the relaxed provisions, for example, a company could lease specialized equipment that only it could use and no longer run afoul of rules

barring the lessor from claiming depreciation and investment credits on the item. The lessor, in such a case, would take the break into account when setting the lease fees.

Investment Tax Credit: The amount of used property upon which the ITC would be obtained was supposed to be raised to \$150,000 from \$125,000. The increased amount will not take effect until taxable years beginning after 1987.

Expensing of Equipment: Equipment purchases could be "expensed" (written off in one year instead of being depreciated)

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to the extent of \$5,000 in 1983 and was supposed to be raised to \$7,500 in 1984 and 1985, and set at \$10,000 in 1986 and subsequent years. Increases in excess of \$5,000 per annum are deferred under the provisions of the new tax act until 1988. Expensing increases to \$7,500 for 1988 and 1989 and for 1990 and thereafter increases to \$10,000 per annum.

Jobs Credit: An employer who hired certain "disadvantaged" individuals could get a tax credit of up to \$4,500 over a two year period for each such person hired. The provision was to expire in 1984 but it has been extended through 1985.

Real Estate: If you purchase real estate for the conduct of your business, current law provides for a depreciation writeoff over a 15 year period. The new law extends this to 18 years for property placed in service after March 15, 1984. Be alert for transition rules where there were binding contracts for the purchase of real property.

Income Averaging: Under prior law, if your current year income exceeded 120 percent of the average income for the four previous years, you could use Schedule G and reduce your tax liability. The 1984 act increases the rate to 140 percent and the base period is now reduced to three years. Also, the averaging formula is modified to change tax brackets to further dilute tax savings.

This will not affect the filing of your 1984 return but will affect future years.

Home Computers: It is fashionable for many individuals to purchase computers which are kept at home. Certain data of one's business, projections, etc., constitute valid business use. But the playing of games, record keeping not connected with a trade or business do not qualify as tax deductible business

expenses.

As with automobiles, there is a new 50 percent use rule. Less than 50 percent business use means spreading the business portion of depreciation over a five year period on a straight line basis. And ITC credit will be affected. In any event, there must be an allocation between business and personal use.

Accruing Pay: It was a good tax ploy for a stockholder-employee of a chapter C corporation to reduce taxable income for a current year by making an accrual entry on the corporation's books and then making payment in the following year. (Within two-and-a-half months.) Being a cash basis taxpayer, it was possible to pick the year of reporting the income, depending on the rates for each of the two years.

The new law closes this loophole and provides that a deduction of an accrual owed to a related party will be only allowed when the amount is paid. This will affect all taxable years beginning after Dec. 31, 1983.

Start-Up Expenses: There is constant friction over the question of expenses incurred before the actual commencement of business operations. Example: A business actually starts on June 1. Can a taxpayer deduct rent for May while shelves, etc., were being installed? Can the cost of postage, stationery, telephone be deducted for April or May? The IRS position is that such expenses are not deductible but amortized over a five year period.

To clarify the situation and keep the issue from constant litigation, the new law requires that taxpayers treat all such start-up expenses as

deferred expenses and amortize them over a period of no less than 60 months, much the way way a corporate entity treats organization expenses.

85% Dividend Credit: If your business is incorporated and you don't run afoul of the Personal Holding Corporation rules, you could receive a \$100 dividend from a domestic corporation and pay only \$2.10 in taxes! (\$100 less \$85=\$15 X 14%)

You can still avail yourself of this tax break but you must reduce the tax benefit if you use borrowed funds to purchase the dividend paying stock. This provision is not retroactive and applies only to stock acquired after enactment of the 1984 tax act.

Fringe Benefits: Under present law, you can give your employees certain tax-free fringe benefits, e.g., health insurance. Many fringes are not
(continued on page 18)

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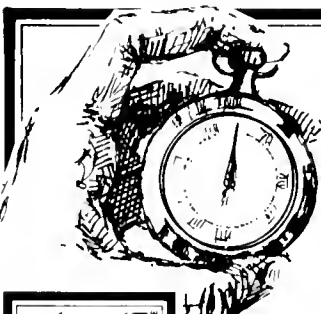
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Growers balk at red tape

By ELIZABETH CARPENTER

State government's increased regulation of agricultural water usage, dam construction and pesticide application dominated discussion by members at the late August meeting of the American Cranberry Growers Association (ACGA). Confronted by increased paperwork and the realization that many legislators may not understand the needs of cranberry farming, several growers expressed concern for the industry's ability to survive in New Jersey.

LOCATED in lightly populated south central New Jersey, the state's cranberry industry must capture voter support in the urban north. Edward Lipman, ACGA delegate to the state agricultural convention, asked: "How can we

capitalize on our (ACGA) history and good name?" Growers responded by supporting ACGA president William Haines Jr.'s recommendation that a nontechnical, illustrated booklet explaining New Jersey cranberry growing be written and made available to legislators as well as the public.

RAY SAMULIS, Burlington County agricultural agent, told growers that explaining water regulations was rather like explaining "how exciting it is to pay your income tax." However, Samulis said, state law mandates that all persons diverting surface and/or ground water for agricultural/horticultural use in excess of an average of 100,000 gallons per day during peak month must obtain a water use

certification from their county agent. He and Richard Washer, senior county agent, will gladly assist Burlington County cranberry farmers in completing required forms.

Samulis suggested growers look at this regulation from a positive standpoint.

"It may help you," he said. "It may prevent your neighbor from abusing your water rights."

Finally, Samulis cautioned growers: "Don't fool around with this. It could lead to meters."

SMALL dam regulation continues to be a source of irritation to growers. Though long exempt from such regulation based on 1913 legislation, a recent rewrite of the law reverses this position and extends dam regulations to cranberry growers. William Haines Jr.

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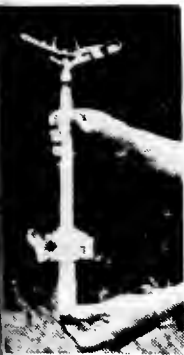
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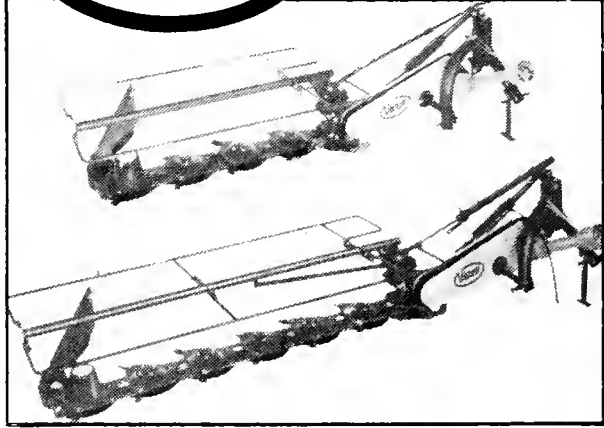
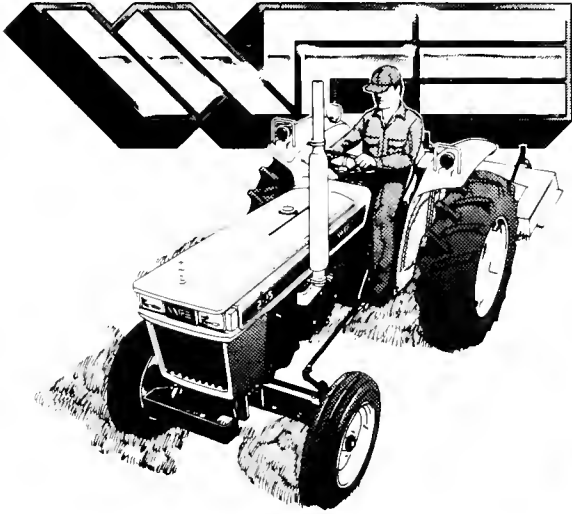


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said growers have lost ground in their attempts to regain the 1913 exemption.

LEGISLATIVE passage of S-1342, a bill expanding the scope of the state's 1971 Pesticide Control Act, may be imminent. Abbott Lee of Lee Bros. Inc. said its passage would significantly expand the regulatory powers of the N.J. Department of Environmental Protection. Among other requirements, farmers would be asked to give advance notice to adjoining landowners when aerial application is to be made and aerial application would be banned on areas of less than 10 acres.

Farm workers and environmental groups have united in their efforts to gain passage of this bill. Lee noted that "they have the ear of the press." To combat stringent legislation, Lee recommends that each grower "exercise common sense, follow his conscience and think carefully about what he is doing" when making pesticide applications.

CROP forecasts for New Jersey helped offset the gloomy legislative scene. Mike Flint, marketing analyst, N.J. Crop Reporting Service, anticipates 1984 production will increase at least 12 percent over 1983. Walter Fort, field man in New Jersey for the Cranberry Marketing Committee, added to the good news, telling growers that "there will be no set aside this year."

"Pick and snip every berry you can," he added.

PHILIP E. MARUCCI, research professor of entomology and extension specialist in cranberry and blueberry culture, reminded growers that they have come a long way from the time when cranberry vines were planted with a hand dibble. Today's high density planting, use of herbicides and intense fertilization promise future yields of 100 to 200 barrels per acre, he said.

Growers were reminded that once the bogs are established, fertilization must be reduced to avoid excessive vegetative growth. Overfertilization encourages thick vine growth at the



WATER gushes from reservoir to reservoir as Herman Wright, retired Indian Mills cranberry grower, explains the merits of his lift pump to Herb Armstrong. Growers attending the ACGA meeting watched Wright's pump in action. (CRANBERRIES photo by Elizabeth G. Carpenter)

expense of flowering, Marucci noted. In thick vine growth, he said, not only are there fewer flowers but they are less likely to be pollinated by bees.

Marucci suggested New Jersey growers increase bog sanding, a standard practice in Massachusetts and Wisconsin. Numerous benefits result from sanding, including stimulation of the new growth of uprights and roots, reduction of frost injury, help with insect control and improvement of soil aeration, the professor explained.

DR. NICHOLI VORSA of the Blueberry/Cranberry Research Center briefly spoke about cranberry fruit size and color. He observed that most newer varieties are larger than older varieties like Early Black. However, he added, newer varieties frequently have less color since the color is concentrated in the skin, the larger berries have less skin per volume of berry and, consequently, lower anthocyanin content. Economically, he explained, the higher yield of newer varieties compensates for this lack of color.

Franklin, a hybrid variety, looks as if it may have early harvest potential, its color is better than that of Ben Lear and Early Black, it has a lower incidence of rot than Early Black and it yields about 156 barrels per acre, Dr. Vorsa said. If vine vigor proves satisfactory, Franklin might be an excellent alternative to Early Black, he added.

GROWERS toured the Research Center bogs during the afternoon portion of their meeting. Here they had a chance to review progress on weed and rot control plots, examine new cranberry varieties, see Dr. William Welker's new herbicide sprayer and listen to Herman Wright, former Indian Mills cranberry grower, explain the operation of his lift pump.

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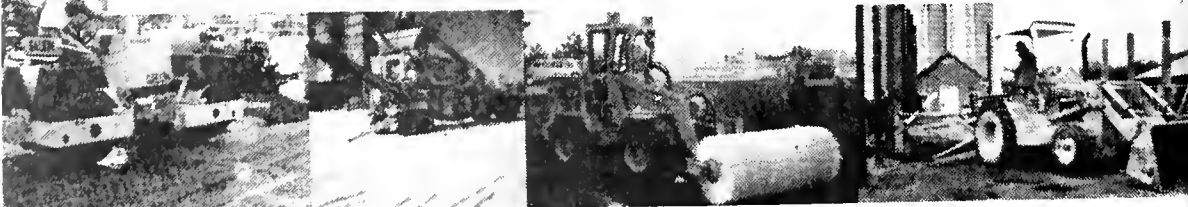
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regional news notes

Massachusetts

By IRVING DEMORANVILLE

General harvest started between Sept. 20 and 25, although some dry harvest started as early as the 10th.

Color was excellent and developed early this year, so the reason for late harvest was that water harvest is more rapid and growers are waiting for maximum color and size. Size is generally good but there are a few reports of small Early Blacks. Quality is generally on the weak side for Early Blacks, no reports on Howes yet.

Anyone who did not apply fungicides this year is probably paying for the omission now. We were only about 30 percent harvested by Oct. 1.

There were three frost warnings in September, the first on the 6th, which is the earliest in many years.

The Cranberry Experiment Station staff—Dr. Robert Devlin, Dr. Karl Deubert, Dr. Charles Brodel, Prof. Stan Norton, Sherri Roberts, Dr. Chester Cross (retired station director) and this writer—attended the 5th International Cranberry Research and Extension Workers Conference held at the Cranberry-Blueberry Research Center in Chatsworth, N.J., on Sept. 17 and 18.

Seventeen papers on various subjects plus a tour of the station and research bog were on the agenda for the 17th. On the 18th, we were given a grand tour of the Pine Barrens, several cranberry bogs and the largest grower and packer in New Jersey.

It was a wonderful experience and I enjoyed every minute of our stay. My thanks to Paul Eck, Phil Marucci, Bill Wilson and Al Stretch for their efforts in making the meeting a great success and to the Darlington, DeMarco, Lee and Haines cranberry operations and the Galetta Bros. blueberry grower-packers for allowing us to visit and interrupt their busy work schedule.

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Dr. Charles Brodel attended the Eastern Branch of the Entomological Society of America Annual Meeting in Hershey, Pa., from Sept. 25-28. Chuck presented a talk on cranberry IPM research and served as chairman of the public information committee.

The Oct. 28 issue of the Sunday New York Times carried an article in the travel section on the cranberry harvest in Massachusetts. The piece includes information on where to visit, eat and stay in Bay State cranberry country. Included with the article is an excellent photo of grower John Decas evening off the berries in a bin.

Nova Scotia

The North American Cranberry Workers meeting was held in Chatsworth, N.J., from Sept. 17-18. The first day was devoted to the presentation of reports and the second to a tour of the state and private bogs. Delegates expressed a desire to hold the next meeting in 1986 at Kentville.

Oregon

Dave Brooks, grower and member of the Ocean Spray board of directors, told the Bandon, Ore., Western World that this year's crop "looks a hair better than last year but not spectacular."

He added: "Last year was terrible, an absolute . . . well, I won't say total disaster, but it was a disaster. This year will be a mild disaster."

Washington

Azmi Shawa, horticulturist and extension agent for cranberries at the Coastal Washington Research and Extension Unit, told the Chinook Observer's Mike Johnston that cooler spring weather caused a late bloom and germination, thus the berries were smaller than usual for harvest time, although plentiful. Color was good, Shawa said.

The Cranberry Festival held in October in Ilwaco featured booths and displays, a food circus, an exhibit by the late peninsula artist in residence, Joe Knowles, tours of cranberry bogs, a fiddler's

jam session, a quilt display and many other events.



MASSACHUSETTS

September was cool and dry. We averaged 1.5 degrees a day below normal for the month, the first cool month since March. Maximum temperature was 83 degrees on the 24th and minimum 40 degrees on the 18th and 28th. The only warmer than average days were the 1st, 14th and 28th. Cooler than average days were the 3rd, 4th, 16th, 17th and 27th through 30th.

Rainfall totaled 2.61 inches or about 1 1/2 inch below normal. There were only seven days with measurable rain, with 1.33 inches on the 15th as the greatest storm. The rest of the day was dry. We are about 4-1/3 inches above normal for the year to date and about 1 inch behind 1983 for the period.

I.E.D.

NOVA SCOTIA

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giving splendid conditions for harvesting cranberries.

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DEFICIT REDUCTION ACT

(continued from page 10)
 excluded by law and Congress imposed a moratorium upon the IRS until Dec. 31, 1983. The new law adds many items not already in the law. These are: (1) services provided by the employer, provided the cost to the employer is insubstantial; (2) qualified employee discounts; (3) parking facilities; (4) subsidized eating facilities; (5) working condition fringes; (6) de minimis fringes; (7) qualified athletic facilities; (8) tuition reduction plans for educational institutions. All of the foregoing are subject to nondiscrimination rules.

The aforementioned are the major changes highlighted for the "average" taxpayer in business. There are a myriad of other changes, some rather complicated, as applied to partnerships and corporations. Still other changes are accounting rules modifications.

No doubt some of these topics will be the subject of articles through-

out the year.

CHANGES AFFECTING INDIVIDUALS

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consider changes made which have only a personal, not business aspect. Interest Exclusion: Prior tax acts provided for exclusion of a portion

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of net income for interest earned. The \$450/900 exclusion has been repealed.

Tax Benefit Items: Amounts currently recovered are excluded from income if they were previously deducted but did not produce a tax benefit. New rules clarify things so that an amount attributable to a prior year's deduction is recovered. The amount may be excluded from income only to the extent that it did not reduce income subject to tax. Applies to amount recovered after Dec. 31, 1983.

Divorces: Recent court cases have hit hard against a spouse who transferred personal residence or stocks, etc., in settlement of marital claims. Income was realized on the transfer and the spouse receiving the property got a stepped-up basis.

Now there is no recognition of gain or loss upon transfer and the spouse receiving the property uses the transferor's basis.

Alimony: A set of strict rules give rise to an alimony deduction.

Generally speaking, the treatment of alimony is unchanged but additional rules prevail. (1) No alimony deduction if payer and payee reside in same household. (2) There must be payment for at least six years. (3) The payer must give IRS name and social security number of payee.

Dependency Exemption for Children: Custodial parent will generally get the exemption, unless

waived by a declaration. Medical expenses can be claimed by either parent when payments are made for children.

Capital Gains and Losses: The holding period for past years has been one year to get long-term capital gain treatment. (Advantageous as 60 percent of LT gain is eliminated from income.) For assets acquired after June 22, 1984 and before Jan. 1, 1988, the holding period is reduced to six months for capital gain treatment.

Contributions: Use your car to benefit a qualified charitable organization? You can deduct actual expenses incurred or use standard mileage rate of 9 cents per mile for 1984 and 12 cents per mile for years 1985 and thereafter.

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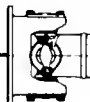
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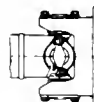
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the photo above is brimming over with goodies that can be purchased in any store that features specialty foods.

In the foreground can be seen delectables that you can whip up in just a few minutes. The tall bottle holds cranberry honey vinegar for use in fruit salad, salad dressings, glazes for poultry and sauces for meat. Cranberry "honey" in the old fashioned jar makes a delicious topping for muffins, waffles, even ice cream. Try your hand at making one of the popular flavored mustards. Cranberry mustard in the bow tied jar is easy to make and a great flavor booster for ham and pork.

CRANBERRY HONEY VINEGAR

1 cup fresh or frozen cranberries
 1/2 cups white wine vinegar
 1 cup honey

In a medium saucepan, heat cranberries and vinegar to boiling, stirring occasionally. The cranberries should just begin to pop. Remove from heat; stir in honey. Pour vinegar and spoon berries into a one quart bottle. Seal. Cool. Use vinegar in recipes for fruit salad dressing, glazes for duckling, sauces for pork or ham. Makes about one quart.

Cranberry Vinegar: Prepare as above but omit honey. Strain vinegar and discard cooked berries. Pour vinegar into two pint size bottles. Spear fresh berries on two bamboo skewers to fit inside the bottles. Insert a few of cranberries in each bottle; seal; cool.

CRANBERRY MUSTARD

1/2 cup dry mustard
 1/2 tablespoon sugar
 1/2 teaspoon salt
 1/3 cup cranberry juice cocktail
 1/2 teaspoon white wine or cider vinegar
 1 egg yolks

In a small, heavy saucepan with wire whisk, combine mustard, sugar and salt. Stir in cranberry juice cocktail and vinegar until smooth. Beat in egg yolks. Cook over low heat, stirring constantly

with whisk, until slightly thickened, about 5 minutes. Do not allow mustard to boil. Pour into a small jar; cover. Store in the refrigerator for up to one (please turn page)

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month. Makes about one cup.

CRANBERRY "HONEY"

4 cups cranberry juice cocktail
or cranberry apple drink
3 cups sugar
½ teaspoon orange extract

In a 4-quart saucepan, combine cranberry juice cocktail or cranberry apple drink and sugar. Heat to boiling over medium heat, stirring until sugar dissolves. Cook to the firm ball stage (244 degrees F). Remove from heat. Stir in orange extract. Ladle into two hot, sterilized half pint jars. Seal. Makes about two half pints.

FRESH

CRANBERRY TREE

By BARBARA O'CONNOR

NEED: Styrofoam tree shape, sewing pins, holly leaves and fresh cranberries. Can of spray varnish.

HOW TO: Working from bottom towards top, attach holly leaves and cranberries with pins. Give a light coating with spray varnish to help "preserve" berries during Holidays.

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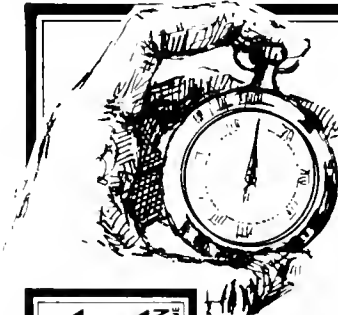
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OBITUARY

RAYMOND SMITH

Military graveside services were held recently at the IOOF Cemetery in Bandon, Ore., for Raymond H. Smith, who died in Bandon Oct. 1 at the age of 65.

Smith, a retired lumber grader for Moore Mill, also grew cranberries. Born in Ofallon, Ill., Smith was an Army veteran of World War II.

He is survived by his wife, Kathleen, and son, Charles, both of Bandon, and two brothers, Ordel and Clarence, both of Ofallon.

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Warrens fete . . . 3
Cave era bogs . . . 11



ONE OF 150 units in the grand parade that was part of the Warrens, Wisc., Cranberry Festival. The crowd in attendance was estimated at over 30,000. (Photo by the Tomah, Wisc., Journal)



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In Wisconsin

Cranberries on parade

By FREDERICK POSS

Eyes right! Forward march!
Time for the annual Warrens,
Wisconsin, Cranberry Festival!

This autumn celebration in
the Indianhead region of west
central Wisconsin joins together
cranberry growers and consumers
for some real fun.

With all the festivity folks of
the north country can muster
for one weekend in the fall, the
tiny village of Warrens develops
symptoms of Disneyland in the
peak season. Parades, tours,
contests, displays—not to mention
people of all shapes and sizes—
salute the cranberry harvest.

And 1984 was an especially
gala occasion. The Wisconsin
Agriculture Reporting Service
estimated the 1984 crop to be

about 1.2 million barrels, a
harvest equal to the record
production of 1982.

SINCE last year's crop
enabled Wisconsin to maintain
its position as the nation's
number two producer of the
bright red, bouncy berries,
it was only natural to assemble
a festival whose yield in
excitement was second to none.

Kicking off preparations for



COVER PHOTO

THESE pumpkin faces greeted
visitors to the annual Warrens,
Wisc., Cranberry Festival. The
story on the festival begins on
this page. (CRANBERRIES
photo by Karen Mittag)

the merrymaking, the Tomah
Area School District, which
includes Warrens in its
boundaries, instituted a week of
menus featuring a delectable
selection of cranberry products
for school lunch.

Each school day of the week
prior to the Warrens Festival,
food preparers in the school
kitchens sorted, chopped and
pared cranberries into a variety
of tasty offerings. Monday's
lunch treat, for example,
spotlighted sparkling cranberry
juice as beverage of the day.

From berries fresh from the
local marsh of David Rezin, on
Tuesday students enjoyed a
zesty cranberry sauce with the
regular school lunch. Wednesday
featured a white lunch cake
decorated with a savory cran-
berry frosting. Thursday: a

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A flute maker and tons of produce were features at the Warrens, Wisc., cranberry celebration.

(CRANBERRIES photos by Karen Mittag)



Please turn to page 6 for rest of story and another photo.

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editorial



Agriculture in the classroom

Mmmmm. Seems like a good idea. The Agriculture in the Classroom project being conducted in Massachusetts public schools, that is.

Although most of the youngsters won't grow up to be farmers, the intent of the program is to acquaint them with agriculture, this most important aspect of their present and future lives.

The Massachusetts Farm Bureau Federation reports that both teachers and pupils are enthusiastic about the program.

A total of \$50,000 is needed to support the project for three years. The state of Massachusetts has pledged to add matching funds if the farming community demonstrates its support. Donations and requests for information can be sent to: Agriculture in the Classroom, c/o Massachusetts Farm Bureau, P.O. Box K, 15 Great Road, Bedford MA 01730. The phone number is (617) 275-4374.



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pungent and piquant cranberry bread complemented baked ham. And, of course, Friday had to conclude the week's menus with a snappy, traditional favorite for autumn meals: cranberry relish.

THE 1984 Cranberry Festival still was not entirely official, however, until Friday night, Oct. 4. Then, while a local schoolgirl, Kristi Jo Feddersen, was crowned Queen of the Fest, a spectacular reception direct from Mother Nature—in the form of a colorful leaf turning—invited everyone to join in the frolic.

Unfortunately, the scarlet and russet maple leaves, so warm and bright on Friday, were dripping from off-and-on showers when Saturday morning arrived.

Northern folks bent on having fun, however, are made of pretty sturdy stuff. That was evident when over 30,000 people jammed into a village normally populated by a few hundred. And a marvelous cornucopia of excitement greeted them . . . cranberries truly went on parade!

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like scattering milkweed seeds, tourists floated in and out of art and craft displays, a farmer's market, an antique and flea market, and, of course, a beer tent.

Like bold sorghum shoots in proud October finery, a variety of ethnic foods challenged taste buds. Scrumptious delicacies

like fried cheese curds, hot lamb sandwiches, funnel cakes, Indian fry bread, barbecued chicken and fresh cranberry pastries satisfied adventurous appetites.

Cranberry handiwork pleased visitors with visual treats in china and homemade quilts with berry patterns fashioned by artisans' hands.

Contests, too, called out for attention. Saturday, Oct. 6, a vegetable contest accepted entries at 9 a.m., an adult art contest began at 10 a.m. and a plant and flower contest started at 11 a.m.

Musical entertainment showcased The Limeys at the Fire Department Dance Saturday night. A Gospel Variety Hour the same night and a Sunday morning gospel sing by the Mid Iowa Men of Song helped keep everyone smiling despite the occasional rain.

ABOVE the noise, music and competitions, helicopter rides gave brave individuals a great panoramic glimpse of the western Wisconsin bog country which produced the tart, tangy fruit everyone had come to salute.

A slower paced bus tour also provided visitors a wonderful chance to take in the production process. Tour takers who stepped aboard in Warrens were shown Felton Mfg. Co., where harvesting machinery is produced. The Gebhardt and Jensen marshes down the road offered a closeup view of grass machines and winter sanding. The John Rezin marsh demonstrated water control equipment, such as bulkheads and sprinkler systems.

Next on the tour came the Wetherby marsh operated by Jim and Nodji Van Wychen. Harvesting was underway there and cranberries

were being gently picked for use as a fresh fruit crop.

The new Ocean Spray receiving station was an intriguing sight, too. The plant is so new that only test loads of berries from newly dug pools were shuttled up long conveyors for practice processing.

And if the sights and sounds hadn't bedazzled anyone yet, the bus riders found more visual treats on the way home. Signs of the seasonal change were written in a bold and beautiful scroll across the roadside white gold beds of marsh grasses. Old school and abandoned community buildings, too, revealed the warp and rough use a Wisconsin winter can etch across their stone faces.

THE CONCLUDING and crowning glory of the fete, however, was the parade itself. Sunday's weather was more accommodating and a record 150 units marched through town in a snappy and upbeat processional.

High school bands, drill corps, commercial and amateur floats, and plenty of veterans organizations all combined to delight parade watchers, young and old alike.

Even before the last parade group trooped past the last cluster of viewers a quick tally showed that not just attendance records had been set. Something like 436 pancake breakfasts had been served up Sunday morning, eclipsing the 306 meals flipped on church griddles Saturday. Another record, too, was the 350 odd booths set up to display crafts, antiques and artistic handiwork.

In fact, looking at the entire week of fun and festivities, it would be impossible to calculate the tremendous promotional opportunities the celebration provided the state's cranberry growers and processors. The entire agricultural sector of the Wisconsin economy, in fact, profited from the pageant.

The 1984 Warrens, Wisconsin Cranberry Festival—it was the 12th annual—was the berry best, all puns aside. Next year why not come and see for yourself?

PREPARING cranberries for the school lunch menu prior to the Warrens, Wisc., Cranberry Festival are JoAnn Litfin and Emily Zellmer. (Photo by the Tomah, Wisc., Journal)



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CAPE COD GROWERS REPORT MEMBER HIKE

The Cape Cod Cranberry Growers Association has increased its membership by 103, reports George Andruk, CCCGA president.

Associate and sustaining members increased by 25.

THE CCCGA committee to develop guidelines for the proper air application of agricultural compounds has completed its report and a copy has been sent to all members.

"Insist your air applicator comply with (the guidelines)," states president Andruk.

"Compliance with this guide will save you expense and will identify you as a responsible user of agricultural chemicals."

Member Clark Griffith reports that his committee has made progress toward the obtaining of a general permit from the Army Corps of Engineers.

Land adjacent to the Cranberry Experiment Station has been

converted into a parking area for 120 vehicles. The CCGA directors have voted to convey the land to the station.

The following funds were voted to support research at the station: \$639, IPM program, for traps and bait to be used in girdler and Sparganthis program; \$2,300, Dr. Robert Devlin, toward cost of a summer research assistant to work on weed control programs; \$1,900, Dr. Charles Brodel, to assist his program on developing control measures on cranberry root grub and white grubs that are beginning to infest some bogs; \$6,500, Dr. Brodel, Sparganthis research program; \$1,400, purchase of new sprayer. Also voted was \$2,000 to Dr. Donald Boone of Wisconsin to study the increasingly prevalent vine die back problem.

With respect to that problem, Andruk reports, the CCCGA has received good news. An extension plant pathologist expected to be hired by the University of Massachusetts will concentrate on developing control measures to rectify vine die back and epidemic field rot, according to Dr. Bruce

MacDougall, dean of the college of food and natural resources.

"These problems are intensifying," Andruk says. "If these infections spread, some growers will be faced with financial disaster."

Less welcome news by Dean MacDougall was that three vacant positions at the experiment station will not be filled due to budgetary limitations.

Calling the annual meeting "a smashing success," Andruk added: "Our secretary/treasurer and head of the station, Irving E. Demoranville, and his staff put it all together. Our thanks to you, Dee."

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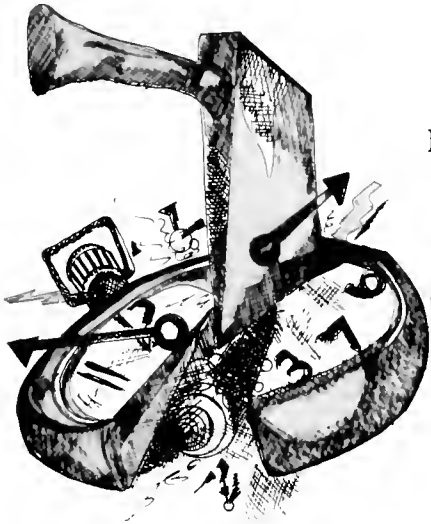
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- 3 SYSTEM FLEXIBILITY** Easy Modification for Growth—Motorola's trunked radio gives you the capability to expand or modify your fleet and subfleet structure as your needs change. Easy, inexpensive modifications can be made simply by exchanging a code plug. This code plug holds all fleet and subfleet identities. It enables you to add new units to your fleet, divide your fleet into new subfleets, or add a new fleet. If the number of frequencies in the fixed equipment of your trunked radio system increases, additional frequencies are automatically incorporated into your mobile, without returning radios to the service shop.

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CAPE COD GROWERS REPORT MEMBER HIKE

The Cape Cod Cranberry Growers Association has increased its membership by 103, reports George Andruk, CCCGA president.

Associate and sustaining members increased by 25.

THE CCCGA committee to develop guidelines for the proper air application of agricultural compounds has completed its report and a copy has been sent to all members.

"Insist your air applicator comply with (the guidelines)," states president Andruk.

"Compliance with this guide will save you expense and will identify you as a responsible user of agricultural chemicals."

Member Clark Griffith reports that his committee has made progress toward the obtaining of a general permit from the Army Corps of Engineers.

Land adjacent to the Cranberry Experiment Station has been

converted into a parking area for 120 vehicles. The CCGA directors have voted to convey the land to the station.

The following funds were voted to support research at the station: \$639, IPM program, for traps and bait to be used in girdler and Sparganthis program; \$2,300, Dr. Robert Devlin, toward cost of a summer research assistant to work on weed control programs; \$1,900, Dr. Charles Brodel, to assist his program on developing control measures on cranberry root grub and white grubs that are beginning to infest some bogs; \$6,500, Dr. Brodel, Sparganthis research program; \$1,400, purchase of new sprayer. Also voted was \$2,000 to Dr. Donald Boone of Wisconsin to study the increasingly prevalent vine die back problem.

With respect to that problem, Andruk reports, the CCCGA has received good news. An extension plant pathologist expected to be hired by the University of Massachusetts will concentrate on developing control measures to rectify vine die back and epidemic field rot, according to Dr. Bruce

MacDougall, dean of the college of food and natural resources.

"These problems are intensifying," Andruk says. "If these infections spread, some growers will be faced with financial disaster."

Less welcome news by Dean MacDougall was that three vacant positions at the experiment station will not be filled due to budgetary limitations.

Calling the annual meeting "a smashing success," Andruk added: "Our secretary/treasurer and head of the station, Irving E. Demoranville, and his staff put it all together. Our thanks to you, Dee."

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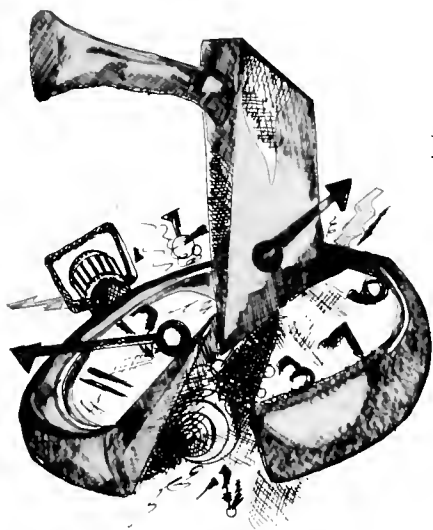
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A fanciful tale

Early, early, early, early history of cranberry cultivation

By STEVE HALL

Eons before the first colonists even saw their first cranberry and untold years before the Indians picked them in the wild, Cape Cod cave dwellers used our friend, the cranberry, in many fascinating ways. Most importantly, the berries' juice, prized for its brilliant redness, was used in paintings on the caves' walls. Though we appreciate the art work today, this wasn't always

the case. Take, for example, this conversation between mother and cave dwelling son:

"Goodness, Jeff! I told you not to put cranberry paintings all over the walls! After a hard day of hand-picking them, it's the last thing I need to look at!"

"Sorry Mom, I'll fix it."

"Please do. Now I must leave you alone while I go bring back the last half basket from my day's work. So be good. I'm

leaving you in charge of the others 'til I return. Okay?"

The mother returned one hour later, only to find the baskets of berries entirely empty.

"What did you do with them, Jeff?" the mother cried out.

"I painted all the walls red, so you wouldn't have to look at my cave art. Used two barrels more from out back, too. Mom, why are you lying on the floor like that? Do you like what I

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did so much that you passed out?"

Jeff's parents tried everything in the book to get their boy to stop painting on walls. They treated him more kindly. Then, they got tough with Jeffrey. Nothing worked.

"It's no use, Gloria," her husband, Alex, told her. "The boy is a free spirit, an artist, a creative soul. There's only one sensible thing for us to do and that's cultivate the berries, so we'll all have enough."

"Cultivate? What's that?"

"It's a word I just made up."

"What does it mean?"

"Well, with cranberries, it means you have to build a bog, bring in sand, plant cuttings, and develop an irrigation system."

"Bogs, cuttings, irrigation? What do THOSE words mean?"

"I don't know yet. I have to invent them. Nice sounding



STEVE HALL claims that the map above is an exact depiction of the world's first (and largest) cranberry bog.

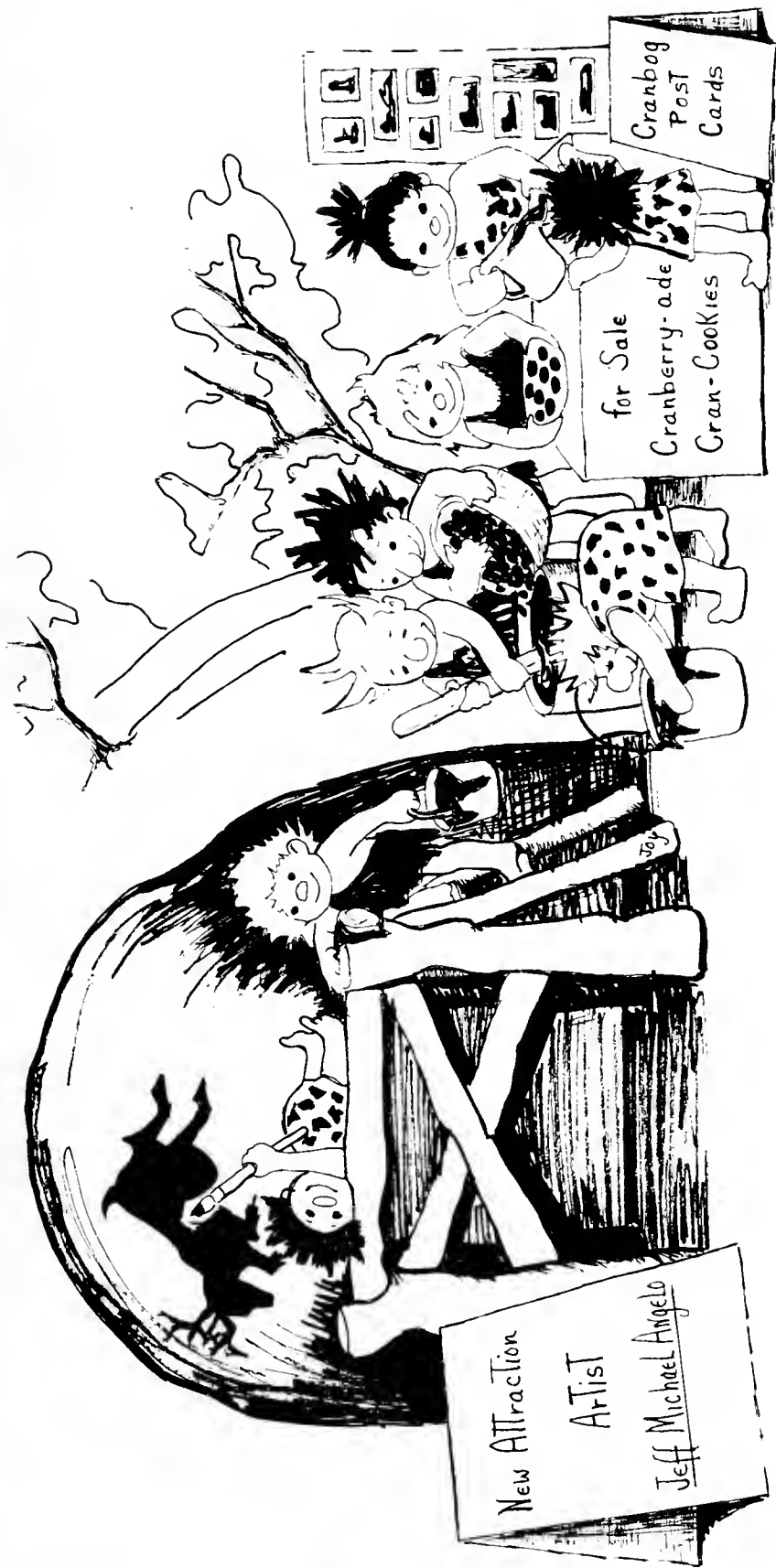
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SELF-APPOINTED historian Steve Hall writes, tongue-in-cheek, that the cranberry first was cultivated in prehistoric times—on Cape Cod.

words, though, aren't they? Oh, by the way, this means YOU'LL have to invent the cranberry scoop."

"Thanks a lot, Alex."

"Don't mention it."

That fall and winter, Alex invented the entire complex cultivation system required to grow the enormous amounts of cranberries his son, Jeff, needed to paint with and that Gloria needed to cook with. He planted that spring. During the summer he watered the plants carefully by flooding the bogs as needed. Well, he didn't actually FLOOD them in the summer. But he liked to use the word, even though he was only watering them. Since drought hadn't been invented yet, he really only had to water them once all summer. But, still, he loved to use that word, FLOOD.

That fall the harvest was tremendous. Cave people who summered on the Cape didn't go home. They stayed to watch the intriguing operation.

"What's THAT?" one of them asked Gloria.

"A cranberry scoop," she told the cave gentleman, showing him the large, hand-carved tool.

"It's the ugliest thing I ever saw," he said.

But he was *thinking* differently. He happened to be the owner of a furniture outlet. He recognized their magazine rack potential immediately. Returning to his native New York City, he began to crank them out. That Christmas they were all the rage. Everyone bought one. Except Gloria, who already had one. Magazine subscriptions, by the way, soared!

Other summer tourists from California and the Midwest saw the inherent value in crop cultivation. They went back home and cultivated corn, soybeans,

grapes, etc. These other farmers said they were the first to cultivate. Poor Alex! He never received one word of credit.

Not to worry though, for true happiness had come to the family. The bountiful harvests provided Jeff with billions of berries. He painted his heart out and today his art is praised by the most eminent art historians.

The inventiveness of Jeff's mother (the cranberry scoop, remember?) saved her time so that she could do other things. She invented the camera, took pictures of the bogs in full bloom and sold them as postcards to the summer people. Poor Gloria, baloney! She made a *bundle*. With her earnings, she

transformed a row of caves on the side of a hill into the world's first motel.

And Alex? How did he make out? Fine. He delighted in the happiness of his family. No fool himself, he labored hard hard hard, eventually turning all of Cape Cod into one big cranberry bog. Alex also invented hybrids, such as the cranapple and the cranorange. He also dug a huge drainage ditch he called the Cape Cod Canal.

Yes! The little red cranberry is responsible for many major developments in the history of agriculture. Thank you Alex, Gloria and Jeff. We owe it all to you!

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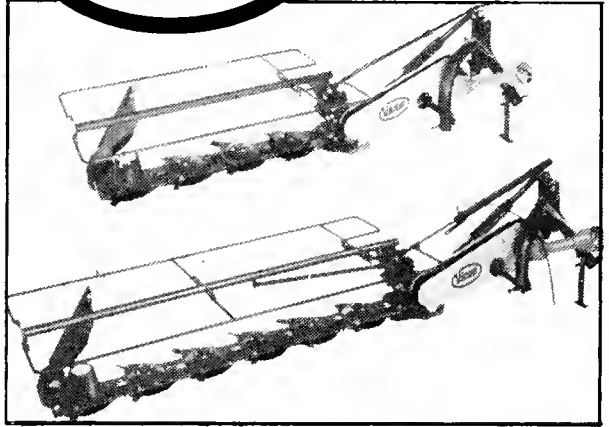
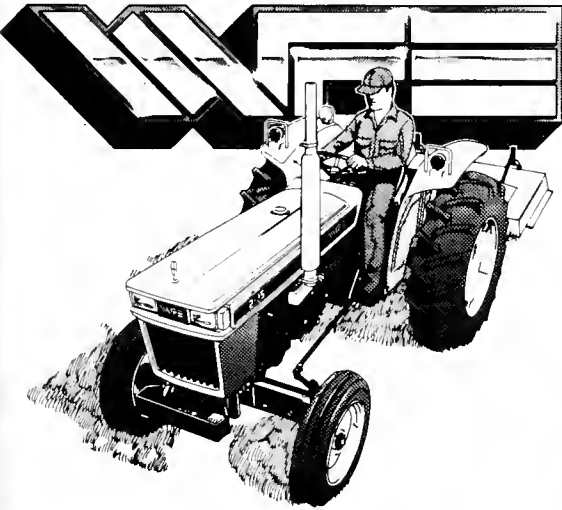
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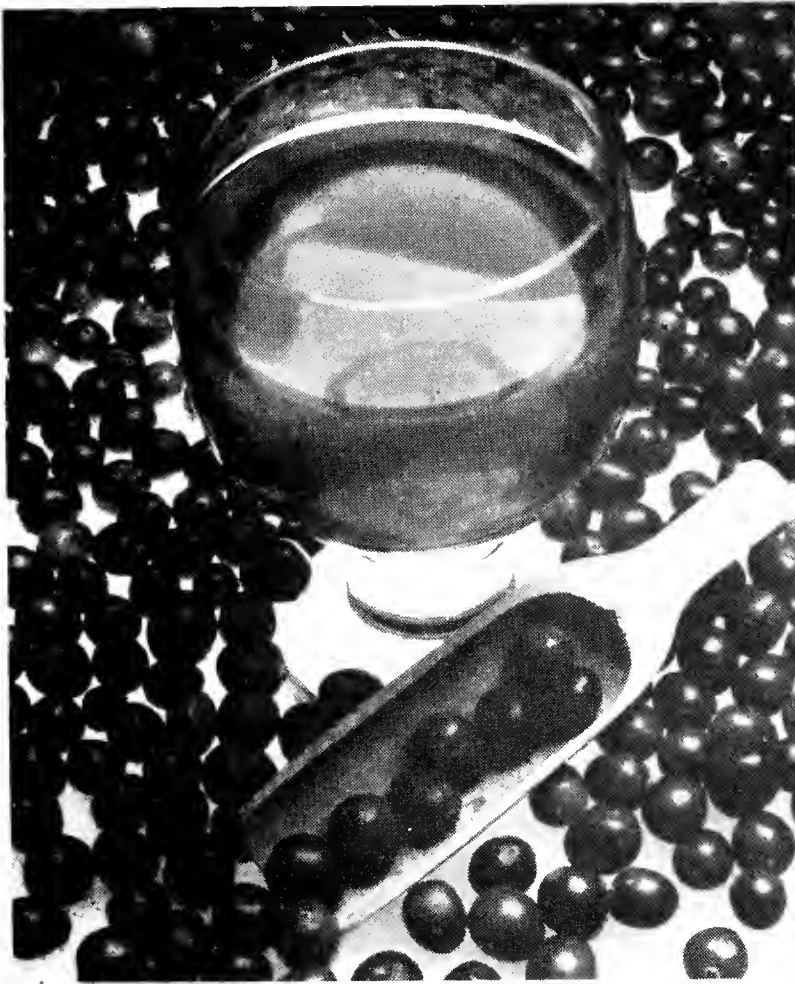
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the greatest storm. We are just over 5 inches above normal for the year and about 1 inch behind 1983.

There were a total of 10 frost warnings issued on seven days during the frost season. The first warning was on Sept. 6, the earliest since 1970. The coldest nights occurred on Oct. 5 and 6, with bog temperatures ranging from 10 to 16 degrees on the 5th and 15-19 degrees on the 6th. Even with the early frost nights, this was a relatively mild fall season. For comparison, we issued 13 warnings in 1983, 17 in 1982, 20 in 1981 and 28 in 1980.

I.E.D.

NOVA SCOTIA

We were blessed with exceptionally good weather during the harvest season. We had three or four minor frosts but nothing which would affect next year's crop.

I.V.H.

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weather watch

MASSACHUSETTS

October temperature averaged 1.5 degrees a day above normal, making it the warmest October since 1971. Maximum temperature was 76 degrees on the 20th and minimum 30 degrees on the 7th. Warmer than average periods occurred on the 11th-12th, 20th-22nd and 29th. Cooler than average days were the 2nd, 6th, 14th, 26th and 27th.

Rainfall totaled 4.27 inches, 7/8 above normal. There was measurable precipitation on eight days, with 2.26 inches on the 2nd as

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ANNE M. Maraz has been named executive director of the National Association for the Specialty Food Trade. She is former vice president of J. Walter Thompson advertising agency.

regional
news
notes

Massachusetts

By IRVING DEMORANVILLE

Dr. Robert Devlin of the Massachusetts Cranberry Experiment Station attended the New England Agricultural Chemicals Association annual meeting in Chicopee, Mass., Oct. 8-10. Bob participated in a symposium on groundwater contamination and off-target drift. Dr. Charles Brodel attended the Northeastern Regional IR-4 meeting in Narragansett, R.I., Oct. 9-10. Dick represented the Massachusetts Agricultural Experiment Station. Dr. Karl Deubert traveled to Tillamook, Ore., to meet with utility representatives relative to the use of herbicides on utility rights-of-way. The meeting was held Oct. 21-23.

Dr. Devlin attended the Agway and Control Round Table in Albany, N.Y. from Oct. 24-26.

The harvest was over 90 percent

completed at the time of this writing and it would appear that the Massachusetts crop will exceed the August estimate by at least 5 percent. Probably there'll be a total of

1,550,000 barrels, maybe even 1.6 million. Size was generally good and color excellent right from the start. Quality was generally on the weak side.

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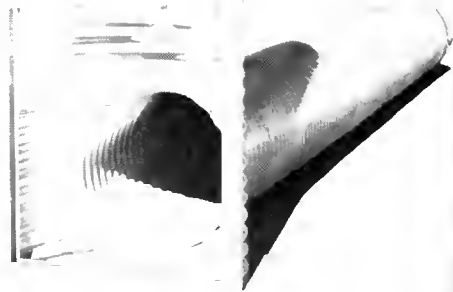
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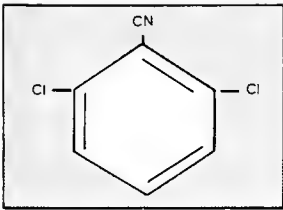
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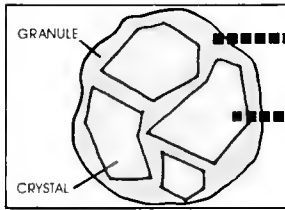
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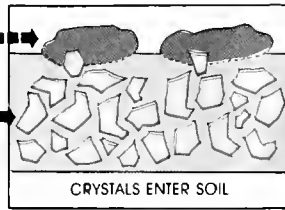
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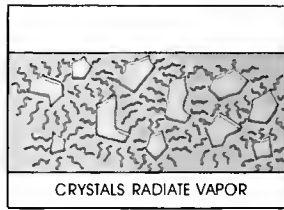
1 Norosac is 2,6-dichlorobenzonitrile, commonly known as Dichlobenil. This unique herbicide goes directly to a vapor stage without going through a liquid stage. It is activated by temperature and soil moisture.



2 This remarkable herbicidal compound of razor-thin crystals is uniquely processed by PBI/Gordon to make a precise granule



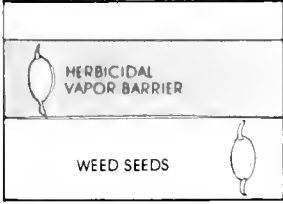
CRYSTALS ENTER SOIL



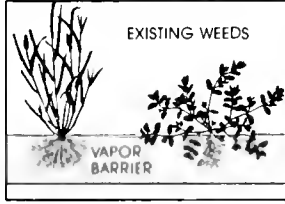
CRYSTALS RADIATE VAPOR

3. Granules are spread on soil or shallow water. Moisture carries the Norosac crystals into the upper layer of soil. Because of adsorption by soil particles, lateral movement is minimal

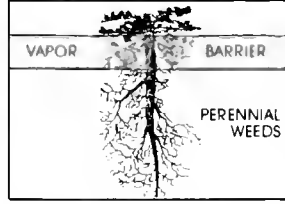
4 Temperature and soil moisture activate the Norosac crystals and they begin to radiate a herbicidal barrier. This continues for an entire growing season, and the spent crystals disappear, leaving no residue.



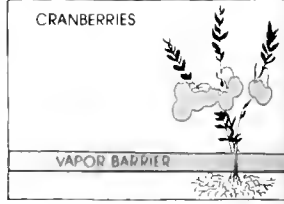
5 In this vapor barrier no plant cell division can occur. Seeds trying to germinate in the barrier will die. Sprouts below this zone will be killed as they try to penetrate the barrier.



6 Existing vegetation such as shallow-rooted grasses and annual weeds having root structures in this barrier will likewise be affected and die after two to three weeks



7 Certain perennial weeds coming out of dormancy and attempting new growth within the Norosac barrier will run into the same dead end they will be killed by the vapor.



8 Norosac, when used as directed, does not affect cranberry bushes that have deep roots extending well below the herbicidal vapor zone.

How Norosac Reduces the Cost of Weed Control in Cranberries

Its vapor barrier not only gives season-long control of toughest weeds, but can be applied anytime between late fall and the popcorn stage.

are dry or under water. And it can be applied anytime that suits you between late fall and popcorn.

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Norosac Dichlobenil Herbicide can make a significant contribution to the efficiency of producing cranberries, and you owe it to yourself to try it on at least part of your crop.

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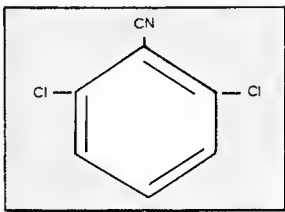
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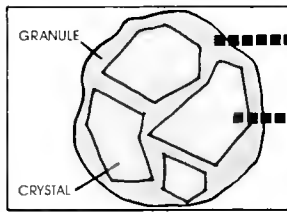
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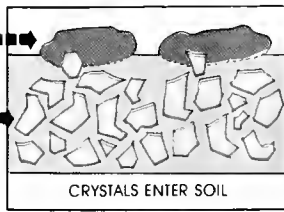
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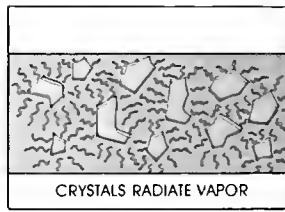


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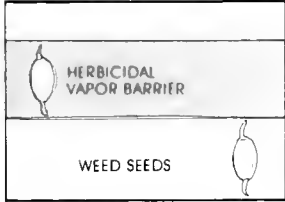
CRYSTALS ENTER SOIL

3. Granules are spread on soil or shallow water. Moisture carries the Norosac crystals into the upper layer of soil. Because of adsorption by soil particles, lateral movement is minimal.

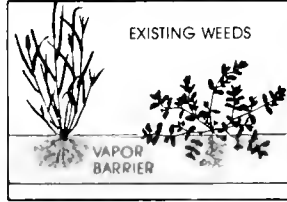


CRYSTALS RADIATE VAPOR

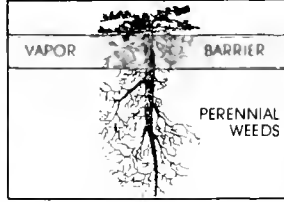
4. Temperature and soil moisture activate the Norosac crystals and they begin to radiate a herbicidal barrier. This continues for an entire growing season, and the spent crystals disappear, leaving no residue.



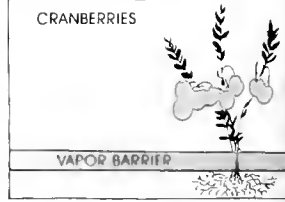
5. In this vapor barrier no plant cell division can occur. Seeds trying to germinate in the barrier will die. Sprouts below this zone will be killed as they try to penetrate the barrier.



6. Existing vegetation such as shallow-rooted grasses and annual weeds having root structures in this barrier will likewise be affected and die after two to three weeks.



7. Certain perennial weeds coming out of dormancy and attempting new growth within the Norosac barrier will run into the same 'dead end' they will be killed by the vapor.



8. Norosac, when used as directed, does not affect cranberry bushes that have deep roots extending well below the herbicidal vapor zone.

How Norosac Reduces the Cost of Weed Control in Cranberries

Its vapor barrier not only gives season-long control of toughest weeds, but can be applied anytime between late fall and the popcorn stage.

are dry or under water. And it can be applied anytime that suits you between late fall and popcorn.

Shouldn't you try Norosac?

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The graphs above clearly demonstrate why Norosac is as efficient as any herbicide that has ever been offered to the Cranberry grower. We urge you to study it carefully.

Norosac provides season-long control of more than 40 tough weeds and grasses including ferns, rushes and sedges.

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STATE, TOWN, COUNTY PRESERVE FARMLAND

In an unprecedented cooperative effort among county, local and state governments, 608 acres of prime farmland in the heart of Burlington County's breadbasket will be spared the developer's shovel, according to the reholder Director Henry W. Metzger.

Last fall, Burlington County—which embraces cranberry country in New Jersey—took title to the controversial Chesterfield Commons tract that was soon to become a 1046 unit housing development in the center of rural Chesterfield. The county purchase is the first in the state to qualify for state funding under New Jersey's Farmland Easement Program.

The purchase price for the tract of prime farmland was \$1.95 million with the county paying \$1.6 million and Chesterfield Township \$350,000, Metzger said.

However, under a new State Farmland Preservation Program providing matching funds for preservation easement purchases, Burlington County is eligible to recover half the cost associated with keeping the land undeveloped.

Freeholder Robert C. Shinn, who spearheaded the County's Farmland Preservation Program, said that when the purchase is final, the county will place a perpetual easement on the parcel which will restrict the use of land to farming.

He said the county will then place the land with the agricultural easement on the auction block to recover a substantial portion of the sale price. That money plus the funds received from the state will be returned to the county's Farmland Preservation Program for future purchases.

The goal of such farmland purchases is to maintain a meaningful use of open productive land, insure the viability of production agriculture and channel growth to more appropriate areas of the county.

"It's a common sense approach," says Shinn. "You don't build houses on your most productive farmland. In Burlington County there is plenty of

room to grow without depleting a valuable land resource, not to mention paving over a cultural heritage."

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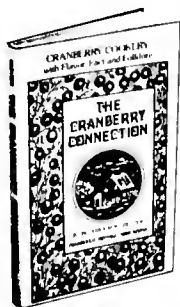
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ON THIS and the next page are photos by Kirby Gilmore of exhibits at this year's annual meeting of the Cape Cod Cranberry Growers Association.

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Principles of fungus control

By AZMI Y. SHAWA

The primary interest of a cranberry grower is to control troublesome fungus diseases. There are three main principles of fungus disease control: 1. exclusion; 2. eradication; 3. protection.

Exclusion simply involves regulatory measures or attempts to keep a disease organism out of an area where it does not presently occur. Exclusion measures involve quarantines and inspections. The idea is to keep the disease from getting into new areas. For the last few years, several growers have been importing vines from other states for planting new bogs. The imported vines may carry with them serious diseases to the Pacific Northwest cranberry bogs. There are several unknown blights that can be transmitted. Recently a new cranberry canker disease was identified that has no presently used fungicide that can control it. It is essential to order vines from a disease free bog, inspected by a competent person.

Eradication eliminates or removes a disease organism from an area in the bog where it had limited distribution. The first method is sanitation, used to reduce the number of disease causing organisms which may concentrate on weeds. Sanitation is achieved by destroying weeds growing in or surrounding your bog.

The second eradication method is chemical treatment. Chemicals are directed against the organisms as they

are exposed on the surface of plant tissue. Fungicides destroy microorganisms on vine tissue surface.

Protection is the most important fungus disease control method. In protection, a protective barrier is placed between the causal fungus spore and cranberry tissue. This is achieved by spraying fungicides according to a spray program. Such a program can be started after harvest by applying a dormant fungicide spray, such as liquid lime sulfur or polysol at a rate of 6 gallons per 100 gallons water (18 gal/A). Do not apply any dormant spray prior to predicted frosty night.

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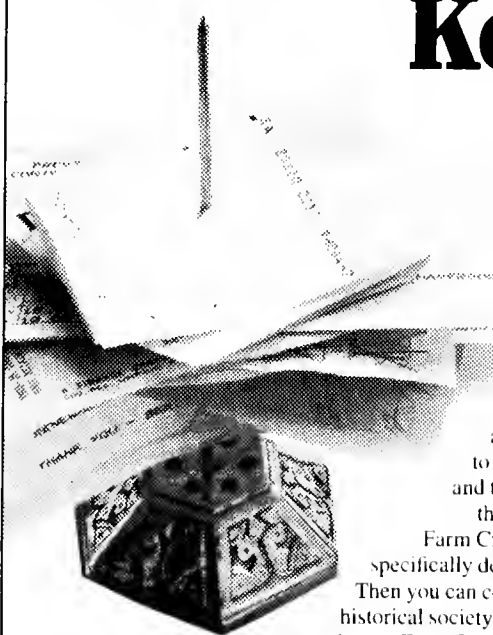
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repaid with interest at the end of the term. A \$1,000 loan for one year at 6 percent interest is repaid in full, \$1,060, at the end of the 12 month period.

There is a variation to this type of loan in which the bank deducts the interest in advance or renews the loan quarterly. Both of these methods represent a slight increase in the straight "true interest" rate.

You can also borrow on your personally owned or business owned vehicles. Usually, you'll get a lower rate on auto or truck loans but because they are installment loans and must be repaid monthly, the true interest rate is almost double the discount rate quoted.

Or you can hypothecate securities owned individually or in your firm's name. Most banks will lend up to 70 percent of the market value of listed securities, some over-the-counter stocks and most mutual fund shares. In most states, there are usury laws setting forth maximum rates that can be charged on loans, but most states allow higher rates than the usual maximum in a situation where loans are secured by the pledge of securities.

FACTORING: The pledging of a firm's accounts receivables is a relatively simple way to get liquidity, but the method is costly and only those firms with a high gross margin can ever consider factoring of accounts receivable.

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Factoring can be obtained on a notification basis—where customers pay directly to the factor—or non-notification basis—where customers remit to you and you in turn give the checks over to the factor, who endorses them in code (with prior arrangement with bank) and deposits to his account.

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PASSBOOK LOANS: Some people cannot understand why a person would borrow his or her own money from a savings bank and pay for the privilege. People do this for the same reason as those who open noninterest bearing Christmas Club accounts—they want a form of compulsion to repay themselves.

It is relatively simple to borrow on a savings passbook, leaving it in the custody of the bank during the term of the loan. Deposits can be made, even withdrawals as long as the balance remaining is in excess of the loan balance. You pay a higher interest rate than the amount received as interest from the bank but the cost is cut because of the tax advantage.

This type of loan is repayable periodically or in a lump sum, at your option.

HOME MORTGAGE

REFINANCING: Homes purchased years ago have a considerable amount of equity, due to mortgage payments having been made and to the inflationary trend that has boosted land and building values during the past three decades.

Mortgage money is tightening up. But if you shop around and ask savings banks, state and federal savings and loan associations, commercial banks, insurance companies, etc., you'll perhaps find one with available funds and anxious to refinance your existing first mortgage.

This method of obtaining cash for your business is costly. The new mortgage will be at the present interest rates (probably much higher than your original rate) and you'll be paying that rate on the balance owed on the original first mortgage.

FINANCE COMPANIES: If you can't borrow from your bank or other source, you can seek financial assistance from finance companies or commercial factors. They will lend you money on the equity represented by your fixtures and equipment. Loans from these sources are extremely costly and should only be considered as a last resort.

SMALL BUSINESS ADMINISTRATION: There are three types of loans available from the SBA. The first of these is the direct loan covering the situation where the applicant must have tried, without success, to obtain financing from banks or lending institutions at reasonable rates. Direct loans are made by the SBA up to a ceiling of \$100,000. A second type of loan is

the guaranty loan, one wherein the SBA will guarantee up to 90 percent of the loan, with a ceiling of \$350,000. The third type of SBA loan is the participation loan in which the lending institution furnishes 25 percent or more of the loan amount, with the SBA furnishing the balance.

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Arabian Gulf . . . 3

Computer list . . 8

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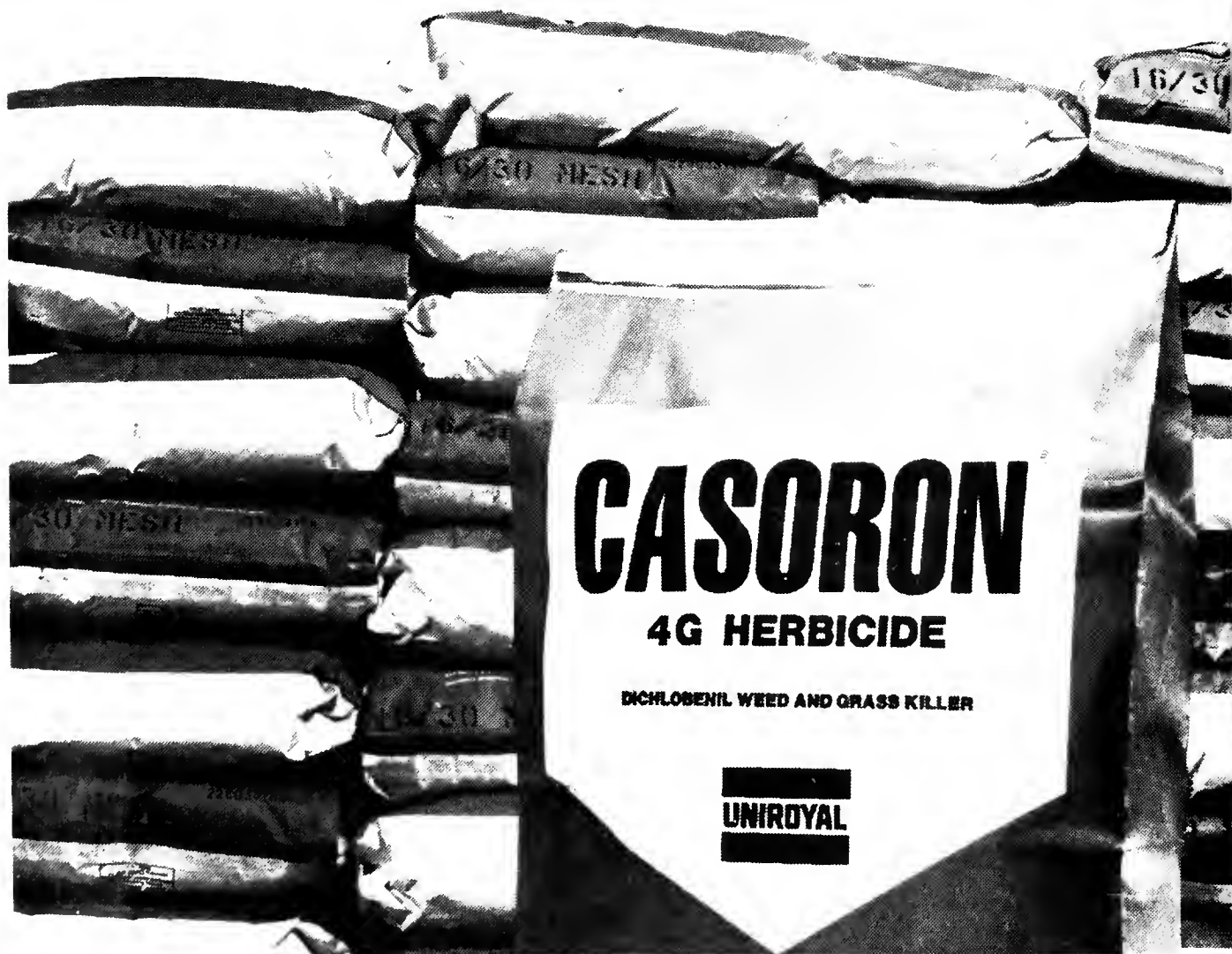
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Doing business in the Arabian Gulf

Selling cranberry products in the Arabian Gulf is a mixed blessing.

First, the good news: The market potential is great. Only North America produces the cranberry (none of that pesky European competition). Also, Muslim law forbids the consumption of alcoholic beverages, so fruit juice is a popular drink in that area.

Now the bad news: Consumers in the Gulf haven't developed a taste for cranberries yet.

As a marketing effort, it's a long haul from the bright red cranberry bogs of North America to the dinner tables of the Arabian Gulf. But if you are looking for a guide, talk to Edward Trundle who has spent the last five years helping to pave the way for his company.

As area marketing manager for international sales at Ocean Spray Cranberries Inc., Trundle offers some cues that can save U.S. exporters of any farm product time, money and frustration when doing business in that market.

Ocean Spray's entry into the Gulf started a few years ago as one of a number of U.S. companies that supplied the commissaries of more than 25,000 Americans working in the area. During that time, Ocean Spray also expanded its sales into the local economies. Its chief products are cranberry juice drinks, cranberry sauce and grapefruit juice.

Exports to the Arabian Gulf make up only a small part of Ocean Spray's overseas sales, Trundle says, but the



OCEAN SPRAY hopes to gain some of the market that has gone to soft drinks. (Arabian American Oil Co. photo)

company is working to boost sales through consumer and distributor awareness programs in stores and through participation in trade shows. Ocean Spray hopes to gain some of the huge market for beverages in

the Gulf that soft drink manufacturers have dominated.

CHECK SUPPLIER REFERENCES

Trundle says that U.S. exporters to the Arabian Gulf should not be

COVER STORY

THE MARKET potential for cranberry sales in the Arabian Gulf is great. So says an Ocean Spray expert on the subject. The story about the Arabian Gulf and cranberry sales starts on this page. (Exxon photo)



WILL this bedouin and his family become cranberry juice drinkers? U.S. cranberry exporters hope so.

(Exxon photo)

hasty in signing over representation to a particular supplier. "You talk to a supplier over there and usually he says, 'I want the whole Middle East.'

"The most important thing is to be very cautious on who your importer is," says Trundle. He adds that, often, U.S. exporters don't do the homework overseas that they would do if selling in this country. "Ask for references and check with the Department of Commerce. Talk to the agricultural attaches at the embassy; they are usually very attuned to the importers. Telex a European supplier to ask about his experiences with the particular seller."

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(continued on page 7)

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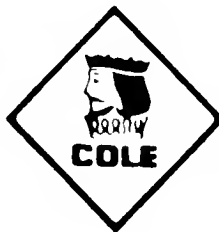
ditorial



CRANBERRIES makes changes

Last February CRANBERRIES received a facial uplift; several changes in design. Last month the magazine contained the most pages—28—it has had in 15 years. This month the publication that serves the cranberry growing industry has undergone other changes—larger size, new stock—brought about in large part by a change in printers. Next month CRANBERRIES will display still other slight changes, the result of our investment in new phototypesetting equipment. There may be minor modifications in the future, too, as conditions warrant. Remaining the same will be our desire to serve our readers and advertisers, as CRANBERRIES has done now for almost 50 years.

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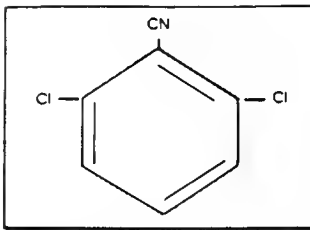
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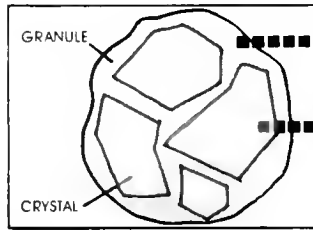
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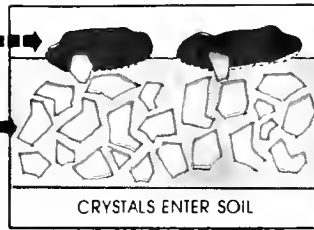
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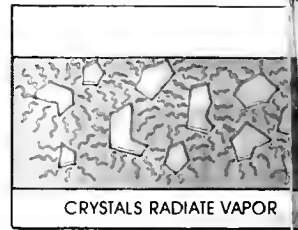
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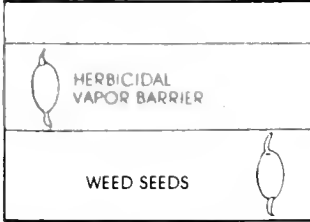
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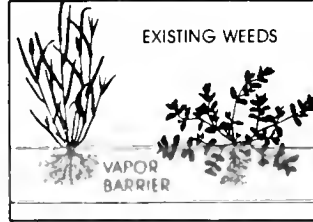
3. Granules are spread on soil or shallow water. Moisture carries the Norosac crystals into the upper layer of soil. Because of adsorption by soil particles, lateral movement is minimal.



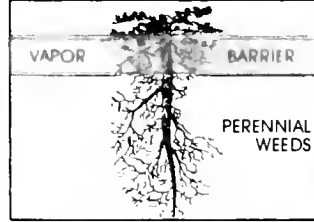
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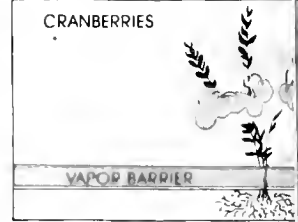
5. In this vapor barrier no plant cell division can occur. Seeds trying to germinate in the barrier will die. Sprouts below this zone will be killed as they try to penetrate the barrier.



6. Existing vegetation such as shallow-rooted grasses and annual weeds having root structures in this barrier will likewise be affected and die after two to three weeks.



7. Certain perennial weeds coming out of dormancy and attempting new growth within the Norosac barrier will run into the same dead end: they will be killed by the vapor.



8. Norosac, when used as directed, does not affect cranberry bushes that have deep roots extending well below the herbicidal vapor zone.

How Norosac Reduces the Cost of Weed Control in Cranberries

Its vapor barrier not only gives season-long control of toughest weeds, but can be applied anytime between late fall and the popcorn stage.



The graphs above clearly demonstrate why Norosac is as efficient as any herbicide that has ever been offered to the Cranberry grower. We urge you to study it carefully.

Norosac provides season-long control of more than 40 tough weeds and grasses including ferns, rushes and sedges.

The chemical cost per acre is low, and the cost of labor is drastically reduced. Furthermore, Norosac can be applied by air or by ground either when the bogs

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Shouldn't you try Norosac?

Norosac Dichlobenil Herbicide can make a significant contribution to the efficiency of producing cranberries, and you owe it to yourself to try it on at least part of your crop.

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(continued from page 4)

Understanding of laws pertaining to product labels, for example, as part of air Gulf homework, Trundle says. "Production and expiration dates must be printed on labels," he says. They cannot simply be stamped on a container where it can be altered; it must be part of the label itself." Ocean Spray has had little problem meeting the expiration date requirements because the company keeps a close watch on its product standards, says Trundle. "Cranberry juice has a shelf life of about 15 months; cranberry sauce, about two years. Some other producers might extend it a bit, but we feel that to maintain quality, we won't go beyond that." Merchants in the Arabian Gulf countries adhere closely to the law when it comes to expiration dates, Trundle says. In fact, their business depends on it. "Authorities will go into a store and check the shelves. If they find even one product that is outdated, they will close the store for a day. They police labels pretty carefully."

BE ATTUNED TO CUSTOMERS

Sharing information with other exporters is also an important part of doing business in the Arabian Gulf countries. U.S. exporters often share what they have learned about regulations and helpful contacts in government and private industry.

Trundle says: "The international community is very close. We chat with each other at trade shows and on other

occasions. And most noncompetitors will help others solve problems."

Introducing a new-to-market product, such as cranberry juice, can make the job even tougher but, as Trundle points out, learning the unique characteristics of the market can open doors. "You have to be attuned to your customers," he says.

(Reprinted from Foreign Agriculture)

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BEFORE YOU BUY THAT COMPUTER

By DR. HAROLD GLUCK

You now live in a computer world. And don't try telling yourself, "I can live without it." From the viewpoint of efficiency, accuracy and keeping costs down, you need that computer.

One of the leading experts on computer law is Marvin N. Benn, a member of the Chicago law firm of Hamman, Benn & Miller. He was kind enough to make available to me a checklist you should use when shopping for that computer. This checklist generally should be used only on a system under \$20,000.

Remember that a computer becomes the heart of your business, controlling many times its value in services. If your computer system does not work—or is not suited to your particular needs—its failure can definitely harm you.

Section I of this checklist contains questions and areas of concern you should consider as they relate to your particular situation.

SECTION I

1) Are there any special environmental or electrical requirements? If so, what are they?

2) Is there a possibility of having acceptance tests? That is, can you test the system and return it if it does not work properly?

3) What preparations must I make for my data base? Can I prepare the data base before I receive the system?

4) Are there any special personnel requirements regarding education or minimum intelligence levels?

5) What would be the response time or throughput when using the system? In a multiuser environment, what would be the response time with several terminals operating various types of programs simultaneously? Is there any restriction in a multiuser environment on the types of programs that can be run simultaneously?

6) What is the availability of software enhancement?

7) Is the source code in escrow in case the software house goes bankrupt and access to the source code is needed?

8) What software documentation

is being provided? Please list.

9) Are there any custom software requirements? If so, please list.

10) Proposed method of payment: one third upon signing, one third upon installation and one third upon acceptance.

11) Who will have the ultimate vendor responsibility when both the software house and the hardware house point to each other as the source of a system problem? A determination should be made as to who will accept

this responsibility.

12) Any maintenance program for the system should begin after the end of the warranty period. No maintenance contract should start on the date that the hardware is delivered. How quickly will the vendor respond when maintenance is needed?

13) Are there any compatibility guarantees that the software will work with the hardware or other software? What about hardware bought through third parties and its compatibility with

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the computer system?

14) If field modifications are needed, what will be the cost? What is the cost for field upgrades?

15) Is a list of suppliers provided, along with a secondary source of supply in the event that the original supplier is not available?

16) Are there any cable costs that have not been included with the system?

17) Are there any educational courses available to learn how to use the software?

18) Before the purchase of the software, are there any test packages available for the computer system presently in use?

19) Will credits be given for the malfunction of the system?

20) Will the vendor supply an emergency backup facility if there is a disaster?

21) Be sure to supply the vendor with a complete list of specifications for your company, which should include the following:

a. the number of customers;
b. the number of inventory items;

c. the number of accounts receivable;

d. the number of accounts payable;

e. the number of invoices per month;

f. the average number of line items per invoice;

g. the maximum number of terminals;

h. the percent of projected increases for items a. through f. over the next 3-5 years.

SECTION II

Hardware Contract:

1) Venue. Change or delete the clauses that require you to bring suit in a county or state other than your own.

2) Costs and Attorney's Fees. Change or delete the clauses that state that you are obligated to pay the vendor's attorney fees to enforce the terms of the contract. (You can compromise on this by being responsible for the costs but not attorney's fees. And, if that is not acceptable, insert "reasonable" attorney's fees.)

3) Arbitration. If there's an

Talk to a broker who knows when to fish and when to cut bait.

Andrew Carter enjoys fishing in his spare time. He likes the anticipation of the strike. He also knows that you don't troll plugs when you're flounder fishing and that you can wear yourself out jigging for mackerel when the fish aren't there. As an investment counselor with Gage-Wiley & Company Inc., he spends his working time angling for superior investment results, using his knowledge and experience in the financial markets.

Providing solid financial advice and personal service has been Gage-Wiley's hallmark for 51 years. And Andy has every reason to believe in it. Before starting to work for the company six years ago, Andy was a Gage-Wiley client and saw the benefits of his investments. Now Andy enjoys giving his clients the same service he received. Andy knows each person's financial situation is different, and he won't try to sell you cod when you're in the market for swordfish.

Instead of struggling with your fish-or-cut-bait decisions alone, call Andy for friendly and knowledgeable advice. He'll be glad to meet you in his office in the Village Landing or at your home or office. With Andy on your side, you won't be at sea with your investments.

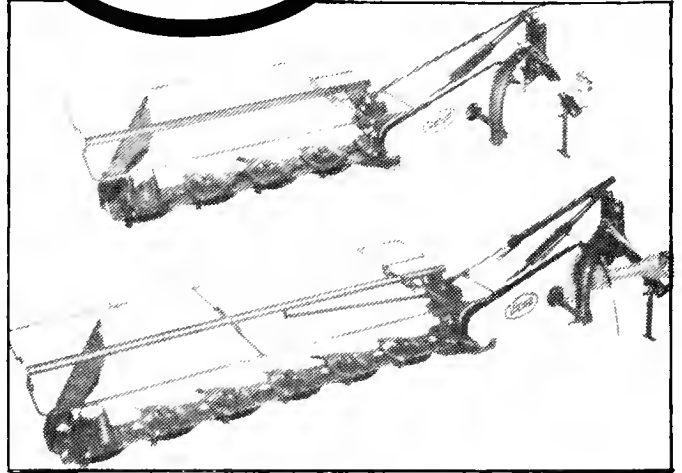
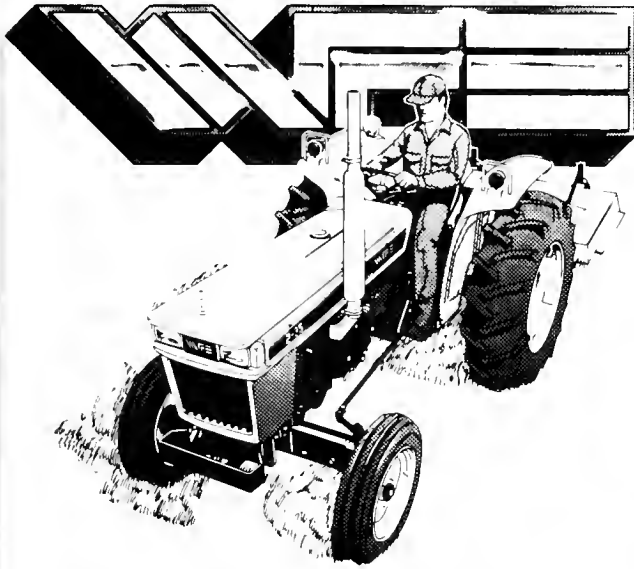


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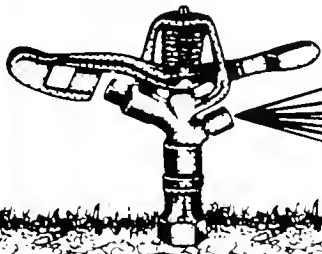
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arbitration clause, make sure that the arbitration is in your city or area.

4) Default. Make sure that there are no acceleration clauses for any payments due on default or clauses that give the right to enter your premises and take the equipment.

5) Finance or Penalty Charges. Delete any and all finance or penalty charges that are required for nonpayment under the contract.

6) Other Charges. Delete any clauses that require you to pay additional charges for correcting errors or bugs in the operating system. The vendor should be obligated to correct the errors or bugs without fees.

Software Licenses (in addition to Items 1 through 5 of SECTION I):

7) Strike out any "as is" provision.

8) Strike any charges for correcting any errors or bugs in the software programs (see paragraph regarding "other charges" above).

9) The vendor should indemnify you against claims by third parties that use of the software (or hardware) violates their patents or copyrights.

(c) 1984 Hamman, Benn & Miller

HERE ARE some hints that you

may find helpful:

If there is a computer trade show in your area, attend it. See what is being offered. Ask all the questions that come to mind, including the ideas presented here. And take all the literature that is being offered so that you can study it at home or in the office.

Watch the newspapers for announcements about special demonstrations of computers and software. We recently landed at a special demonstration of new software on the market. Also, the manufacturer himself may give a demonstration course. Pay special attention to the questions asked by the people present and how they are answered.

If there is an introductory course given by your local high school or community college, take it. They also give courses on public television. Right now we are following one called "Bits and Bytes." Another one has just started titled "Computer Programme."

A top priority: Visit someone who already has the equipment you are considering purchasing. You want to find out if he/she is satisfied with it. And what suggestions that person can give you.

In your hometown there may be several stores selling computers. Visit them and see what they have to offer. Find out if they can give you a demonstration. But sign nothing! In a forthcoming article, I will present a rider that you can use when you have finally decided which computer setup you are going to buy.

On my desk are several computer books I have been asked to review. Your first book should be one that will enable you to understand and use your particular computer.

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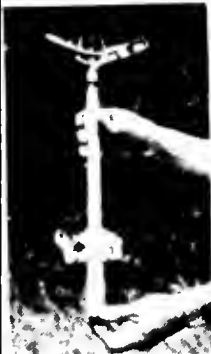
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regional
news
notes

Massachusetts

By IRVING DEMORANVILLE

Unofficially, the Massachusetts crop appears to be a record and will surpass the 1983 crop by about 15 percent or something over 200,000 barrels. There'll probably be a total of 1,675,000 barrels or more.

* * * * *

Dr. Charles Brodel and Sherri Roberts of the Massachusetts Cranberry Experiment Station attended the New England Irrigation Conference in Auburn, Mass., on Nov. 14-15.

Oregon

Mike Jones is the new president of the Bandon, Ore., Cranberry Festival Association. Other officers are: Bill Sipes, vice president; Melody Jones, treasurer; Marge Kelley, secretary; Debbie Berry, Brenda Pegg and Chuck Salt, directors. This year's festival will be held Sept. 27-29.

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MASSACHUSETTS

November was a warm month, averaging 1.1 degrees a day above normal. Maximum temperature was 68 degrees on the 2nd and minimum was 21 degrees on the 20th. Warmer than average periods were 1-2, 5, 10-12, 16 and 26-29. Cooler than average days were the 3rd, 13-14, 17 and 19-22.

Rainfall totaled 1.69 inches, about 3 inches below normal. This was the driest November since 1976 and seventh driest in our records. There was measurable rain on nine days but most were small amounts. The greatest storm was 0.94 inch on the 12th. The period from 16-29 was dry. We are 3¼ inches above normal so far and nearly 5 inches behind 1983 for the period.

I.E.D.

NOVA SCOTIA

The weather continued mild in November for that time of year with no appreciable amount of frost in the soil. Production of cranberries in Nova Scotia in 1984 appears to be close to 500,000 lbs.

I.V.H.

Letters

CRANBERRY BOG PAINTING

On a cover of CRANBERRIES magazine a few months back was a picture of a cranberry bog painting (The Cranberry Harvest, Nantucket Island, by Eastman Johnson, in April 1984 issue) from a museum in California.

I live around bogs (across the water from

Nantucket) and also paint. Can you send me the address where the painting is . . . ?

Cynthia Leonard
Acushnet, Mass.

Editor's Note: Timken Art Gallery, San Diego, Calif.

FANCY FOOD SHOW IS THE LARGEST YET

Two seminars, "Gift Packaging for Profit" and "Retail Pricing for Profit," will be among the major attractions at the record breaking 10th Winter International Fancy Food and Confection Show Feb. 17-19 at the Los Angeles Convention Center.

John H. Hamstra, president of the National Association for the Specialty Food Trade, sponsor of the show, said the show

is 20 percent larger than last February's exhibition. By mid-October, he said, 340 exhibitors had taken 82,000 square feet of space.

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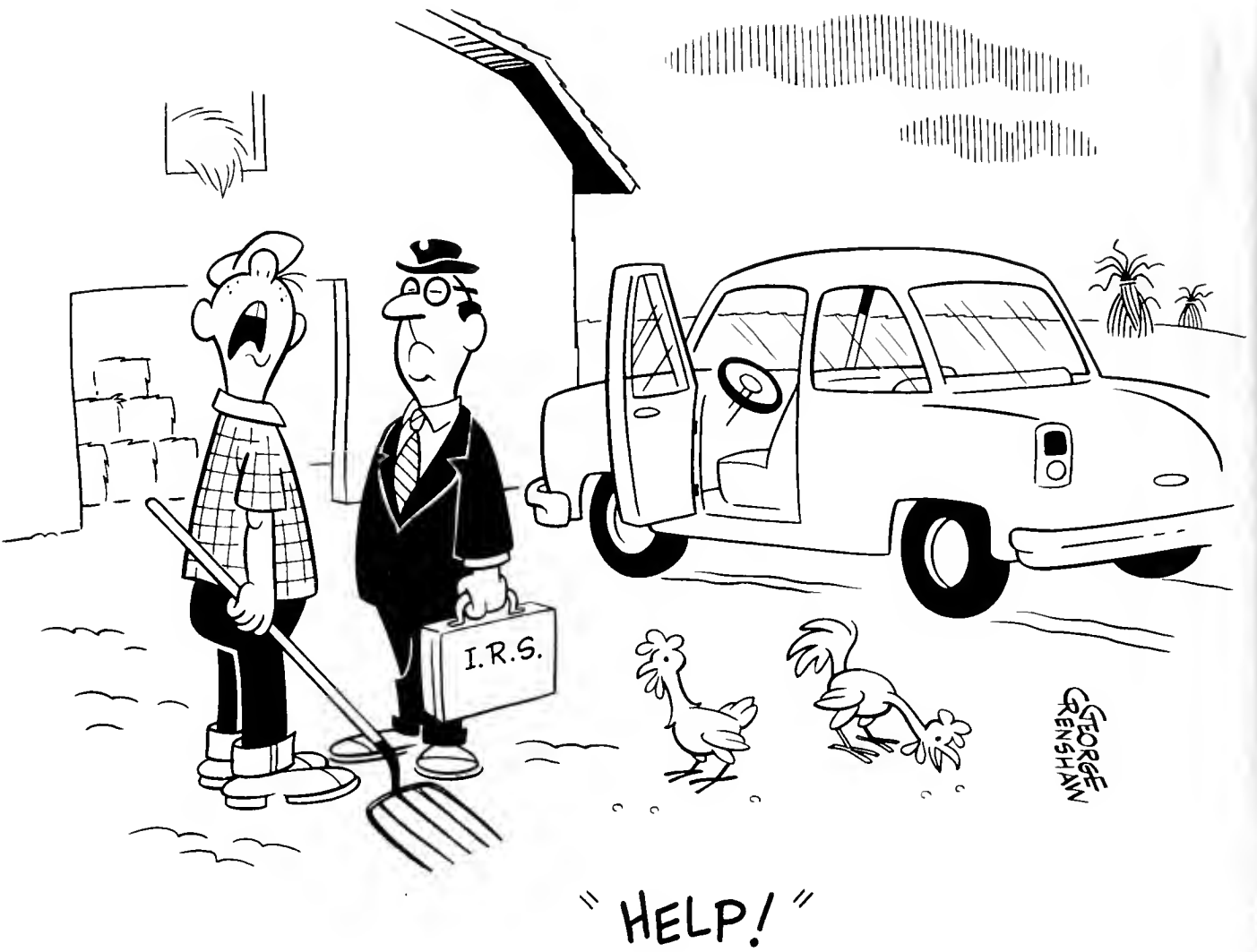
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Dissolve in bowl 2-4 teaspoons granulated sugar and gelatin with heated cranberry juice cocktail. Place dissolved ingredients in refrigerator to chill until liquid gets consistency of egg whites uncooked. While liquid is chilling, beat heavy cream, folding in ½ cup confectionary sugar until stiff. Remove gelatin from refrigerator. Using electric mixer at high speed, add about half of the whipped cream until well blended or deep pink. To enhance flavor, add 1 teaspoon of cranberry liqueur. To enhance texture, add 2 tablespoons of whole berry cranberry sauce. Pour into serving glasses, garnish with leftover whipped cream.

SAUDIS LIKE CANNED FRUIT

Canned fruit in natural juices with no additives is very popular in Saudi Arabia. An Oregon company is marketing canned blueberries and cherries through a partnership with a U.S. supermarket chain.

CRAN-RASPBERRY IN PAPER BOTTLE

With the introduction of Cran-Raspberry to the Paper Bottle, the number of juices and juice drinks being offered in the ready-to-serve aseptic package has been raised to nine.

CRANBERRY NAPOLEONS

The following recipe comes from La Maison de Notre Pere in Pembroke, Mass.

Cranberry mousse

1 package puff pastry sheets (in frozen food department)

1 package white frosting

Thaw puff sheets and cut into approximately 2 inch by 3 inch pieces. With fork, poke small holes in top. Place on cookie sheet and bake at 375 degrees for 15 minutes or until golden. Remove—let cool. Split each 2 inch by 3 inch cooked pastry. Save the flat sides (bottoms), one for each serving. Take cranberry mousse and spread on cooked pastry sheets. Place one layer on another. Frost flat sides with white frosting and place on mousse pastry sheets (3 decker style). Decorate.

CRANBERRY MOUSSE (Yield, 6 servings)

2 cups cranberry juice cocktail

2-4 teaspoons granulated sugar (to taste)

1½ packets unflavored gelatin

2 half pints heavy cream

½ cup confectionary sugar

1 teaspoon cranberry liqueur

2 tablespoons whole berry cranberry sauce

Heat 2 cups cranberry juice cocktail.

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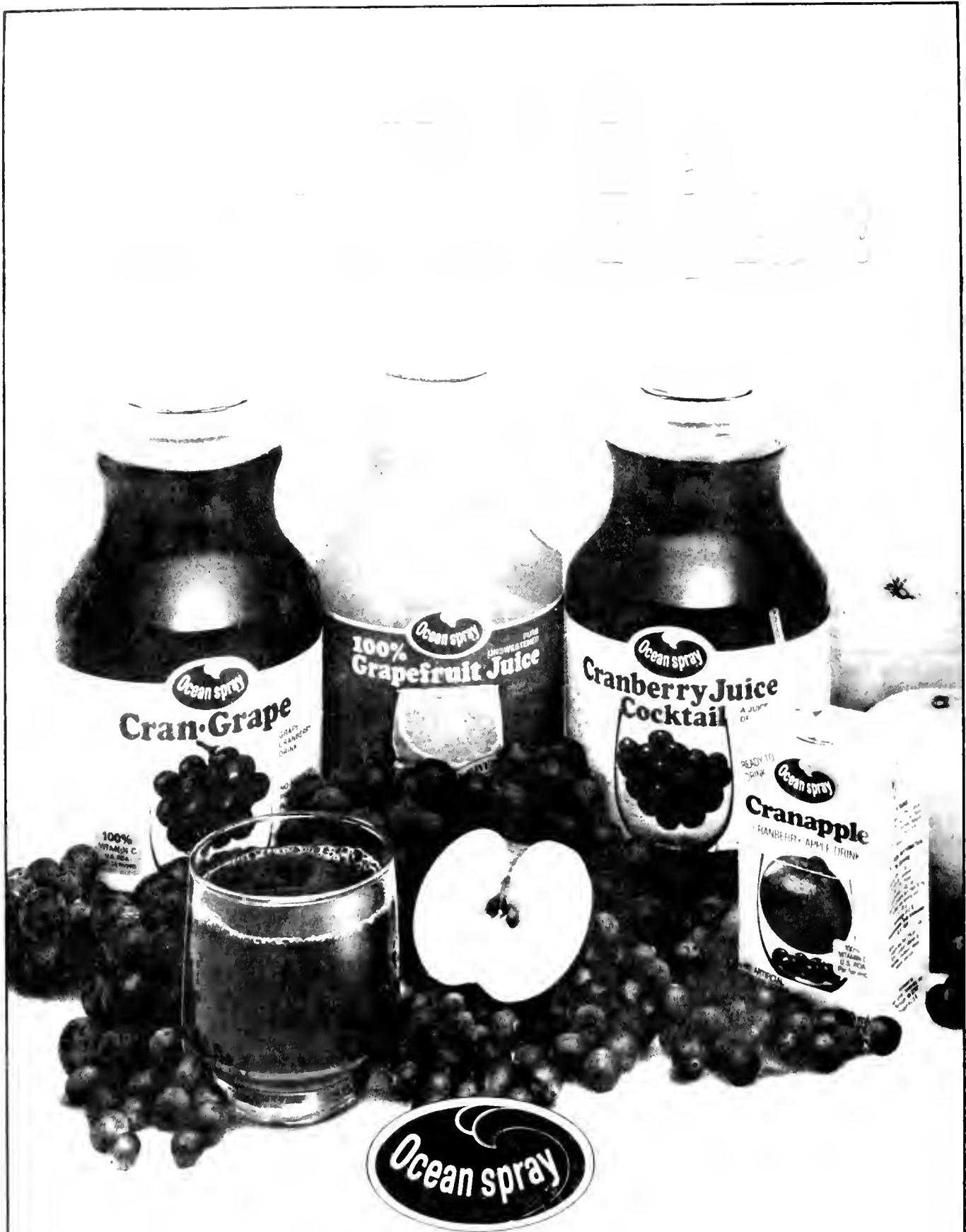
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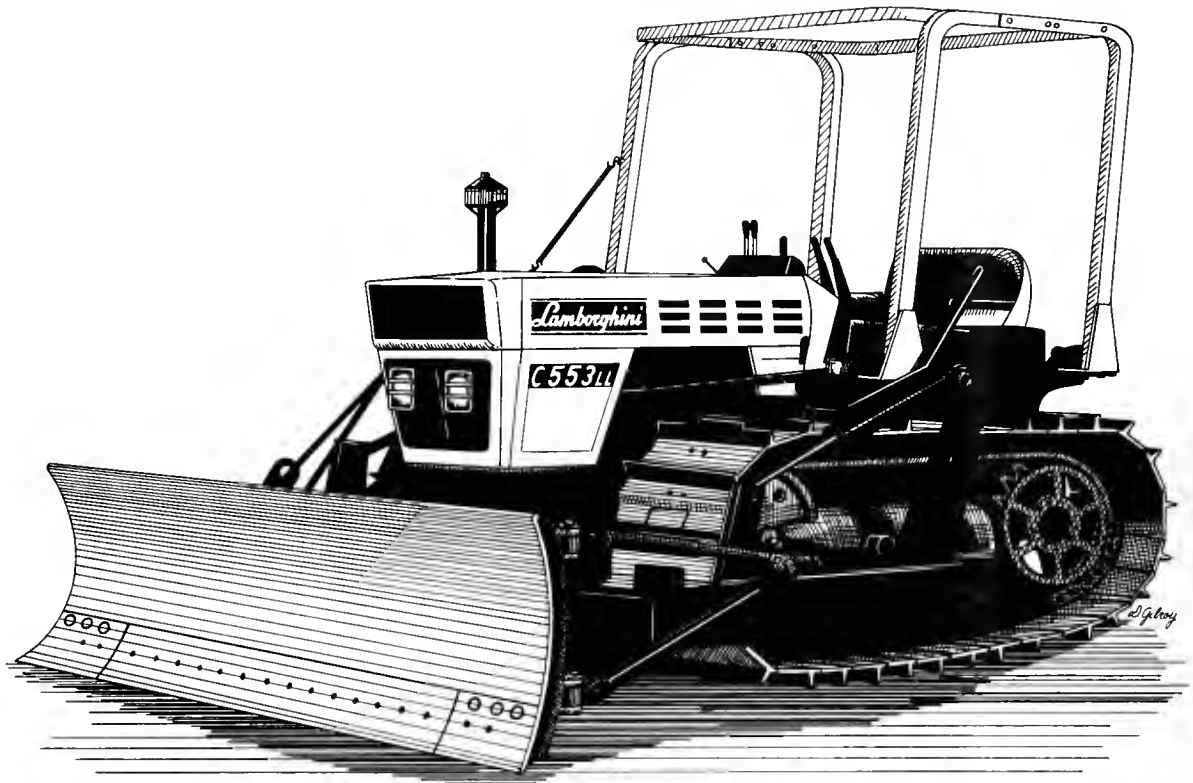


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754	75hp din	24,000
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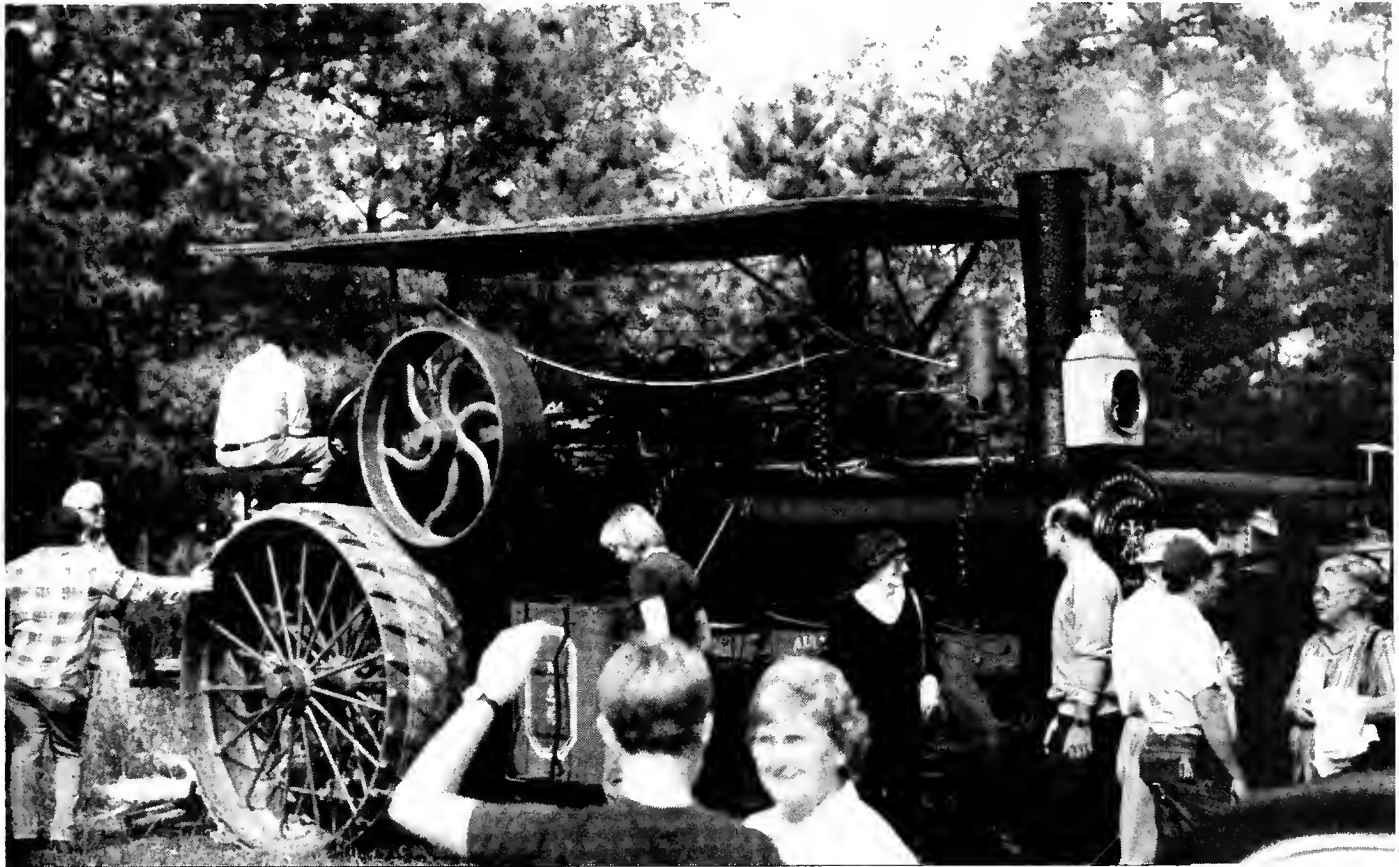
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Chatsworth holds 1st fete



THIS beautiful antique steam tractor was on display, courtesy of Tommy Ackerman of Waretown.

(CRANBERRIES photo by Nick Vorsa)

By MICHEL SMITH

More than 2,000 people took an autumn ride through New Jersey cranberry country on Oct. 20 to visit the town of Chatsworth, unofficial capital of the unique Pine Barrens and site of the area's first annual cranberry festival.

The daylong event had plenty for the curious and enthusiastic visitors to see and do. An antique cranberry sorter gave berries the mandatory seven bounces and old and new harvesting tools and photographs drew lots of interest.

A floral arrangement contest showed the cranberry's potential as decorative material and the American

Cranberry Growers Association displays of biggest berry and available varieties of berry dispelled the myth that all cranberries are small and round. People were intrigued to see bell shaped, oval and pointed berries and were amazed at the size of Joe Darlington's winning biggest berry: 4.9 grams.

One hundred craft and antique

vendors were on hand and music by country groups and dulcimer players set the jaunty tone of the day. Antique cars and an antique steam tractor with a piercing whistle added to the fun, as did a visit by the Jersey Devil, a well known character in Pine Barrens folklore.

One of the most popular booths was the food table, where a remarkable variety of products featuring the

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COVER PHOTO

THE JERSEY DEVIL, Clark Torres, and Little Miss Cranberry, Elizabeth Willhouse, were spotted by photographer

Nick Vorsa at the Chatsworth, N.J., Cranberry Festival. The story starts on this page.



HOLLY FAVORITO discusses the cranberry varieties displayed at her table.
(CRANBERRIES photo by Ted Gordon)

cranberry could be purchased, along with cranberry tea and juice. A well stocked table enabled visitors to sample the recipe contest entries. The contest, sponsored by Ocean Spray Cranberries, proved beyond a doubt the culinary versatility of the berry. The small, red fruit was used in imaginative items ranging from catsup, compotes and cookies to chocolate cranberry crunch cups, winner of the creativity award. The contest was an eyeopener for those familiar only with the standard relish, sauce and bread and many left the

booth with a new respect for the cranberry.

This interest and increased awareness delighted Mary Ann Thompson, coordinator of the festival. Miss Thompson, chairperson of the History Committee of the American Cranberry Growers Association and of Chatsworth Club II, said the purpose of the festival was twofold. All three sponsors of the event, Chatsworth Club II, Ocean

(continued on page 8)

Bees

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Sprinklers for Florida?

Was in Orlando, Fla., on business recently when the temperature dipped down into the low teens. The papers were full of stories about devastated citrus groves and panicked growers. During an early morning run on the day of departure, when the temperature had warmed up to the low 30's, I got to thinking about how coping with frost is a way of life for cranberry growers and whether citrus growers can learn anything from their hardy northern cousins.

When I returned, I put in a call to Irving E. "Dee" Demoranville, head of the Massachusetts Cranberry Experiment Station.

"Sure, sprinkling could protect the oranges," the ever helpful "Dee" said. "The question is whether there would be too much of a build-up of ice. Taller risers would, of course, be needed. Perhaps a combination of sprinklers and smudge pots would be the answer. Then, of course, you get into a question of economics. But there would seem to be a place for sprinkler frost protection down there."

Just last year Florida growers suffered a hard blow from frigid weather, albeit not as serious as from this year's record breaking cold spell. Below freezing temperatures are not complete strangers to the sunny state. Perhaps the citrus industry ought to take a hard look at what its northern neighbors are doing.



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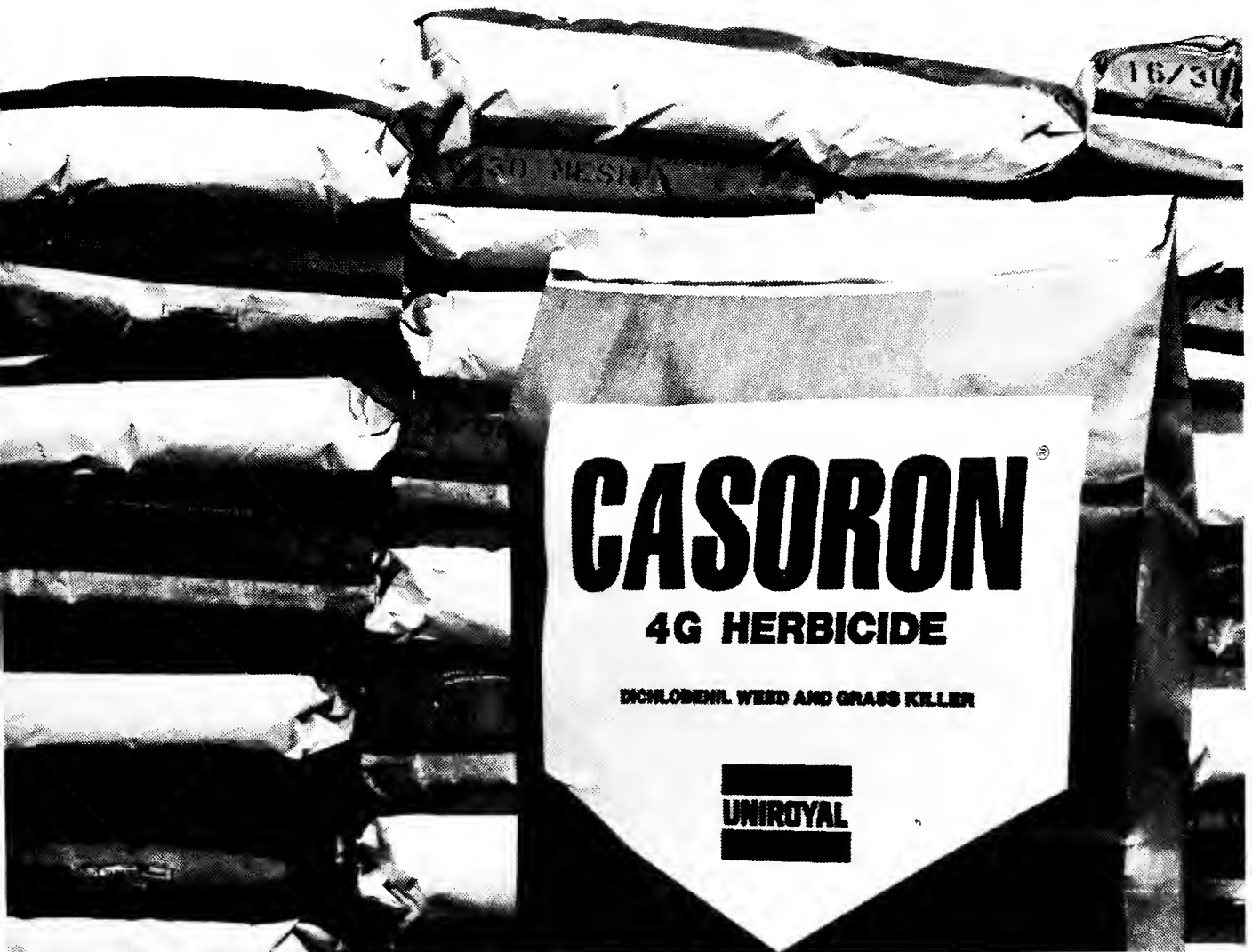
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FRAN GUDAUSKAS, left, and Mae Barringer of the Love Quilters work on a wall hanging titled, "The Flowers That Bloom in the Springtime."
 (CRANBERRIES photo by Ted Gordon)

CHATSWORTH . . .

(continued from page 4)

Spray and the Growers Association, wanted to educate the general public on the cranberry and its many possible uses. In addition, Chatsworth Club II hoped to spark interest in and funds for the restoration of the local White Horse Inn, a building which has historic links with both the town of Chatsworth and with the cranberry industry.

On the National Register of Historic Places, the inn was part of a luxury resort complex founded in

1904 by Prince Ruspoli, a prince of Rome and ambassador to the U.S. The Chatsworth Club, as the exclusive Pine Barren retreat was named, drew visitors such as the Astors, Vanderbilts, Biddles, Duponts, Drexels, Morgans, Goulds and Pulitzers until World War I.

Prince Ruspoli was also a cranberry grower. Amelia Green, vice chairperson of Chatsworth Club II, remembers that her father, Alfred Stevenson, lived at White Horse Inn when he managed the bogs for the prince. The inn is the only

surviving building of the once famous complex. Chatsworth Club II envisions the structure as a community building and museum after its restoration.

The town of Chatsworth sits in the midst of what were once the prince's bogs. Much of this cranberry acreage is now owned by Garfield J. and Mark DeMarco and produces abundantly. Garfield J. DeMarco, one of many who contributed to the day's success, donated the use of his field as the festival site.

Alvin Brick Jr. of Brick's Cranberries sold more than 400 lbs. of cranberries, some of which were donated by the Cranberry-Blueberry Experiment Station.

Also contributing was Ocean Spray. Cranberry juice, exhibit items, ribbons and prizes of cash and cranberry glass were donated by the organization. A silver trophy for biggest cranberry went to Joe Darlington for his Jersey variety. Ribbons were awarded to Ada Simons for biggest Early Black; Bill Haines Jr. for biggest Howe and Stevens; Fred Miller for biggest Ben Lear.

Phil Marucci, blueberry and cranberry scientist, judged the competition. He also made awards to the following winners in the "smallest number of berries to fill a cup contest": Jerseys, Joe Darlington; Stevens, Paul Fitzpatrick of DeMarco Cranberries; Early Blacks, Ada Simon; Howes, Bill Haines Jr.

Geri Lewis' cranberry cheesecake took best of show in the recipe contest while children's best of show went to Colleen Callaghan for her cranberry apple bread. Pat White won the creativity award for chocolate crunch cups.

First place winners in other categories included Joan Hansen, sauce; Nancy Klebold, jelly; Mrs. Joseph Leadly, compote; Ada Simons, cookies; Scott Bray, relish, and Jean Ann Edwards, pie. Mrs. Leadly also took first in the brea category and Jenny Parker won the children's cake category with her cranberry walnut cake. A recipe book featuring winning entries will be available by summer.

One of the most frequently heard comments during the day was: "You're having the festival again next year, aren't you?" Miss Thompson's reply: "Come on back. It will be bigger and better than ever."



THIS floral arrangement in an old cranberry scoop was made by Doris Curry of Cross Keys, N.J. (CRANBERRIES photo by Ted Gordon)



The recipe below won best of show at the Cranberry Recipe Contest held at Chatsworth, New Jersey's first annual cranberry festival. The prizewinner: Geri Lewis of Atco, N.J.

CHEESECAKE WITH GINGERSNAP CRUST AND CANDIED CRANBERRY GLAZE WITH GRAND MARNIER

CRUST:

- 2 cups crushed gingersnaps
- 6 tablespoons butter, melted

Blend crushed gingersnaps with melted butter in a medium sized bowl. Press firmly over bottom and sides of a lightly buttered 9 inch spring form pan.

FILLING:

- 5 pkg. (8 oz. size) cream cheese at room temperature
- 1 1/4 cups sugar
- 3 tablespoons all purpose flour
- 1 1/2 teaspoons grated lemon peel
- 1 1/2 teaspoons grated orange peel
- 1/4 teaspoon vanilla textract
- 5 eggs
- 2 egg yolks
- 1/4 cup heavy cream

Preheat oven to 500 degrees. Make filling in large bowl of electric mixer, combine cream cheese with sugar, flour, lemon peel, orange peel and vanilla. Add eggs one at a time, beating after each addition. Beat only until mixture is well combined. Add cream, beating until well combined. Pour filling into prepared pan; bake 10 minutes. Reduce oven temperature to 250 degrees. Bake 1 hour and 20 minutes longer. Cool cheesecake on wire rack, then refrigerate 3 hours or overnight. Remove sides of spring form pan and put on glaze.

GLAZE:

Wash 2 cups fresh cranberries and spread in an even layer on the bottom of a shallow baking dish. Sprinkle with 1 cup of sugar and 2 tablespoons of Grand Marnier, cover tightly and bake in a 350 degree oven for 1 hour, stir occasionally during the baking period. Chill before glazing cake.

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Bring in son or daughter?

By **BESS RITTER MAY**

If your son or daughter has ever said to you, "Wouldn't it be great if we could work together growing cranberries on a permanent basis?" you can make this dream come true to your mutual advantage. Here're some of the reasons:

*It's so difficult today to acquire the needed capital to set up independently so that working with you might be the only way in which your son or daughter might become a cranberry grower.

*This may also be the best way for him/her to acquire excellent cranberry growing experience, for you'll be there to guide him/her away from the expensive mistakes of the novice.

*A joint father-son/daughter arrangement can also be a good solution to your future retirement problems: You can now curtail hard work gradually while retaining a strong interest in your enterprise.

*With a father-child work relationship, as you move toward retirement, your cranberry growing business, unlike those of others who face retirement, won't go down hill as you gradually become less able to handle physical work. He/she will take over and keep production high.

*Nor do you have to have a son/daughter to go this route. A compatible nephew or other young relative (or nonrelative) can also work out as well.

But before pursuing this dream further, determine whether your son is right for an arrangement of this type. Has he always been interested in cranberry growing? How well did he handle any such work responsibilities assigned to him in the past, such as helping with planting, spraying, harvesting? Does your wife approve of the projected arrangement? If your son is married, would the life of a cranberry grower, on a permanent basis, appeal to his wife? Or, if you have a daughter, how would her husband feel? If your

son/daughter is relatively young, does he/she have sufficient maturity to make a working relationship with you practical plus a confidence and respect for you as a grower and father?

But even when your son/daughter passes all such tests, start with a temporary arrangement, "just to see how things work out." Your child might be made responsible for a special project of his/her own, such as weeding or taking care of transportation needs. He/she might receive a salary on a par with what outside labor is paid for similar work and also might be encouraged to plough back a portion of earnings into the enterprise by investing in machinery and supplies. This is advantageous to the business, of course, but will also benefit your son, since he won't come into a permanent arrangement empty-handed but will contribute a share of the capital. When profits are too meager for a competitive wage, he/she might be paid partly in cash and the remainder in equipment.

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Under this employer-employee relationship, which might continue for a year, he/she won't be responsible for any losses, liabilities or torts. And if, after an approximate 12 month period, it's mutually decided that the son/daughter-father work dream isn't practical, you can buy out any investment that he/she has made.

But if the appeal of cranberry growing together has become stronger for you both, make a change in your son's work status. Instead of simply following your directions and relying on your judgment, he/she should begin to formulate his/her own plans, based on desires (like your own) to increase profits and decrease costs.

You will want to work out the details concerning specific projects together, while gradually giving your offspring more and more rein. Such an arrangement is usually known as a *joint operation* agreement, with the details worked out compatibly:

*You might want to continue to own the real estate in full and either receive a rental from him or interest on your investment, according to its estimated value. You will be responsible for taxes, the upkeep and other expenses.

*If the farm is debt free, you might want to contribute your real estate to your son, at a minimal figure, to help build his share of the farm income. Many growers consider this arrangement practical, since all that is forfeited by the father is the interest or the rent, with the son/daughter handling all land related expenses.

*Still another plan is to sell the child a half interest in the property, to be paid for via a noninterest bearing note.

The estimated value of labor by both parties should be based on the prevailing wage for the type of work done. Because evaluating management isn't easy, a better plan might be to assume that that aspect is a joint and unpaid contribution to the venture.

And income might be shared by basing the earnings each receives on the value of the individual contribution, with increases and decreases in machinery and other items shared in the same proportion as the income. If, for example, your son's contribution in the form of capital, operating expenses,

labor and management equals 50 percent, his earnings should be 50 percent of total earnings.

However, if you and your son manage the entire bog on a 50-50 basis, which includes the investment of capital, management and labor, and if you jointly own all farm property and maintain a strictly joint bank account, you may find it hard to avoid the formation of a *partnership*, which usually comprises all of those features. Many cranberry growers prefer to avoid a partnership because of the disadvantages.

*Each partner is liable for all debts incurred by the cranberry growing business.

*Each partner is also responsible for any action by the other which creates a business obligation.

*Personal property contributed to

the partnership by either partner becomes a partnership property.

*The partnership is usually automatically dissolved by the death or the voluntary withdrawal of a partner.

But the chances of preventing the formation of a partnership are improved when a written agreement is drawn up in the form of a lease and includes an express disclaimer of a partnership, together with a denial of any authority of either partner to act for the other. There also should be no joint bank accounts.

Another plan is to *incorporate* the father-son/daughter business, since the liability of a corporation member is usually limited to his/her capital investment plus his/her own share of undistributed profits. It is also very easy to transform property interest

Massachusetts Grower

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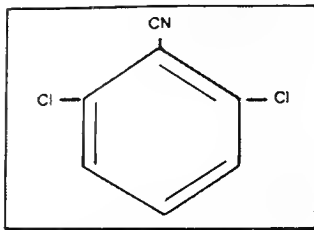
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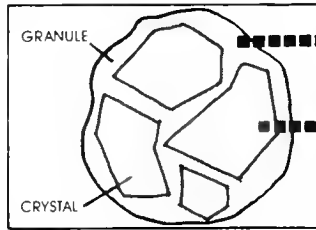
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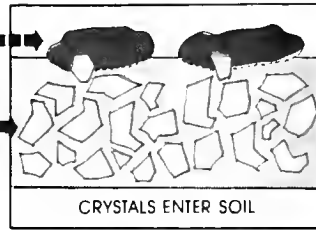
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1 Norosac is 2,6-dichlorobenzonitrile, commonly known as Dichlobenil. This unique herbicide goes directly to a vapor stage without going through a liquid stage. It is activated by temperature and soil moisture.

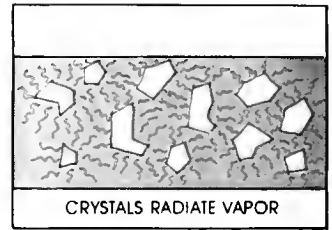


2 This remarkable herbicidal compound of razor-thin crystals is uniquely processed by PBI/Gordon to make a precise granule.



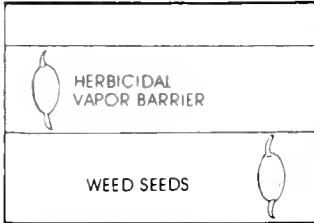
CRYSTALS ENTER SOIL

3 Granules are spread on soil or shallow water. Moisture carries the Norosac crystals into the upper layer of soil. Because of adsorption by soil particles, lateral movement is minimal.

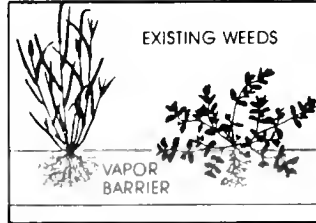


CRYSTALS RADIATE VAPOR

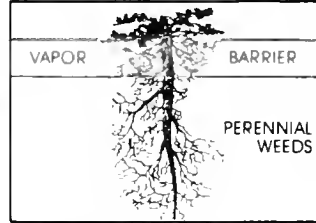
4. Temperature and soil moisture activate the Norosac crystals and they begin to radiate a herbicidal barrier. This continues for an entire growing season, and the spent crystals disappear, leaving no residue.



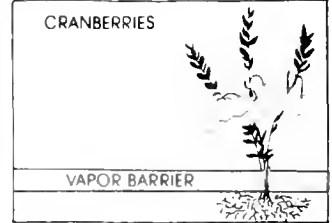
5. In this vapor barrier no plant cell division can occur. Seeds trying to germinate in the barrier will die. Sprouts below this zone will be killed as they try to penetrate the barrier.



6. Existing vegetation such as shallow-rooted grasses and annual weeds having root structures in this barrier will likewise be affected and die after two to three weeks.



7. Certain perennial weeds coming out of dormancy and attempting new growth within the Norosac barrier will run into the same dead end: they will be killed by the vapor.



8. Norosac, when used as directed, does not affect cranberry bushes that have deep roots extending well below the herbicidal vapor zone.

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under a corporate arrangement within and between generations by stock transfer, and less difficult to share income and expenses proportionately. Retirement planning is also more flexible.

However, the machinery of a corporation is cumbersome. Legal advice is needed to organize it, written articles must be supplied to the state and operating a corporation requires considerable paper work, such as the drawing up of bylaws, the making of annual reports to the state and the reporting to the state of any issuance of stock or the alteration of the corporation capital structure.

Still another father-son/daughter operations arrangement is sometimes known as a *farm lease arrangement* and this is especially suitable if you're planning ahead for your retirement. This arrangement might specify that

- *the operator (your son/daughter) is also your tenant and will provide most or all of the labor and management and a portion or all of the needed equipment;

- *if a cash or crop share lease is included (as is usual), you may (or may not) elect to exercise managerial

control over your son's/daughter's cranberry growing operations;

- *neither landlord or tenant (generally) may bind each other without consent by incurring debts, entering into contracts or selling farm products or other jointly owned property;

- *the landlord (you) isn't responsible for torts committed by the tenant (your son/daughter) and he/she isn't responsible for torts committed by you.

But before coming to any kind of permanent agreement, both you and your son/daughter should make some careful decisions concerning the ownership of all farm property, the value of labor and the management of expenses. All this should be put in writing with the help of a lawyer and reviewed periodically for a lot of good reasons:

- *The statement will put the agreement on a businesslike basis, clarify all shadowy areas and avoid misunderstandings.

- *It will give concrete evidence of your child's participation in the business.


- *It will also satisfy the legal requirement that all such agreements which include real estate be in writing in order to be legally enforceable.

Such an agreement should also spell out the handling of possible contingencies concerning liabilities to third parties, since such regulations vary from state to state and also are subject to change.

As concerns the ownership of

property and the estimated value of labor and management by both parties, any arrangement (as already outlined) that's mutually agreeable might be elected.

As concerns all operating expenses, it is usual to share them, with important purchases and sales made only after careful joint discussion and agreement. Arrangements should also be made for weekly or monthly withdrawals for personal expenses. Many father-child arrangements fail only because of disagreements based on overlooking



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With respect to financial management, if you want to avoid a legal partnership, avoid a joint bank account into which all cranberry growing receipts are deposited and from which all expenses are paid. Instead, you might maintain separate accounts, with the main receipts and expenses divided as they occur, then either deposited or withdrawn. Notes might be kept concerning minor items paid out and received, and settled at regular intervals.

Written records should be carefully maintained, which include:

- *Item accounts of receipts and expenses.
- *Capital outlays.
- *An account of production.
- *All fixed expenses, such as taxes, interest and insurance.
- *Cranberry growing income from sales and any other sources.
- *A detailed list of all cranberry growing property, including real estate, plants, fertilizer and machinery.
- *Amounts paid and received by each party.
- *Any income or expense which isn't shared.

Such records may seem elaborate but they can be simplified with the help of an accountant who can teach the

average grower and his business associate to handle them on their own. And such recounts are vital if you want the essential information needed for making mandatory monthly or yearly settlements with your co-worker (son or daughter) concerning income and expenses. These data will also give you the needed facts and figures for filing tax returns and will serve as a guide for increasing cranberry growing profits.

You should also make provisions, in the written agreement, concerning the eventual termination of the joint operation in a way which permits the remaining partner to continue the cranberry growing operation.

When the termination is caused by the death of either party, the agreement might provide that the survivor is entitled to buy the business and even buy out other heirs. But since this may be difficult unless the survivor has sufficient capital, one arrangement is to take out life insurance when the original agreement is written up. Insurance should provide all or part of the purchase price and a decision should be made concerning who shall own the policy, be the beneficiary and be responsible for the premiums.

Provision should also be made, when the agreement is written up, for the possible termination of the business relationship for a reason other than the death of one of the parties. Instructions might be spelled out which include reimbursements for all who are involved and plans for continuance of the business.

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Massachusetts

By IRVING DEMORANVILLE

Dr. Karl Deubert attended several USDA workshops in Washington, D.C., from Dec. 9-14. The workshops dealt with using computerized information on agricultural publications.

New Jersey

The 39th annual meeting of the Northeastern Weed Science Society was held Jan. 9-11 in Atlantic City, N.J.

Keynote addresses were given by Dr. Gale A. Buchanan, dean and director of the Alabama Agricultural Experiment Station at Auburn University, and Dr. Will D. Carpenter, general manager, technology, Monsanto Agricultural Products Co.

Oregon

When harvest was over, a total crop of 78,943 barrels was reported at Bandon, according to the Bandon, Ore., Western World.

Washington

By AZMI Y. SHAWA

This writer will give a herbicide research update March 5 at 1 p.m. at the Coastal Washington Research & Extension Unit in Long Beach.

Dr. Denny Davis, agricultural engineer, Washington State University, will give a Furford Harvester/Pruner modification update March 11 at 7 p.m. at the North Willapa Harbor Grange Hall in Grayland.

"Cranberry Production in the Pacific Northwest," by Azmi Shawa, Carl Shanks Jr. and Peter R. Bristow of Washington State University and Marvin N. Shearer and Arthur P. Poole of Oregon State University is now available and can be obtained by writing to the Coastal Washington Research & Extension Unit, Rt. 1, Box 570, Long Beach WA 98631. The cost is \$7.50 each.

LOWER PREMIUMS BEING LOOKED AT

The Federal Crop Insurance Corporation is considering changes in the crop insurance program that would lead to substantially lower premiums for most cranberry growers in the country. The changes are expected to go into effect for the '85 season.



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weather watch

MASSACHUSETTS

December was very mild, averaging 7 degrees a day above normal. This was a record for East Wareham. Maximum temperature was 62 degrees on the 29th (not a record) and minimum 18 degrees on both the 8th and 27th. Warmer than average period occurred from 1st-3rd, 6th, 9-13, 16-20, 22, 24-25 and 28-31. The only cooler than average days were the 7th and 27th.

Precipitation totaled 3.45 inches or 3/4 inch below normal. There was measurable precipitation on 11 days, with 1.16 inches on the 22nd as the greatest storm. Snowfall totaled 1 inch, the least since 1979.

For the year 1984, our temperature averaged 1.4 degrees a day above normal, the warmest since 1983 and fifth warmest in our records.

Substantially warmer than normal months were February (record), June, August, October, November and December (record).

Cooler than average months were January, March and September. Strangely enough, the maximum temperature for the year was only 90 degrees on June 8. Minimum was minus 15 degrees on Jan. 22.

Precipitation for 1984 totaled 48.39

inches, which is about 1 1/2 inches above normal. This is nearly 7 inches less than in 1983. The greatest precipitation from one storm was 3.22 inches from May 31 through June 2. Months with substantially above normal precipitation were February, March, June and July. Below normal months were January, August (record dry), September and November. Basically, the period February through July was about 50 percent above normal and August through December was about 40 percent below normal.

Snowfall for the year was 25.5 inches, just slightly below our average.

One final note: Sunshine for 1984 was substantially below normal, the least since 1972. The bulk of the cloudiness occurred during the period January through April, with the rest of the year average.

I.E.D.

NOVA SCOTIA

Up to Jan. 4, we had a reasonable winter, with one minor cold snap right after Christmas. The mean temperature was minus 0.4, slightly warmer than the 30 year average of minus 2.4 C.

I.V.H.

WASHINGTON

Minimum temperature for December was 17 degrees on the 19th, with a bog minimum of 13 degrees. Maximum temperature was 51 degrees on the 15th. Rainfall totaled 9.23 inches, the average for December was 14.53 inches. The year's total precipitation was

90.78 inches—the 23 year average is 84.85 inches.

A.Y.S.

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A new manufacturing facility for the production of Vitavax has been opened in Naugatuck, announces James Wylie, vice president and general manager-crop protection for Uniroyal Chemical.

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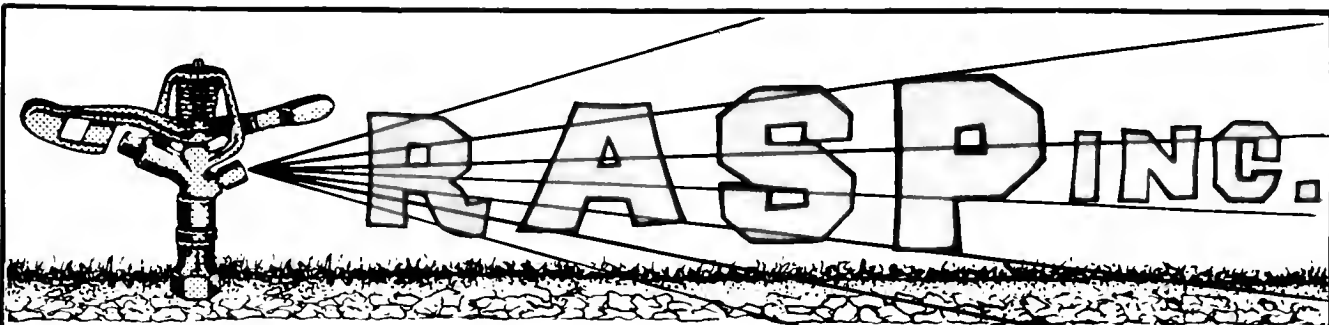
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SEEK TO AVERT DUMP CRISIS

The New Jersey Pinelands Commission recently called upon state and local officials to cooperate in an effort to prevent the Pinelands—the state's cranberry growing region—from becoming a major new dumping ground for garbage.

In a recent letter to Department of Environmental Protection Commissioner Robert Hughey, county health boards and solid waste managers, and Pinelands area mayors, Commission Executive Director Terrence D. Moore said the commission fears a sharp increase in illegal dumping in the Pinelands.

"Illegal dumping has always been a problem in the Pinelands because of its large, unpatrolled, wooded areas," Moore wrote. "However, as landfills close and many counties and towns fail to come up with alternative plans for garbage disposal, the incidents of illegal dumping threaten to increase considerably unless some preventive measures are taken."

Moore said that rising disposal fees at those landfills remaining open could also increase illegal garbage dumping in the Pinelands. He added that a partial solution would be to have municipal, county and state agencies jointly prosecute illegal dumpers since they could be violating as many as five laws: state trespass laws, the Solid Waste Management Act, the Pinelands Protection Act, county health regulations and municipal litter laws.

HOLIDAY SALES DOMINATE

All fresh cranberries, 73 percent of cranberry sauce and 34 percent of other cranberry products are sold between September and December, according to Stuart Pedersen, chairman of Ocean Spray.

THE PART-TIME FARMER

How much of total farm family income comes from off-farm jobs and other off-farm sources? According to Behind the Ag Scene, the answer is 63 percent.

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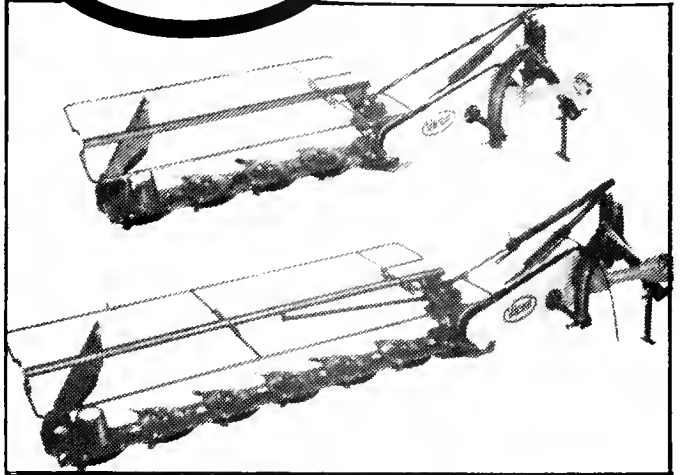
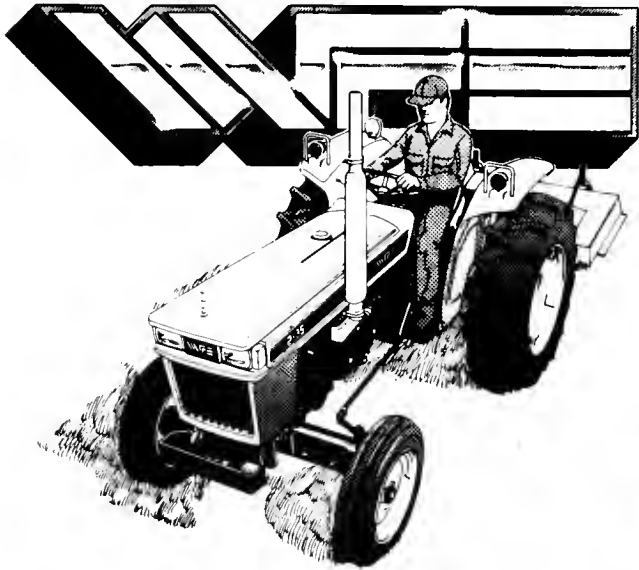
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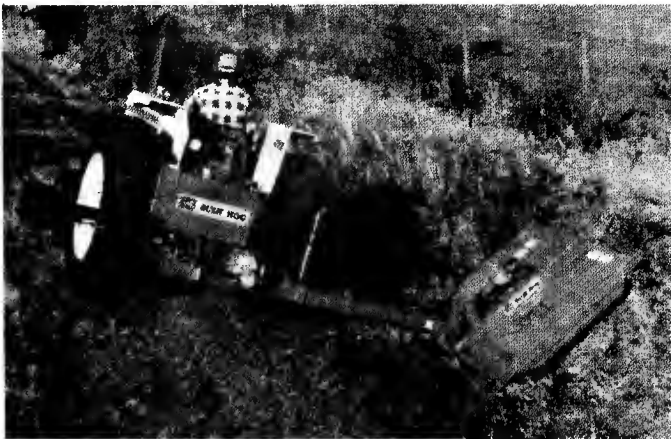
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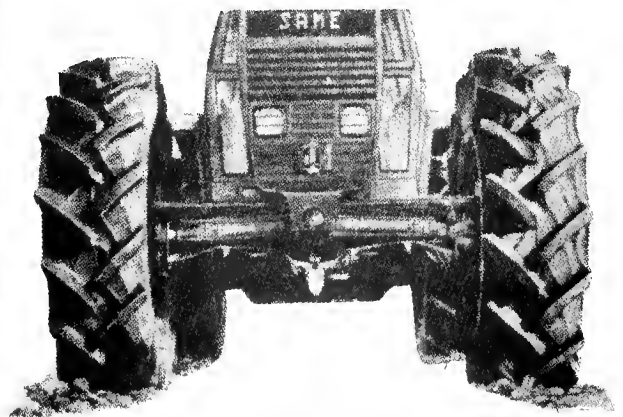
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EXPORTS TO BECOME MORE CRUCIAL FOR THE U. S.

By CLARK EDWARDS
Foreign Agriculture

During the next two or three decades, the domestic market for food is expected to expand less than 1 percent per year. U.S. agricultural capacity, however, should grow much faster. The resulting potential for excess supplies will make the expansion of foreign markets more crucial than ever for U.S. agriculture.

Exports are already an important outlet for U.S. farm products. Today, the output from 40 percent of harvested acres in the U.S. enters export channels, compared with 20 percent just a decade ago.

If U.S. exports increase at an average annual rate of 3 percent, as expected, output from approximately 50 percent of the harvested acreage will be exported by the year 2000.

Even so, the U.S. share of exports—and of global output—will decline as worldwide production expands. These findings are based on a study being prepared by Economic Research Service, one in a series of publications on world food problems.

World food production is projected to meet the increased demand even if output slows somewhat from the growth rates of the past 30 years. Production rose annually at a 2.9 percent clip in the 1950's and 2.7 percent in the 1960's. However, bad weather and adverse economic conditions dropped the rate to 2.2 percent during the 1970's.

Prospects are that world agriculture can double its output over the next three decades. To do so, long-term growth will have to be maintained at slightly above the reduced pace of the 1970's. This is likely to occur, even though farm prices could fall as production outstrips demand.

Meanwhile, world food consumption is expected to double over the next three decades, spurred by rising incomes, changing tastes and better distribution of food to low income people.

The last doubling took 27 years. The pace will be slower this time because growth in world population is easing.

Population during the 1990's is expected to fall to 1.6 percent per year, compared with the current 1.7 percent and 1.9 percent during the 1950's and 1960's. Forecasters have suggested that if present trends continue, world population growth may cease altogether during the next century.

Alternative future levels of world food production, demand and prices would have

different impacts on U.S. farmers, exporters, consumers and others in the food marketing system.

If a relatively plentiful world food situation prevails, U.S. export markets will grow more slowly, with excess supplies perhaps becoming more extensive. If export growth falls to as little as 2 percent per year, larger domestic supplies would mean even lower farm prices.

Lower feed prices would benefit livestock growers but extensive federal assistance would be needed to support farmers' incomes.

Conversely, should there be an extended period of world food shortages, food prices relative to other consumer spending would rise and export markets would grow at a quicker pace. Farm income would improve, consumer prices would rise and the need for federal aid would probably be unnecessary for most commodities.

Many factors will influence the future supply of U.S. farm products, including new approaches on farm policies and trade agreements. Ways will have to be found to expand exports, accommodate the probable downtrend in world food prices and cope with short-term fluctuations in prices and export levels as U.S. farmers turn more to international markets.

Agriculture is increasingly affected by national monetary policy, tax laws and the level of government deficits. For instance, higher interest rates dampen demand for farm products because they increase foreign exchange rates—thereby raising the real price of U.S. agricultural products in world markets.

On the other hand, food supplies also may eventually decrease as higher interest rates discourage investment in farmland and capital.

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The internationalization of U.S. agriculture has changed the basis for farm policies. It has implications for the relative well-being of farmers, the agribusiness sector and consumers as well as U.S. trading partners.

(This article by Clark Edwards of the National Economics Division, Economic Research Service, appeared in the January 1985 issue of Foreign Agriculture.)

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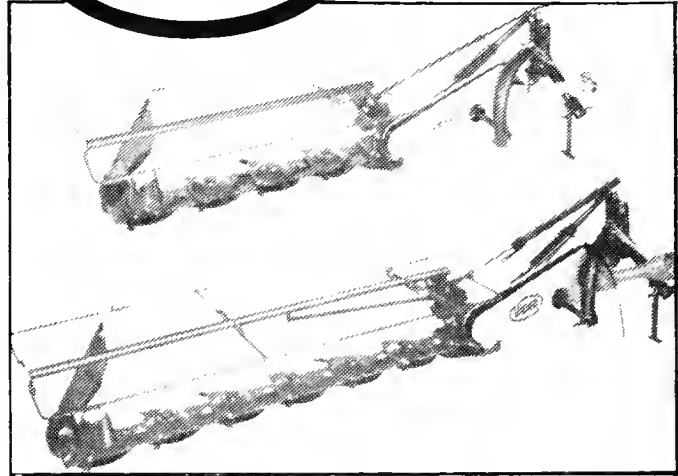
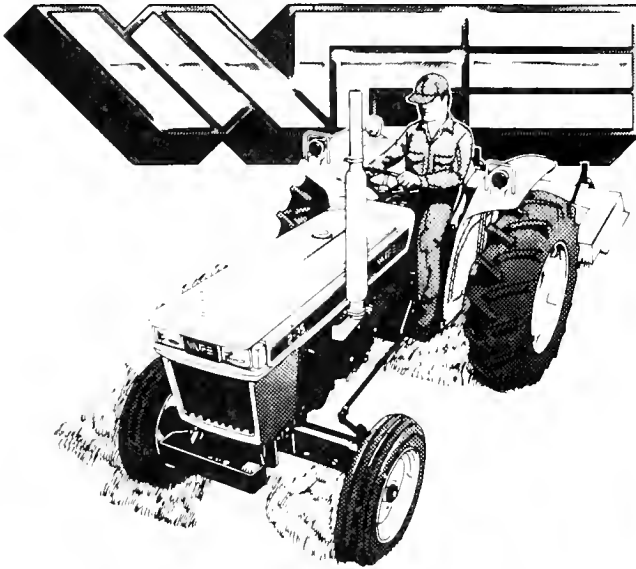


THINK SPRING!

1984 pest report . . . 3

A berry funny tale . . . 12

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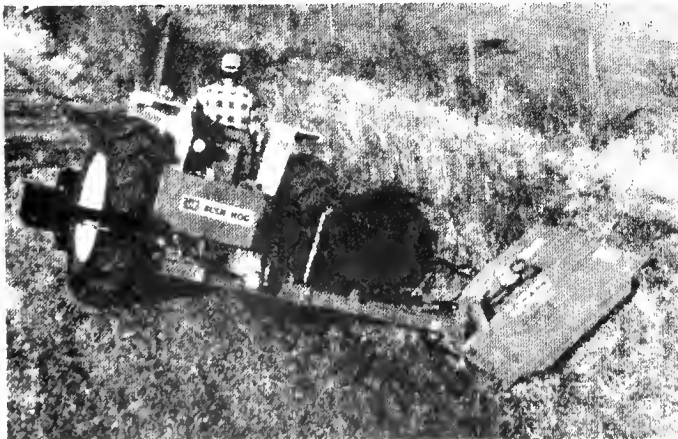
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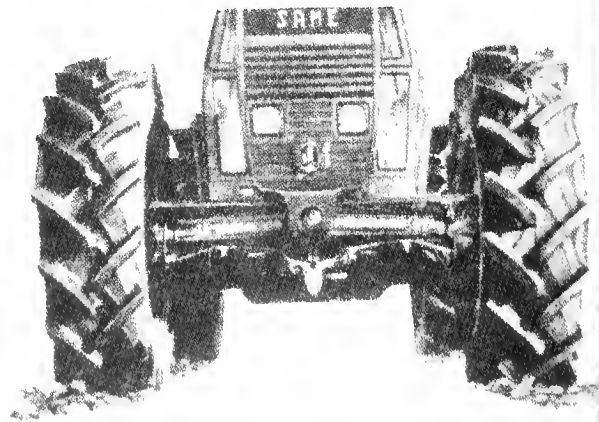
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Integrated pest management on cranberries in Massachusetts, 1984 results

By SHERRI L. ROBERTS
Cranberry IPM Coordinator
Massachusetts Cranberry
Experiment Station

Table 1. Average percent of direct insect injury on fruit at harvest on IPM and Check bogs in Massachusetts, 1984

Pest	Damage type	% Damage	
		IPM	Check
Sparganothis fruitworm	Fruit damage	0.87	0.99
Cranberry fruitworm	Fruit damage	1.15	1.93
Total % of Insect Injury to Fruit		2.02	2.92

The 1984 growing season was the second year of operation for the Massachusetts Integrated Pest Management program on cranberries. The major objectives of the program were to train and educate the grower to better understand the cranberry pest complex, including appropriate monitoring methods, and to update economic threshold levels in order to accomplish economically and environmentally sound pest management.

Table 2. Average percent of indirect insect injury on vines at harvest on IPM and Check bogs in Massachusetts, 1984

Pest	Damage type	% Damage	
		IPM	Check
Cranberry tipworm	Terminal cupping	1.88	1.44
Southern red mite	Leaf bronzing	0.71	14.67
Gypsy moth	Tip damage	9.64	12.13
Blossom worm			
False Armyworm			
Cutworm			
Green spanworm			
Brown spanworm			
Gypsy moth	Leaf feeding	1.73	3.03
Blossom worm			
False Armyworm			
Cutworm			
Green spanworm			
Brown spanworm			
Cranberry weevil	Cut blossoms	9.75	9.43

Information reported here resulted from intensive weekly scoutings of 15 commercial cranberry bogs in Massachusetts. Forty seven of these bogs were considered IPM bogs and 17 were Check bogs. In depth scouting is the keystone of every IPM program, for it enables IPM personnel to advise growers as to the need for an optimal timing of pesticide applications.

Operation and Procedure

Financial Support

The program was funded in FY84 by a USDA-Extension Service, IPM grant; participating IPM growers paid 50%/A for insect scouting and advise-ment; USDA-Extension Service, IPM grant. In addition, Ocean State and the Cape Cod Cranberry Growers Association made contributions earmarked for specific purposes.

Number of Cranberry Bogs Scouted: Each week, 47 bogs totalling 301.92

COVER PHOTO

BELIEVE IT OR NOT (no, this isn't a Ripley puzzler), those are cranberries arranged in the snow. You'll find out how they got there by turning to page 12. CRANBERRIES photo by Steve Hall)

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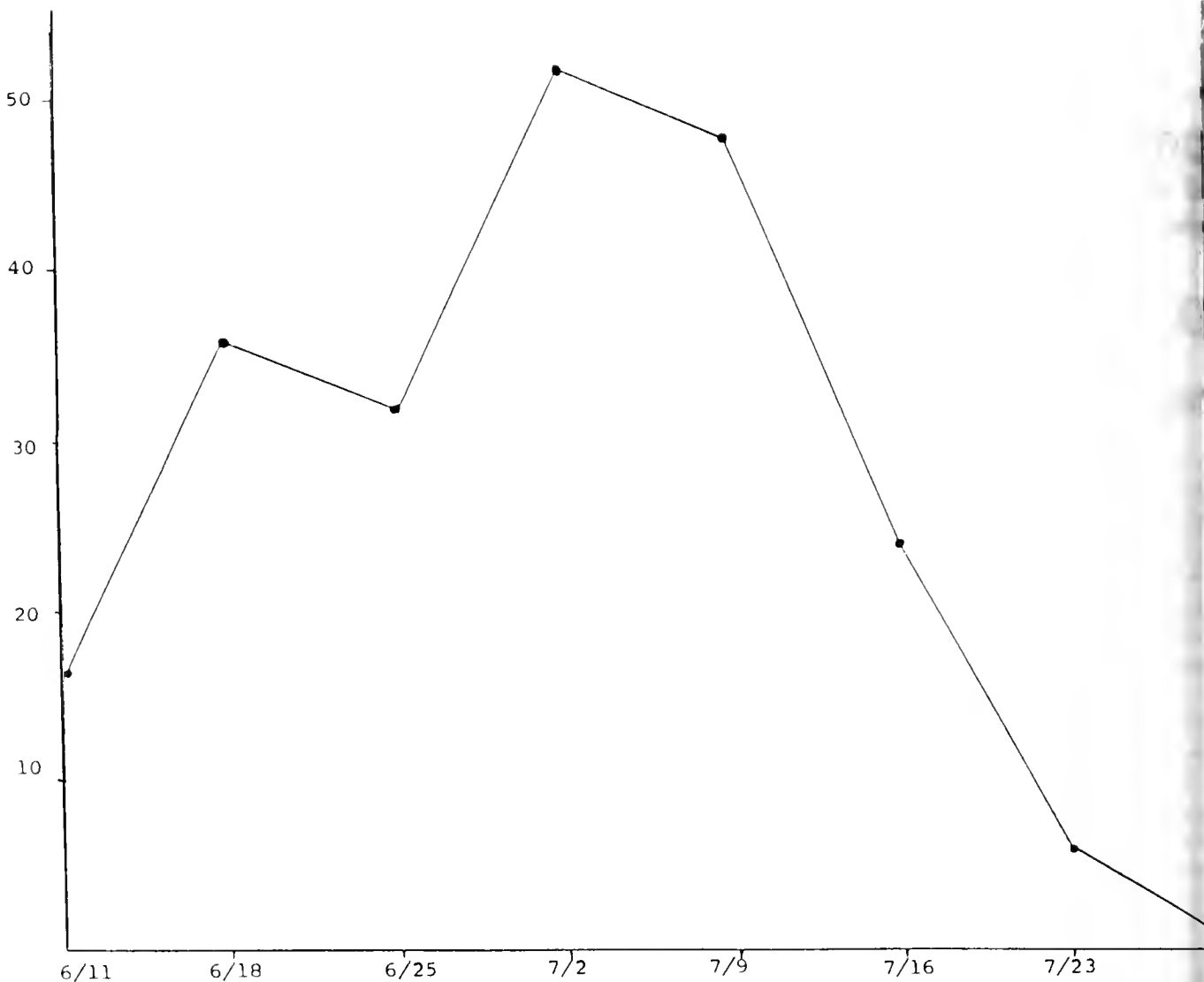


Figure 1. Average weekly adult catches for 1984 for Chrysoteuchia topiaria.

acres and 8 Check bogs totalling 32.3 acres were scouted for insect, weed and disease infestations. Bogs ranged from 1 to 20 acres apiece. IPM growers received a scouting report and were contacted either in person or via telephone by the IPM coordinator and advised about the need to treat, when to treat, and materials to use. Check bog growers followed their own pesticide application program with no advice from the IPM coordinator.

Sampling Methods

Weekly, intensive bog monitoring provides the soundest basis for accurate pest management decision making and grower advisement. Bogs were divided into 1-acre scouting sites. At each site, one sample was taken (sample=25 180-degree sweeps, using a 12 inch insect net, depth into canopy 4 to 5 inches) and insects counted were beneficials, such as spiders and hymenopterous parasites, and pests, such as cranberry weevil, spanworms,

cutworms, gypsy moth, fireworms and Sparganothis fruitworm.

Visual sightings were made for cranberry tipworm, cranberry girdler and blackheaded fireworm and damage resulting from all previously mentioned pests.

Pheromone traps were used to monitor cranberry girdler and

Sparganothis fruitworm flight. One trap was used on each bog and captured girdlers and sparg were counted weekly.

The cranberry fruitworm is an annual problem plaguing every cranberry grower, and the timing of pesticide applications is all-important if this pest is to be properly managed.

(continued on page 8)

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Outrage, pure and simple

Administration pulling, congressional pushing is likely to result in a farm program that won't yank the rug out too quickly from too many hard pressed farmers.

That there will have to be a gradual change in farm support regulations there can be no doubt. A good place to start is the Administration proposal to limit support payments to those farmers with annual incomes under \$100,000. That big agri-business gets as large a slice as it does from farm assistance is an outrage.

The more farming can distance itself from Washington, the better off it will be. It's bad enough being subjected to the fickleness of nature. Farmers don't have to be buffeted about by the winds of political change, too.

Comparing wheat farming or cattle ranching to cranberrying is like comparing apples to oranges—or coconuts. They're different. Size, for one thing. But other branches of agriculture might take a look at the cranberry field. They might take a look at the fruits of cooperation, as in cooperative.



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TOWN BOGS PROFITABLE

Last fall's harvest of cranberries provided over \$100,000 in revenue to two Massachusetts towns.

Falmouth, which leases its 50 acres of bogs to the Handy Cranberry Trusts, derived \$22,606.10, based on a \$5 per barrel fee.

Mashpee received over \$80,000 in proceeds from its cranberry bogs.

The two towns' bogs are under the supervision of their respective conservation commissions.

—STEVE HALL

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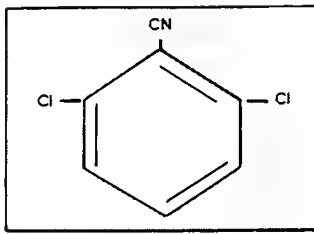
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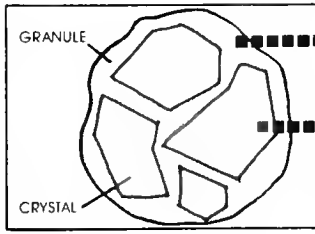
County; Dan Brockman, Vesper; Joan E. Humphrey, Friendship.

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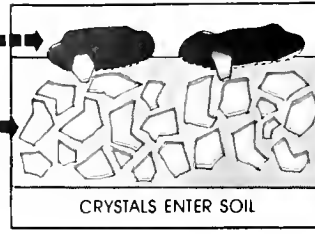
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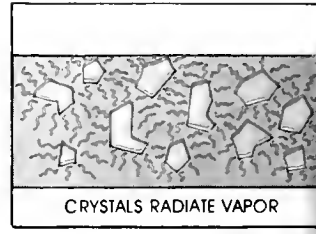
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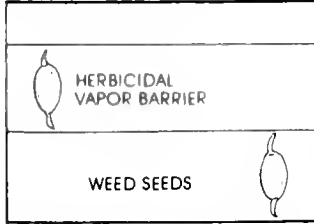
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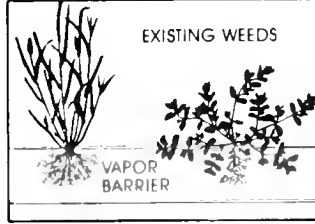
3. Granules are spread on soil or shallow water. Moisture carries the Norosac crystals into the upper layer of soil. Because of adsorption by soil particles, lateral movement is minimal.



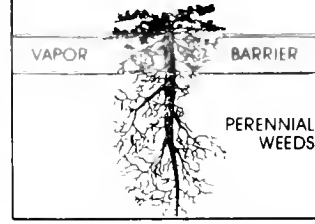
4. Temperature and soil moisture activate the Norosac crystals and they begin to radiate a herbicidal barrier. This continues for an entire growing season, and the spent crystals disappear, leaving no residue.



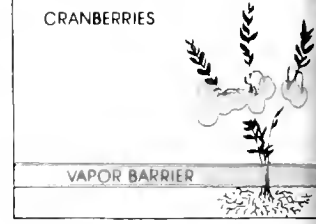
5. In this vapor barrier no plant cell division can occur. Seeds trying to germinate in the barrier will die. Sprouts below this zone will be killed as they try to penetrate the barrier.



6. Existing vegetation such as shallow-rooted grasses and annual weeds having root structures in this barrier will likewise be affected and die after two to three weeks.



7. Certain perennial weeds coming out of dormancy and attempting new growth within the Norosac barrier will run into the same dead end: they will be killed by the vapor



8. Norosac, when used as directed, does not affect cranberry bushes that have deep roots extending well below the herbicidal vapor zone.

How Norosac Reduces the Cost of Weed Control in Cranberries

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Table 3. Percent of cranberry bogs participating in the IPM program with grass and sedge weeds in Massachusetts, 1984

Weed Pests	% of bogs with weed	% of bogs with problem
Grass	100	13
Poverty	15	4
Manna	13	4
Cut	33	9
Rattlesnake	11	4
Smoke	20	0
Panicum	4	0
Sedges	48	6
Woolgrass	15	0
Plantain	2	0
Fresh water reed	4	0
Rushes	9	2

Table 4. Percent of cranberry bogs participating in the IPM program with annual weeds in Massachusetts, 1984.

	% of bogs with weed	% of bogs with problem
Marsh St. Johnswort	56	2
Dodder	67	11
Tearthumb	30	0
Ladies thumb	20	0
Pitchfork	67	9
Ferns	22	0

INTEGRATED PEST MGN'T . . .

(continued from page 4)

Based on past research findings, pesticide application was made nine days after the 50 percent out of bloom date. The second application was made 10 days after the first, as a standard procedure. After the second application, fruit samples (sample=25 berries per 1-acre) were inspected for unhatched, nonparasitized cranberry fruitworm eggs to determine a need for a 3rd or 4th treatment.

Fruit and vine injury at harvest was determined in IPM and Check bogs on the basis of 10 handfuls of vines pruned per scouting site.

Cranberry weeds were surveyed in August before clipping or harvest. Recommendations for spring and fall herbicide applications were made, based on the most numerous or serious weed species and past herbicide use.

Results

Injury was divided into categories: 1) direct (=injury to the berry); and 2) indirect (=injury to the vine). Sparganothis and cranberry fruitworms cause direct injury (Table 1). These two types of damage are separable and can be combined for total percent injury.

IPM bogs had a combined direct injury level of 2.02%, whereas the value for Check bogs was 31% greater, or 2.92%.

Indirect injury was subdivided into "types of injury" and "separable injury"

attributable to one pest (Table 2). "Types of injury" included tip damage and leaf feeding damage. "Separable injury" consisted of tipworm damage bronzing due to southern red mite

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Table 5. Percent of cranberry bogs participating in the IPM program with perennial weeds in Massachusetts, 1984

	<u>% of bogs with weed</u>	<u>% of bogs with problem</u>
Narrow-leaf goldenrod	100	33
Asters	89	17
Wild bean	39	4
White violate	54	15
Loosestrife	48	4
Meadowbeauty	13	0
Joe Pye Weed	26	0
Bell Wort	2	0
Arrowhead	6	0
Mint	15	0
Blue vervain	2	0
Clover	2	0
Ditch stonecrop	2	0
Mermaid weed	2	0
Purslane	2	0

Table 6. Percent of cranberry bogs participating in the IPM program with woody perennial weeds in Massachusetts, 1984

	<u>% of bogs with weed</u>	<u>% of bogs with problem</u>
Brambles	96	26
Chokeberry	41	13
Hardhack	83	6
Maples	91	4
Poison ivy	52	6
Leather leaf	22	0
Sweet pepperbush	30	2
Cat briar	67	22
Heather	2	0
Tall briar	35	0
Pines	6	0
Cinquefoil	4	0
Meadowsweet	22	0
Sheep laurel	9	2

ing, and cut blossoms due to
cranberry weevil activity. All indirect
ary could not be combined numer-
ely because individual uprights
ometimes exhibited more than one
e of injury.

Tip damage was 21% lower on IPM
s than on Check bogs.

Leaf feeding was 43% lower on IPM
s than on Check bogs.

Cranberry tipworm damage,
sisting of cupped terminal leaves,
w 24% lower on Check bogs than on
IPM bogs.

Southern red mite injury, observed
leaf bronzing, was 95% lower on IPM
m on Check bogs.

Cranberry weevil damage, consisting
everted blossom buds, was 3% lower
Check than on IPM bogs.

Cranberry girdler moth flight was
nitored, using commercially
vailable pheromone traps. Monitoring
eck flight and end of flight on

selected bogs enabled growers
throughout the region to make
more timely insecticide treatments to
manage larval populations. Cranberry
girdler flight peaked the week of June
25 and ended the week of July 30

(Fig. 1).

Sparganothis fruitworm flight began
approximately the first week of June,
peak flight occurred the week of June
25, and ended the week of July 30.
Second generation moths began

Massachusetts Growers

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Table 7. Cost benefit analysis of insect pest control in IPM vs Check bogs, 1984

	<u>IPM</u>	<u>Check</u>	<u>Difference</u>
Average number of spray dates per acre	4.07	4.50	
Average number dosage equivalents per acre ¹	5.88	6.80	
Average cost per acre spray materials for insecticides	\$43.04	\$59.38	-\$16.34
Spray application cost:			
Sprinkler ²	\$16.02	\$14.04	
Helicopter ³	\$ 3.42	\$14.25	
	<u>\$19.44</u>	<u>\$28.29</u>	-\$ 8.85
Average % fruit injury due to insects ⁴	2.02	2.92	
Average value per acre of fruit loss due to insect injury ⁵	\$152.71	\$220.75	-\$68.04
Per acre charge for IPM growers	\$20.00		+\$20.00
Average net benefit per acre from IPM			+\$73.23

1. Dosage equivalent = actual pesticide rate divided by MA recommended pesticide rate.
2. Based on \$3.50 per acre labor cost and \$1.00/acre/application for fuel and oil.
3. Based on \$9.50/acre/application - includes nurse truck, loading, and labor.
4. Does not include cut-blossom, leaf-feeding, and tip damage which does not directly affect the fruit.
5. Based on pool price for Ocean Spray, as of Jan. 30, 1985: \$54/bbl and MA 1984 average yield of 140 bbl/acre.

emerging the week of Aug. 13 (Fig. 2).

A weed survey was conducted in late August on IPM and Check bogs. The weeds were divided into four categories: (1) grasses and sedges; (2) annuals; (3) perennials, and (4) woody perennials. The most serious problem in each category was poverty grass, dodder, narrow-leaf goldenrod and brambles, respectively (Tables 3, 4, 5, 6). Spring and fall herbicide recommendations were made for the IPM bogs.

Insecticide Use

IPM bogs received 10% fewer insecticide treatments than the Check bogs. IPM bogs received 14% fewer dosage equivalents than the Check bogs (Table 7).

Parathion continued to be the most commonly applied insecticide in the cranberry industry. Among Check growers, however, Parathion usage dropped from 3.6 to 1.75 applications/

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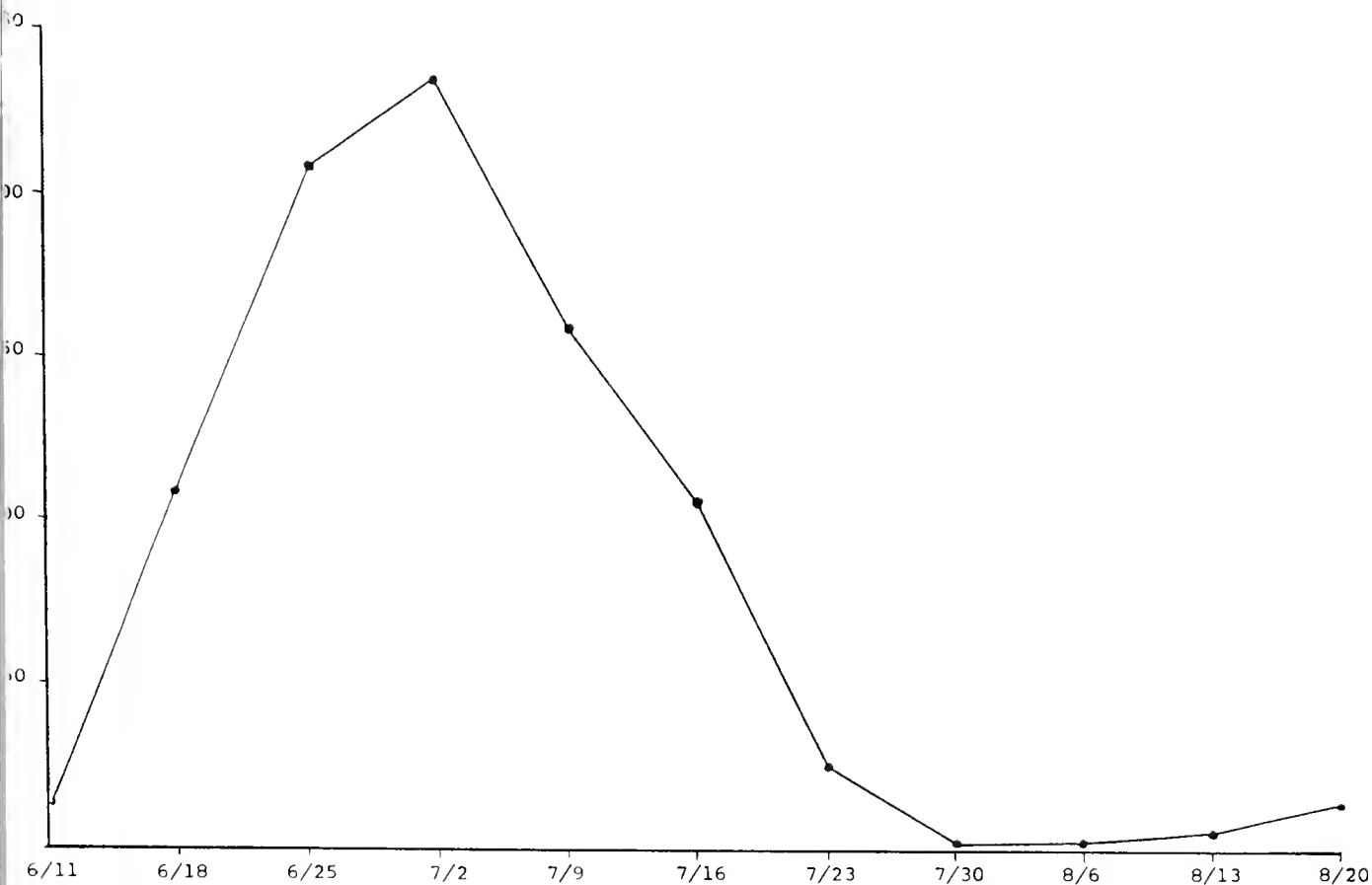


Figure 2. Average weekly adult catches for 1984 for *Sparganothis sulfureana*.

from 1983 to 1984, a 50% reduction. Diazinon use increased among Check growers. In its first year of availability, Lorsban ranks second and third in use behind Orthene and diazinon as a primary insecticide among Check and IPM growers, respectively (Table 8).

Table 7 summarizes the cost benefit analysis of IPM vs Check bogs. IPM growers made 10% fewer insecticide applications and realized a cost savings of \$25.19 on materials and their application. IPM growers used more costly insecticides that are less harmful to beneficial insects and to the applicator than did Check growers. The average value of fruit loss per acre was \$68.04 lower on IPM bogs, resulting in an average net benefit per acre of \$73.23 from IPM scouting and grower advisement (Table 7).

It should be emphasized that this analysis is intended to show *relative* instead of *absolute* numerical or percentage differences, and that the values herein are *average*. As such, they do not reflect grower wholesale prices for pesticides, per acre yields higher or lower than the Massachusetts average of 140 barrels per acre, or fruit prices substantially different

from those in this analysis.

It also should be noted that savings in pesticide and application costs seen in 1984 are only the most immediate benefits of IPM. IPM has essential, long-term benefits as well as reducing

selection pressure for pesticide resistance and thus greatly delaying development of resistance, while prolonging the period of usefulness of currently available pesticides.

Table 8. Number of insecticide treatments/acre applied for insect control in IPM and Check bogs, 1983 & 1984.

Pesticide	Number of Treatments/A			
	1983		1984	
	<u>IPM</u>	<u>Check</u>	<u>IPM</u>	<u>Check</u>
Parathion	1.40	3.60	1.63	1.75
Guthion	1.80	1.00	0.58	0.87
Sevin	0.60	1.20	1.00	0.87
Diazinon	1.00	0.20	0.48	0.62
Lorsban	----	----	0.95	1.12
Orthene	0	0.20	0	0
Lannate	0.20	0	0	0
Malathion	0	0.20	0	0
Omite	0	0	0.04	0.25
Pyrenone	1.60	1.00	1.00	1.12

Writing with cranberries . . . ?'

By STEVE HALL

Strange things happen when you don't listen well. When I talked on the phone with Bob Taylor, editor of CRANBERRIES, he asked me to "write something about cranberries." Since I wasn't listening, I thought he said, "write something with cranberries."

"Okay," I replied, "but it won't be easy."

"Oh, come on, Steve," he laughed, "you can do it."

"I'll do my best," I said, hanging up, not sure *what* I was going to do. What could I write with cranberries??? A visit to the local office supply store proved useless. They didn't sell typewriters made out of cranberries and they didn't sell pens that used cranberry juice instead of ink.

"Guess I'll have to handle this myself!" I said. I bought a bag of berries at the local supermarket, brought it home, and squeezed each berry above the pages of my notebook. The juice dribbled out, *slowly*.

I wrote, "The story you are about to read is . . ." That beginning took

me eight hours, 15 minutes, and one bag of berries. Needing more, I hopped into my car and headed back for the market.

"Eeeeeee!" a shopper there screamed, looking at my red-stained hands. "A murderer! There's a murderer in the store!"

"I'm no killer," I explained politely. "I'm a cranberry writer."

This did not convince her nor did it convince the store manager, who had already called the police.

The lab boys were able to prove that my hands were indeed stained with cranberry juice, not blood. And it took them only two weeks to do it!

My stay in jail wasn't *that* bad. It gave me the time to figure out the proper way to write with berries. Soon as I was released, I went back to the market and bought four more bags. Back home, I packed the snow down in my back yard. Then I chose a topic, springtime, and decided to write a short, yet snappy little article called "THINK SPRING!" I did this by arranging the berries one by one beside

each other in the snow.

One of my neighbors, Ben, wandered over when I was about halfway through "Whatcha doin'?" he asked.

"I'm on special assignment," I told him. "I'm writing for CRANBERRIES magazine."

"You ain't wrote *much*," Ben remarked. "Just two words," he noted, pointing to "THINK SPRING!"

"Ben," I replied, undaunted by his literary criticism, "it's quality, not quantity, that counts!" Visions of my "THINK SPRING!" story becoming a best selling novel, and then a blockbuster movie, danced in my head.

"Sorry if I offended you," Ben apologized.

"Don't worry about it," I told Ben. "You'll always be my friend, even when I'm a world famous writer."

"And when is this going to happen?" he asked me.

"THINK SPRING!" I told him. Always the optimist, I repeated, "Ben, THINK SPRING!"



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regional news notes

Massachusetts

By IRVING DEMORANVILLE

Drs. Robert Devlin and Karl Deubert attended the annual meeting of the Northeastern Weed Society held in Atlantic City, N.J., on Jan. 8-10. Both Bob and Karl presented papers and, in addition, Bob was chairman of the ecology, physiology and soils section.

Dr. Charles Brodel attended the New England Small Fruits Conference in Concord, N.H. Chuck presented a paper titled "Application of Pesticides Through the Irrigation System."

Washington

By AZMI Y. SHAWA

The Cranberry Field Day will be held Friday, June 28 at the Coastal Washington Research and Extension Unit, Pioneer Road, Long Beach.

Last month we mentioned that copies of "Cranberry Production in the Pacific Northwest" (PNW 247) are available from the Coastal Washington Research and Extension Unit, Rt. 1, Box 570, Long Beach WA 98631, at \$7.50 each. Checks should be made payable to Cooperative Extension Publications. The new publication, a revision of an earlier publication, "Cranberry Production in Washington," is 50 pages, authored by Azmi Y. Shawa, Carl H. Shanks Jr., Peter R. Bristow, Marvin N. Shearer and Arthur P. Poole and contains color reproductions and full information on West Coast cranberry production. Copies also may be obtained from the Bulletin Office, Cooper Publications Bldg., Washington State University, Pullman WA 99164-5912 or

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Two other recent publications are 1984 Cranberry Establishment and Production Costs and Returns, Southwestern Washington, Dry Harvest (EB 1295) and Wet Harvest (EB 1296). They are 50 cents each.



MASSACHUSETTS

January was cold, averaging 5.5 degrees a day below normal; not record breaking cold, but consistently cold for the month with only two days of above average temperature.

Maximum temperature was 53 degrees on the 1st and minimum 4 degrees on the 21st. The only warmer than average days were the 1st and 2nd. Colder than average periods occurred from the 9th-12th, 16th-18th, 20th-23rd, 26th, 27th and 29th.

Precipitation totaled only 1.17 inches or about 3-1/8 inches below normal. It was the driest January since 1970 and third driest in our records. There was measurable precipitation on nine days, but 0.37 inch was on the 8th was the greatest storm. Snowfall totaled 11.7 inches, but all storms were light, fluffy and dry.

I.E.D.

NOVA SCOTIA

Our weather took a decided change right after Christmas and has remained cold ever since (Feb. 4). We also have about as much

snow now as I can remember for several years.

I.V.H.

WASHINGTON

January was a warm, sunny month. Maximum temperature was 62 degrees on the 17th and minimum was 23 degrees on the 1st.

Rainfall totaled .78 inch, a dry record for this area, with the local records dating back to 1945. The average for January is 11.49 inches. There was measurable rain on seven days but most were small amounts! The greatest storm was 0.17 inch on the 28th.

A.Y.S.

POSITION ANNOUNCEMENT GRADUATE RESEARCH ASSISTANTSHIP

Pullman, Washington. A graduate research assistantship in cranberry culture is available effective Summer, 1985, or until filled. This assistantship is to conduct work leading to an M.S. or Ph.D. degree in the Department of Horticulture and Landscape Architecture, Washington State University.

Possible areas of research include culture, postharvest physiology, weed control, nutrition and growth regulators.

For further information, write or call Professor Azmi Y. Shawa, Horticulturist and Area County Extension Agent, Coastal Washington Research and Extension Unit, Route 1, Box 570, Long Beach, WA 98631 (Phone 206-642-2031).

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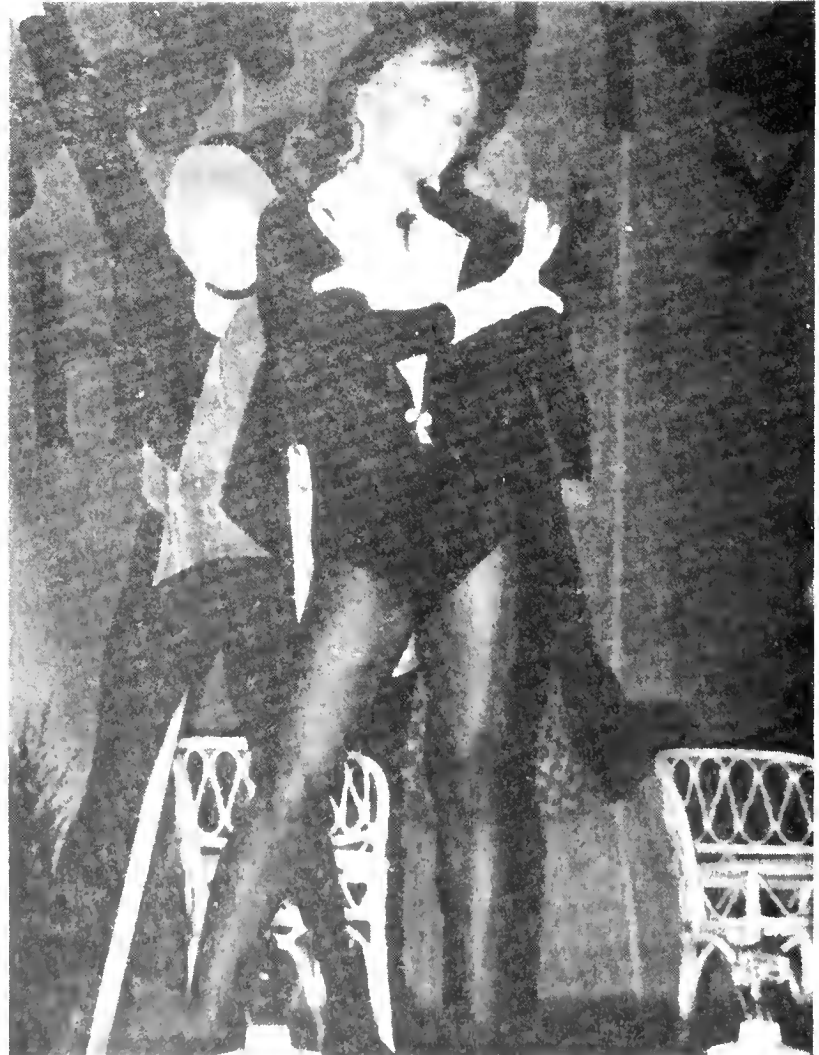
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PHOTOS on this and the preceding page are from last year's Bandon, Ore., Cranberry Festival.

(Photos by the Western World)





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OBITUARY

JOSEPH A. CHAMBERLAIN

Joseph A. Chamberlain, 62, of Mary's Pond Road, Rochester, Mass., a cranberry grower with Decas Cranberry Co., Inc., of Wareham who was active in all phases of the company, died Feb. 13 at Massachusetts General Hospital. He was the husband of Georgia (Decas) Chamberlain.

Born in St. Agatha, Me., he was the son of the late Paul and Hannah (Michaud) Chamberlain.

Chamberlain was a member of the Cape Cod Cranberry Growers Assn. He also was active in town affairs. He was a member of the Rochester Planning Board and was the board's representative until 1984 to the Southeastern Regional Planning and Economic Development District and a member of SEED. He also was supervisor of Veterans' Graves and the chairman of the Industrial Development Commission.

A member of the Rochester Police Department for 22 years, he served as sergeant until his retirement in 1983. He was a member of the Plymouth County Police Officers Assn., the Plymouth County Narcotic Enforcement Officers Assn. and the Rochester Police Assn. Among other affiliations, he served on the committee charged with naming the Rochester Memorial School and he was a charter member of the Sippican Rod and Gun Club and the Fraternal Order of Eagles. He was active first in cub scouting and served as treasurer for 22 years of Boy Scout Troop 31.

Besides his wife, he is survived by

four children: Joseph Adrian Chamberlain II of Lakeville; Esther-Ann Chamberlain of Chelmsford; William D. and Cynthia Kae Chamberlain of Rochester. Other survivors include five sisters, Candide Desrosiers of Sinclair, Me., Claire LaChance of Plainville, Conn., Theodora Rival of Madewaska, Me., Penelope LaVoice of Bangor, Me., and Carmelita Cyr of Bristol, Conn., and one brother, Donald James Chamberlain of Woodbridge, Va.

Chamberlain served in the military for three years during World War II, leaving as a technical sergeant.

A memorial service was held Mar. 24 at First Congregational Church, Rochester.

Contributions in memoriam made be made to the Rochester Conservation Commission Fund, c/o Valerie Nichols, Plymouth Savings Bank, 226 Main St., Wareham MA 02571.

-Carolyn Gilmore

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CRANBERRY WHISKEY BREAD

Cathy Collins won a prize at the first Chatsworth, N.J., Cranberry Festival for this recipe.

- 1 box yellow cake mix
- 1 box vanilla instant pudding
- 1/2 cup whiskey
- 1/2 cup oil
- 1/2 cup milk
- 5 large eggs

Mix all together, then beat for 2-3 minutes. Fold in 1 generous cup chopped nuts, 1 generous cup coconut, 1 1/2 to 2 cups chopped cranberries. Bake in greased and floured tube or bundt pan for 55 minutes at 350 degrees. Cool in pan 10 minutes, then turn out to rack. Sprinkle with confectioner's sugar when almost cold.

GLAZE: 3/4 cup sugar, 1/2 cup whiskey, 1

wedge butter, boil together for 30 seconds. As soon as you remove cake from oven, pour hot glaze over cake and let it set and cool in pan.

CROP ESTIMATE UP

By IRVING E. DEMORANVILLE

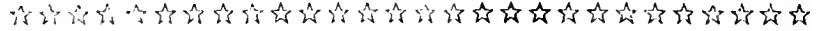
The latest crop report from the USDA Crop Reporting Service indicates the national crop at 3,313,000 barrels.

That's up from the August record breaking estimate.

The latest report gives the Massachusetts crop as 1,644,000 barrels, which is about 11 percent above the August estimate and roughly 12 1/2 percent above the 1983 crop.

Other areas in descending order Wisconsin, 1,200,000 bbls.; New Jersey, 274,000 bbls.; Washington 103,000 bbls.; Oregon, 92,000 bbls.

These totals may be subject to small changes later in the year.



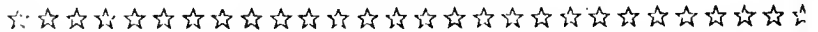
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Wisconsin growers go to school

By DAN BROCKMAN

The cranberry growers of Wisconsin converged on Wisconsin Rapids Jan. 17 and 18 for the annual Wisconsin Cranberry School. The largest attendance of any year was present—250 growers.

THE SCHOOL began with an introduction by Tod Planer, who has been the driving force in organizing each year's school and who once again did an outstanding job.

Following Tod's talk, an interesting film on Wisconsin's ground water was shown. It explained what ground water is, where it comes from, how important it is to each of us, some problems with it (pollution and overuse), and how to protect it. After the movie, Dave Curwen discussed a case history of ground water contamination in the "central sands" area of Wisconsin, a large, potato growing region in central Wisconsin.

Tim Dittle, a graduate student at the University of Wisconsin, Madison, then discussed his insect pest survey, which was sent to all growers in the state. The survey revealed that the cranberry fruitworm and the blackheaded fire worm are the two major insect pests to the Wisconsin grower.

A **VERY** thorough presentation on ditch stonecrop, a relatively new

problem weed in Wisconsin, was then given by Dr. Malcomb Dana. According to Dr. Dana, ditch stonecrop is becoming more of a problem because of the drier growing conditions encountered from the use of sprinkler irrigation.

Ditch stonecrop is a perennial weed most common on new plantings and in thin beds. A spray application of 2,4-D applied in mid-May at the rate of 1.09 kg/ha (about 1 lb/A) gave 100% control in Dr. Dana's study. He believes that 2,4-D granules applied about May 15 at the rate of 1 lb/A of active

ingredient, watered in with .25 inch of sprinkler irrigation would give the same amount of control. Dichlobenil (Casoron, Norosac) applied 1 lb/A in mid-May will suppress growth until late July, after which stonecrop may not mature enough to cause

Dr. D. L. Mahr then talked on picking the correct insecticide for use on cranberries. Pesticides should be picked for their effect on target and nontarget insect pests, cost per application, active life of insecticide and safety in use, he advised.

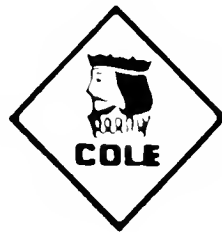
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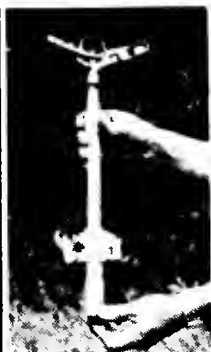
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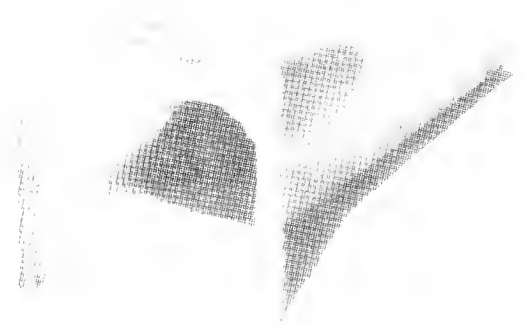
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BARREN BERRY, a problem in Searles vines, was discussed by Dr. Elden Stang. Dr. Stang noted that "barren berry" is a condition in which the vines fail to blossom. The barren spots are always in the same place and noticeable by the lack of blossoms and vigorous growth. Dr. Stang determined that it is a nonreversible, genetic problem, with the only solution being to remove the barren vines through burning, herbicides or digging them out, and then to replant the area in known, producing vines.

After a break for lunch, the afternoon session began with a film and talk by Roger Cole on electrical safety. Cole stated that .2 amps, such as the current used by a 25 watt refrigerator light, kills a thousand people in the U.S. yearly.

Getting more color in a cranberry is of interest to all growers and processors and Jiwan P. Palta is studying how to do it. His studies to date have been trying to find a way to penetrate the cuticle (waxy outer skin) of the cranberry with various chemicals. A combination of acetone and ethrel (a known fruit ripening chemical) have been found to pass through the cuticle.

Dr. Dana has worked with the growers for many years and is always a well liked speaker at the schools. What herbicides to use on cranberries

was his afternoon presentation.

Dave Curwen and Tom Berwick finished the day's session with a presentation on applying chemicals through sprinkler systems.

That evening many of the growers attended the Cranberry Growers Banquet, held at the Altdorf Church Hall about seven miles west of Wisconsin Rapids. A traditional part

of the school, this year's banquet again provided good food, drink and conversation for all who attended. We owe a thank you to the cooks, servers and bartenders who made the banquet a success.

FRIDAY morning at 8:30 the school resumed, with some showing the effects of a late night the night before.

The first presentation, by Dr. Ronald

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M. Boone, was a compilation of studies done on the relationship of weather to cranberry production and quality.

Joe Haug, district wildlife manager for the Department of Natural Resources, gave an excellent presentation on wetlands and wildlife habitat improvement. He noted that cranberry growers in the state control large areas of wetlands and wildlife habitat, land which is becoming more and more valuable to the sportsmen and wildlife of the state. He said most growers realize the value of wildlife and wetlands more than the general public does. Haug cited examples of wildlife being helped by the presence of cranberry marshes: eagles, loons, geese, sandhill cranes and sharptail grouse, to name a few.

Sid Hovde, DNR forester, mentioned the large land areas cranberry growers control and said that we should think of our wooded acres as crops to be harvested just like the cranberry beds. He noted the many acres of mature aspen he has seen on different marshes, most of it, he said, in need of being harvested.

THE SCHOOL was wrapped up with a very informative "open forum" on weed control. Three growers, Gerald Brockman, Harold Mesura and Jeff Hableman, along with Bob Hawk of Wildhawk Inc., formed a panel at which questions were directed. A lot of very useful information was dispensed in a short while by both the panel and the school attendees.

This writer would like to see this approach expanded in future years, as many of us have similar problems and can benefit greatly from the solutions other growers have found.

MAINE BLUEBERRY CROP SMALLEST SINCE 1981

According to the New England Crop and Livestock Reporting Service, Maine's 1984 wild blueberry crop is estimated at 25 million lbs., a 44 percent drop in harvested production from 1983's record output and the smallest crop since 1981.

Reductions in both acreage and yield kept the 1984 harvest well below earlier expectations.

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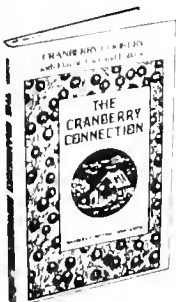
THESE CRANBERRY KIDS took part in last year's Independence Day parade in the town of Phillips, Wis. They are, left to right: Ryan Stuve, 9; Reese Stuve, 5; Reed Stuve, 6; Kristin Gottschalk, 10. (Photo by Sheri Hyland Stuve)



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Mann's a fighter

By CAROLYN GILMORE

Cranberry grower David Mann took Wareham, Mass., to court and forced the town to assess agricultural property according to the lower state formula. Now he's taking on the state itself.

Grower Mann gave up 15 acres of bog for the expansion of Rt. 25 (S. 495) through Plymouth to the Cape. He is worried that there is more to lose than 15 acres if the state-approved highway design is upheld.

For Mann and others, sacrificing part of his 100 acres of continuous cranberry bog system is not the issue. Wetland protection is. Highway "runoff" containing salts and oil detrimental to cranberry wetlands and cultural management is a very real threat, they believe.

Rallying behind Mann are area cranberry growers as well as farmers, sportsmen, environmentalists, hydrologists and local citizens.

"We're not trying to get them to give up the highway," Mann said. "We just want to make it environmentally safe."

Mann was awarded \$400,000 for the 15 acres of bog to be claimed by the state for the highway. He offered to return the money if the state would accede to his demands without replacing the bogs and routing the runoff. This request was denied.

The original Department of

Public Works drainage pool for the bog area of the highway was determined "inadequately designed" by IEP Engineering Co., Mann said. The Plymouth Conservation Commission denied that design. An appeal was then made to the Department of Environmental Quality and Engineering, which has authority over town commissions.

After review, the DPW enlarged the pool to accommodate a "100 year storm" situation and to include an oil boom. Further conditions included the installation of environmental monitoring wells around and away from the pool. However, there is no legal level of pollution required for action and no method of enforcement, Mann said.

The new design has sealed walls, but a bottom open to direct contact with the aquifer, the grower asserts. The project will also claim about a half acre of environmentally sensitive white cedar swamp.

"The bog and underground water is a designated protected aquifer for the town of Plymouth," Mann said. The water system is also connected to Bourne and Onset water supplies.

The new proposal "is a worse situation than what we had before," Mann said. "My hydrologist thinks this is going directly into the pond."

Instead Mann would like to see highway runoff removed through a "self contained system" that connects by pipeline to the nearby Cape Cod Canal. He would also like to see highway construction that includes replacement of the 15 acres he lost with other wetlands as required under the current wetland laws. These laws were not in effect when the highway was originally designed.

Mann appealed the DEQE permit. A backing of letters from cranberry growers followed, but in

Please Turn Page

COVER PHOTO

CRANBERRY GROWER David Mann says the environmental issues in the case in which he is involved are clear-cut. The story about Mann and his battle starts on this page. **CRANBERRIES** photo by Carolyn Gilmore)



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the meantime the permit slipped through without a public hearing. Unlike most environmental controversies, there is a clear-cut better way in this case, argue Mann and his supporters. Tying into a closed drainage to the canal is a non-wetland alternative.

"Here they can do it, so why not do it?" Mann asks.

In support of Mann's predicament, the Cape Cod Cranberry Growers Association is also concerned about all future highway expansion in cranberry growing areas.

The DPW is looking at 61 acres of cranberry bogs and 70 acres of primary agricultural land in North Carver-Plymouth where the continuation of Rt. 44 is proposed. With no close access to the ocean, highway runoff problems here may be more complicated.

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More red tape for the grower

While taxpayers from many specialized areas are adversely affected by specific aspects of the Deficit Reduction Act of 1984, one problem has arisen for all taxpayers. In the thousands of pages of this bill the Internal Revenue Service found three little words, "adequate contemporaneous records", and began the bureaucratic process of establishing time consuming and aggravating rules directly affecting millions of Americans. The IRS decided it is the duty of Americans to inform the government of every trip they make in a vehicle used for business, regardless of whether it is a tractor plowing a field or a farmer's wife picking up a part for a combine.

Under the regulations taxpayers must tell the government where each trip was made, at what time it was made, its purpose, and the exact mileage. If a taxpayer does not comply with this rule he is not allowed to deduct for tax purposes legitimate business expenses associated with the use of his vehicle.

I find it difficult to believe that such a regulation could ever be implemented.

As an example of the oppressive effects of these requirements consider the farmer who works 100 hours a week. Barely getting the work done on his farm during the day, he goes into town that night with his family. This farmer will efficiently utilize his time that night to pick up supplies for the farm. He logs his time, purpose of trip, mileage, and destination. Then he goes to dinner. This mileage does not count, and therefore is not deductible.

His farm hand uses a vehicle during the day, and is expected to record his name, the time, purpose for travel, and mileage for every stop. He goes to the seed store and records the mileage. Then he stops by the tractor dealership to pick up a part. He records this mileage. Then he stops at a local store to get a snack. This is not considered a business trip; therefore the mileage can't be deducted.

There are pages of burdensome paperwork in one full farm workday between the farmer and his work hands. It is obvious that for the honest, hardworking American the IRS has developed an outrageous requirement that would detract from a productive workday. How can a farmer be expected to run his business efficiently, tend the land, and lead a normal life if Federal regulations dictate how he spends his day?

Several pieces of legislation have been introduced to change this IRS contemporaneous mileage requirement. Threatened by these proposals, the IRS announced on January 25, 1985, that it will modify the contemporaneous mileage regulations. This modification comes in the form of a special rule for farm vehicles. The new rule will allow farmers to satisfy the record requirement in two different ways

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EDITORIAL . . .

(continued from preceding page)

for a vehicle that is directly used in the business of farming. The farmer may either keep only records of personal use, or keep no record at all and treat 80 percent of vehicle use as business and 20 percent as personal.

Although these changes do solve many of the original problems, several areas still need to be revised. One is the paperwork still required of the farmer who may, for example, use his personal automobile 75 percent of the time for work-related purposes. This farmer would be required to log the 25 percent personal use -- time, name, destination, and mileage -- for every trip.

With the new ruling by the Internal Revenue Service I hope that we have not ended the battle. The federal government must begin to understand that it is not the producer: the people are. We must fight government over-regulation. We cannot, and should not, allow problems like this contemporaneous mileage issue to slip by.

(This guest editorial was written by Sen. John East (R-NC). Senator East was a political science professor at East Carolina University before being elected to the U.S. Senate in 1980.)



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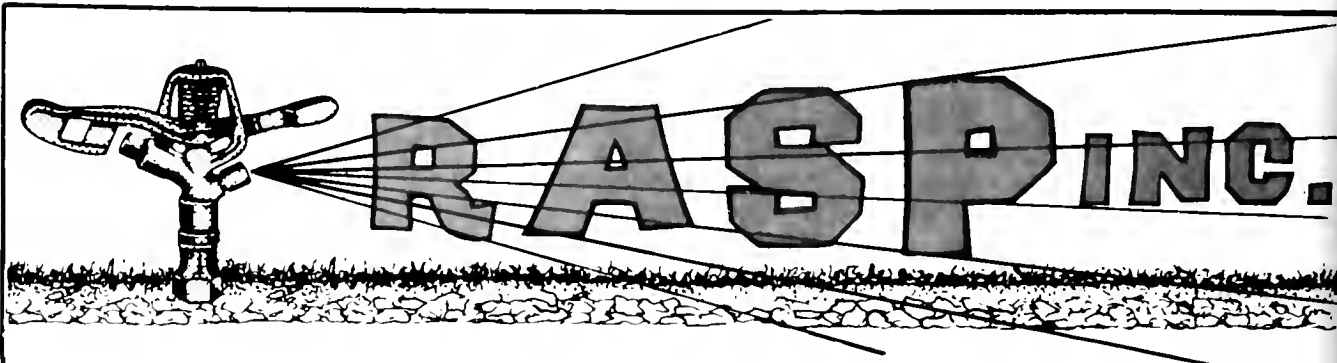
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regional
news
notes

Massachusetts

By IRVING DEMORANVILLE

Dr. Robert Devlin of the Cranberry Experiment Station attended the annual meeting of the Weed Society of America in Seattle from Feb. 5-8. Bob presented a paper on some of his herbicide research. Dr. Devlin also attended a meeting of the board of directors of CAST in Washington, D.C., from the 26th thru 30th.

weather
watch

MASSACHUSETTS

February was warm, averaging 2.6 degrees a day above normal. Maximum temperature was 53 degrees on the 25th and minimum was 5 degrees on the 5th. Warmer than average days were the 1st, 13th, 17th, 19th and 22nd through 25th. The only cooler than average period was the 3rd through 9th. Precipitation totaled 1.61 inches or about 2 inches below normal. This was the least since 1980 and sixth lowest in our records. There was measurable precipitation on seven days, with 0.65 inch on the 6th and 7th as the greatest amount. We are about 5 inches below normal for the first two months and

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nearly 5-1/2 inches behind 1984. Snowfall was a total of 12.5 inches, very dry and powdery.

I.E.D.

NOVA SCOTIA

Our weather ameliorated somewhat towards the end of February with two or three heavy rains taking a considerable quantity of snow. The maximum temperature in January was 1.0 degrees C and the minimum was -17.5 on both Jan. 8 and 18. Oxygen deficiency could be a problem this year.

Not too much activity for cranberry growers as our cold weather continued and we still had a light snow cover on March 20.

I.V.H.

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A burro for Christmas

By NORA ANN KUEHN

When I was left a widow with 4 and 6 year old sons to raise, my mother came to live with us. Mother had always been a farm enthusiast. She was determined that her grandchildren were going to grow up in a country environment. Whenever they received a gift from Grandma, it either barked, mewed, quacked, crowed or hopped. In a short time, our three acres greatly resembled Noah's Ark.

Just before Christmas, Mother read someplace that a burro ate much less than a horse did and at once decided that a burro was just the gift for the children.

John Martin, our neighbor, brought the burro home for us. Because our lane was soggy and wouldn't accomodate his heavy truck, John and the burro arrived on foot, exchanging uncomplimentary looks.

"Did you buy this long-eared creature for a plow?" John asked me, tugging on the rope around the burro's neck. The burro inched forward on

stubbornly braced feet, pushing a layer of mud before it.

"Mother bought the burro for the children," I explained.

John handed me the rope and left, shaking his head. The burro, as if in agreement with him for the first time, shook its head, too, and set up such eerie braying that I nearly fell off the porch. The noise brought Mother and the children running out of the house. The boys started at once to beg for rides on the burro. Grandma took the problem right in hand.

"You children can't ride until after your mother has ridden the burro around first to make sure it's safe for you boys to ride," she said firmly.

"You don't mean me!," I said knavishly, knowing very well that I had heard right and thinking how stupid I was going to look upon the back of an animal that resembled an old fur coat from some mission barrel. I'd be like a 12 year old on a 4 year old's tricycle. "After all, I do have a job to hold down in a very respectable

real estate office," I said indignantly. "I can't ride that . . . that ignoble beast."

Mother avoided looking at me. I saw that her gaze rested reverently on the Christmas scene painted across the front window of our house. In this painting, there was a famous mount closely resembling our new burro.

"SOME very important people have been known to ride upon what you choose to call an ignoble beast," she said sarcastically.

I felt my face burn.

"Oh, for heck sakes," I mumbled. "Wait until I get into some jeans and I'll ride that sole-eyed beast."

Mother and the boys huddled on the back porch, trying to stay out of the wind, while I spent the next five minutes shouting, "Get up! Get up!" My mount only hunched up and leaned forward with his feet braced. After a few minutes of the burro moving only his hide, I was almost on his long ears.

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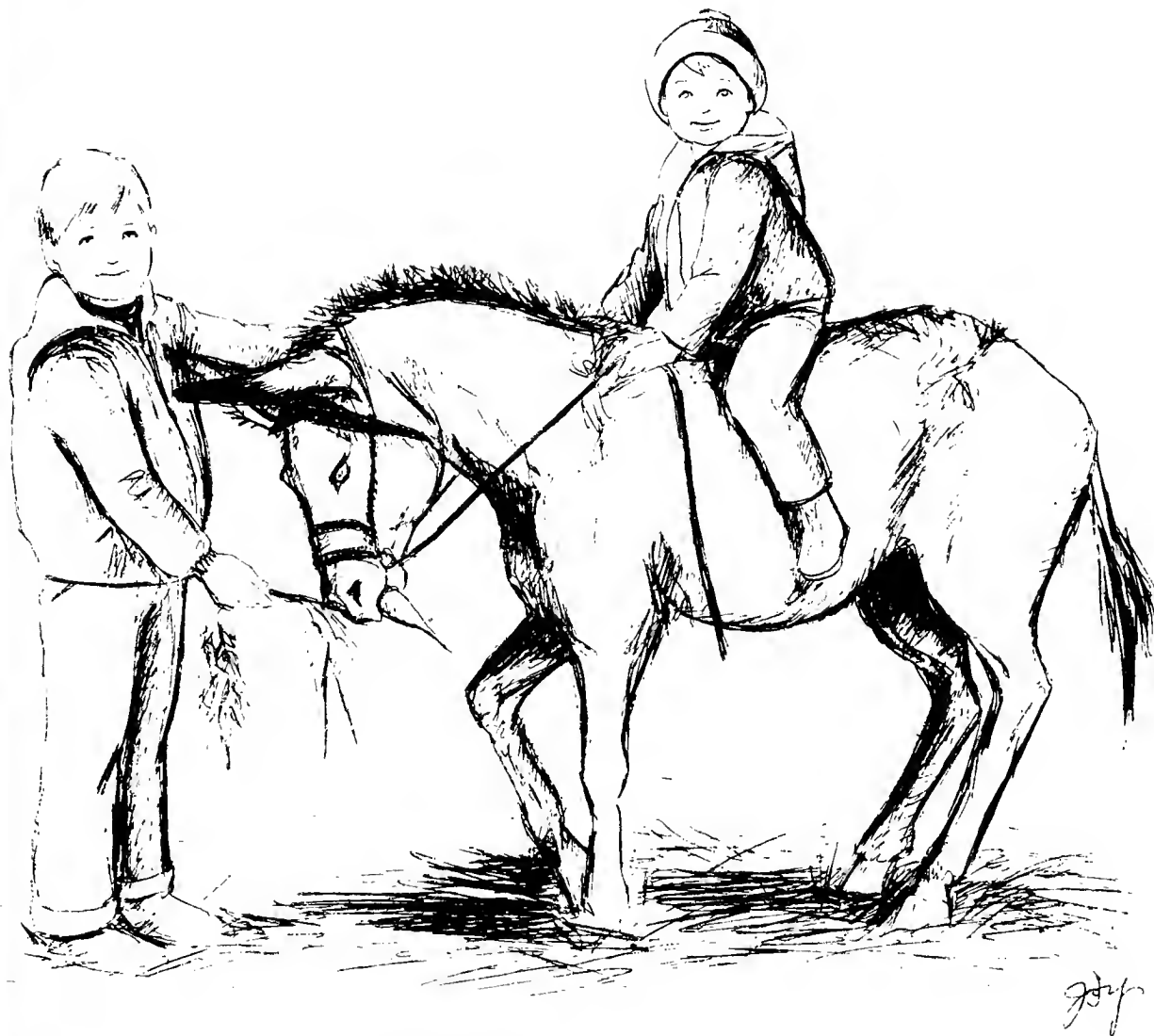
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THE BURRO made it a very special Christmas for the boys.

I was moving slowly back to the burro's middle, determined that when I got there I would do more than shout, when one of the boys slapped a paper sack he had been blowing into. The sack burst with a bang any gun would have been proud of. It was then that the burro and I violently parted company.

Upon hearing the bag explode, the burro gave one unexpected leap that carried us under the clothesline. As I was floating back to earth, the clothesline caught me just under the arms and, in one awful second, I hung there like a piece of wet laundry. Suddenly, the clothesline, clothesline post and I tumbled all wrapped up in an unsightly heap.

Mother rushed from the porch. "Are you hurt?" she asked, helping me to my feet.

Not being able to find one single scratch didn't help my temper one bit.

"No thanks to you and that blasted burro that I'm not dead," I stormed.

Mother looked at me helplessly.

"I guess I made a bad buy," she said sadly. "I'll list the burro for sale in the paper tomorrow."

This brought a wail of disappointment from the boys but the ad came out in the next paper just the same.

TWO DAYS later a man came to see if we still had the burro for sale. I assured him that we did and led the way to the barn. Triumphant, I opened the barn door. There, standing as docile as a lamb, was the burro with the 4 year old upon his back. Before I could speak, the 6 year old came dashing in with a big bunch of carrots. I knew then why we hadn't

had nicely stewed carrots on our table lately. I'd been lucky to find a few orange shreds among the salad greens.

"This man came to buy the burro," I said, and more bedlam couldn't have broken loose if I'd said the bomb was going to be dropped in five minutes.

The noise brought Mother hurrying from the house. She took one look at the tear streaked boy astride the carrot munching burro and cooed.

"Isn't that sweet? Nora, you can't still want to sell the burro."

I looked at the prospective buyer and saw that he knew we were outnumbered.

So, in spite of a mangy beast that always looks like he would like to hang me on the clothesline again, the boys got a burro for Christmas.



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This recipe by Kathy Stepler of Vincentown, N.J., won a prize at the Chatsworth Cranberry Festival.

Top and bottom 9 inch pie crust
1 cup cranberries whole
5 medium apples, sliced
1/2 cup raisins
1/2 cup sugar
grated orange rind
2 tbsp cornstarch
1 tbsp butter

Line pie plate with crust. Mix remaining ingredients except for butter. Put filling into crust lined pie plate. Dot filling with butter. Cover with top crust, trim and make steam vents. Brush with a little milk. Bake in 450 degree oven for 15 minutes. Reduce heat to 350 degrees and bake 45 minutes longer. Cool and frost.

FROSTING: 1 cup confectioners 10-X powdered sugar and a little milk.

FARM-CITY HEAD

Clarence J. Bizet of Tallahassee, Fla., a merchandizing specialist with the Florida Department of Agriculture and Consumer Services, has been elected 1985 chairman of the National Farm-City Council Inc.

The National Council's headquarters are in Indianapolis, where its activities are administered by Kiwanis International.

The Farm-City Week program was organized in 1955 with a mission of educating and informing farm families and their urban neighbors about their interdependency. Farm-City Week activities are conducted year-round, with most events around Thanksgiving. The 1985 National Farm-City Week is Nov. 22-28.

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Jaycees honor grower

Abbott W. Lee, 34, Chatsworth, N.J., cranberry and blueberry grower, has been chosen as one of four National Outstanding Young Farmers for 1985.

Lee's selection was announced recently at the U.S. Jaycees 29th National Outstanding Young Farmer (NOYF) Awards Congress in Great Falls, Mont. The program is sponsored by Deere and Co., makers of John Deere equipment and implements.

A graduate of Delaware Valley College with a degree in horticulture, Lee started growing in 1972.

An inventor by necessity, Lee has designed and built a number of different farm implements

ABBOTT LEE'S inventive genius has earned him recognition by the Jaycees as one of four National Outstanding Young Farmers for 1985.



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over the years, including an aquatic bog sander. This implement allows the sanding of cranberry bogs without serious damage to the plants. It also increases protection for the cranberry vines.

Other Lee inventions include a self-loading cranberry bog conveyor, unmanned barge loading system and an osmocote dispenser for planting cranberry cuttings.

The February 1982 issue of CRANBERRIES carried a story by Elizabeth G. Carpenter on yet another Lee invention: a three reel water harvester.

Lee hopes to perfect one of his inventions and have it produced by a professional manufacturer.

Yields and proceeds from Lee's farm have increased. He credits this improvement to the use of better blueberry varieties and promotional emphasis. In the recent past, too, production costs have been reduced with the use of a high fructose sweetener.

A gubernatorial appointee to the New Jersey Pesticide Council, Lee also serves the Tru-Blu Cooperative Association and the Knights of Columbus.

He and his wife, Pamela, have one child, Jeremiah.

The NOYF Awards Congress is the culmination of a year-long search for the nation's top young farmers. Nominees at the local, state and national level are judged on the basis of their progress in agriculture, the extent of their soil and water conservation practices and their contributions to the well-being of their community, state and nation.

The U.S. Jaycees adopted the NOYF program in 1954. Since that time, hundreds of farmers have been honored, including U.S. Secretary of Agriculture John Block (1969).

Deere and Co., of Moline, Ill., has been the sponsor of the NOYF program for the past nine years.

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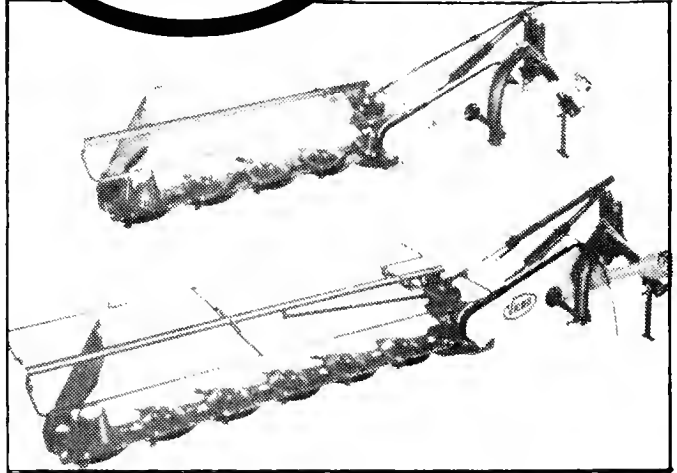
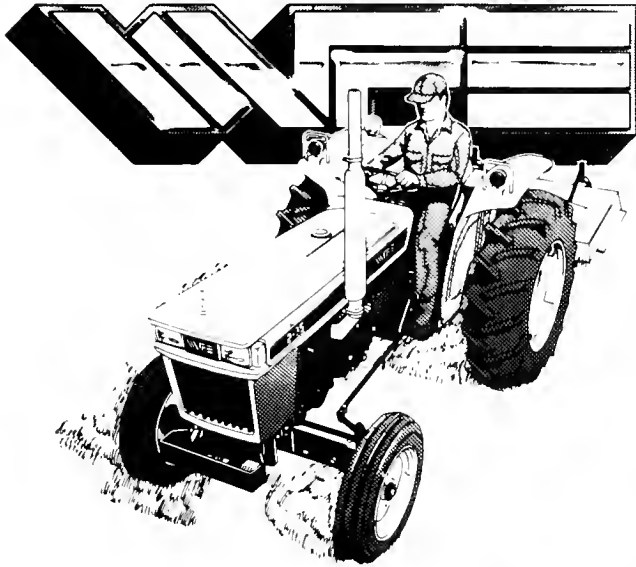
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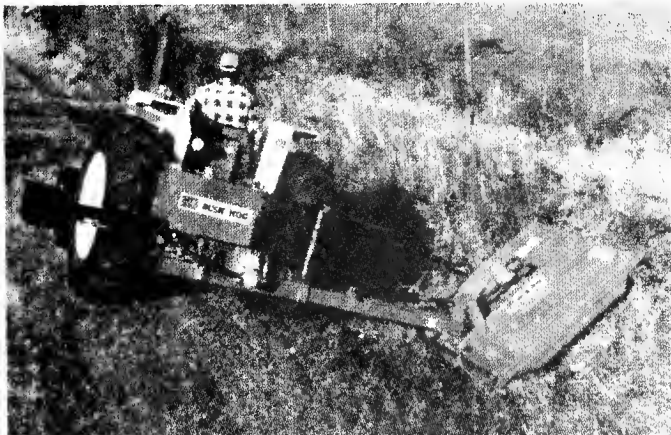
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GROWERS ARE ELIGIBLE FOR SOIL & WATER AWARDS

Growers, farmers and ranchers demonstrating practical ways to conserve soil and water in their operations are eligible to participate in a national soil and water conservation awards program.

This is the third annual awards program, sponsored by the National Endowment for Soil and Water Conservation and the Du Pont Company, which selects a conservation farmer/rancher from each state and awards \$1,000 to each of three national winners. In 1984 the three national winners attended a White House ceremony and were presented award certificates by Vice President George Bush.

"The purpose of the awards program is to honor those farmers and ranchers who are implementing sound, innovative and cost-effective conservation techniques," says Emmett Barker, chairman of the Endowment. "These outstanding farmers and ranchers deserve special recognition and through this program their conservation initiatives are brought to the attention of other agricultural producers and the public."

A conservation farmer/rancher will be selected from each state by committees of farm, conservation and government leaders. The Endowment Technical Advisory Committee will review the conservation work of the state nominees, selecting 10 national finalists on the basis of their accomplishments in soil and water resource management and pollution abatement.

The 10 national finalists and their spouses will receive an expense-paid trip to attend a national awards ceremony in the fall. Three national winners will be selected from among the 10 finalists.

The winners in the 1984 program were from California, Tennessee and Texas. The other finalists were from Colorado, Kansas, Minnesota, Nebraska, North Carolina, Ohio and Pennsylvania.

"Du Pont is pleased to sponsor the Endowment awards program for the third year because we believe the nation has no choice but to do a better job of soil and water conservation," says Dale E. Wolf, a Du Pont group vice president. "By focusing the spotlight on conservation methods and accomplishments of growers across the country, we can hasten the day when the goal is achieved."

The National Endowment for Soil and Water Conservation, established in June 1982, is a nonprofit, privately funded, nonpolitical organization dedicated to conserving natural resources and fostering a sense of stewardship for the land.

State coordinators for the program are:

Massachusetts—Robert Hatch, Massachusetts Association of Conservation Districts, 19 Pleasant St.,

Granby MA 01033. (413) 467-9820.
 New Jersey—Samuel R. Race, New Jersey State Soil Conservation Committee, N.J. Ag. Dept., CN 330, Trenton NJ 08625. (609) 292-5540.
 Oregon—Calvin Kraemer, Oregon Association of Conservation Districts, Rt. 4, Box 76, Cornelius OR 97113. (503)

357-6216.

Washington—Ray Hill, Washington State Grange, 3104 Western Ave., Seattle WA 98121. (206) 284-1750.

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The 31st annual International Fancy Food & Confection Show, scheduled for the Georgia World Congress, Atlanta, Ga., July 14-17, is 40 percent larger than last summer's event.

"We expect another record breaker," said John H. Hamstra of H. Hamstra & Co., and president of the National Association for the Specialty Food Trade, sponsor of the trade show.

He pointed out that last summer's event in Washington, D.C., was 44 percent of the previous year and was identified by Trade Show Week as the "fifth fastest growing" trade show in the country.

Bradley J. Petty of Petty's Fine Foods in Tulsa, Okla., chairman of the NASFT Retailer Division, announced a preliminary seminar program.

Subjects will include the computerization, off-premise catering, mail order marketing opportunities, and workshops on specialty cheeses, coffee and tea, confections and packaged specialty foods.

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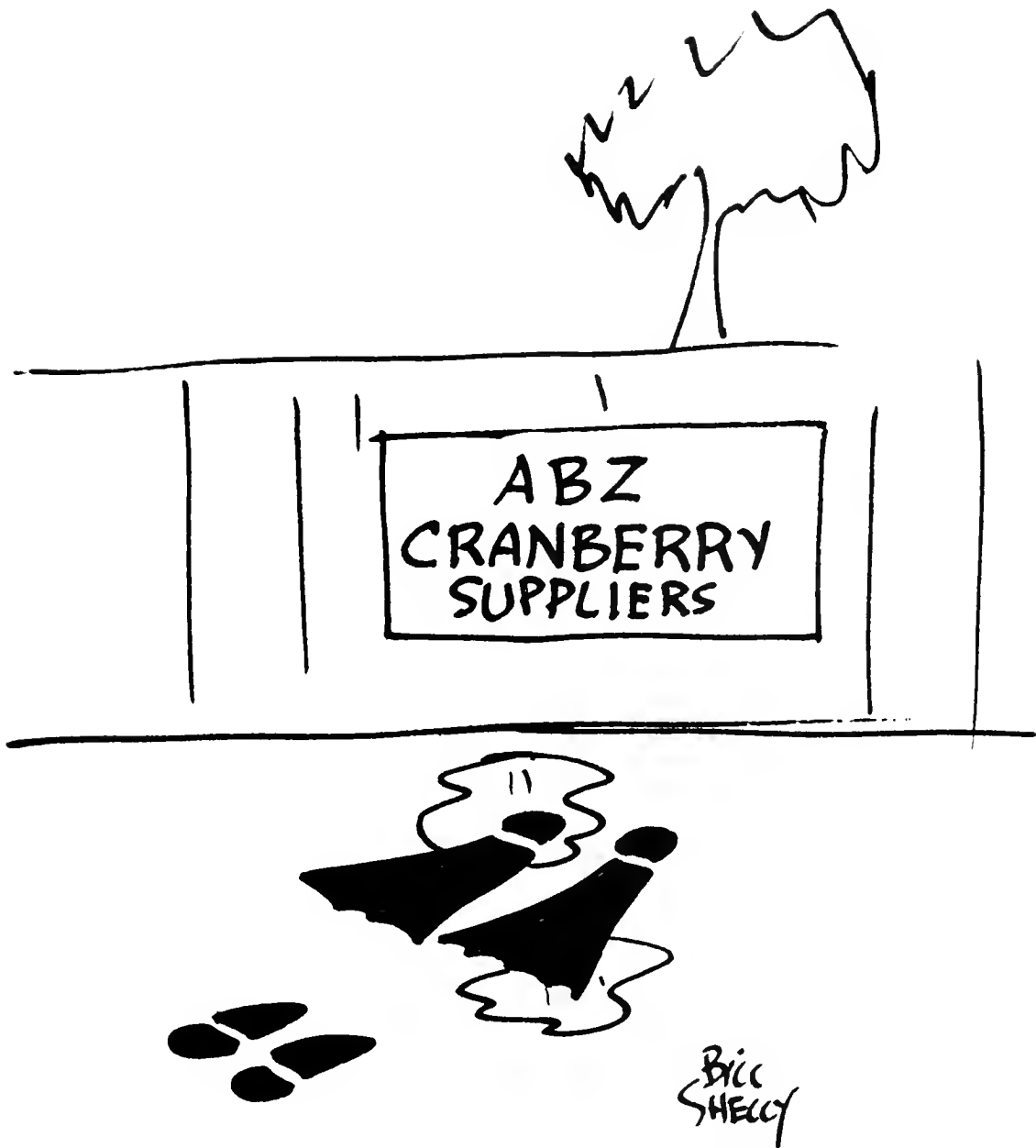
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So writes Richard Browning in the Fall 1984 issue of Oregon's Agricultural Progress, published by the Agricultural Experiment Station, Oregon State University.

Browning adds: “In intermediately developed nations, with some mechanization and use of herbicides, but also financial and educational restrictions on their use, losses from weeds are estimated to be 10 percent. In underdeveloped countries, where poverty and ignorance (on the part of farmers, government officials and researchers) often block efforts to reduce weed growth, losses due to weeds are estimated to be a whopping 25 percent.”

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Changes in the culture of cranberries in recent years have increased the potential threat of dodder. Harvesting methods have changed from dry harvesting to water harvesting in many areas. Water-harvested bogs are flooded and the berries are either knocked off the vines with a mechanical beater or raked off. Either method disperses the dodder seed in the flood water. This not only spreads the seed in that bog, but as this flood water is reused in the harvesting of other bogs, dodder is spread from bog to bog.

The use of sprinkler irrigation, another change in culture in recent years, also spreads dodder in cranberry bogs. Water is applied through sprinklers for irrigation, for frost protection, and to cool cranberry plants when the temperature is too high. Thus,

cranberry bogs may be sprinkler irrigated over much of the growing season. Dodder seed can be spread through the irrigation system if the water is contaminated from dodder

either growing along the banks of reservoirs or along the canals feeding the reservoirs.

From "Dodder and Its Control," USDA, Farmers' Bulletin No. 2276.

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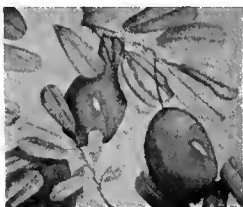
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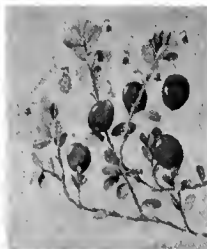
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Use of Sex Attractant Traps to Monitor Sparganothis Fruitworm Populations

By CHARLES F. BRODEL
Cranberry Experiment Station
East Wareham, Massachusetts

Monitoring populations of *Sparganothis sulfureana* (Clemens), commonly known as the Sparganothis fruitworm, is a troublesome task for Massachusetts cranberry growers. In the spring, an intensive visual scan of vine tips and loose strife plants may or may not lead to the detection of overwintered larvae. Sweeping with a long-handle insect net is equally inconsistent in its results. Given that larvae are found, however, there is no clue about the number of larvae present and, thus, the severity of the infestation. Based on scanty information, growers must either apply an insecticide as a preventive measure or postpone applications until damaged berries are observed in July and August. The latter strategy usually leads to only a partial kill of the summer generation of larvae and, therefore, to unacceptable reductions in yield.

To improve the monitoring and management of *Sparganothis* populations, it was decided to test an experimental monitoring system which utilizes the sex attractant chemical specific to *S. sulfureana*. In nature, a *Sparganothis* female moth emits a scent which signals *Sparganothis* males downwind that she is sexually active. Using the plume of scent as a means of orientation, males fly upwind, locate

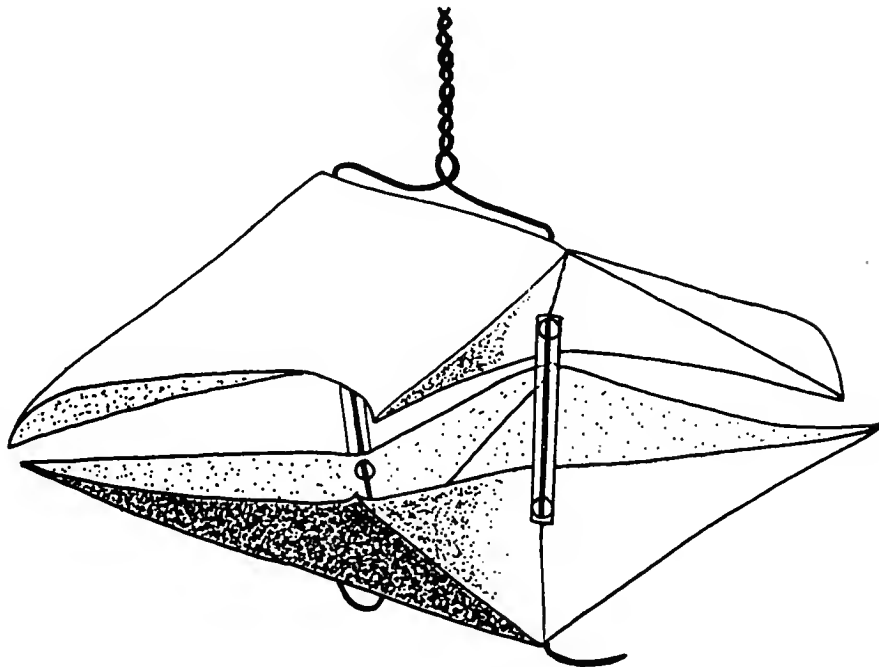


Fig. 1. Side view of a typical wing-style sex attractant trap.

the female, and attempt to mate. Chemists at the New York State Agricultural Experiment Station in Geneva have identified the molecular structure of this scent and synthesized it in their laboratories. By impregnating rubber septa with the man-made scent and placing

these in sticky traps (Fig. 1) on bogs, it was hoped that typical mate-seeking behavior could be elicited from male moths. Success in this would mean that *S. sulfureana* moth emergence and flight could be closely monitored, and insecticide applications be made on a more

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COVER PHOTO

A LARGER than life-size *Sparganothis* fruitworm moth. A story on the use of sex attractant traps to monitor the *Sparganothis* population starts on this page.

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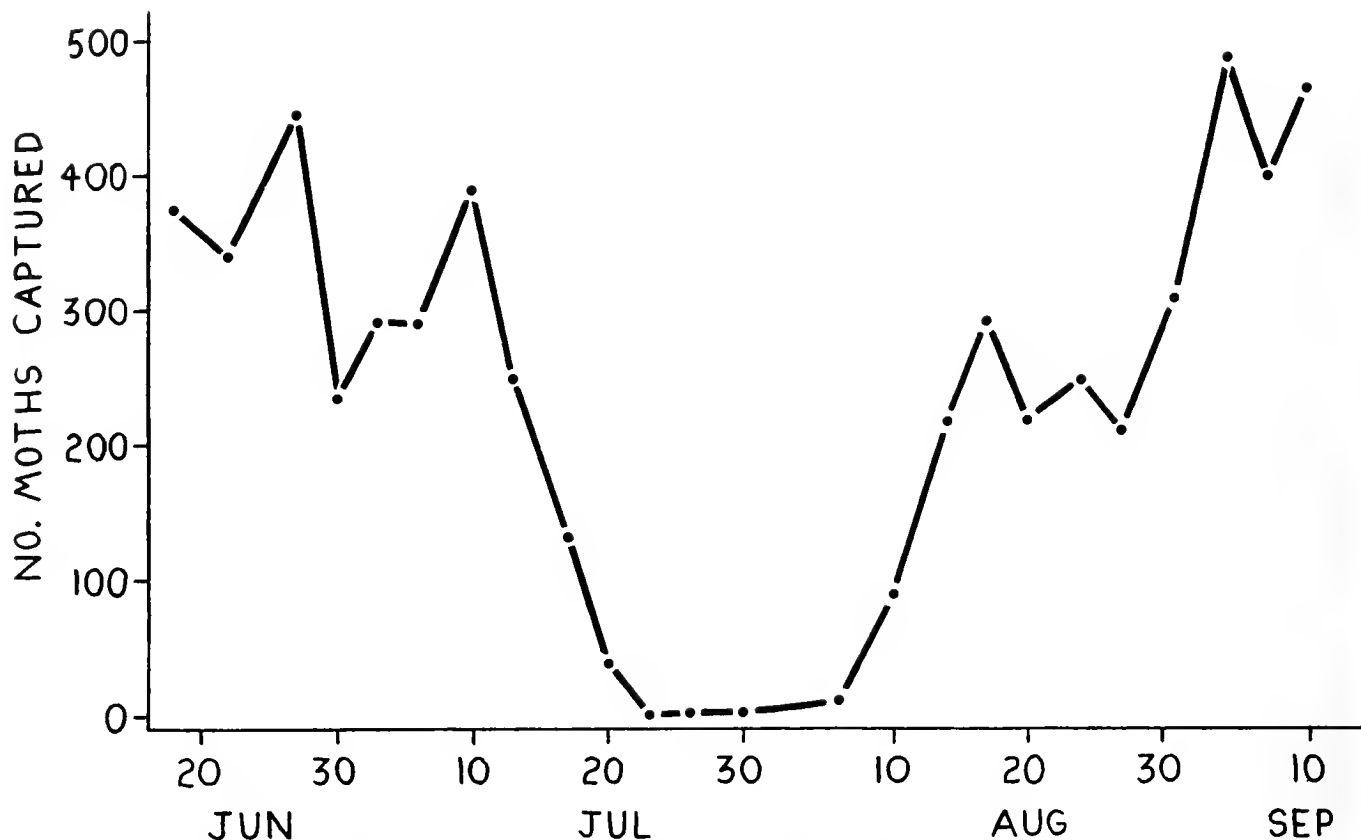


Fig. 2. Emergence and flight pattern for *S. sulfureana* at Bog A, 1984.

informed and timely basis.

Materials and Methods

Conrel[®] wing traps¹, produced by Albany International, were suspended about 6 in above the vine tips on the windward side of 3 Massachusetts bogs from June through September of 1984. Three trap sites were located on southern, middle, and northern sections of 53-acre Bog A in Wareham. One and two traps, respectively, were placed on 6.5 acre Bog B in North Carver and 11-acre State Bog in East Wareham. Bogs A and B are commercial bogs which receive insecticide treatments every July. In contrast, the 1-acre section of State Bog being monitored had not received such treatments for the previous 5 years.

Rubber septa impregnated with the sex attractant of *S. sulfureana* were placed in traps on June 8 at State Bog and on June 18 at Bogs A and B. Commonly called 'baits,' the septa were replaced on July 23 and August 31. One of the 2 traps at State Bog did not receive a bait and thusly served as a control.

Trap bottoms were replaced every 3 or 4 days throughout the season. Collected trap bottoms were transported to the laboratory, where

the number of captured moths on each were counted, recorded, and plotted.

Information concerning insecticide applications and horticultural practices was obtained for each site at the end of the growing season. To estimate crop reductions from larval feeding, 12 handfuls of vines were pruned at randomly selected locations within 150 ft downwind of each trap, transported to the laboratory, and inspected for fruit injury. The total number of inspected berries per trap site ranged from 338 to 774. The estimate for Bog B resulted from field observations by the grower and author just prior to

harvest.

Results and Discussion

Two patterns of moth emergence and flight occurred at the five trap sites. One pattern, observed on Bog A (Fig. 2), was characterized by initially high moth catches which did not decline steadily until between July 10 and 20. Recently emerged moths, recognized by their brightly colored wing scales, became much less abundant in traps after July 6. Trap catches remained at very low levels between July 23 and August 6. The next generation of moths began to emerge between August 6 and 10.

(continued on page 6)

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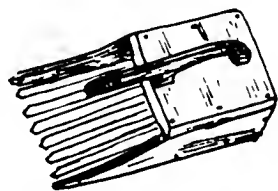


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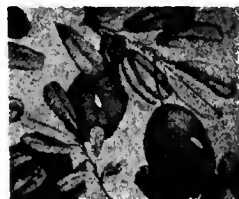
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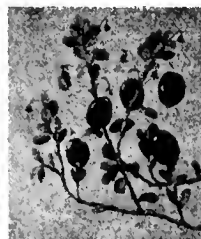
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A gradual increase in the number of moths per trap occurred until early September, at which time trap catches equaled or exceeded the levels of June and July. Activity continued at about these levels throughout September, but ceased altogether when the first hard frost occurred in early October.

The second pattern, observed at Bog B and State Bog (Fig. 3), differed from the first in two respects. Initial counts on June 18 did not exceed 30, whereas those on Bog A ranged between 200 and 400 (Fig. 2). Counts peaked at a level of about 180 on June 27, but were not maintained. A precipitous decline occurred within 3 days, followed by a more gradual decline to low levels by July 20. On Bog A, peak value did not decline for about 4 weeks.

Information about the sites, trap catches, crop reductions, and pesticide practices is presented in Table 1. On Bog A, where moth catches were consistently high from June 18 through July 6, percentages of fruit loss seemed to vary with pesticide practices. Where Lorsban was used as a 2nd fruitworm treatment, losses remained below 0.5 percent. Where parathion was used, 14.5 percent of the fruit was destroyed by larval feeding.

On State Bog and Bog B, average trap catches were markedly lower. At catches of less than 100 per 3- to 4-day period, 2 percent of the fruit was consumed in the absence of fruitworm treatments. Where diazinon and Lorsban were applied, losses were not detectable.

The control presumably obtained by applying an effective insecticide on July 20 or 24 might have been anticipated based on life history information on *S. sulfureana* in New Jersey. Marucci (1953) reported that female moths deposit eggs from 1 to 2 days after emerging and that eggs require 9 to 12 days before hatching. In Massachusetts, relatively few moths caught in traps on July 10, 1984 were newly emerged. This means that most of the total egg population was deposited by July 12 and had hatched by July 24. Fortunately, insecticide applications were made at just the right time to contact a very high percentage of the recently emerged larvae. Up to that point, only a small amount of fruit was apparently injured.

One might be surprised, however,

that even when crop reductions were minimal, large numbers of 2nd-generation moths were trapped. The expectation would be that high larval mortality in July would lead to much lower trap catches than those obtained from August through September. Migration of moths from upland areas might account for a small percentage of these catches. Far more significant a factor, in my opinion, is the large number of eggs deposited in June and July. If each female deposits from 30 to 50 eggs, as stated by Beckwith (1938), and an insecticide kills 90 percent of resultant larvae, the next generation comprises from 3 to 5 moths. Given a 1:1 sex ratio and no predation and parasitism, 1.5 to 2.5 times as many male moths should be available to be trapped in August and September than in June and July.

In summary, the placement of

wing-style traps baited with sex attractant enabled emergence and flight of *S. sulfureana* moths to be closely monitored at 5 sites in 1984. Supplementary information about pesticide practices and yield reductions at the sites provided hope that growers may someday use traps to determine the need for and timing of insecticide treatments to control Sparganothis larvae.

Literature Cited

Beckwith, C.S. 1938. *Sparganothis sulfureana* Clem., a cranberry pest in New Jersey. J. Econ. Entomol. 31:253-256.
Marucci, P.E. 1953. Proc. 83rd Annu. Mtg. Amer. Cranberry Growers' Assoc. :6-13.

Acknowledgments. I am grateful to Dr. Wendell Roelofs at the New York State Agricultural Experiment Station, Geneva, NY, for synthesizing sex attractant and providing a generous supply of baits.

Thanks are also extended to Mr. Russell Lawton and Mr. Christopher Makepeace for allowing me the use of their bogs and providing needed information about bog history and horticultural practices.

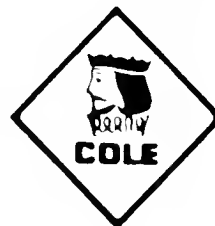
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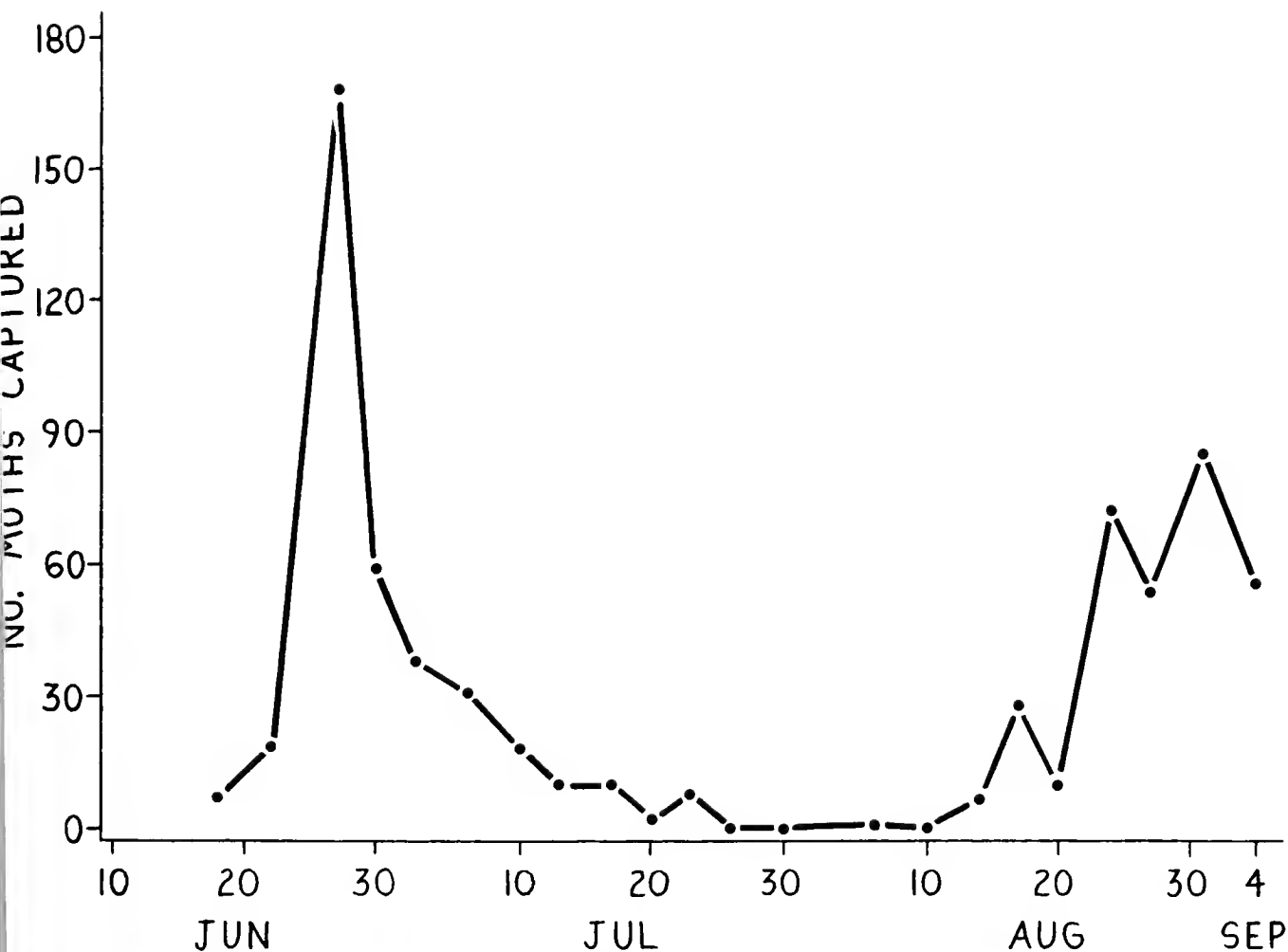
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Ocean Spray Rings Fortune 500 Gong

With fiscal 1984 net sales of \$457 million, Ocean Spray debuted this year on the prestigious Fortune 500 list of the nation's largest corporations, company officials report.

Ocean Spray wound up in 478th place.

The cooperative's sales have doubled over the last five years. It expects to reach the \$500 million sales mark during fiscal 1985, which ends on Aug. 31.

"We're proud to have been included on the Fortune list," said Harold Thorkilsen, president and chief executive officer of Ocean Spray. "It highlights nine consecutive years of record sales and growth. It also reflects the commitment and sacrifice of our grower-owners during a number of very lean years with respect to industry profitability, to invest in the research and development, marketing programs and plant expansion which have

made Ocean Spray products increasingly popular with customers.

"We've been successful," Thorkilsen continued, "largely because our management style and operating philosophy are based on the traditional values of quality, hard work, innovation and the American entrepreneurial spirit."

Thorkilsen said the Fortune 500 status is a benchmark in the company's history.

"We have other goals also," he said. "We're continuing to increase our sales this year and will continue to make gains in our operating efficiency.

"We won't rest on our laurels. We hope to pass many more milestones in the future."

Until Ocean Spray launched its popular line of juice drinks in 1962 with a new version of Cranberry juice cocktail, the company had been a marketer of

fresh cranberries and sauces, with the overwhelming majority of sales falling during the holiday season.

By the late '70s, more than two-thirds of sales were in juices and juice drinks. Ocean Spray now has captured 13 percent of the juice drink market and is the best selling brand name in the canned and bottled juice drink category.

Obituary

Vaino C. Harju

Retired grower Vaino C. Harju, 80, of West Wareham, Mass., died recently at Sassaquin Convalescent Home, New Bedford.

Born in Carver, Harju lived most of his life in Wareham. He was a member of the Cape Cod Cranberry Growers Association and the United Methodist Church, Marion.

He was the widower of Violet (Sleightholm) Harju.

Survivors include a daughter, Linda Morrison of Marion; a brother, Eino Harju of Marion; a stepdaughter, Lorena Briggs of Marion; and a niece.



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HAWAIIAN PUNCH

This recipe is from The Cranberry Connection, a cranberry recipe cookbook written by Beatrice Ross Buszek.

- 3 cups cranapple drink
- ½ cup rum
- 2 tablespoons lime juice
- 1 tablespoon sugar
- 1 4¼ oz. jar strained banana baby food

Combine all ingredients in a blender. Blend at high speed about 30 seconds. Serve over ice rocks. Makes about 4½ cups.

Coming in the July issue

Carolyn Gilmore's roundup on the Massachusetts "right to know" law.

Elizabeth Carpenter's detailed coverage of the New Jersey American Cranberry Growers' Association meeting.

Laura Zahn's feature and photos on the Eagle River, Wisc., Cranberry Fest.

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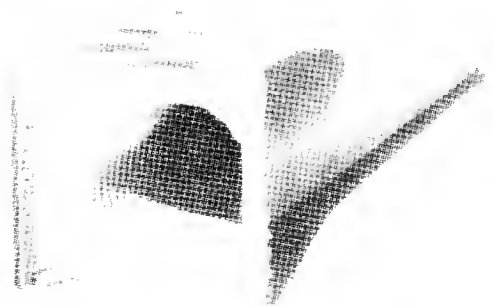
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Ocean Spray Picks Headquarters Site

By **BOB FITCH**
and **BOB TAYLOR**

Blocked by the town from expanding its corporate headquarters in Plymouth, Mass., Ocean Spray has decided to put up a new, \$20 million complex on the Lakeville-Middleboro, Mass., border.

The cranberry cooperative began looking for a new site a year ago when Plymouth voters turned down a request to fill in a portion of scenic, historic Plymouth Harbor for the proposed expansion. More than 100 potential sites were looked at before Ocean Spray officials narrowed down the choices to five, then two. A location in Wareham, Mass., was the other final choice.

The proposal is subject to the cooperative coming to terms with about a dozen landowners

and a zoning change approval by Lakeville voters. About 70 percent of the land for the new

complex is in Lakeville. Each of the landowners has signed purchase and sales agreements with Ocean Spray.

The new headquarters could be ready for opening in 1987, said Curtis L. Collison, Ocean Spray senior vice president.



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All the sites considered were in southeastern Massachusetts and within a 25 mile radius of the present headquarters.

Ocean Spray employs about 350 persons in Plymouth. Also moving to the new site in Lakeville-Middleboro will be the Cranberry World museum.

The cooperative's workforce is expected to double in the next 10 years.

Name Schumacher New Commissioner

A Lexington native who is associated with the agriculture department of the World Bank, August Schumacher Jr. is the new commissioner of the Massachusetts Department of Food and Agriculture.

Upon assuming his post, Schumacher promised to "maintain our current programs which have helped us reverse a 30 year decline in agriculture in this state while continuing to foster new approaches through public-private partnerships in marketing, agricultural research and farmland preservation."



MASSACHUSETTS

March was very warm, averaging 3.5 degrees a day above normal. It was the warmest March since 1977 and seventh warmest in our records. Maximum temperature was 75 degrees on the 28th—a new March record—and the minimum was 17 degrees on the 22nd. Warmer than average periods were the 2nd, 5th, 8th through 14th, 20th, 23rd and 27th through 30th. Cooler than average days were the 4th, 6th, 7th and 18th.

Precipitation totaled 3.21 inches, which is more than 1½ below normal. This is the fifth consecutive month with below normal precipitation and the seventh of the past eight. There was measurable precipitation on 11 days with 1.91 inches on the 12th as the greatest storm. We are 6-2/5 inches below normal for the three month period and 7 inches behind 1984. This was the driest January through March in our records. There was only 1 inch of snow recorded.

I.E.D.

NOVA SCOTIA

Although only small patches of snow remained in open fields as of April 11, our season remains backward. The past two weeks have been characterized by overcast skies and wet snow. At this point, it looks as if we are off to a slow start.

I.V.H.

WASHINGTON

February brought the rain that had been lacking in January but, with a total of 6.48 inches, it was not up to average. Average is 9.45 inches. March added 8.15 inches to the total, now standing at 15.77 inches, approximately half of the average yearly amount, 30.53 inches.

The days and nights have been on the cold side, with much wind blowing. February maximum temperature was 59 degrees on the 14th and the minimum was 17 degrees on the 4th. March continued cold for this area overall, with a maximum temperature of 62 degrees on the 16th and a minimum of 25 degrees on the 2nd.

A.Y.S.

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How to analyze your financial statements

By **MARK E. BATTERSBY**
Financial & Tax Consultant

Every month most of us receive a number of statements from our accountants. Those statements usually tell whether the cranberry growing operation has made or lost money. But, those same confusing and often-ignored financial statements can also tell you the health of your cranberry operation and even serve as a road map to increased profits.

Quite simply, financial statements are the end results of the accounting cycle. All business transactions go through the bookkeeping system and come out as financial statements. Few cranberry growers, however, fully understand that cycle or the statements that result.

The two key statements to

emerge from the bookkeeping process are the income statement and the balance sheet. In order to read either of these statements or any financial statement, it is first necessary to understand the terminology employed by accountants and financial professionals. A few key terms that every cranberry grower should be familiar with include such exotic things as:

—**Assets.** Assets are simply all of the possessions and the rights of a given business that have a monetary value.

—**Current Assets.** Current assets are those assets of a cranberry growing operation which the owner or accountant expect to be consumed or converted to cash within a relatively short period of time, usually less than a year.

—**Fixed Assets.** Fixed assets

refers to those assets which are expected to be consumed or disposed of over a period that is usually longer than one year. Equipment or the fixtures in your cranberry operation are an excellent example of what bankers and accountants refer to as fixed assets.

—**Liabilities.** Liabilities are nothing more than the debts of your cranberry growing business.

—**Current Liabilities.** Those debts that are expected to be paid off within a fairly short period of time, again usually less than a year.

—**Long-Term Liabilities.** Debts that are to be paid off over a period of time greater than one year. Loans are an example of long-term liabilities.

—**Owner's Equity.** Owner's equity, stockholder's equity or even partner's equity all refer to

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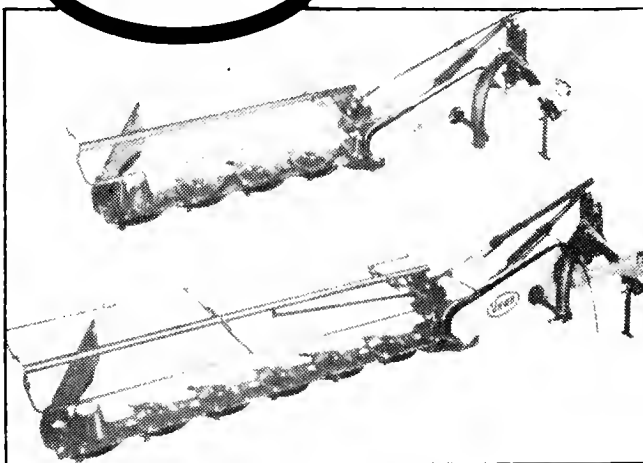
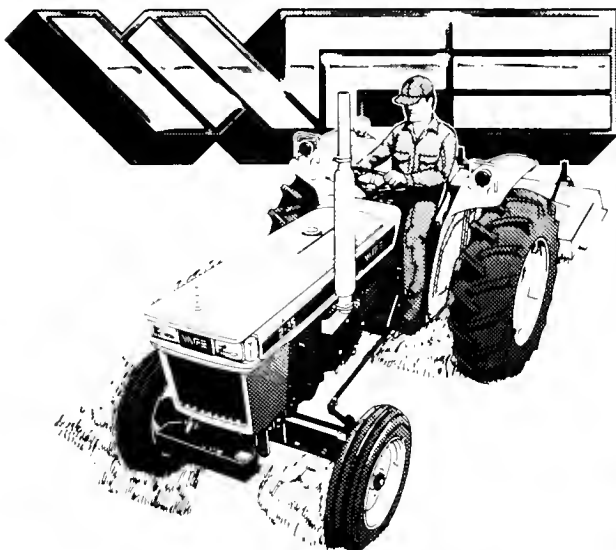
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the owner's claim against the assets of the cranberry growing operation after liabilities have been deducted, also referred to as capital or net worth.

—**Balance Sheet.** The balance sheet is a key financial statement that reports on the condition of a cranberry operation in terms of assets, liabilities and owner's equity.

—**Income Statement.** This is also called a profit and loss statement (P & L). It is nothing more than a financial statement that reports in terms of revenues and expenses the changes in the financial condition that have taken place in a cranberry growing or packing operation over a specified period of time.

—**Financial Statements.** Financial statements are a series of documents prepared by bookkeepers and accountants to summarize the effects of business transactions or the cranberry business itself.

—**Inventory.** Is best defined as produce or crops held for sale in the normal course of business, materials in the process of production or materials held for such use in a manufacturing process.

—**Accounts Receivable.** The accounts receivable are the money owed to the cranberry operation by someone to whom the operation has given crops, goods or service on credit. It is listed under current assets on the balance sheet because most accounts receivable are retired in a relatively short period of time.

—**Accounts Payable.** Money owed by the cranberry bog or marsh to an outside creditor for goods or services it has received. It is listed under current liabilities.

—**Notes Payable.** Notes payable are long term liabilities such as loans or notes that are to be paid by the business over a period of more than one year.

—**Notes Receivable.** Notes receivable are an asset consisting of money that the

company has loaned out and which it expects to be repaid.

—**Revenue.** The amount of assets that a business gains as a result of its operation. In most cases, the asset is cash.

—**Fundamental Accounting Equation.** The total assets of a business, which are equal to the claims by its creditors plus the claims by its owners.

Or, put another way:

THE ACCOUNTING EQUATION

Assets =	Liabilities	+ Owner's Equity
Cash, stores, supplies, inventory, furniture, land, patents, licenses, equipment, buildings and assets the farm entity owns.	Loans, wages owed, purchases made on account, and any other debts the business entity may have incurred.	The owner's equity is what remains when liabilities are deducted from assets.

The sample statements [Figure 1 & Figure 2] show a cranberry operation that is doing \$80,000 per year in gross sales, with assets of \$38,000. Your own financial statements, of course, will vary greatly from this example and will, hopefully, show a great deal more detail, but the basics will be pretty much the same.

The process of evaluating the attached financial statements, your own financial statements or those statements of a bog or marsh you are thinking of buying for investment purposes

can be very complex. In fact, there are entire books devoted to the subject of evaluating financial statements. We'll have to settle for understanding the basic financial statements and a few suggestions about using those figures to improve your operation.

Working with the income statement or P & L, and the balance sheet, it is possible to determine the following information:

—Working capital (owner's equity).

—Current ratio, which measures the ability of a

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Figure 1

PROFIT AND LOSS STATEMENT
(Income Statement)

TOTAL SALES	\$ 80,000
COST OF GOODS SOLD	32,000
GROSS PROFIT	48,000
TOTAL EXPENSES	
Labor costs (salary, wages, payroll taxes, commissions, benefits)	12,800
Fixed costs (rent, utilities, maintenance, taxes, insurance, bank service charges)	13,600
Variable costs (travel, promotions, advertising, office & shop supplies, bad debts)	6,400
OTHER BUSINESS INCOME (rent, interest, etc.)	800
NET PROFIT (The bottom line)	\$ 16,000

In the attached example [Figure 3], working capital is \$23,940 (\$38,000 in total assets minus \$14,060 in total liabilities from Figure 3).

This amount is the owner's equity about which we hear and read so much. Everything you have minus everything you owe—the difference is basically what is left for you.

In order to determine the current ratio of your operation, divide the current assets by the current liabilities. In our example, the current ratio is \$27,740 divided by \$3,800 or approximately 7:1. Traditionally, the larger the volume of a cranberry grower's sales, the lower the average ratio becomes.

This ratio is used to measure the ability of a cranberry grower to meet its debts. It's another

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cranberry operation to meet its debts.

—Cost of goods related to sales.

—Gross profit related to sales.

—Operating expenses related

to sales.

—Cost of goods related to inventory turnover.

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Registration for the field day will start at 9:30 a.m. The morning program will start at 10, with a 16 minute, color film, "Trees, the Highest and Oldest Living Thing." This will be followed by Dr. Pettibone's talk on Washington state agriculture. Dr. Tom Ley, extension irrigation engineer, Irrigated Agriculture Research & Extension Center, Prosser, will speak on "Pump Hook-Up and Irrigation Requirements for Cranberry Bogs." A panel discussion, "Cultural Practices for a Newly Planted Cranberry Bog," will be moderated by Arthur Poole, Coos County Extension Agent-Horticulture, Oregon State University. Panelists will be Wally Cordell, Don Hatton, Grayland; Frank Glenn III, Malcolm McPhail, Long Beach; Jack McMahon, Roy Peters, Bandon, Ore.

A smoked-baked salmon lunch will be served at 12:30 by the Pacific County 4-H group, Ghost Riders.

In the afternoon, there will be replies to Question box queries and a tour of test plots and the greenhouse.

An equipment show will be available all day.

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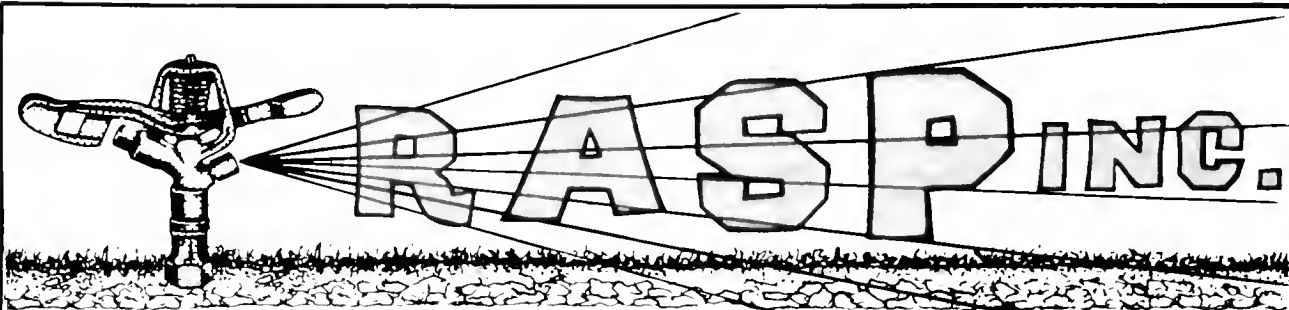
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MASSACHUSETTS

By IRVING E. DEMORANVILLE

As of April 1st, there were 7 points of a possible 10 that favored keeping quality in the 1985 Massachusetts cranberry crop. This is only the third time in 38 years that we have had this many points at this time of year. In both of the other occasions, the quality was topnotch. In fact, in one of the years, seasoned observers indicated the quality as "the best in 25 years." The forecast is for VERY GOOD to EXCELLENT keeping quality in the 1985 Massachusetts crop. Growers should be cautioned that, even with the bright prospect for quality, we have experienced serious but spotty outbreaks of fungal diseases the past two years—especially in 1984. A quality control program of late water or fungicide treatments could be one of your better investments in 1985. Growers who dry harvest should always consider quality treatments. Keep in mind, late water after sanding has traditionally tended toward some crop reduction and warm, wet, humid weather in the summer are ideal conditions for most disease fungi to develop.

WASHINGTON

By AZMI Y. SHAWA

Dr. C. Allen Pettibone, Washington's Director of Agriculture, will be the keynote speaker for the Cranberry Field Day on Friday, June 28 beginning at 10 a.m., at the Coastal Washington Research & Extension Unit, Pioneer Road, Long Beach.

For further information, contact this writer at (206) 642-2031.

Dr. Pettibone, who was recently appointed by newly elected Governor Booth Gardner, was born in Redmond, Ore., but was raised on a wheat and cattle farm near Steptoe, in Whitman County, Wash., a farm that is still operated by the family.

Pettibone received his BS in agriculture mechanization in 1954, another BS in agricultural engineering in 1960 and an MS in the latter field in 1965, all from Washington State University.

He received his doctorate in agricultural engineering from Cornell University in 1975. He has worked for VSU since 1957. He worked for the U.S. Department of Agriculture on the Pullman campus from 1960-65. In 1965, he accepted a regular faculty appointment. He served as chairman of the Department of Agricultural Engineering from 1975-79, and has been associate dean and director of resident instruction for the college since then. He served as acting dean of the college for 11 months in 1981-82, while a new dean was

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Figure 2

BALANCE SHEET STATEMENT

TOTAL CURRENT ASSETS	\$ 27,740
Cash on hand and in bank	5,320
Receivables, accounts, notes	2,280
Inventory	14,440
Inventory - misc'l	5,320
Other current assets	380
 TOTAL FIXED AND OTHER ASSETS	 \$ 10,260
TOTAL ASSETS	\$ 38,000
 TOTAL LIABILITIES	 \$ 14,060
Total current liabilities	3,800
Total long-term liabilities	10,260
 TOTAL NET WORTH OR OWNER'S EQUITY	 \$ 23,940
TOTAL LIABILITIES & OWNER'S EQUITY	\$ 38,000

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Figure 3 illustrates how to determine three useful percentages—the cost of goods sold related to sales, the gross profit related to sales and operating

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ANALYSIS OF FINANCIAL STATEMENTS

INFORMATION WANTED	CALCULATION NEEDED	RESULT
Working Capital	Total Assets	\$27,740
	minus Total Liabilities	<u>- 3,800</u> \$23,940
Current Ratio	Current Assets	\$27,740
	divided by Current Liabilities	<u>3,800</u> = 7.1
Cost of Goods Sold Related To Sales	Cost Of Goods	\$32,000
	divided by Total Sales	<u>80,000</u> = 40%
Gross Profit Related To Sales	Gross Profit	\$48,000
	divided by Total Sales	<u>80,000</u> = 60%
Operating Expenses Related To Sales	Operating Expenses	\$32,800
	divided by Total Sales	<u>80,000</u> = 41%
Cost Of Goods Related To Inventory (Turnover)	Cost Of Goods	\$32,000
	divided by Total Inventory	<u>19,760</u> = 1.6

expenses related to sales. Each percentage can be determined by dividing the cost of goods sold, gross profit or operating expenses by total sales. In the example, the cost of goods sold is 40 percent of sales, the gross profit is 60 percent of sales and the operating expenses amount to 41 percent of sales.

To find an accurate picture of inventory turnover, merely divide the cost of goods sold by the total inventory amount from Figure 2. In the example, the cost of goods sold is \$32,000 divided by the inventory of \$19,760, yielding a 1.6 time turnover.

Turnover, like current ratio, tends to change with the size of the cranberry operation.

Often, professional financial analysts divide the total amount of sales by inventory to determine turnover. However, this is not a realistic measure because other factors besides inventory costs are reflected in the total sales figure—factors such as net profit and operating expenses. What the total sales divided by inventory ratio does give, however, is a good picture of how well you are converting your inventory into sales.

With this knowledge under your belt, you should be able to read and understand those financial statements your accountant provides you with each month. Better yet, you now have a yardstick with which to compare your present cranberry operations with operations last month, last year or five years ago. These internal figures and ratios will show you how you are managing your cranberry growing operation now in comparison with a given period last year, two years ago or when you first started. And, best of all, these same figures can also be used to compare your operation with similar operations in your area or, somewhat less realistically, with the national ratios of the entire industry.



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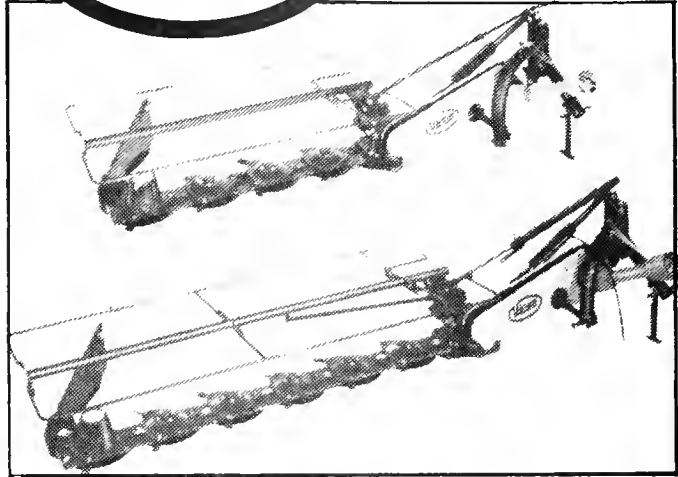
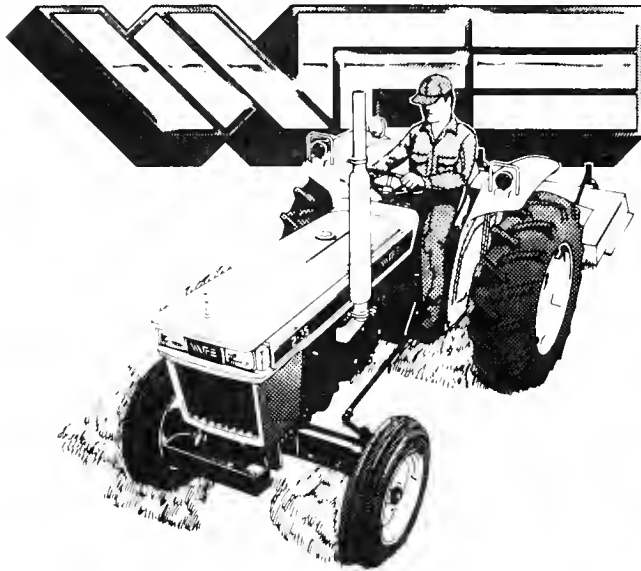
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Water Conservation Concern of National Water Cranberry Conference



By **ROBERT FITCH**

Water conservation and quality control were the principal subjects at the National Cranberry Conference held April 30-May 2 at the Heritage House Motor Hotel in Hyannis, Mass.

About 65 attended, most of them from New England and New Jersey but some from as far away as Washington, Oregon, Nebraska and Colorado.

The conference was jointly sponsored by the Massachusetts Cooperative Extension Service and the Soil Conservation, Massachusetts. Among the attendees were growers, soil conservation and irrigation experts, Farm Bureau personnel and cranberry research and support specialists.

Dr. James Tillotson, director of research and development, Ocean Spray, expressed a great deal of optimism about the future of the cranberry industry in his keynote address at the conference dinner. After giving a brief history of Ocean Spray, he noted that the cooperative made the Fortune 500 list for the

(continued on page 10)

COVER PHOTO

ATTENDEES at the National Cranberry Conference discuss the planned irrigation system at a new cranberry bog being developed by Harju Brothers Cranberries in Plympton, Mass. A story on the conference starts on this page. (Photo by Robert Fitch)

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Growers Respond to Law on Chemicals

By CAROLYN GILMORE

Massachusetts is one of 22 states in which employees and residents now have the right to find out what kind of toxic substances are being used on the job and in the community.

Under the Massachusetts "right to know" law, an estimated 120,000 businesses in the state must list any of 1,600 chemicals that are used in the workplace and file the information with the regional Department of Environmental Quality Engineering (DEQE). Records must be kept by businesses for 30 years; by the DEQE for 40 years.

CRANBERRY growers and other agriculturists in Massachusetts are already well aware of regulations, certification and label requirements in handling chemicals.

"Most of the farmers and growers are very happy to comply with the law," notes James Slattery, administrator of the Massachusetts Farm Bureau Federation. "But the paperwork is going to aggravate them."

The "right to know" law went into effect Sept. 26, 1984, covering employees who work with toxic or hazardous substances. As of April 1, 1985, residents can request information about chemicals used by businesses in their respective communities.

"As far as informing employees, growers do this anyway," Slattery said. "From the public relations standpoint, the agricultural community is coming out very well."

DEQE official Gene Ramero said: "It makes available information to this and other agencies responsible to health where all hazardous substances are being used in the commonwealth. For any disaster, we would have access to locations of

chemicals that would be responsible for certain problems. It provides potential to track toxic substances anywhere in the commonwealth. It provides a sources list that may be beneficial."

A written petition to the "municipal coordinator" is required by any resident with a complaint or inquiry. From the facts, the coordinator determines if an investigation is warranted and notifies the employer using the substance within five days. The information is reviewed within 15 days and the coordinator decides whether the petition raises a valid health or safety claim. From there the findings go to the DEQE for further evaluation. The process can be stopped at any stage if the investigator decides the concern is not warranted. The law is enforceable only through the Attorney General; there is no civil action.

"The more I read this thing, the more I like it," Slattery said. The law establishes a "nonemotional" procedure, "forces research and strengthens paperwork," he added.

GROWER Peter Beaton favors the law's implementation of "municipal coordinators" to direct inquiries from community residents. These officials also are responsible for keeping records of

(continued on page 6)

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editorial



A New Farm Agenda

(This guest editorial is excerpted from *Behind the Ag Scene*, prepared by Bozell & Jacobs, Agricultural Division, and H.L. Tinley.)

It's unfortunate, but the problems of agriculture have long baffled the Washington experts. Now, after 52 years, it appears the bureaucrats are about ready to toss in the towel and walk away—and this may be the *best thing that ever happened to agriculture!* Because we have arrived at a time for new directions. A time for new ideas. A time for a new beginning.

Let's take stock. Can Washington really control agriculture? No, Congress can't—and neither can the USDA.

Today, the USDA is like a mighty log floating down the Potomac, carrying 10,000 ants—and each ant feels he is steering! The USDA is a "growth industry," rapidly approaching the point where there will soon be *one USDA official for every farmer.*

Though the history of the USDA reflects a series of miscalculations, we shouldn't be too critical. USDA is a giant bureaucracy, operated by humans who are expected to be infallible, to know the unknowable and able to do the impossible. We can no more expect perfection from these men than from ourselves. We all put our pants on, one leg at a time!

Whose problem is it? Agriculture's problem isn't strictly a government problem. It's a problem for all of us. In all fairness, we shouldn't criticize the government for trying to help us, or the American taxpayers for supporting us. In the final analysis, the problem is ours. We must march to the beat of our own drum.

Should farm programs be continued? No, they shouldn't. But the safety net they offer shouldn't be eliminated in one fell swoop either. We have a dangerous 52 year addiction to government programs that must be broken first.

As we consider future farm programs, let's take a hard look at ourselves:

WHY ARE WE AFRAID to recognize that wealth is produced **ONLY** when production takes place . . . that is, when **SOMEBODY** does **SOMETHING!** Not, as in our case, when acreage is restricted or eliminated and production reduced.

WHY ARE WE AFRAID to recognize that government controls simply have not worked? They hobble us, the most efficient producers of food and fiber the world has ever seen. Controls have only served to create a new world called "parity." Parity makes it legitimate for a farmer's income to be *only 65 percent* of that of people in the cities.

WHY ARE WE AFRAID to recognize the fact that farm programs are *welfare programs in disguise?* They are an aspirin, not a cure. The 1985 farm program is nothing but the patched-up 1983 inner tube first thrown to drowning farmers 52 years ago. Granted, farm

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RIGHT TO KNOW . . .

(continued from page 4)

toxic substances for five years in their towns or cities. Typically, a municipal coordinator is a health or fire official.

"This is better than before," Beaton said. "There is no confrontation between grower and neighbor." It is also a means to prevent "some of the media emotionalism" associated with chemicals, he added.

Beaton sees the employee aspect of the law as an opportunity to better organize annual employee training programs and manuals on handling chemicals.

Municipal coordinator for Marion, Ray Pickles sees the "right to know" law as a "much bigger concern for industrialized areas" than for farming areas such as southeastern Massachusetts.

"It is designed to develop a paper trail that would allow the medical profession, employers and researchers to trace back to the source of a problem," Pickles said. "It's really the start of a paper trail that could lead to a safer environment for everyone."

Slattery observed that most agricultural suppliers have been accommodating in supplying information needed for the law's material safety data sheet.

Growers have readily cooperated in addressing the paperwork and training employees, Slattery noted.

"From the standpoint of who is responding to the law, we're in great shape," he said. "Fruit and vegetable growers make a very conscious effort to comply. Once you train the initial few people, it's really not too bad."

Slattery has held 14 Farm Bureau sponsored training sessions throughout the state in the first three months of this year.

A cottage industry has sprung up to accommodate the need for employee training, using video, manuals and handout materials. The Extension Service has developed training slides for its own employees. One supplier for the cranberry industry, DeCran Ag Supplies Inc., has offered its customers an employee training service this spring.

CRANBERRIES gives you news and views of the industry.

EDITORIAL . . .

(continued from page 5)

programs have kept us afloat, but they have not permitted us to enter the American income lifeboat. These 52 years of farm programs have made us second class citizens—wards of the state, barred from sharing fully in the American dream.

WHY ARE WE AFRAID—yes, why are we farmers afraid to take a chance on a market-oriented, free enterprise agriculture? Today—in the mid-1980s—we are attempting to compete in a world market, hobbled by an archaic system that limits our production . . . but does not limit our costs. By scaling back production and downsizing operations, we are denied our most priceless tool—mass production and all the efficiencies it offers. Our artificial prices block us from exports, while exports are the **ONLY**—yes, the **ONLY** real answer—to agriculture's problems.

WHY ARE WE AFRAID to face the future? To win we must be willing to compete on a businesslike basis. Success only comes to those who are neither afraid to fail or discouraged by failure. The greatest mistake we can make is to be constantly fearful of making one. For us in agriculture the hour is late, the task is hard and the stakes are high. We are at the crossroads and will soon be selecting the systems agriculture will use in the next century. Are we fair to our children to impose upon them a bankrupt system that at best had only kept us alive?

So what are we saying? Well, it's this: Agriculture needs a new agenda. It is time we realize that food is produced to be consumed and a "sale" to the government is not truly a sale at all. We have piled up so much cheese in caves around the country we can't even give all of it away. Future government policy must be targeted toward moving agricultural surplus **OUT** of the country. Any future government program that encourages a huge buildup of commodities is the wrong program. The salvation of agriculture and of the American farmer lies not in **SUBSIDIES** and **CONTROLS** but in **EXPORTS**. Past programs allocated 90 percent of their funds in holding down production—and 10 percent in stimulating exports. Where would we be today if this this had been even 50-50?

Here is our five point proposal:

1-Existing farm programs would be phased out—not all at once, but over the next five years.

2-During this time, funds allocated for agriculture would be continued at the same level as in the past. Further, this money would be combined with funds normally earmarked for foreign aid. The total amount then would be targeted towards subsidized exports and financing a massive new **FOOD FOR PEOPLE PROGRAM**.

3-This new program would be identical to Public Law 480, the highly successful Food for Peace Program of the 1960s. PL480 probably did more good for agriculture than anything we have done before or since.

4-Such a humanitarian effort would help millions of starving people—those in Ethiopia are a typical example. Such a project also would enhance the stature of this country in the world community.

5-This program would enable American farmers to meet their competition on an equal footing, since other countries already are subsidizing agricultural exports. While making it possible to reduce our surplus of agricultural commodities, this proposal contains an even more priceless advantage: It would free American farmers to use their abilities and matchless skills in the mass production of agricultural commodities. And to enjoy the financial rewards this promises!

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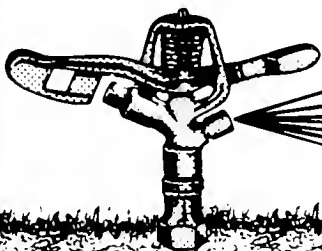
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AGWAY

N.J. Cranberry Growers Receive State & National Recognition

By ELIZABETH CARPENTER

William S. Haines Jr., president of the American Cranberry Growers' Association, welcomed growers to the association's recent 117th annual winter meeting held at Braddock's Tavern. Once a stagecoach stop, the tavern is situated on historic Medford, New Jersey's Main Street and shares its name with one of the state's pioneer cranberry growing families.

EDWARD V. LIPMAN, the association's state agricultural convention delegate, told growers that two of their members received recognition at the January convention for their outstanding contributions to New Jersey agriculture. William S. Haines Sr., who most recently served as president of the board of managers of Cook College, Rutgers University's agricultural college, received the Distinguished Service to Agriculture Award. Abbott Lee received the Outstanding Young Farmer in New Jersey Award and was cited for his professional ingenuity and inventive-

ness in creating several new techniques for cranberry farming. (Lee later was named one of four recipients of the Outstanding Young Farmers' Awards by the U.S. Jaycees. He is the first New Jersey resident ever selected for this national honor, an award based on success in farming, conservation practices and community and industry involvement.)

Lipman pointed with pride to the New Jersey Department of Agriculture's 1984 Annual Report. Both front and back covers featured cranberries—testimony to the significant impact the cranberry industry has made on the state's agricultural scene.

Finally, Lipman noted farmers approved a resolution at the convention requesting that additional funds be allocated for maintenance of the state's experiment stations. He also said convention delegates passed a resolution asking that no water be exported from New Jersey's Pinelands, the heart of the state's cranberry and blueberry industry. This is a critical issue since metropolitan centers like nearby Camden are suffering from water pollution and water shortage problems. However, maintaining the region's

present water quality and quantity is crucial to agriculture's welfare.

In another water related issue of major concern to growers, Garfield DeMarco explained that Governor Kean has just signed a bill (A-1544, C.33) into law that modifies permit requirements for the construction and maintenance of small dams. New Jersey's cranberry growers welcomed this news.

JAMES GIBSON, statistician in charge, New Jersey Crop Reporting Service, noted that the color and size of New Jersey's 1984 crop was good. An average of 85.6 barrels of cranberries were produced per acre of bog. A total yield of 274,000 barrels was produced on 3,200 harvested acres and all berries were utilized. Although this represents an 18 percent increase from 1983, it is still 7 percent below the state's record crop of 1982.

DR. NICHOLI VORSA, plant breeder at the Blueberry/Cranberry Research Center, told growers: "We should be able to double or triple our yield in New Jersey." Vorsa recalled the cooperative breeding programs between the USDA and New Jersey and Massachusetts and how they sought to improve crop yield and produce varieties resistant to false blossom disease. This effort, initiated in 1929, resulted in varieties like Pilgrim, Stevens, Wilcox, Franklin, Bergman, Beckwith and McFarlin. Today, with false blossom disease no longer a threat, growers continue to look for high yielding

(continued on page 15)

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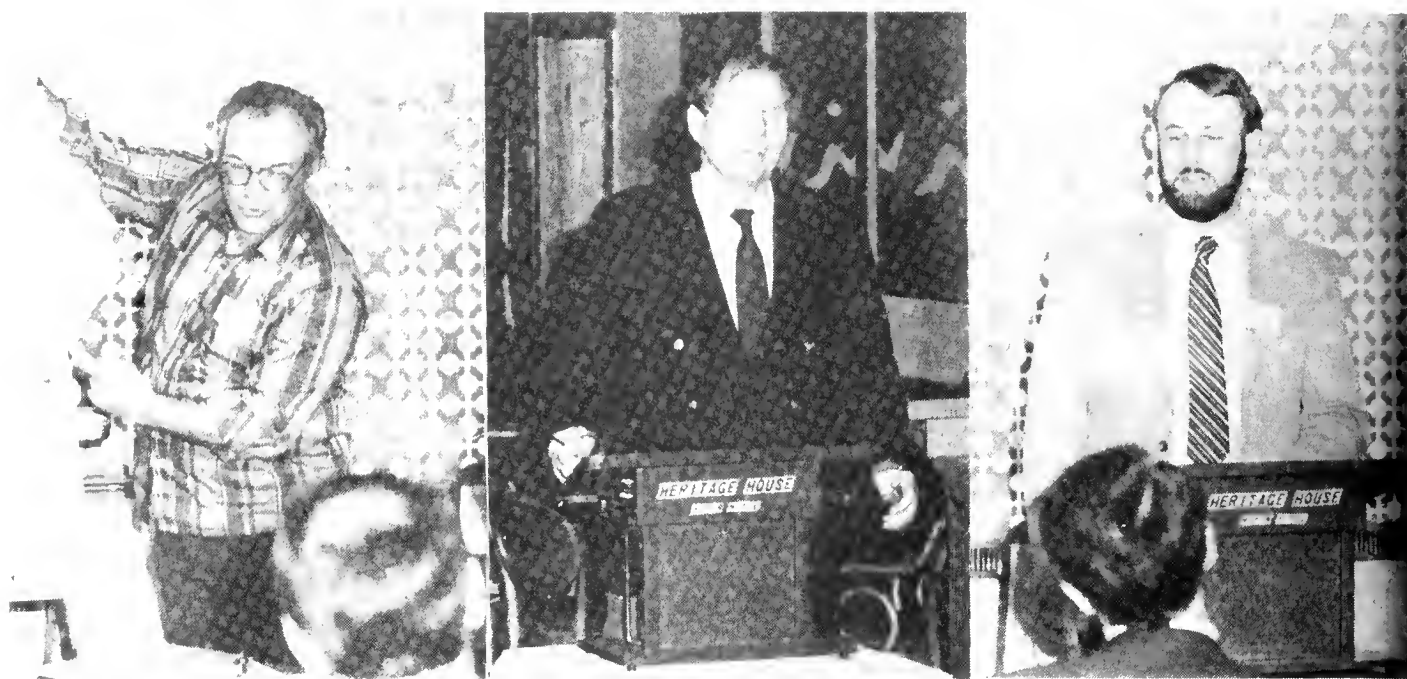
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SPEAKERS AT THE CONFERENCE: L. to r., Fred Mahn, New Jersey grower; Dr. James Tillotson, director of research and development, Ocean Spray; Frank Easter, Soil Conservation Service specialist, state of Washington.

(Photos by Robert Fitch)

WATER CONSERVATION . . .
(continued from page 3)

first time last year.

John C. Decas of the Decas Cranberry Co. was the dinner M.C.

Tours were made of the Harju Bros., Clark Griffith and A.D. Makepeace bogs and the Middleboro Ocean Spray plant.

Among the speakers, on a variety of subjects ranging from production and harvest technology to integrated pest management to the costs and returns of cranberrying to methods of applying water and regulations and legislation affecting water use were Lee Davis, Rex Tracy, Bob Light, Mike Sikora, Jere Downing, Irving Demoranville, John Meader, Bernard Morzuch, Gene Mills, Charles Brodel, Sherrie Roberts, Lloyd Thomas, Dick McIntyre, Fred Mahn, Obie Ashford, Frank Easter, Gylan Dickey, Joe Cooney, Ben Gilmore, Ron Gronwald, Jack Tibbetts, Carl Gustafson, George Andruk, Thomas

Williams, Jay Slattery.

Papers presented at the conference will be given in future issues of CRANBERRIES. Below is the paper, "National Engineering Policy on Irrigation," given by Lloyd Thomas, head of the engineering staff, New England National Technical Center, Soil Conservation Service.

Agriculture is far and away the nation's biggest water consumer, accounting for 83 percent of the total water use. Like other water consumers, agriculture intends to use more water each year, although this may not be possible.

America's ground water resources are far greater than the total capacity of all our lakes and reservoirs, including the Great Lakes. The ground water volume is equivalent to about 34 years of surface runoff. Ground water accounts for nearly one-fourth of the fresh water consumed in the U.S., with agriculture using about half of it. It is, however, replenished slowly. An average of 3 inches of the water that soaks into the ground each year

passes beyond the soil moisture zone and recharges the ground water supply. Heaviest ground water withdrawals are, of course, in the West and Southwest part of the country.

A considerable amount of ground water being withdrawn for irrigation is not renewable. It has accumulated over many thousands of years. In some areas, water is being withdrawn with almost no recharge taking place. This so called "ground water mining" is depleting the nation's water supply at the rate of 21 billion gallons per day.

Despite water shortages in some areas, irrigation is on the increase. In 1958 only 37 million farm acres were irrigated. By 1967 the figure was up to 44 million acres. According to Natural Resources Inventories, by 1977 farms were irrigating 58 million acres, and, by 1982, 60.5 million acres.

This increase in irrigation has accentuated the need to manage the application of water, minimize erosion, use the water resource wisely, and thus

(continued on page 12)



CLOCKWISE FROM BOTTOM LEFT: 1. Soil conservation, cranberry and irrigation experts took a close look at this new cranberry bog at Harju Bros. 2. Clark Griffith, far right with power speaker, tells attendees at the conference about the operation of his bogs in South Carver, Mass. 3. Paul Harju, center, discusses the development of new bogs by his company in Plympton. 4. Irving Demoranville, foreground, and others at the conference inspect a new Harju bog. In the background, a new bog is being graded by a bulldozer, with the use of a laser system which ensures that the bog will be perfectly level. 5. The A.D. Makepeace Co. demonstrated the irrigation/sprinkler system at its Wankenquah Bogs.

(Photos by Robert Fitch)



maintain the quality of surface and ground water.

Of these 60.5 million acres, 35 million acres needed conservation treatment, either for erosion control, drainage or irrigation water management. And more than half of the need is for irrigation water management. Irrigation water management is defined as "determining and controlling the rate, amount and timing of irrigation water application in a planned and efficient manner."

The objective of irrigation water management is to effectively use available irrigation water supply in managing and controlling the moisture environment of crops to promote the desired crop response, to minimize erosion and loss of plant nutrients, to control undesirable water loss and to protect water quality.

In the 13 Northeastern states, the Natural Resource Inventory shows that there are approximately 429,000 acres of irrigated cropland, of which 232,000 acres or 54 percent needs some conservation

treatment for erosion control, drainage or irrigation water management. These figures may also be too low for the humid Northeast, where farmers use a lot of supplemental irrigation and may not irrigate every year. It is suspected that much of this supplemental irrigation does not

show up in the census or inventory data.

As a result of the "Soil and Water Resources Conservation Act" of 1977, better known as "RCA," USDA developed a National Soil and Water Conservation Program, better known as NCP (National Conservation Programs). The

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 (William Chamberlain)

NCP identifies six long-term objectives:

1. Reduce excessive soil erosion.
2. Improve irrigation efficiency.
3. Improve water management.
4. Reduce upstream flood damages.
5. Improve range conditions.
6. Improve water quality.

Three of these objectives—improve irrigation efficiency, improve water management and improve water quality—are, of course, directly related to irrigation and irrigation water management.

The NCP allows for flexibility so that the worst needs can be addressed in different parts of the country. Nationally, SCS is a leader in irrigation technology, especially in water conservation and management activities and data on the soils being irrigated. SCS works in cooperation with universities, suppliers and researchers in the development of standards and specifications for proper installation of irrigation systems.

Irrigation systems require

sound and up-to-date planning to be compatible with changing farming systems. SCS technical specialists work to improve irrigation technology and expertise by monitoring field trials and evaluating operating

systems. The Service works closely with researchers to stay abreast of new developments and help insure that research needs are addressed.

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necessary to meet the conservation needs of the land, and this certainly includes assistance with irrigation and water management.

In each state, SCS has an irrigation guide setting forth the basic design criteria for all conservation irrigation methods adapted to local conditions. These irrigation guides are generally prepared in cooperation with state universities, state experiment stations, extension service and agricultural research service.

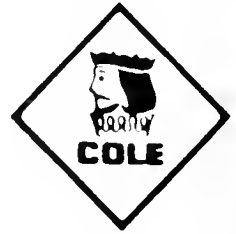
SCS policy is to provide technical assistance to farmers, farmer groups and local entities to install irrigation facilities that provide for the conservation use of soil and water resources and minimize erosion and maintenance problems. With limited resources, SCS must carefully assess the priorities for technical assistance in each state. This is the state conservationist's job. Naturally, the amount of irrigation technical assistance that we provide must depend upon the needs in that location, and we have the flexibility to adjust to that need.

Since improvement of irrigation efficiency, improvement of water management and improvement of water quality are three of the six conservation

objectives, irrigation and water management assistance is a concern to the SCS. In the Northeast, we are currently in

the process of assessing the need for water management assistance on a state-by-state basis.

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NEW JERSEY GROWERS ... (continued from page 8)

cultivars that color in early September. The cross of Early Black with Searles looks promising, with 90 percent of the seedlings harvested by September 20, Vorsa said. Vorsa continues to study the possible causes of the high percentage of rot in certain cultivars.

DR. ALLAN STRETCH, USDA plant pathologist at the research center, reviewed with growers the future availability of fungicides. Economic considerations compel DuPont to take **MANZATE** Fungicide products containing Maneb or Maneb plus zinc off the market. However, the company will continue to maintain its registration for Mancozeb and products containing Mancozeb. Stretch said the federal EPA is in the process of reevaluating several fungicides, including Difolatan, Bravo and Benlate, with specific attention given to their potential impact on consumer health.

Stretch updated growers on his continuing research related to the shelf life of water harvested and dry harvested cranberries. Referring to data compiled in 1982-83, he reminded growers that dry harvested berries generally are less susceptible to fungal rot and physiological breakdown than wet harvested berries. During the course of study, all varieties evaluated at the research center continue to be subjected to identical fungicide maintenance routine. To date, Pilgrim, Stevens and Franklin appear better able to withstand rot for a longer time period than Early Black, Ben Lear and Wilcox, while Ben Lear, Franklin, Pilgrim and Stevens are less susceptible to physiological breakdown than Wilcox and Early Black. Water temperature does not seem to be connected to percentage of rot.

Franklin, Early Black, Ben Lear, Pilgrim, Stevens and Wilcox are also being observed for continuing anthocyanin development once they are placed in storage. Identifying cultivars that will color under these conditions is important in future breeding programs. It appears that Franklin, Early Black and Ben Lear continue to develop color after being put in storage while continued coloring in Pilgrim, Stevens and Wilcox is minimal.

Stretch's fungicide testing with Bravo for 1983-84 demonstrates the value of consistent long-term applications in preventing fruit rot. Hand sprayed applications appear to be somewhat more effective than aerial applications.

PHILIP E. MARUCCI, research professor of entomology and extension specialist in cranberry and blueberry culture, told growers repetition is valuable in cranberry studies because the more one studies a subject, the more one learns how much there is yet to discover. Among the subjects he referred to were the advantages of early drawn bogs, bees and pollination and the merit of cranberry varieties other than Early Black.

Marucci again reminded growers that

early drawing of water from bogs enhances crop size and berry color. However, he said, there is an increased risk of insect damage. Today, insecticides help the grower control the damage. Marucci warned, however, that insects inevitably will develop a resistance to any new insecticide. To counterbalance this, he recommends postponing use of new products until absolutely necessary.

Pollinating activity of bees can be a frustrating experience for cranberry growers because bees don't thrive on cranberries and prefer many of the Pinelands wildflowers to cranberry blossoms, Marucci said. He noted that 436 different kinds of flowers blossom in the Pinelands and, of these, 320 bloom at the same time as cranberries. Fortunately, only a few—sand myrtle, Pine Barrens heather, inkberry, black huckleberry, blue huckleberry and dewberry—impinge on cranberry pollination. Testing at the research center shows bee activity is greater on un sprayed bogs than sprayed bogs. However, when the wild flower bloom diminishes, bee activity increases in the bog.

Bee activity also diminishes where there is dense upright growth or when the weather is extremely hot and dry. Careful pruning and proximity to water can enhance pollination, Marucci said.

Although Early Black has long been the standard variety in New Jersey, Marucci again reminded growers that newer varieties like Ben Lear, Crowley, Stevens and No. 35 show exceptional promise. For example, he recently observed that Ben Lear, planted in an Indian Mills bog, had a larger percentage of fruit set, produced more fruit buds per upright, and colored nearly as well as Early Black. N.J. growers are welcome to take cuttings from these four varieties at the research center.

NEW JERSEY'S Senate Energy and

Environment Committee continues to consider expansion of the 1971 pesticide control legislation. Abbott Lee told growers that the Farm Bureau opposes this bill, a piece of legislation that would allow "anyone to sue anyone else for a perceived violation of a pesticide law," Lee said. Its excessive regulatory powers could be detrimental to farmers, he added.

RAY SAMULIS, Burlington County agricultural agent, reminded growers to maintain accurate pesticide records, including date of pesticide application, type of equipment used for application and amount of pesticide used. New Jersey's Department of Environmental Protection has staff specifically employed to check agricultural pesticide application records.

GROWERS' interest in increasing the general public's understanding of New Jersey's cranberry agriculture has resulted in the development of a brochure that will be ready for distribution in the fall. Katia Darlington told ACGA members that the brochure will focus on the compatible relationship between the state's cranberry farming and the region's wetlands and wildlife. Photographs will highlight the text.

A second public relations effort will be a weekend cranberry festival in Chatsworth, the "capital of the Pines," in October 1985. Several growers contributed to the success of last year's initial festival, an effort that attracted 3,000 visitors.

NAMED ACGA officers for 1985-86 were: William Fox Jr., president; Abbott Lee, vice president; Dr. Paul Eck, treasurer; Philip E. Marucci, secretary; Edward V. Lipman, ACGA delegate to the N.J. Agricultural Convention, and Joseph Darlington, alternate delegate to the convention.

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MASSACHUSETTS

April was warm, averaging 2.1 degrees a day above normal. This was the warmest April since 1976 and the sixth warmest in our records. Maximum temperature was 80 degrees on the 26th and the minimum was 24 degrees on the 10th. Warmer than average days were the 6th, 15th, 16th, 19th, 21st and 26-30. Cooler than average days were the 1st, 3rd, 9th, 10th, 14th and 24th.

Rainfall totaled 1.36 inches, about 3 inches below normal. This was the lowest April total since 1963 and the third lowest in our records. There was measurable precipitation on 10 days, with 0.63 inch on the 1st as the greatest storm. This was near half of the monthly total and there was actually less than 1/4 inch from April 8th to the month's end. We are 9 1/2 inches below normal for the year to date and 12 1/2 inches below 1984.

There is some frost injury around, which probably occurred on April 17th. Too early to make a good estimate but this is the earliest we have ever had frost injury. Very dry conditions and dew points in the single numbers were evidently responsible. The injury does

not appear to cover the entire cranberry area but was spotty and confined to parts of the Wareham, Carver, Plymouth growing sections. Also some leaf drop, mostly on Early Blacks.

I.E.D.

NOVA SCOTIA

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with cool temperatures prevailing. In fact, we had snow May 3 and 8. I.V.H.

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Pheromone Research Being Conducted in Washington Bogs

By **CARL H. SHANKS JR.**
Washington State University
S.W. Washington Research Unit

Many animals, including insects, emit chemicals which bring responses from others within their species. Alarm pheromones signal danger to other individuals, aggregation pheromones cause individuals of a species to stay close together, oviposition pheromones tell other females of the species that a fruit has already received an egg, and sex pheromones attract members of the opposite sex of that species.

Each insect species has its own pheromone, which usually affects only members of that species.

Sex pheromones are often used to monitor insect populations. Once the chemical components of a pheromone of an insect species are identified, the pheromone can be synthesized. Baits containing the pheromone are placed in sticky traps and the traps are positioned in fields of the crop which attract the insect. Insects of that species are attracted to the pheromone and are caught in the sticky coating of the trap. Frequent examination of the traps will reveal whether that pest insect is present, when it is present, and give an estimate of the size of the population. This information can be used to tell us if sprays are needed, and, if so, when they should be applied.

This summer, we will be conducting research (partially funded by the Washington Cranberry Commission) with pheromones of two insect pests of cranberries. Both are female sex pheromones. That is, they are emitted by the females to attract males.

One is the cranberry girdler, which seems to be increasing as a pest in Washington. It has already been tested at Bandon, Ore., with good success. We want to use it to learn more about cranberry girdler in Washington bogs, where the climate is quite different from that in Bandon.

The other insect is the blackheaded fireworm. This insect currently is not a great problem due to very effective insecticides.

However, use of pheromone traps could result in better timing of sprays and also could result in fewer sprays if the traps show the insect not to be present.

Drs. Les McDonough and Harry Davis of the USDA laboratory at Yakima identified the sex pheromone of the female blackheaded fireworm last year. We plan to test its efficacy this summer. We hope that this will result in financial and time savings to our cranberry growers.

We will be asking some of you for permission to place traps in your bogs. If permission is granted, we will keep you informed as to what our findings are.

TETRA PAK MOVES

Tetra Pak Inc., which produces aseptic packaging for Ocean Spray drinks and is

the world's leader in this type of packaging, has relocated its corporate headquarters from Dallas, Texas, to Shelton, Conn.

Tetra Pak is an international company which originated in Sweden but is now headquartered in Switzerland. The Tetra Pak Group's turnover in 1984 was approximately \$1.5 billion. The company specializes in packaging systems for liquid foods. In 1984, 35 billion packages were sold in 90 countries.

Venture Center in Shelton, a new, two story, 55,000 square foot office building situated on 8½ acres in southeast Fairfield County, will house corporate management personnel and the regional office of the eastern U.S.

A lease agreement with an option to purchase the property has been negotiated.

"We are pleased to locate our headquarters building within our major market area," Lara R. Bergwall, president and chief executive officer of Tetra Pak Inc. said. "This location gives us very good access to major customers and will provide an excellent base for our extensive technical service. Approximately 100 people will be employed at the site by the end of 1985."

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IN THE APRIL issue, you may recall, we had a very funny piece by Steve Hall titled "Writing with Cranberries." Well, it seems Steve isn't the only one who's written with cranberries. Turns out that "Chuck" Brodel, Massachusetts Cranberry Station entomologist, also has written with cranberries. He explains it this way: "(Steve's article) brought to mind an urge I had to wax philosophical soon after assuming the duties of entomologist at the Cranberry Experiment Station in 1979. A glance at the (photo above) will convey what I imagined to be the motto of every lifelong cranberry grower: 'Life is just a bog of berries.' Formed from ripe cranberries, arranged in printed and cursive letters, the motto rested on the slope of a pile of unscreened sand beside an 11-acre bog. In this case, at least, I think it can be said that the medium is certainly the message! Don't you agree?" Yes, we agree, Chuck. (We're beginning to think that cranberry people are not only the craftiest people around but the most whimsical and funny. It's the juice! It's the juice!)

ALLIS-CHALMERS GIVES REPORT ON ITS FINANCES

Reporting final 1984 financial results, Allis-Chalmers says it had a net loss of \$261 million, equal to \$19.26 per common share, compared with a 1983 loss of \$142.2 million, or \$11.84 per share. Sales were \$1.326 billion in 1984 and \$1.300 billion in 1983.

Wendell F. Bueche, president and CEO of the Milwaukee based corporation, "On March 28, we announced a

preliminary agreement with a subsidiary of Klockner-Humboldt-Deutz AG of West Germany to purchase our agricultural equipment business, including the Allis-Chalmers Credit Corporation."

CHAFEE NAMES HEADS OF EXPORT TASK FORCE

Sens. Mark Andrews (R-N.D.) and Charles E. Grassley (R-Iowa) recently were named by Senate Republican Conference Chairman John H. Chafee

(R-R.I.) as cochairmen of a special Republican Conference task force to explore ways of opening world markets to U.S. farm products.

"By increasing exports of our farm products, American farmers will flourish again," Chafee said. "I am confident that Sens. Andrews and Grassley, through this new task force, will help to build the framework for a new farm policy based on exports."

OCEAN SPRAY CREATES NEW MANAGER POSTS

To prepare for planned growth, Ocean Spray Cranberries has expanded its executive level management structure by naming a new senior vice president and creating two additional vice president level positions.

In making the announcement, Harold Thorkilsen, president and chief executive officer, said: "Ocean Spray has experienced rapid growth in the past several years and we anticipate this growth to continue. In order to keep pace with this growth, we are expanding our senior management organization. Today's appointments make even greater use of our internal strengths and go a long way toward establishing the executive level management we'll need in the years ahead."

Promoted to senior vice president was Curtis L. Collison Jr. Collison joined Ocean Spray in 1982 as vice president of human resources. He reports to Thorkilsen and will assume responsibility for the company law department, in addition to his responsibilities for the communications and human resources departments. Collison was previously director of personnel for the commercial division at Digital Equipment Corporation in Merrimack, N.H. His prior experience includes assignments at Cambridge Memories Inc., Honeywell Systems Inc., and IBM. He holds a BS degree in business administration from Syracuse University.

Arch J. MacIsaac has been promoted to vice president of logistics. He joined Ocean Spray in 1982 as director of the company's management information systems department and was previously employed by American Hospital Supply in McGaw Park, Ill. In April 1984, MacIsaac was appointed to the position of director of logistics management. He holds an MS degree in management from Lake Forest College in Illinois. MacIsaac reports to Senior Vice President Endre Endresen.

Michael J. Shea has been promoted to vice president-controller. He joined Ocean Spray in 1978 as internal auditor, was subsequently promoted to manager of internal audit, assistant corporate controller, and, in 1981, to controller of the corporation. Before joining Ocean Spray, Shea was a

senior accountant with Touche-Ross and Co. and Deloitte, Haskins and Sells in Boston. He is a CPA with a BS in business admini-

stration from Stonehill College and an MBA from Babson College. Shea reports to Group Vice President Alvin Wanthal.

ATTENTION: Massachusetts Bog Owners With Expansion & Maintenance Projects

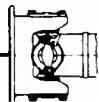
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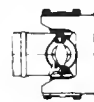
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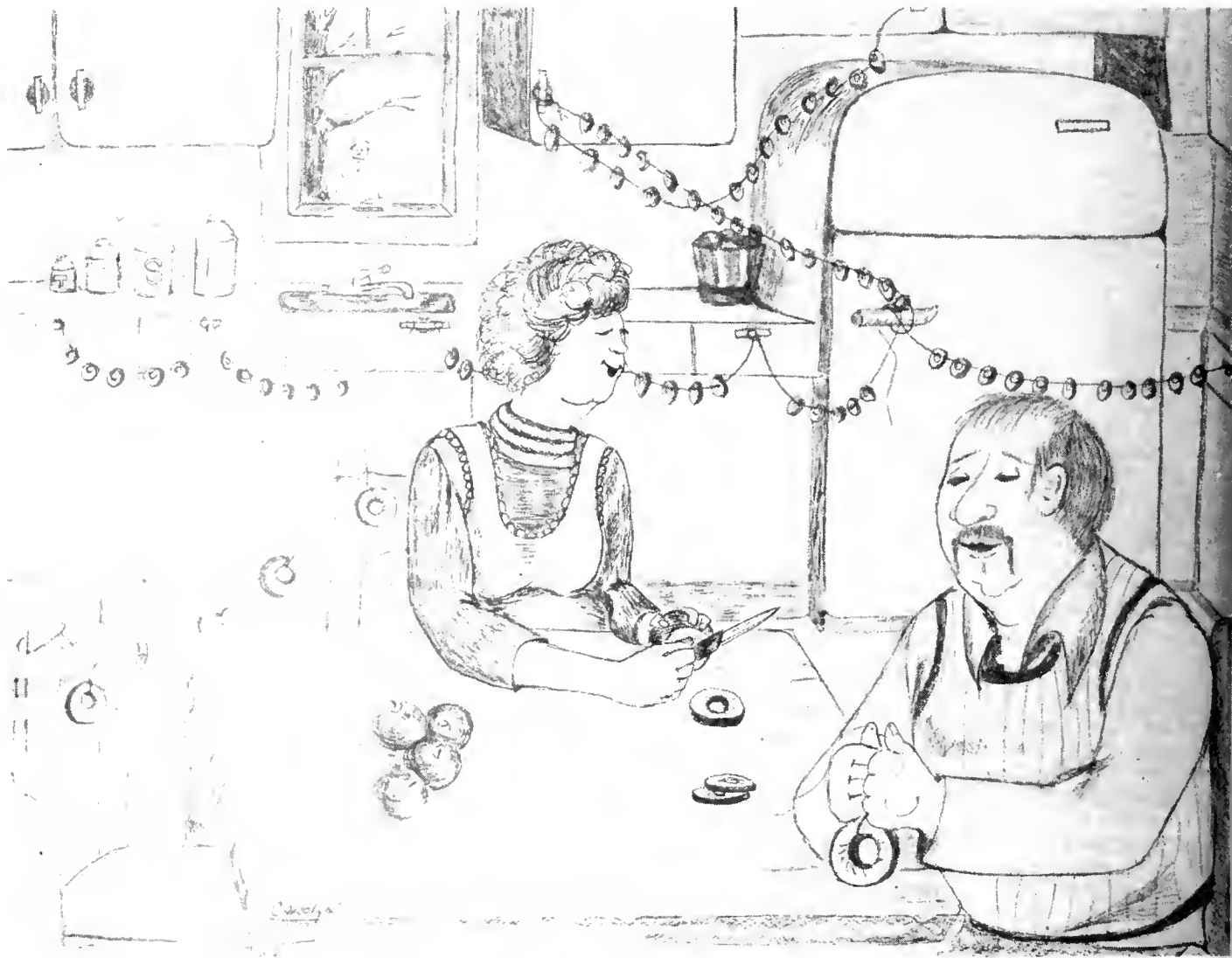
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Gettin' Along

By CHARLES METCALF

One cool evening I stopped by to see my old friends, Joel and Martha. When I walked into their little kitchen, I was astonished. From wall to wall, from chair to chair, was a criss-cross of strings hung with hundreds, thousands of little sliced apple rings. Martha was slicing. Joel was stringing.

"Good heavens, Joel," I asked, "whatever are you doing this for?"

"Wal, I don't rightly know," Joel replied. "But Ma says it's better'n sitting here hating each other."

regional news notes

MASSACHUSETTS

By IRVING E. DEMORANVILLE

Dr. Robert Devlin attended the annual meeting of the Northeast Section of the American Society of Plant Physiologists at St. Michael's College in Winooski, Vt., April 25-27.

6 oz. liquid fruit pectin

Sterilize eight 8 ounce jelly glasses. Leave in hot water until ready to use. In large, deep saucepan, combine cranberry juice with sugar. Tie cinnamon, cloves, allspice securely in a small cheesecloth bag. Add to mixture. Stir over high heat. Bring mixture to a full rolling boil. Stir in pectin. Again bring to full rolling boil. Boil 1 minute, stirring constantly. Remove from heat, discard cheesecloth mixture and skim foam for liquid. Ladle jelly into hot, sterilized glasses and seal.

ORGANIC FARMER WORKSHOPS SET

The Natural Organic Farmers' Association of New York will sponsor a series of one day on-farm workshops this summer.

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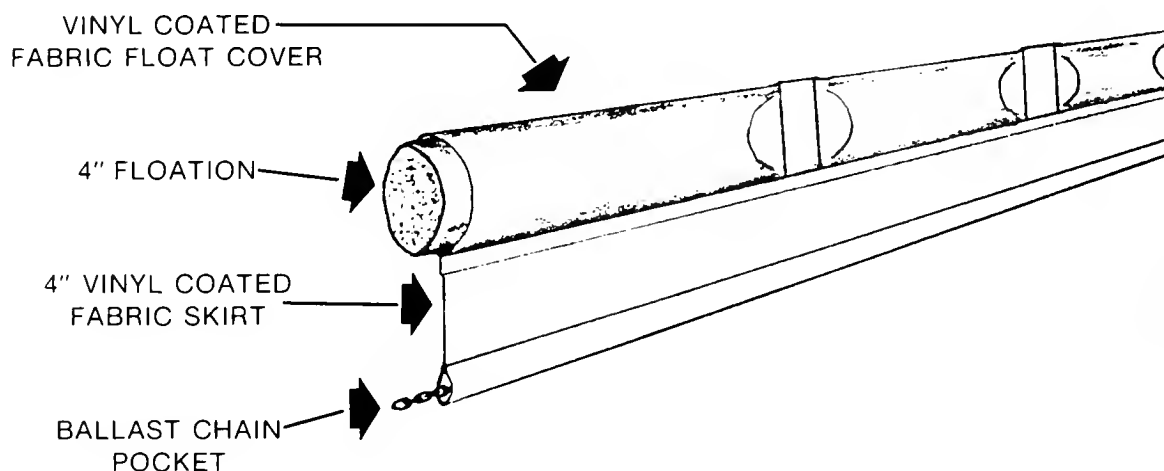
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Thar's Plenty of 'Red Gold' In Them Wisconsin Marshes

By LAURA ZAHN

When Betty and Charles Goldsworthy sit down for Thanksgiving dinner, they've already seen enough of the cranberries accompanying their turkey to last most diners a lifetime.

But, for them, the berries are a reason to be thankful. Goldsworthy's late father, Vernon, a long time correspondent for CRANBERRIES Magazine, began cultivation of the 120-acre Thunder Lake Marsh near Three Lakes, Wisc., 35 years ago. Today, Charles owns and operates it, and is president of Cranberry Products Inc. processing plant in nearby Eagle River. Betty Goldsworthy manages the gift shop the plant operates as an outlet for its products, including cranberry-scented candles and potpourri.

Wisconsin harvests 130 million pounds of "red gold" each year, Charles Goldsworthy said, worth up to \$40 million.

COVER PHOTO

LEN MASER of Cranberry Products Inc. scoops up fresh berries at 65 cents a pound during the 1984 Cranberry Fest in Eagle River, Wisc. At the celebration, Cranberry Products also gives away glasses of juice, trips to a local producing marsh are available, and a cranberry bake sale is always a sellout. A story about Cranberry Products and Wisconsin cranberrying starts on this page.

(CRANBERRIES photo by Laura Zahn)



BETTY GOLDSWORTHY, who manages the gift shop at the cranberry plant in Eagle River, Wisc., sells donuts and cranberry pie at Eagle River's annual October Cranberry Fest. She also shows filmstrips to visitors on the history of cranberrying.

(CRANBERRIES photo by Laura Zahn)

depending on the market. From September until early November, shifts may work the flooded marshes 10 hours a day.

In Eagle River, the Chamber of Commerce knows that calls for a celebration. Each October, the Cranberry Fest includes a bake sale with cranberry donuts, pie, bread and cake, and free cranberry juice from the plant. Berries are sold for 65 cents a pound. A bus takes visitors to Goldsworthy's marsh, and the vehicle is always packed, so a string of cars follows. Goldsworthy gives a short history lesson and bog walk. Betty Goldsworthy runs the filmstrip at the library for more history on U.S. cranberrying.

Goldsworthy and his fellow growers in the Eagle River area are among the few independents whose berries go into labels such as Monarch, Richelieu, Sure Fine, Food Club, Super Valu and Eagle River.

"The market is changing," he said. "People want it more in juice now. They're not looking for fresh cranberries. They used to want fresh cranberries for Easter." Now, 70 percent of the berries end in juice. Only 10 percent are sold fresh and the rest go into sauces, jams and jellies.

That means change for Goldsworthy's marshes. Some of his beds, which cover 120 acres at an investment of about \$30,000 per acre, will be torn up, though they could produce berries normally for 200 years with proper care. Betty Goldsworthy said the new plants will yield fruit "as big as crabapples. In five years, that is."

After cuttings are stamped into the ground, they are babied for five years: treated with herbicides and insecticides, layered again with sand so vines will reproduce and grow upright, and flooded to form a winter "blanket" of ice and snow for protection against Wisconsin's extreme cold days.



CHARLES GOLDSWORTHY operates marshes in Three Lakes and Tomahawk, Wisc., and gives lectures to visitors during the Eagle River, Wisc., Cranberry Fest. He answers questions and speaks to hundreds of visitors each year and allows them to walk on one of his beds for a closeup look. (CRANBERRIES photo by Laura Zahn)

When buds form, they will not be fruit until August of the following year, he said. The bloom's pollen is heavy for wind carrying, so the Goldsworthys also baby 200 bee hives.

After pollination, berries ripen about Sept. 15, depending on the variety. And there's quite a number for Goldsworthy to keep track of—72 varieties between (continued on next page)

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his Three Lakes and Tomahawk marshes, he said.

After berries are knocked off with a beater, floated to the end of the bed and loaded, the debris and leaves are removed by a blower at the Eagle River plant.

Goldsworthy tells visitors to the marsh that fresh berries from the festival's bin should be refrigerated within 72 hours. He shakes his head.

"Years ago, when they were harvested by hand, it was gentler and they lasted longer. Now, when you go through, you bruise them and get some berry breakdown."

Still, fresh berries last a whopping two years frozen, Betty Goldsworthy said. She makes a point of educating Eagle River Cranberry Fest visitors in what a remarkable berry the cranberry is, in storage, vitamin C value, and in recipe and use versatility.

Judging from the sale of the cranberry donuts, nobody has doubts about its other remarkable attribute: taste.

CRANBERRIES



The National Cranberry Magazine

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Water of Prime Concern to Growers

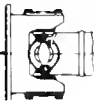
Having only the average layman's knowledge about ground water (well, maybe a little more; at least more than that of many a city dweller unfamiliar with wells, pump breakdowns, etc.), I was duly alarmed by some of the remarks made at a recent cranberry conference by Lloyd Thomas, head of the engineering staff, New England National Technical Center, Soil Conservation Service.

The nation's ground water supply, accumulated over thousands of years, is being depleted at the rate of 21 billion gallons per day, said Thomas. Sounds like a mighty amount.

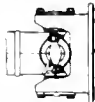
Agriculture is the biggest user of ground water. In little more than a quarter of a century, irrigation use alone has expanded about 40 percent. And, you can be sure, usage will increase.

No one should be more concerned about water conservation and the role of the Soil Conservation Service than the cranberry grower, with his/her need for the valuable resource.

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weather watch

MASSACHUSETTS

May was above normal for precipitation, below normal for sunshine and very near normal for temperature. Temperature averaged just 0.1 degree a day below normal. Maximum temperature was 80°F on the 11th and minimum was 32°F on the 9th. Warmer than average days were the 1st, 11th, 22nd, 24th, 25th and 27th. Cooler than average periods were the 2nd through 6th, 8th-9th, 12th, 19th and 29th.

Rainfall totalled 4.92 inches, which is about 1½ inches above normal. This is the first above normal month since October and only the second since August. It was the largest May total since 1979. There were 12 days with measurable rain, with 2.02 inches on the 2nd and 3rd as the greatest storm. We are about 8 inches below normal and over 11 inches behind 1984. Sunshine was the least for May since 1948.

FROST

We have had a total of 12 frost warnings on 10 days through May. There was an extremely dangerous frost on the evening of May 29th, with the general range of temperatures from 19 to 22 degrees; there were a few bogs in the 14 to 18 degree range and some in the mid

to high 20's. These are very low bog temperatures for this late in the spring and, in the Wareham-Carver area, sprinklers were running before or shortly after sunset when many bogs were already down to 30 degrees. Some injury where growers were slow to get started and even injury on the outer parts of bogs where water was delivered in smaller quantities due to low pressure or old, poorly designed systems. Too

early to estimate losses yet, but, with our present system of sprinklers, they would have equalled or surpassed the devastating frost of May 30, 1968. To further complicate the situation there is injury from a very cold, dry night in mid-April when some bogs were down to 10°.

FINAL KEEPING QUALITY FORECAST

Weather data to June 1st gives us



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total of 8 points of a possible 16 that favor keeping quality for the 1985 cranberry crop. The prospect is for good to very good keeping quality this year. The spring has been reasonably dry, which is favorable; but it also has been warm, which is unfavorable. As a general recommendation, we would advise fungicide treatments, especially in bogs that have had problems in the past.

I.E.D.

NOVA SCOTIA

The first week of June was characterized by rainy, cool weather. We are definitely in need of some warm, sunny weather. In many areas, it will take a week of dry weather for the land to dry enough to permit normal farm operations.

I.V.H.

OCEAN SPRAY HELPS RESTORE CAPE VERDEAN VESSEL

Donations from the state of Massachusetts and Ocean Spray, the largest corporate contributor, are funding the restoration of the 91-year-old Cape Verdean fishing schooner, *Ernestina*, as a sailing school vessel. Cape Verde and cranberrying have

had a long history together. Many of the thousands of Cape Verdeans who immigrated to southeastern Massa-

chusetts in the late 19th and early 20th centuries found work harvesting the cranberry bogs in the area.



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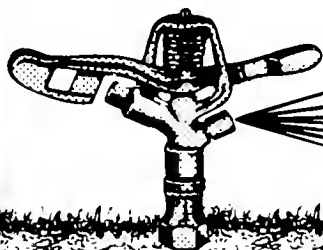
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Upbeat Note Sounded at Annual Meet

Ocean Spray President Hal Thorkilsen told the 1985 Grower Workshop/Annual Meeting in Newport Beach, Calif., that Ocean Spray is heading for the 10th consecutive year of record sales and earnings.

Sales in '84 amounted to \$465 million with proceeds of \$148 million, he noted. Cranberry drinks are 25 percent ahead of last year, Thorkilsen noted.

The Ocean Spray president explained that the coop has pooled resources with Welch, Tree Top, Citrus World and Tri-Valley to form Cooperating Brands Inc. for ventures in the food service industry. He also commented on Ocean Spray's plans to test market frozen juice bars and yogurt.

Thorkilsen credited grower-owners for the success of the cooperative, citing their willingness over the last 20 years to invest in consumer marketing programs and

physical plant.

Mitzi Ayala, president of American Agrinet Inc., talked to growers about dealing with the media regarding issues of concern to the industry.

Charles Garfield, author of *Peak Performance* and *Peak performance in Business*, discussed his principles for attaining peak performance.

Rep. Silvio Conte (R-Mass.), John Weinfurter, aide to Rep. Joseph Moakley (D-Mass.), and Gail Fosler, chief economist of the Senate Budget Committee, spoke on the economy, the federal budget and tax legislation.

Joseph Marshburn, president of Citrus World Inc., stressing that cooperatives should cooperate with each other, illustrated his theme by describing the cooperation between Ocean Spray and Citrus World and the formation of Cooperating Brands Inc.

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Managing Grub Populations With Granular Insecticides

C.F. Brodel and B.A. Watt
Cranberry Experiment Station
East Wareham, Massachusetts

Grubs of six species of beetle are known to feed on the roots of cranberry in Massachusetts. These are the cranberry white grub, cranberry root grub, grape nomala, cranberry rootworm, striped colaspis, and strawberry root weevil. Until the mid-1950s, partial control of these species was achieved either by flooding bogs during the summer or by applying paradichlorobenzene crystals, a solution of sodium cyanide, or DDT dust. The use of

dieldrin from 1955 onward, however, enabled growers to eliminate grub populations from bogs and lessen the damage incurred by other pests, such as the cranberry weevil and cranberry girdler.

In 1975, all agricultural uses of dieldrin were banned in the United States. Reasons for the ban of this and other insecticides of the chlorinated hydrocarbon class included their marked persistence and accumulation in the environment and the postulated long-term, adverse effects on wildlife

populations. The persistence and effectiveness of dieldrin is well illustrated by the fact that no grub infestations were reported on Massachusetts bogs for 7 years after the ban. Since 1982, however, 5 to 10 growers have encountered difficulties with the white grub, *Phyllophaga anxia* LeConte, the cranberry root grub, *Lichnanthe vulpina* (Hentz), and the strawberry root weevil, *Otiorhynchus ovatus* (L.). Almost certainly, the number of growers who discover infestations on their properties will

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increase each year. A management method other than the costly summer flood will be needed.

Granular insecticides represent one possible means of managing grub populations in the future. The field trials described herein were conducted in 1984 and involved the testing of two granular insecticides against the two most economically important species, the white grub, *P. anxia* (Fig. 1), and the cranberry root grub, *L. vulpina* (Fig. 2).

Materials and Methods

Insecticide trials were performed on two bogs infested with one or both types of grub. Crane Brook Bog in Carver had a highly organic soil which drained poorly, and was infested with both grub species. Weeds were not evident, but the owner reported that grasses and narrowleaf goldenrod were once plentiful there. Although the test area was uniformly vined with 'Howes,' leaf coloration was abnormal and root systems were easily extricated from the soil. Somewhat in contrast, the Maple Spring Bog site in Wareham was sandy, well-drained, and infested only with white grubs. The 'Howes' vines did not appear to be stressed and, indeed, considerable effort was required to pull them from the soil. They did not cover the test area uniformly, but were intermingled with clumps of wood grass.

A granular formulation of two insecticides was tested at each site. Diazinon® 14G¹, manufactured by Ciba-Geigy, was applied at 28 and 56 pounds of formulation, or 3.92 and 7.84 pounds of active ingredient, per acre. Lorsban® 15G, made by Dow Chemical Co., was applied at 13.5 and 40.5 pounds of formulation, or 2.025 and 4.05 pounds of active ingredient, per acre.

¹Mention of a trademarked product does not imply endorsement of the product or discrimination against other products containing the same active ingredient.



Fig. 1. White grub, *P. anxia*



Fig. 2. Cranberry root grub, *L. vulpina*

Maple Spring Site. Three blocks of 5 plots each were flagged in infested areas near ditches on

May 2. Treatment plots measured 8 X 12 ft and shared a common border with 1 or 2

adjacent plots. On May 6, pre-treatment grub counts were made by a team of 5 people. In each plot, 4 areas measuring 2 X 2 ft were dug and rolled back. Soil beneath and within the root zone was inspected for white grubs, but seldom did the search include soil deeper than 6 inches below the surface. Collected specimens were placed in numbered plastic vials, returned to the laboratory, and stored in a refrigerator at 40°.

Insecticides were applied on May 15 from 9:30 to 10:45 am using a jar with 9 holes drilled in its lid. The temperature was between 55° and 60°F, wind velocities ranged from 0 to 5 miles per hour and skies were sunny. At 11:40 am the solid-set, overhead irrigation system was turned on and permitted to run for about 20 hours. During that time, about 2.5 inches of water fell on the plots while temperatures ranged from 40° to

55°F. Post-treatment grub counts were made on June 8 by a team of 4 workers. All stored grubs were later identified and re-counted. Head capsule widths were measured using an ocular micrometer in a stereoscope in

order to determine whether the insecticides were active only against the smaller, younger grubs. Crane Brook Site. A 5 X 5 Latin square was staked out on May 2. Each plot in the square measured 7 X 7 ft and shared a

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common boundary with 2,3, or 4 adjacent plots. On May 5, counts of grubs were made by a team of 6 workers. In each plot, 4 holes of 12 X 12 X 8 in were dug in random locations. The contents of each hole were placed on a sheet of black plastic and thoroughly examined by hand for the life stages of either grub. All specimens were placed in numbered plastic vials, returned to the laboratory, and stored in a refrigerator at 40°F.

Insecticides were applied on May 21 from 2 to 3:30 pm using a cylindrical ice cream carton with holes punched in its lid. Breezy, dry conditions prevailed and the temperature reached about 70°F. At 4:30 pm a single sprinkler head set up in the center of the Latin square was

turned on and operated continuously for 20 hours. During that time, the plots received about 2.5 inches of water and the temperature ranged from 44° to 69°F.

Post-treatment grub counts were made on June 12 by a team of 6 workers. Procedures matched those used for pre-application counts. Stored grubs were identified, re-counted, and measured in the same way as grubs removed from the Maple Spring site.

Statistical analyses. The post-treatment count of grubs in each plot was subtracted from the pre-treatment count to obtain what should be called a 'difference.' Summing the differences for all similarly treated plots and

dividing by the number of plots provided the average difference for a given insecticide treatment at a given site. Regarding white grub counts, a constant of 10 was added to each difference to avoid the occurrence of negative numbers. Likewise, a constant of 50 was added to each difference in the root grub trial. White grub differences for the Crane Brook site also underwent square root transformation. Three analyses of variance were performed on white grub data at the Maple Spring and Crane Brook sites and on root grub data at the latter site.

Results and Discussion

The results of the field trials are given in Tables 1 and 2. Table 1 presents average grub

Table 1. Grub counts of *P. anxia* and *L. vulpina* before and after treatment with granular insecticides at two bog sites in Massachusetts. May-June, 1984.

Treatment and lb/acre	Avg number <i>P. anxia</i> /ft ² *			Avg number <i>L. vulpina</i> /ft ²		
	Before	After	Diff.**	Before	After	Diff.**
<u>Crane Brook</u>						
Diazinon 14G 28.0 . . .	1.0	1.5	-0.5a	6.2	6.9	-0.7a
Diazinon 14G 56.0 . . .	1.0	1.6	-0.6a	9.4	7.2	2.2a
Lorsban 15G 13.5 . . .	1.1	1.4	-0.3a	10.1	12.2	-2.1a
Lorsban 15G 40.5 . . .	1.2	1.0	0.2a	8.4	10.9	-2.5a
Untreated	1.1	0.8	0.3a	6.8	9.5	-2.7a
<u>Maple Spring</u>						
Diazinon 14G 28.0 . . .	0.6	0.2	0.4a	- -	- -	- -
Diazinon 14G 56.0 . . .	0.5	0.1	0.4a	- -	- -	- -
Lorsban 15G 13.5 . . .	0.4	0.4	0.0a	- -	- -	- -
Lorsban 15G 40.5 . . .	0.5	0.5	0.0a	- -	- -	- -
Untreated	0.4	0.5	-0.1a	- -	- -	- -

* Data from Crane Brook subjected to \sqrt{X} transformation.

** Mean differences followed by same alphabetic letter are not statistically different at $P \leq 0.05$.

counts before and after treatment, whereas Table 2 shows pre- and post-treatment counts of grubs belonging to several size categories, as determined by head capsule width.

At Crane Brook (Table 1), average numbers of white grubs per ft² were no lower after treatment than before. The same held true for cranberry root grubs. Head capsule measurements (Table 2) indicated that no specific growth stage of each species was more susceptible than other stages to either diazinon or Lorsban at the selected rates.

At Maple Spring (Table 1), the average counts seemed to suggest that diazinon induced some mortality of white grubs.

They seemed to indicate that reductions as great as 67 and 80 percent might actually have occurred in plots treated at the 28-lb and 56-lb rates, respectively. Measurements (Table 2) seemed to indicate that grubs whose head capsules were 1.625 mm wide were more susceptible than grubs whose capsules were 2.75 mm wide. (The presence of grubs with a head capsule width of 0.875 mm might have helped to show that smaller grubs are more susceptible to a given dose of insecticide). Despite these definite trends, an examination of the data on a replicate by replicate basis and the outcome of the analysis of variance both revealed that grub counts and reductions were not consistently great enough in this trial to

enable diazinon to be labeled as an efficacious material. Further testing might demonstrate that diazinon provides acceptable levels of control against white grubs when used at high rates in sandy soils.

Several points should be made concerning the development of future grub management strategies. First, as more properties become infested, there will be a greater opportunity to test granular insecticides. Pre-treatment counts could be omitted in favor of increased numbers of trial sites. Judgments about efficacy would be based on the consistency of post-treatment counts from site to site relative to counts in untreated plots. According to Drs. Patricia

Table 2. Counts of P. anxia and L. vulpina grubs with given head capsule widths before and after treatment with granular insecticides at two bog sites in Massachusetts. May-June, 1984.

Treatment and lb/acre	Number <u>P. anxia</u> with given head capsule width, in mm*						Number <u>L. vulpina</u> with given head capsule width, in mm*					
	0.875		1.625		2.75		0.75		1.25		2.0	
	B	A	B	A	B	A	B	A	B	A	B	A
<u>Crane Brook</u>												
Diazinon 14G 28.0 . . .	4	4	15	26	1	0	47	68	36	29	38	41
Diazinon 14G 56.0 . . .	1	8	15	22	3	1	102	74	48	39	39	27
Lorsban 15G 13.5 . . .	1	4	19	24	2	0	107	170	46	52	49	23
Lorsban 15G 40.5 . . .	0	0	21	18	2	2	108	155	13	30	47	33
Untreated	0	2	22	13	0	1	54	132	30	25	52	33
<u>Maple Spring</u>												
Diazinon 14G 28.0 . . .	0	0	24	5	7	6	-	-	-	-	-	-
Diazinon 14G 56.0 . . .	0	0	17	3	5	1	-	-	-	-	-	-
Lorsban 15G 13.5 . . .	0	0	17	17	2	3	-	-	-	-	-	-
Lorsban 15G 40.5 . . .	0	1	21	14	4	11	-	-	-	-	-	-
Untreated	0	0	14	19	6	4	-	-	-	-	-	-

* Before (B) and after (A) treatment.

Vittum (Univ. of Mass.) and Joseph Weaver (Univ. of West Virginia), both of whom have field tested an array of insecticides against grubs in turfgrass, Oftanol® and Triumph® should be considered prime candidates for future cranberry trials.

Second, researchers need to keep in mind that certain insecticides perform best in sandy soils while others do well in soils composed mainly of organic matter. In sandy soils, higher rates of insecticide are often needed to offset amounts lost via leaching. In organic-type soils, many insecticides become bound to or "tied up" on organic matter near the surface. Once this occurs, no amount of precipitation or irrigation water can release the insecticide and wash it into lower layers of soil where grubs are feeding. Injection of insecticides is sometimes a way to overcome this problem.

Lastly, the extensive damage inflicted by grubs prior to the use of dieldrin should not necessarily be expected to recur

in the future, even in the absence of efficacious insecticides. Improved bog management practices give reason for being optimistic. Growers today fertilize and irrigate frequently, producing vigorous vines which are able to tolerate a goodly amount of root injury over several years. In contrast, growers years ago rarely fertilized bogs and only occasionally flooded them during hot summer months. Already in a stressed state, vines subjected to grub feeding readily succumbed, often within the same growing season. In addition to stimulating vine growth, growers today reduce the number of competitive plants on bogs by judiciously applying pre- and post-emergence herbicides. Certain of these selectively kill grasses which attract white grubs. Years ago, in contrast, grasses which thrived on bogs increased the likelihood of invasion and successful colonization by white grubs.

In summary, the field trials of 1984 showed that diazinon 14G and Lorsban 15G were not effective against white grubs and cranberry root grubs in highly organic soil. In sandy soil, diazinon 14G seemed to provide control of less developed white grubs, but this could not be substantiated statistically. Modified field trials involving diazinon 14G and other promising insecticides should be conducted until a practicable grub management strategy is delineated.

Acknowledgments. Grateful appreciation is extended to the following: D. Cannon, G. Cannon, W. Cannon, M. Devlin, T. Devlin, C. Foote, Y. Foote, Z. Koczanski, G. Parent, L. Pieroni, and M. Ramsey. J. Atwood and C. Makepeace are thanked for offering their properties as experimental sites.

This study was made possible by a grant from the Cape Cod Cranberry Growers' Association.



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Elizabeth A. Mueller of Spooner, Wisc., writes: "I've been a regular subscriber to **CRANBERRIES** magazine. Could you please tell me whether **CRANBERRIES** has ever carried articles on recipes for cranberry vinegar or cranberry tea? The Cranberry Connection does not appear to have recipes on either of these two items." Editor's Note: **CRANBERRIES** carried a recipe on Cranberry Honey Vinegar in the December 1984 issue. Our latest edition of **The Cranberry Connection** has two recipes on cranberry tea.

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¼ teaspoon each ground nutmeg and cinnamon
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½ cup each orange and lemon juice

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MASSACHUSETTS

By IRVING E. DEMORANVILLE

Drs. Robert Devlin and Charles Brodel, IPM Coordinator Sherri Roberts

and the author attended a Soil Conservation Service sponsored meeting April 30 through May 2 in Hyannis on water use in cranberry culture.

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Elden J. Stang, University of Wisconsin extension horticulturist, notes in *Wisconsin Cran Tips* that the following ad appeared in a farm publication:

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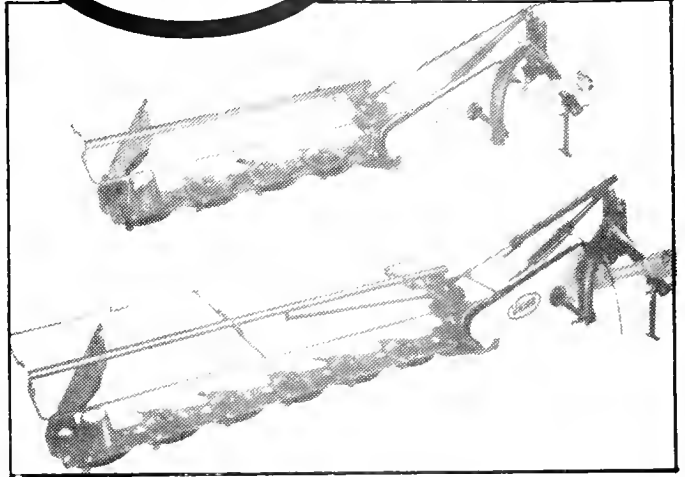
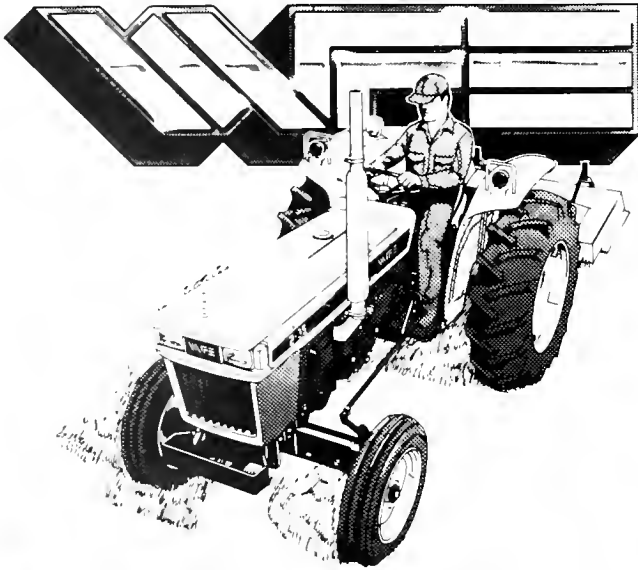
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and raw material storage areas. And you, the cranberry grower, will want photos of bog equipment, garages, sheds and other storage areas, sprinkler systems, pumphouses, bulkheads, and all the other equipment and materials used in cranberry production.

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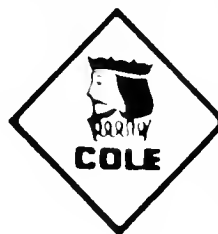
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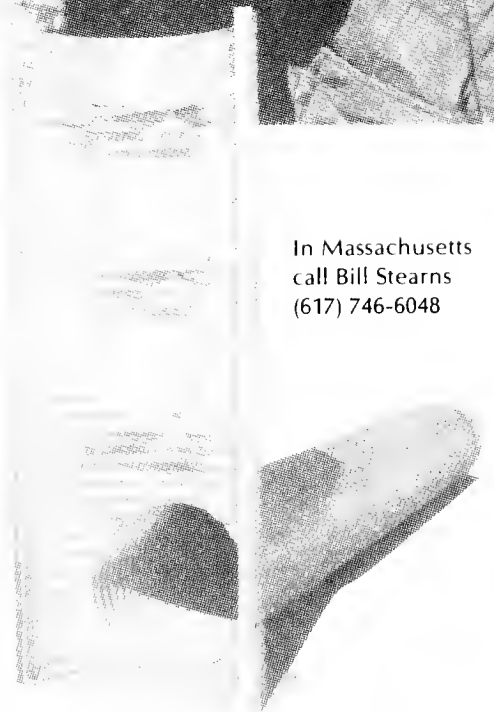
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Plant Pathologist Caruso Joins Experiment Station

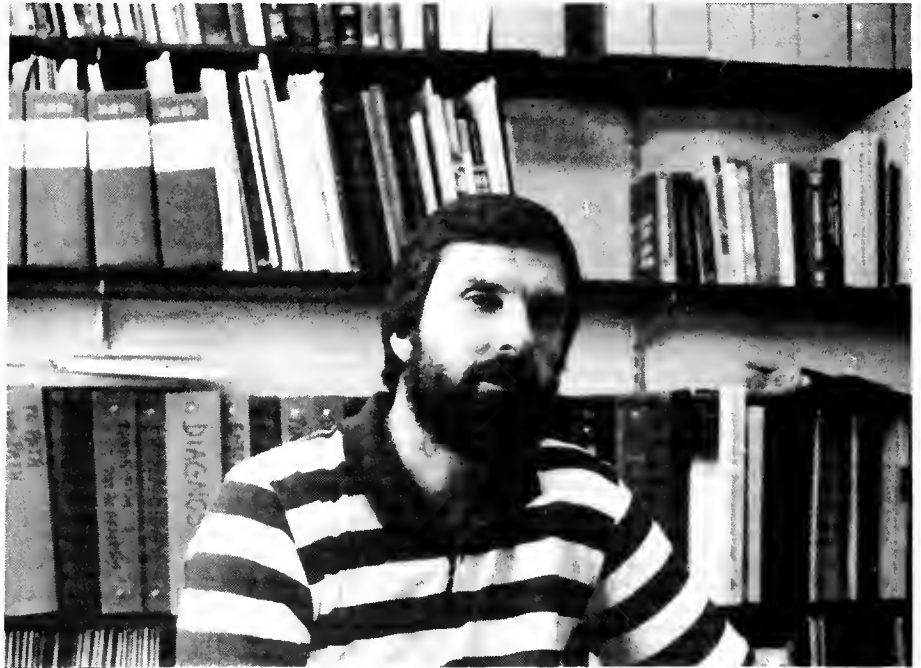
By **CAROLYN GILMORE**
Dr. Frank L. Caruso, the recently named extension plant pathologist at the University of Massachusetts Cranberry Experiment Station in East Wareham, Mass., calls himself a trouble shooter."

"When growers have a problem that is not insect or cultural, I try to figure out if it is a plant pathogen," Caruso said.

Caruso comes to the Massachusetts station from the University of Maine, where he was involved in extension, research and teaching. He received his Ph.D., in plant pathology from the University of Kentucky, where he researched immunization against diseases in cucurbits. And he earned his masters at the University of Massachusetts, where he studied tomato sarium wilt.

Caruso, who is a familiar summer resident of Cape Cod, which adjoins the heart of the Massachusetts cranberry growing region, will be moving his family from Maine to Forestdale, Mass.

Explaining his work, Dr. Caruso said disease diagnosis involves plating the affected



FRANK L. Caruso combined extension work, research and teaching at the University of Maine. He is the new extension plant pathologist

at the Massachusetts Cranberry Experiment Station. (CRANBERRIES photo by Carolyn Gilmore)



COVER PHOTO

ANN Kurz Chambers calls this painting "Cranberries: Blossoms to Berries." It has proven to be her most popular work and she likes it because "it is somewhat educational to people learning about cranberries." A story about the cranberry artist starts on page 11.

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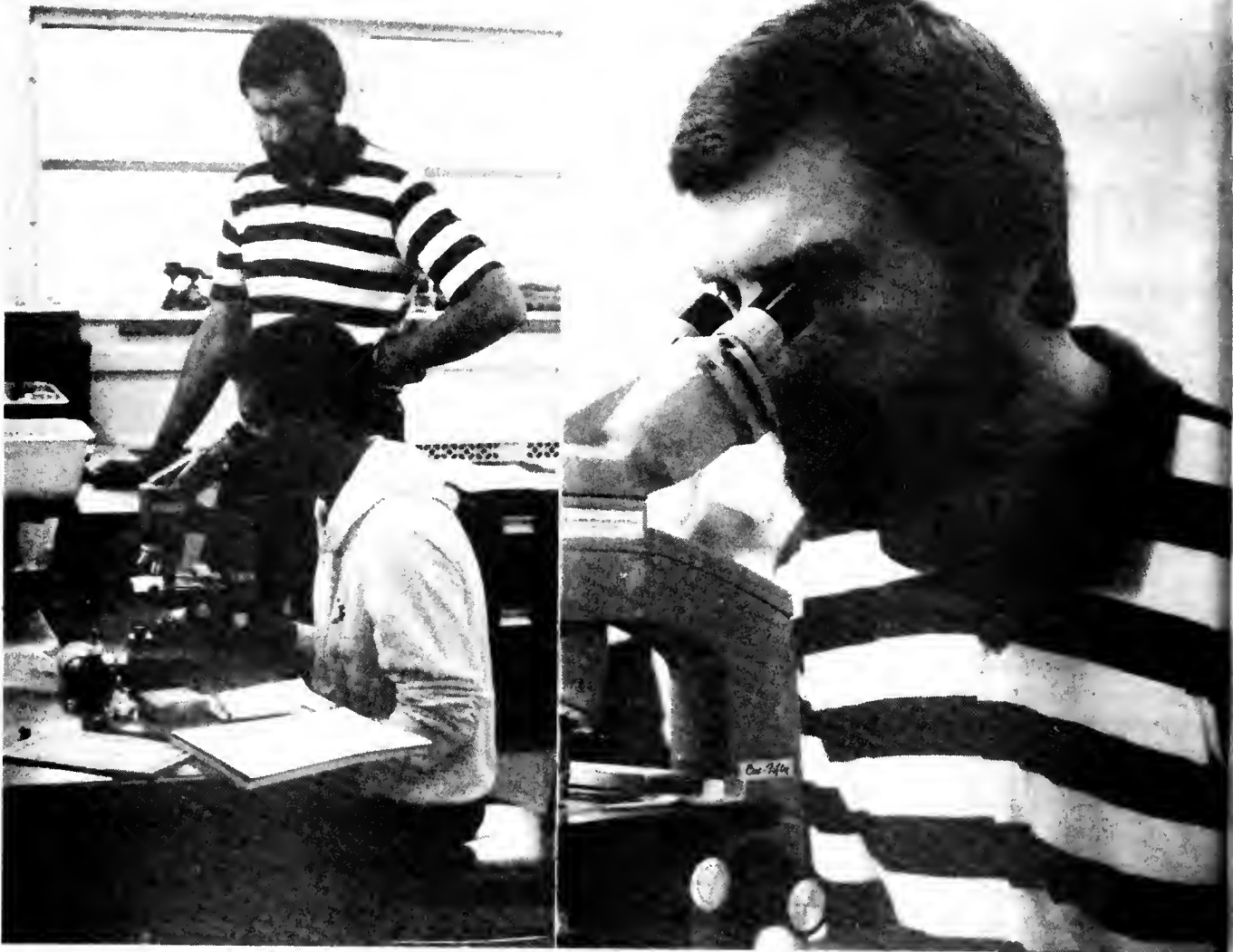


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AT THE LEFT, Dr. Caruso observes the work of summer assistant Matthew Beaton. At the right, he

observes plant tissue under the microscope. (CRANBERRIES photo by Carolyn Gilmore)

plant part on cultural medium, followed by microscope examination. An identified disease causing organism may not necessarily be the problem, he added. Further testing and inoculation of healthy specimens with the disease are needed before a conclusion can be reached.

Fungal, bacterial and nematode diseases can be identified at the East Wareham station, Caruso said. Virus identification is performed at the University of Massachusetts laboratories in Amherst.

The growing season is admittedly a hectic time at the station.

"I hope to be able to do some research in the off-season when specimens are not coming in on a regular basis," Caruso said.

The plant scientist already has instituted a system of specimen collection for cranberry disease diagnosis by outlining procedures for collecting and submitting samples. A specialized form is also available for growers to fill out when bringing in a specimen. Growers with questions or in need of forms may contact Dr. Caruso at the station.

Assisting Caruso in the lab this summer is Matthew Beaton, son of grower Douglas Beaton.

Matt will enter the University Cornell as a freshman pomology this fall. (He will be keeping his hand in baseball, as well.)

"Matt has been indispensable," Caruso said. "He has done a lot of culture work, which freed me up for other things."

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A Change of Pace

We vacationed this summer in Nova Scotia, one of Canada's cranberry growing regions. The other, of course, is British Columbia.

There are many pleasurable sights in Nova Scotia, from that jewel of a city, Halifax, to quaint seaside towns on the south shore to rolling hills on the north shore to that wondrous sight, the tidal bore, at Truro. But the purpose here is not to write a travel report. The purpose is to . . . well . . . share an epiphany.

We were driving through sparsely settled country between Yarmouth and Bridgewater when conversation halted temporarily. The radio was turned on. A local news program was being given. Lo and behold, we began hearing birth announcements. "An 8 pound, 3 ounce boy was born last night to Mr. and Mrs. Bernard . . .," and so on. I began to savor each item with keen interest, as if these were people I knew.

Then we began to receive produce reports. Prices are high, I thought. But what better goods to spend money on? Next came local for sale and want to buy reports. "Jennifer Smith has a freezer she would like to sell. Her number is . . ." "John Dubec wants to buy a tractor."

Take those birth reports. I got to thinking about how when I listen to state and local television and radio reports back home, what I get are death reports. Unnatural death, of course. Annihilation reports. Murder reports. Crash reports. Arson reports. Bodily injury and maiming reports. All kinds of bad news reports.

An apologist for this kind of reporting (at the start of one recent local noontime TV news show, I heard an unbroken litany of reports about a dozen disasters) might argue: "We don't give birth announcements because the communities in which you live have become large places. You don't know the people who give birth and wouldn't care to hear about the event." I might reply: "Look, I don't know the woman who bashed in her husband's head with a ball-peen hammer either. Neither do I know the guy who died after smashing his car against a tree after leaving a bar in East Podunk. Where is the mirror the media is supposed to hold up to the world? Where is the good news as well as the bad? Where is the gestalt, the perspective?"

Maybe a lot of growers have such thoughts, dealing as they do with the basic elements and realities of existence: the earth, the cycle of regeneration, plants, the marketplace, technology. Maybe they feel, as I do, that their senses are bombarded by a lot of static from

(please turn the page)

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EDITORIAL . . .

(continued from preceding page)

outside the parameters of their lives. Working a bog is one remedy. So is motoring through comparatively unspoiled Nova Scotia—where life still is on a scale that makes sense—and listening to birth reports and produce reports.

regional news notes

MASSACHUSETTS

By IRVING E. DEMORANVILLE

It gives me a great deal of pleasure and personal satisfaction to welcome a new member to our Station staff. Dr. Frank Caruso began his duties as Cranberry Station Plant Pathologist on June 2. Frank has a UMass tie, as he received his MS there. His doctorate is from the University of Kentucky. After several years on staff at the University of Maine, he has joined us. We welcome him aboard. He fills the area of expertise left when Dr. Bert Zuckerman transferred to the university's Amherst campus several years ago.

Dr. Robert Devlin attended the annual meeting of the Northeastern section of the American Society of Plant Physiologists held in Providence, R.I., on 24-26. Bob is a society officer.

Reports and observations indicate that our bogs came through the winter in good shape. No winterkill and very little oxygen deficiency injury. Probably there were more acres sanded on the ice than ever before and just about all of them look great.

However, there have been a few flies in the ointment. There was more leaf drop than usual, especially on Early Black, from what, for want of a better term, I call "stress situations." These are usually associated with heavy crops and some other factors, such as mite injury, herbicide injury, dry conditions, etc. Frost injury is more prevalent than in several years and may have cost us 100,000 barrels or more.

To make up these problems, insect populations have been light and there were a lot of bogs with heavy blooms and fruit was setting very well.

We may make up some of the losses overall and have a heavy crop close to last year's.

WASHINGTON

Extension agent Dr. Malcolm McPhail, who was based in Chehalis, has resigned his post to become a full time cranberry grower.

McPhail had been an extension agent

serving Lewis, Pacific, Thurston and Grey Harbor counties for the past 15 years. Agronomist McPhail earned his Ph.D. at the University of California.

STRUGGLE OF IDEAS

Scoring phenomenal gains in agricultural production over the last six

years, China has become the world's No. 1 producer of wheat, rice, cotton and tobacco, according to Terry Taylor writing in the April 1985 *Foreign Agriculture*.

With an arable land mass of 20 million acres and a population now over 1 billion, China has never lacked the need and potential for abundant farm output. However, since 1949 and the so-called "liberation" under Mao Tse-tun, the effort to tap China's agricultural resources has been a struggle of two opposing economic philosophies. There are indirect planning, which makes room for private enterprise, and direct planning, in which the state controls

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weather watch

MASSACHUSETTS

There were a total of 12 frost warnings issued on 10 days during the 1985 spring wet season. The first was on April 23 and the last was on May 30. The night of May 29 was a very dangerous situation and there was a fair amount of injury around.

June was cool, averaging 1.8 degrees a day below normal. This was the third coldest June in the past 25 years. Maximum temperature was 82 degrees on the 10th and the minimum was 47 degrees on the 9th. Warmer than average days occurred on the 1st, 10th and 22nd. Colder than average were the 5th, 6th, 8th, and 26th through 29th. Rainfall totaled 5.25 inches, or 2 inches above normal. There was measurable rain on 15 days, with 1.21 inches on the 17th as the greatest storm. We are just over 6 inches below normal for the first half of 1985 and 13½ inches behind 1984 for the period.
I.E.D.

NOVA SCOTIA

June was cool and wet. As a consequence, the amount of precipi-

tation was about three times the 30 year average and the 165 hours of sunshine was considerably below the 30 year average of 217. I am pleased to say that July was more favorable. Perhaps it was planned that way for the visit by CRANBERRIES to our province.
I.V.H.

USDA TRADE NETWORK OFFERS A NEW WAY TO BOOST FARM EXPORTS

Last year, U.S. exporters sold \$400 million worth of agricultural products

overseas through an aggressive, new marketing network operated by the Foreign Agricultural Service (FAS) of the U.S. Department of Agriculture.

Known as AIMS, Agricultural Information and Marketing Services, this new program is dedicated to providing America's food and agricultural exporters with timely international marketing information, including specifics on the latest export opportunities overseas.

(continued on page 15)

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Plymouth County ACS Moves to New Offices

The Plymouth County, Mass., Agricultural Stabilization and Conservation (ASCS) office has moved from its North Middleboro location to 2510 Cranberry Highway, Wareham. The new telephone number is (617) 295-6860. "Our new location should be better able to provide service to cranberry growers," said County Executive Director Paul Russell. "We are in the heart of the cranberry region and on the way to the Cranberry Experiment Station." The ASCS branch of the U.S. Department of Agriculture continues to serve cranberry growers with cost sharing in developing water conservation measures with respect to dikes, dunes, reservoirs and irrigation systems, when they are constructed according to ASCS specifications. In Massachusetts, ASCS also operates with the Cranberry Marketing Committee in providing office space for mapping, measuring and photocopying all cranberry acreage. By means of annual aerial surveys, records of new acreage are updated. CMC field representative Carolyn Gilmore.

Bristol, Barnstable, Dukes and Nantucket counties are still served from the Southern Massachusetts County Office, Bristol County Agricultural High School, Center Street, Segregansett. Phone number there is (617) 669-6621.
C.G.

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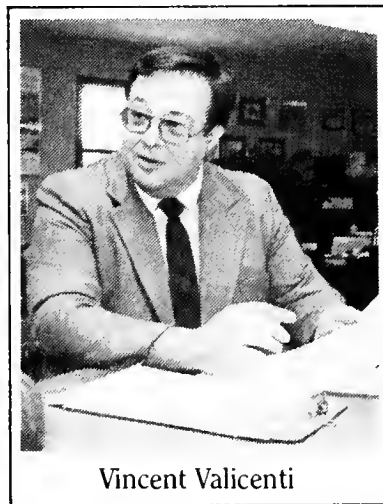
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CRANBERRY ARTIST

If cranberrying had an official artist, her name would be Ann Kurz Chambers.

You might say that Ann's penchant for drawing and painting berries, blossoms and vines came about quite naturally. She grew up in Port Edwards, the heart of Wisconsin cranberry country, skated on frozen over marshes in the winter, and, when a high school student, interviewed grower R.S. Brazeau on the aminotriazole scare of 1959 for a school paper.

Largely a self-taught artist, Ann began painting about 15 years ago. After a series of lessons in oil by a local artist, she began to paint heavily on her own and started to show at local art fairs.

In 1979 she took a seminar on watercolors, being interested in painting smaller works and thereby meeting expenses at art shows. Ribbons and purchase awards began coming her way.

Mostly, her subjects were landscapes, wild flowers and sunflowers. In addition to oil and watercolor, she also worked in pen and ink and, most recently, intaglio.

Pretty much, her life continued uninterrupted along the path of being homemaker, wife, mother of four (now ages 14 to 20) and part-time artist, until, four years ago, it became shattered by that growing American phenomenon: divorce.

For a year, Ann cast about, trying to get her life back in order. She finally decided that she would return to college—after an absence of 18 years—to earn a master's degree in communications. In 1964 she had been awarded a BS in home economics by Lamar University



ARTIST Ann Kurz Chambers grew up in the heart of Wisconsin's cranberry country.

in Beaumont, Tex.

On May 31, 1984, 22 months after she had enrolled in the University of Wisconsin, Ann walked away with her MA. She spent the summer getting the house into shape, having a gas furnace installed and taking

herself and the kids out West for a little rest and relaxation.

In September, she prepared her resume and was about to launch herself into job hunting when one of those chance events occurred that change the direction of our lives.

Grower Kathy Vanatta approached Ann, asking her to paint a cranberry bog, "from a fruit fly's view." Kathy liked the painting and asked her to do another. And then she suggested that Ann paint up a storm—subject: cranberries—and exhibit her work at the Warrens Cranberry Festival.

Ann called Carolyn Habelman. Carolyn said she still had time to get into the fair's art show. So, that Monday morning, she ordered frames and mats and painted all week long from 6 a.m. until 11 p.m. She framed her paintings until 2 a.m. Saturday, got four hours sleep, and then set off for Warrens. The growers liked her work, thinking she had realistically depicted cranberries, vines and blossoms. Besides sales of her paintings, Ann picked up a few commissions for future work.

The experience was a turning point. Ann decided to devote full



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time to her art work for one year. If the year is a success, she'll go on. If it isn't, well, she'd have given it her best shot.

As she explains it, "I didn't want to get to the end of my life and wonder if I could have made it. I don't want any, 'I wish I would haves,' at the end of my life."

Ann got into cranberry notecards, which she marketed and packaged in her home. The most popular: a design showing four stages of cranberry growth. Ann credits her printer, Orv Howen, with the idea of producing cards.

"I like the four stages, too, because it is somewhat educational to people learning about cranberries," Ann says.

The Wisconsin artist also began doing business and personal stationary, logos and commissioned oils and watercolors. And she now produces beverage napkins, sport shirts, T-shirts and caps with the slogan, "Cranberries—America's Native Fruit." In addition, she is doing etchings of



THOSE berries, in this watercolor, pen and ink rendition by Ann Kurz Chambers, titled, simply, "Cranberries," look . . . well, . . . good enough to eat.



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cranberries and harvest scenes.

On a whim, she began making paper out of cranberries, stems and leaves and rag pulp—"cranberry etchings on cranberry paper." It worked!

Ann has been busy exhibiting at cranberry festivals and fairs. This month she'll have a one person show at the Pump House in La Crosse, Wisc. Next month she'll exhibit in Warrens again and then at the Ilwaco, Wash., Cranberry Festival.

In addition to working hard, she's having fun. She especially enjoys meeting grower families—whom she admires and respects—and exchanging ideas and viewpoints.

Ann's year is up Oct. 31. Decision time is Nov. 1. At this point, it's a fair bet that she'll have plenty of reason to continue the tough, risky life of producing art for a living.

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USDA TRADE . . . (continued from page 7)

Using an impressive array of satellites and high speed computers, AIMS' worldwide telecommunication network enables it to serve as an important trade link between America's food exporters and major foreign importers. For instance, just hours after a foreign importer notifies one of USDA'S 80 overseas agricultural offices of his international purchasing needs, details on this export opportunity can be made available electronically to U.S. companies through their personal computers. If they do not have a personal computer, this information can be forwarded to them by mail within days.

"To succeed in the increasingly competitive international marketplace, U.S. companies must take a more active—even aggressive—stance in uncovering and pursuing international trade opportunities," says Michael Dwyer, coordinator of the AIMS Project.

To help in this endeavor, AIMS offers five different export information services.

"While each is unique in its approach," notes Dwyer, "all are specially designed to assist U.S. companies in introducing their agricultural products to new overseas markets as well as expanding their present markets."

AIMS' foreign trade leads service has sparked the greatest interest with U.S. exporters. Using the latest in communications technology, USDA's overseas agricultural offices can electronically forward the specific import needs of thousands of foreign traders, wholesalers, distributors and agents to AIMS in Washington.

Over 5,500 foreign trade leads were processed last year. Registered U.S. companies receive these trade leads in three ways, which vary only in the timelines of receipt: personal computer, daily computerized direct mail, and the weekly bulletin, "Export Briefs."

The Buyer Alert program is the newest service offered by AIMS. It is similar to the trade lead service except that the trade information flows in the opposite direction—from U.S. exporters to foreign importers. Using its high speed telecommunications links, AIMS forwards actual export offers of U.S. companies to overseas buyers every Wednesday. To participate, U.S. exporters must supply AIMS with specific sales and product information, along with each product's export price. This service has rapidly become one of AIMS' most popular services. U.S. companies are reporting serious sales negotiations underway with foreign buyers who contacted them after reading the AIMS' Buyer Alert bulletin—now distributed in 11 major markets in the Far East, Western Europe and the Middle East, along with Canada and Mexico.

AIMS computer based files can match the worldwide product interest of U.S. companies with those of foreign firms that have identified themselves as prospective buyers of specific agricultural products. The importing interests of over 12,000 foreign buyers

are contained in these computer files and can quickly be made available to interested U.S. exporters.

AIMS monthly newsletter, "Contacts for U.S. Agricultural Products," also assists American firms by advertising their food and agricultural products in

foreign markets. "Contacts" is sent to FAS agricultural counselors, attaches and trade officers for distribution to prospective foreign buyers. Translated into Japanese, Spanish, French, Italian and Greek, "Contacts" is mailed to tens of thousands of buyers worldwide.

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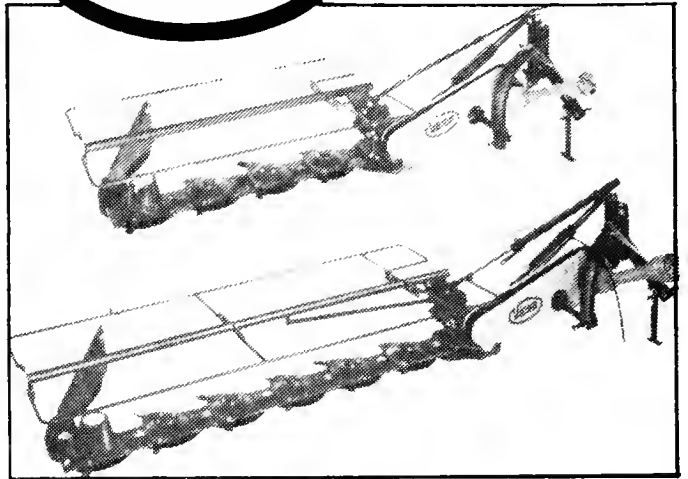
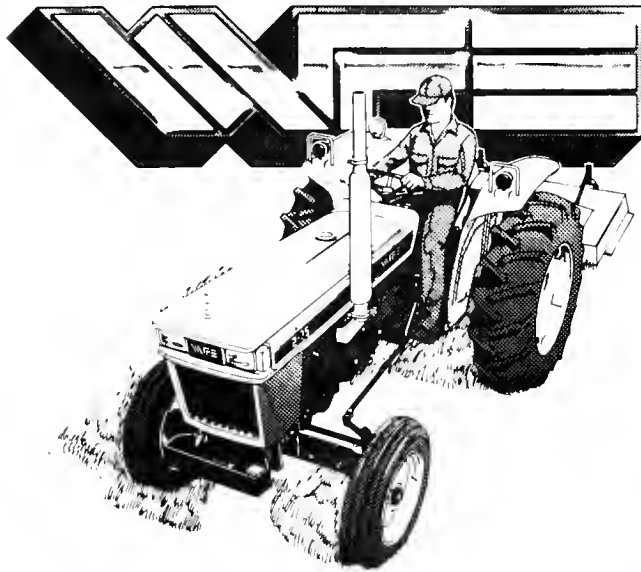
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By late June, the extent of frost damage for the season was being estimated at 5 to 10 percent of what last year's total crop was. That would mean a loss of about 100,000 barrels.

"This may be low," Demoranville said. "We tend to underestimate frost injury."

NEVERTHELESS, extensive sanding in the state this past winter gave a boost to perhaps a quarter of

the state's acreage. Frost tolerance generally increases by a degree or two in freshly sanded areas. On the

whole, Massachusetts bogs entering bloom were looking "very, very good," Demoranville said.



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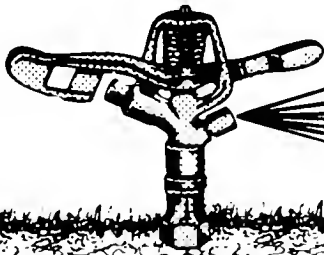
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2 **SIMPLE OPERATION** Motorola has gone to great detail to make these trunked radios the easiest you've ever operated. **Ease of Channel Access**- Now there are up to 20 channels to accommodate your communications needs each time you initiate a call request. And initiating a call is easier than on a one or two-channel radio. There's no searching for a channel, no listening to make sure it's clear-the system does it for you automatically. All radios in your fleet or subfleet are automatically programmed to the frequency the system assigns to you. Just depress the Push-To-Talk (PTT) button and communications can begin. **Automatic Call Back**-An open channel is usually available to you within 1/3 second of depressing the PTT button. If all radio channels should be momentarily busy, your radio operator hears a "Talk Prohibit Tone." The request to talk is automatically placed in an ordered, waiting line (queue) so there's no need to wait and monitor for a clear channel. Waiting callers are selected on a first-in, first-out basis. When a clear channel is available, the operator is alerted by a short audible tone that a channel has been assigned, and he-she can begin to talk.

3 **SYSTEM FLEXIBILITY** Easy Modification for Growth-Motorola's trunked radio gives you the capability to expand or modify your fleet and subfleet structure as your needs change. Easy, inexpensive modifications can be made simply by exchanging a code plug. This code plug holds all fleet and subfleet identities. It enables you to add new units to your fleet, divide your fleet into new subfleets, or add a new fleet. If the number of frequencies in the fixed equipment of your trunked radio system increases, additional frequencies are automatically incorporated into your mobile, without returning radios to the service shop.

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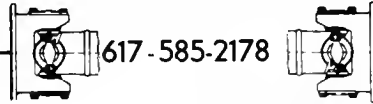
SPICY CRANBERRY SAUCE

This recipe by Joan A. Hansen won a first prize at the Chatsworth, N.J., Cranberry Festival.

- 2 sticks cinnamon
- 10 whole cloves
- 1/4 teaspoon ground nutmeg
- 1 quart cranberries (sorted and washed)
- 2 cups boiling water

Cook five items together until skin of cranberries is broken, then simmer for 3 minutes. Remove from heat and run through a food mill. Return to heat, add 2 cups of sugar and simmer for 5 minutes.

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FARM PLIGHT WORST OF CENTURY, EXCEPT FOR 20'S, DEPRESSION

Aside from the Great Depression and several years preceding that bleak period, the current farm crisis is the worst in this century.

So said Wayne Rasmussen, USDA's historian, recently.

Rasmussen, the department's historian for 40 years, made the comparison between the current large debt, shrinking land prices and

declining equity and those aspects of the 20's and the Great Depression.

He said that while he envisages fewer farms in the future, the family farm should survive into the 21st century and beyond.

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Predicts Biotechnology For Agriculture Will Become Big Business

In only a few years, biotechnology has become a "key avenue for business growth" and is well on its way toward becoming a multi-billion dollar industry, says a Du Pont executive.

"Long range projections of growth rates for biotechnology-based businesses are most attractive," says Dale E. Wolf, group vice president of Du Pont's agricultural chemicals division. "Some experts predict that total sales could reach well over \$35 billion by the turn of the century."

Wolf spoke recently as part of the "Issues in Agriculture" lecture series sponsored by the College of Agricultural and Life Sciences at the University of Wisconsin/Madison.

Biotechnology's most immediate and dramatic benefits will occur in health care and agriculture, Wolf says. In health care, biotechnology's commercial potential has already become reality with the development of vaccines, diagnostic kits and human insulin, he says. In agriculture, biotechnology sales to farmers may increase from almost nothing today to \$2 billion by 1990.

Wolf says agricultural products and applications might include herbicides so potent that only an ounce will treat an

acre of wheat, food crops that are resistant to herbicides and modified plants that are resistant to drought, heat and cold.

Other aspects of agricultural biotechnology might involve plant growth regulators to make photo-

synthesis more efficient and produce bigger yields, and "antifeedants" that would prevent insects from eating treated plants.

Competition in biotechnology is becoming increasingly intense on both the domestic and international fronts,



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Wolf says. Foreign concerns held 40 percent of the 826 new U.S. biotechnology patents issued in 1984, he says.

"Overseas investors hold a substantial number of U.S. biotechnology patents," he says. "Although the foreign share has been shrinking steadily, it is still large."

The governments of England, France, Japan and West Germany have made biotechnology a national priority, Wolf says. Of those countries, companies in Japan and West Germany will give U.S. companies the greatest competition, he says.

"The competition is stiff and may become even more so in the future," Wolf says. "This means that the ability of America to maintain its preeminence in this field rests on strengthening the partnership among universities, government and industry."

"To keep America's competitive edge, expansion of basic knowledge and understanding about biotechnology is absolutely key. Academia can make a very special contribution by attracting the best and brightest students to science and, in particular, to agriculture-related fields."

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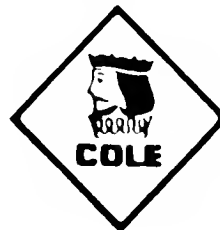
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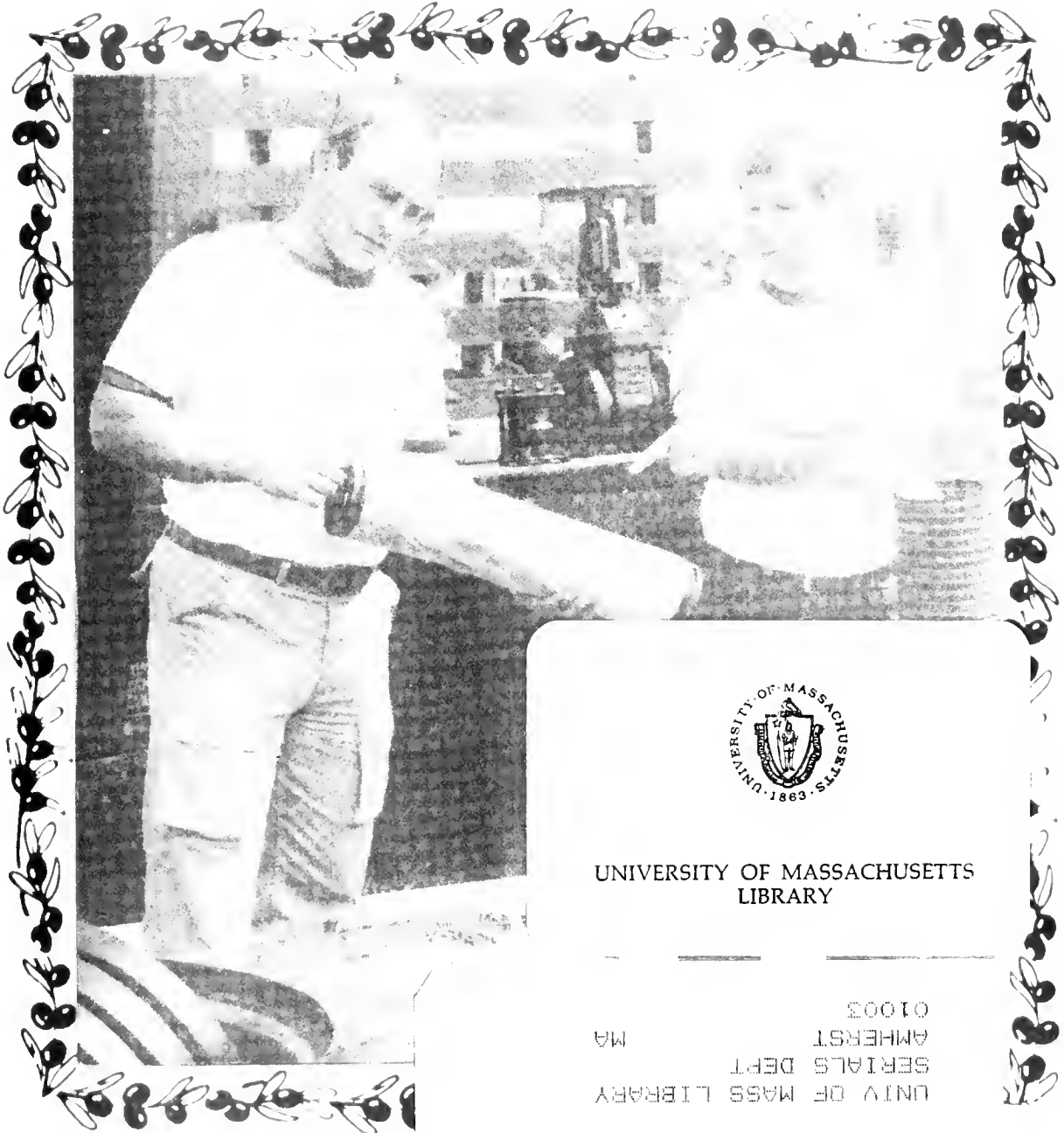
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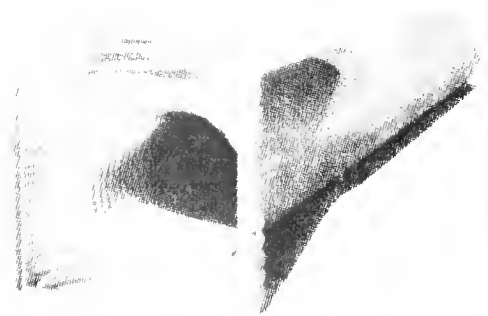
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THANKSGIVING'S OVER

Cranberry Expert Is Ivan V. Hall

Research scientist Ivan V. Hall is rather pleased that Canada celebrates Thanksgiving on the second Monday in October.

"Gives us a break between the holidays," he says. "This way we don't have all that Christmas stuff in the stores right at Thanksgiving."

But, owns the cranberry expert, who is based at the Agriculture Canada Research Station in Kentville, Nova Scotia, the October date does put a lot of pressure on the Canadian grower to harvest early.

"About 90 percent of people have either turkey or goose—and cranberries," Hall says. "It's just nip-and-tuck to get them ripe in time."

About two-thirds of the crop in Nova Scotia is marketed for Thanksgiving. Most of the remaining one-third is held over for Christmas.

There are about a dozen growers in Nova Scotia, with bog sizes ranging from one or two acres to 40 acres. Total production in 1984 amounted to 200,000 kilograms (almost half a million pounds) in 1984.

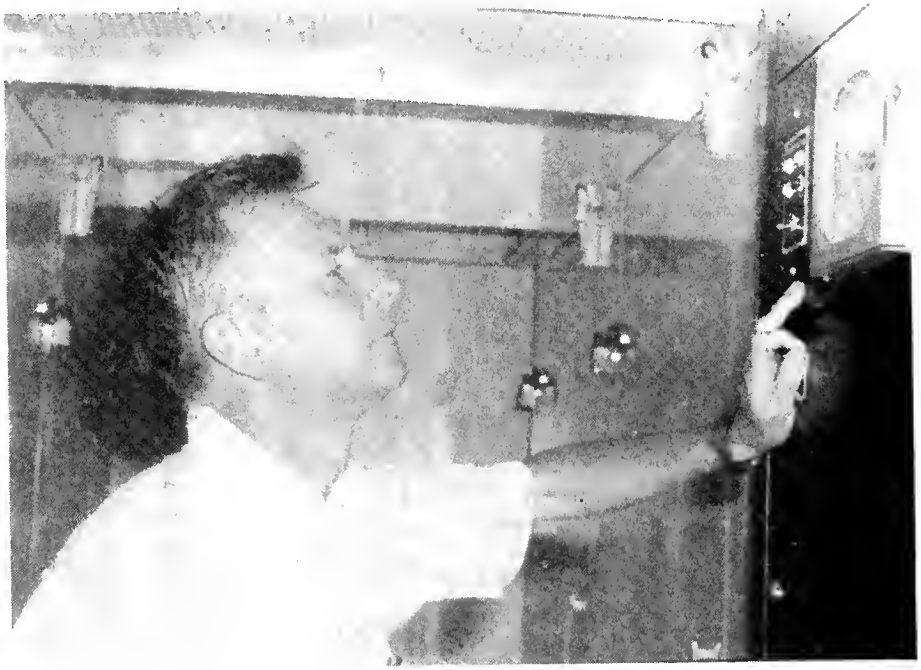
With an infusion of enterprise and capital, Hall believes, there

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COVER PHOTO

PIPE was among the materials and equipment displayed at the Cape Cod Cranberry Growers Association annual meeting. For more photos of displays, see pages 14 and 15.

(CRANBERRIES photos by Carolyn Gilmore)



IVAN V. HALL checks the temperature and light readings on the door of one of the Nova Scotia Research Station's growth chambers. (Photo by CRANBERRIES)

is "no reason acreage can't be expanded tenfold."

When it comes to Nova Scotia cranberrying, Hall, 58, knows of whence he speaks. And the same goes for blueberries—on which he spends the bulk of his time—and other berries.

Hall, who grew up in Parrsboro, about 50 miles west of Truro, has been with the research station since 1949. Although his dad was a school inspector, both his folks had

(please turn page)

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LEFT: Ivan V. Hall studies in his office. ABOVE: Hall, with his wife, Carol, in their well cultivated flower and vegetable garden.

(Photos by CRANBERRIES)

been born on farms, and he was brought up in an agrarian atmosphere. He was graduated from Paarsboro High School, received his bachelor's and master's degrees from Acadia University, and, in 1950, was granted a leave of absence by the station in order to earn his Ph.d, from Cornell University.

While at Cornell, he met his pretty wife, Carol Haff, who was a technician for a plant physiologist at the university.

"All she had to do was change the last two letters of her name to go from Haff to Hall," quips the scientist, who, while he patently forsakes ambitions of being a ribald greeter at a Las Vegas nightclub, nevertheless leaves the impression of enjoying a bit of waggery now and then.

The Kentville Research Station, located in the apple-laden Annapolis Valley, is an impressive-looking, contemporary brick, concrete and glass structure that sits on 150 acres.

Opened in 1981, the building houses researchers in food processing as well as specialists in fruit, vegetable, tree and

poultry studies. Much of the grounds are planted in colorful rhodendrons, which also are a

(continued on page 25)

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Next: A Billion

The folks at Ocean Spray certainly have good reason to be proud of what happened on August 14, 1985.

That's the day the cooperative surpassed \$500 million in annual sales for the first time.

But rest on their laurels? No way!.

Prexy Hal Thorkilsen posted a still higher challenge, saying: "We're looking even further down the road to a billion by the mid 1990's."

The sailing is never easy, of course, but the good ship Ocean Spray appears to be ably staffed and very sea ready for the long journey to that billion dollar mark.

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Adult sizes: S(34-36); M(38-40); L(42-44); XL(46-48) at \$14.00
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By ANN KURZ CHAMBERS

Reelected recently to the three year terms on the Wisconsin Cranberry Board were Albert Amundson, Babcock, and Charles H. Lewis, Shell Lake. Others who serve on the board are Mary Brazeau Brown, Wisconsin Rapids; Kay A. Finch, Black River Falls; Guy A. Gottschalk, Wisconsin Rapids; John R. Rezin, Warens; Gary G. Vanatta, Port Edwards. The board sponsored more than \$55,000 in cranberry research in 1984-85 and, in cooperation with the Wisconsin Cranberry Growers Assn., provided a frost warning service to growers.

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The Day Ocean Spray Surpassed \$500 Million

August 14, 1985 will remain etched in the annals of Ocean Spray history as a hallmark day.

That's the day the cooperative surpassed \$500 million in annual sales for the first time in its 55-year history.

Said Hal Thorkilsen, president and chief executive officer: "Breaking the \$500 million barrier is a major accomplishment for us and one that we are all naturally quite proud of. It stands as a tribute to the hard work, the commitment to quality and the dedication to excellence shared by each of our growers and employees. It is also a tribute and reward for the sacrifice of our growers who, during some very lean years, continued to invest in the research and development programs, the marketing plans and the plant expansions that have made Ocean Spray products increasingly popular with consumers.

"The \$500 million mark is not, however, a goal in itself. It took us 55 years to get this far. We're looking even further down the road to a billion by the mid 1990s."

Ocean Spray surpassed \$500 million in sales shortly before 2 p.m., E.D.T., on Aug. 14. Bottles produced at that time at each of the co-op's manufacturing facilities have been sent to corporate headquarters for inclusion in a commemorative case.

Work was halted for a short time at each facility and at the Plymouth office to allow employees to participate in the celebration. Included within the festivities were remarks by Thorkilsen and Stuart Pedersen, chairman of the board at Ocean Spray, who were attending a directors' meeting in Wisconsin. The remarks were made by a telephone hookup

from Wisconsin to each of the six Ocean Spray manufacturing locations, in addition to the Plymouth office.

Pedersen, a second generation cranberry grower from Warrens, Wisc., read a resolution passed unanimously by the board of directors congratulating the cooperative's officers and employees. He also spoke of the evolution of Ocean Spray from the small, sauce-dominated company of two decades ago into the major food processor that it is now.

"As today's achievement attests, we're no longer those 'cranberry sauce' people," Pedersen said. "We're more, much more."

"But what's particularly pleasing is, as this ceremony shows, we've been able to maintain the closeness, the spirit of family, that we had when we were, in fact, those 'cranberry sauce' people."

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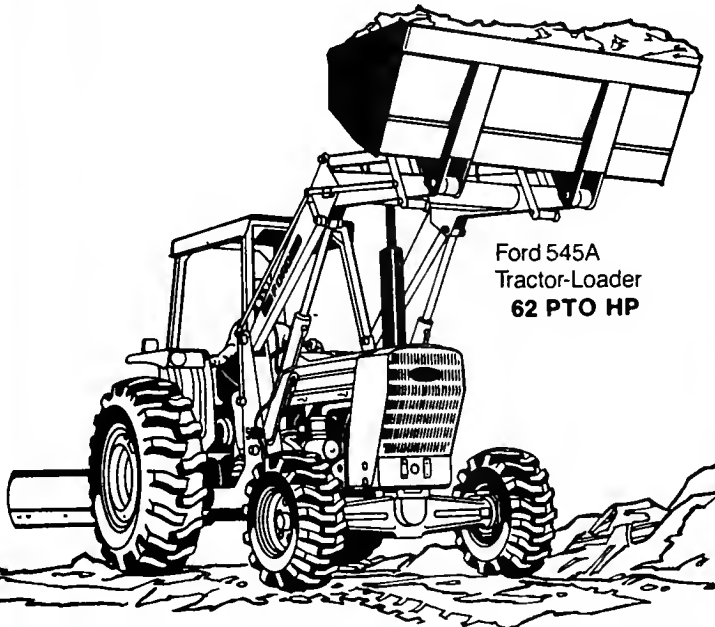
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MASSACHUSETTS STATION OBSERVES 75TH YEAR

By MICHAEL COUTURE

With more than 100 persons sharing a New England clambake complete with chowder, clams and lobster (no cranberry sauce but the beverage, of course, was cranberry juice), the 75th anniversary of the University of Massachusetts Cranberry Experiment Station was observed recently.

The informal affair drew a mix of state university officials, office holders, scientists, former station employes and cranberry growers, all gathered together to honor this landmark for area growers experiencing problems or seeking methods for preventing them.

In its 75 years, the station has provided information to growers about bog temperatures,

growing conditions, pesticides, herbicides, fertilizers and other factors connected with cranberry cultivation. During that span, the station has had only three directors: Dr. Henry J. Franklin, who served from 1910-52, Dr. Chester A. Cross, station head from 1952-81, and Prof. Irving E. Demoranville, who assumed the post when Dr. Cross retired.

The station's focus has been to abet cranberry production and it has done so with a collection of highly regarded scientists and devoted workers, among them entomologist William Tomlinson. At the station for 26 years, during which time he gave out copious advice on the eradication and control of bugs, Tomlinson retired in 1978.

"Dr. Cross was in charge

when I came here," Tomlinson said. "I think it's great that the station is being recognized on its 75th anniversary. The effect of the station on the cranberry industry has been enormous."

Said Dr. David Knapp, president of the University of Massachusetts: "This experiment station at East Wareham is what a university is all about."

The school, he added, is proud of the link between the station and the growers.

Deidre Ling, UMass vice chancellor of university relations and development, summed up her impression of her visit to the station with the word, "marvelous."

She said she thought the station is "a perfect example of cooperation between a land

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grant university and citizens.”

John Barrus, a lobbyist for the Farm Bureau Federation, said cranberry growers were “hurting badly” when he was serving in the Massachusetts General Assembly. Barrus served two terms as a representative and three as a senator out of Goshen.

“There were several problems with the industry at the time,” he said, citing the aminotriazole scare as one of them. “This fear has since passed and the cranberry industry has developed a marketing system second to none.”

Barrus said the station “has worked in helping toward the development of a quality product and served the growers in a way that only an extension service can do.”

Due to residential growth, there is a concern about water supplies in many areas, particularly around Cape Cod, Barrus said. He said he has told legislators not to hurt the cranberry industry in the search for more water supplies.

Associate Dean Richard Rohde, who heads the UMass extension service programs, said the industry generates \$11 million in revenue for the state.

“It’s (the cranberry industry) a big business,” he said. “We’re number one in the country.”



STATION STAFF: (standing left, l. to r., front, then back) Gloria Schiappa, Dr. Robert Devlin, Dr. Frank Caruso, Dr. Charles Brodel. (sitting) Philip Bailey, Carolyn Demoranville, Sherri Roberts, Gisele Parent, Dr.

Zdislaw Koszanski, Deborah Cannon, Michael Ramsey, Yvonne Foote. (standing right) Prof. Irving Demoranville, Dr. Karl Deubert, Cecil Foote, Charles Amaral.

(Photo by Theresa Devlin)

Rohde warned that cranberry-ing must compete wisely with home building, recreational use of fresh water and industrial development.

He praised the station for having as its priority working

with the industry.

Hailing the station as an asset to both growers and the state, Robert Light, associate director of the UMass Cooperative Extension Program, said the school was attempting to be as

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supportive as possible with a resource base.

He said an integrated pest management program was started at the station to effect highly controlled pesticide spraying.

"It's designed to handle the insects and cut back on the use of pesticides," Light said. "The program is 67 percent funded by the growers, indicating the support the station gets."

To help future scientists, the Cape Cod Cranberry Growers Association has created two grants for college students in related programs at the station, according to Jean Gibbs, chairperson of the association's promotion subcommittee.

The School of Food and Natural Resources is the largest on the UMass campus and Jean Cooper serves on the Dean's Advisory Council, a group that helps decide how money is

divided among's the school's three agricultural stations, at East Wareham, Amherst and Waltham. She indicated her support of the station and spoke of its importance to both the industry and the university.

Aside from those mentioned above, some of the others at the anniversary observance were: Dr. Richard O'Brien, UMass provost; Dr. E. Bruce Mac Dougall, dean of the College of Food and Natural Resources; August Schumacher, state commissioner of agriculture; Charles Dowse, president of the Massachusetts Farm Bureau; State Sen. Edward Kirby, and Wareham Selectmen Lizio Mestieri, John Kelenosy, A. Clayton Fuller and Phyllis McGraw.

23 Staff Station

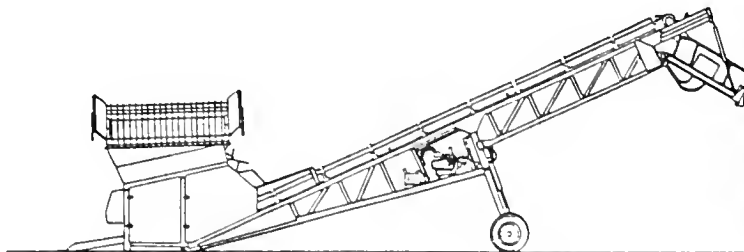
By GISELE PARENT

The Cranberry Experiment Station was established by the Massachusetts legislature at the request of the Cape Cod Cranberry Growers Association in July 1910.

With a present staff of 23, the facilities include: a chemistry lab run by Dr. Karl Deubert, responsible for fertilizer research, soil and water residue tests; a plant physiology lab directed by Dr. Robert Devlin, responsible for research with plant growth regulators and experimental herbicides for weed control on cranberry bogs; an entomology lab run by Dr. Charles Brodel, responsible for studying control strategies for cranberry insect pests; a plant pathology lab under Dr. Frank Caruso's direction, responsible for diagnosing diseases of cranberries and

(continued on page 23)

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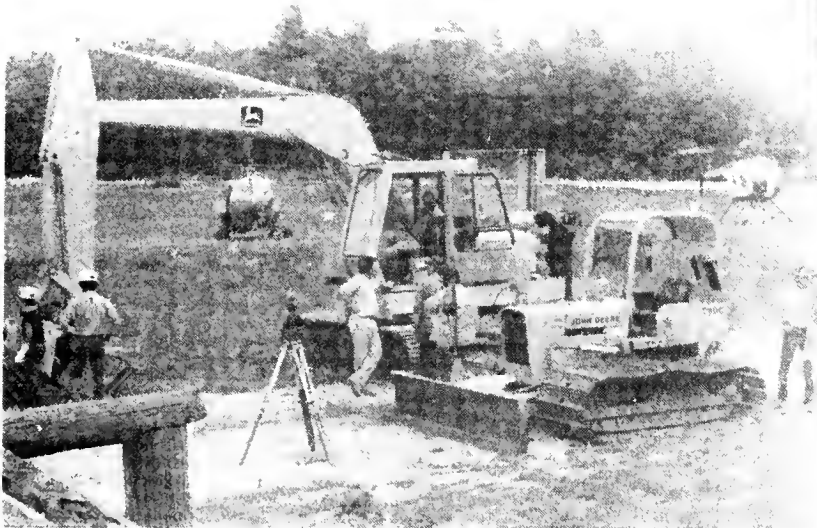
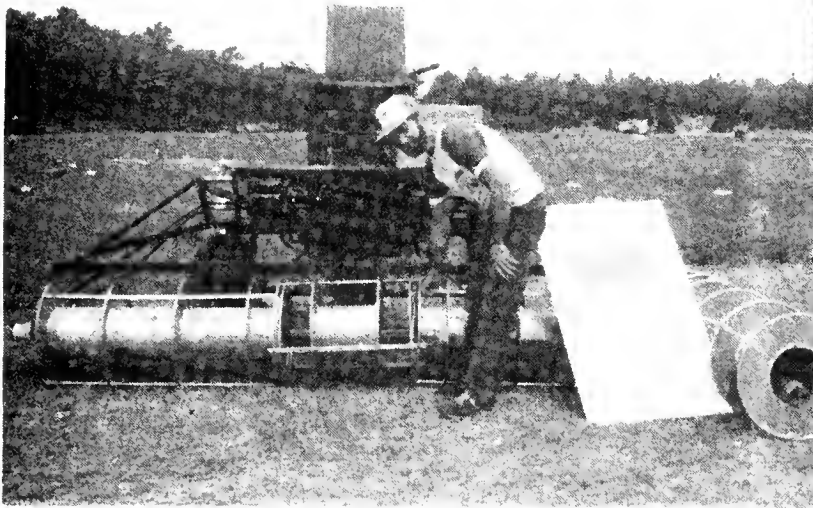
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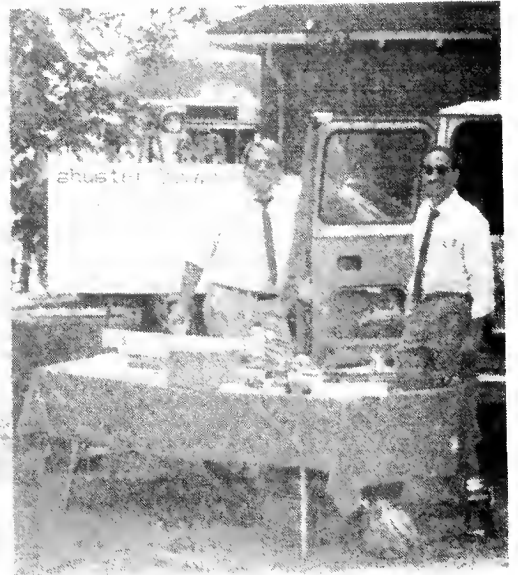
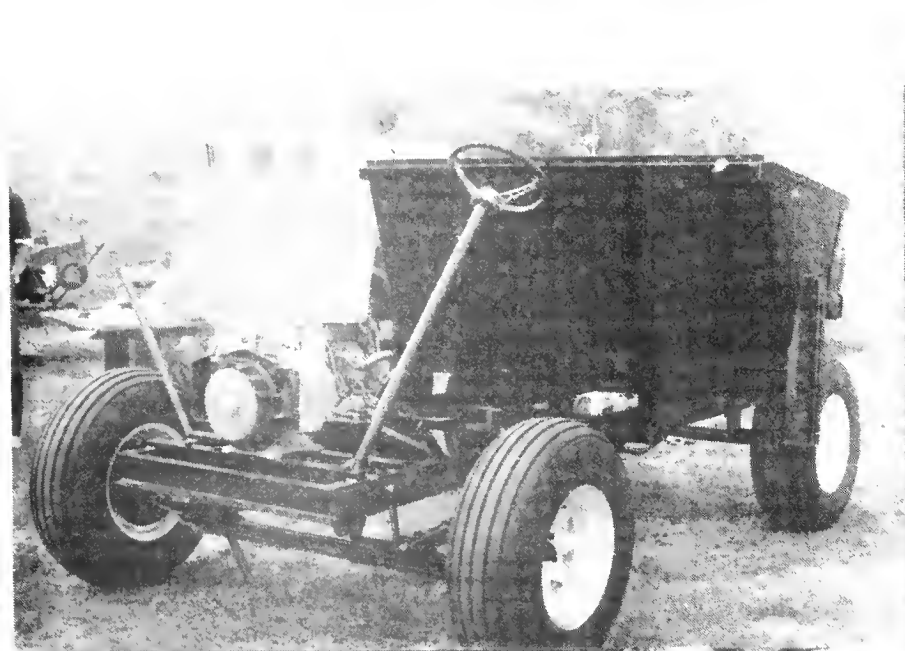
LARRY MYERS
District Manager



A CLAMBAKE, good talk and, of course, cranberry juice were among the ingredients that made for enjoyment at the 75th anniversary of the Massachusetts Cranberry Experiment Station.
(CRANBERRIES photos by Mike Couture)



AMONG THE DISPLAYS
at the annual meeting of
the Cape Cod Cranberry
Growers Association
annual meeting were some
conventional looking
vehicles and some vehicles
that were not your
ordinary, everyday,
conventional looking
vehicle.
(CRANBERRIES photos
by Carolyn Gilmore)



THERE WAS no lack of ingenuity and diversity in the machinery and equipment shown at the CCCGA meeting held at the Massachusetts Cranberry Experiment Station in East Wareham. (CRANBERRIES photos by Carolyn Gilmore)



Langlos 5 NNE minimum temperature was the lowest recorded in its seven year record—1.4 below average.

Rainfall was 0.19 inch at both stations and each station recorded only five days of measurable precipitation. August rainfall was 0.71 inch below the 30 year norm at Bandon 2 NNE and 0.60 inch below the average at Langlos 5 NNE.

A.P.

The irrigation of at least 1 inch per week to allow sufficient moisture for growth of berries and development have pulled heavily on the water table/storage.

July maximum temperature was 78 degrees on the 10th and the minimum was 41 degrees on the 15th. Total precipitation: 0.94 inch.

August maximum temperature was 84 degrees on the 14th and 17th and the

minimum was 37 degrees on the 28th. Precipitation totaled 1.86 inches, bringing the total for the year to 29.53 inches, 16.50 inches below the normal/average.

Because of the shortage of water in the Long Beach area, growers were deciding to put off harvest in this water harvested area until as late in October as possible.

A.Y.S.

WASHINGTON

Weather Watch Catch-up: April was comparatively warm, with the maximum temperature 74 degrees on the 7th and the minimum 29 degrees on the 1st. Precipitation totaled 5.10 inches, about average for April.

May maximum temperature of 86 degrees came on the 17th and the minimum of 30 degrees on the 7th. Precipitation totaled 2.06 inches, below normal by 1.5 inches.

June maximum temperature was 90 degrees on the 18th. Minimum was 36 degrees on the 28th. Precipitation totaled 3.78 inches.

The total precipitation for the six months of 1985 equals 26.73 inches, the lowest accumulated for the period since 1961 and that year could be earlier, according to many long time residents, but the station records were not available for earlier years. The normal amount for this period is 42.35 inches, making the 1985 total to date (Sept. 13) 15.62 inches below normal. There is a dry trend throughout the Pacific Northwest and much of the total West Coast area.

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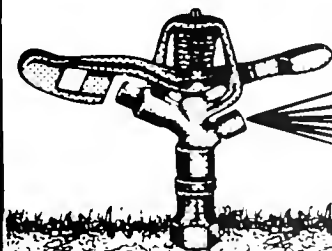
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The Giant Cranberry Controversy

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By H. PAUL BRUNCKE

We are becoming a divided nation. Nothing as trivial as Democratic or Republican. Nothing as insignificant as the NFL-AFL Super Bowl, but something of gigantic proportions. I'm talking about jellied cranberries versus whole cranberries. This is serious. The foundation of the family system is at stake.

The scene is pre-Thanksgiving. Time to buy the turkey,

yams, stuffing ingredients, etc.

"I'll be happy to do the shopping," say I.

"Oh no, I'll be happy to do it," says my lovely wife.

"Oh, I wouldn't hear of it," I say, jingling the car keys. "I'm all dressed." There is some, not so good-natured, pushing and shoving at the garage door.

What has caused this sparring? It is our family cranberry controversy. It has been running for years. The

lucky shopper will get the cranberries of his/her choice. I'm a jellied man and my wife lives for whole cranberries. I don't like whole cranberries and my wife abhors jellied. We have never considered buying two cans. Obvious waste.

Occasionally, we have shopped together. Me pushing the cart, my wife selecting, weighing cost per pound versus quality in a very professional manner. Now we turn into the

canned goods aisle. I propel the cart with lightning speed. My wife gives a hip fake worthy of Walter Payton. The cart blocks the cranberry area. My wife executes a leap-n-stab that plucks a can of whole cranberries from the shelf and drops it lightly into the cart.

Oh well, there's always Christmas. But wait, I think I have the answer to our problem. The time has come for THE CRANBERRY DIVIDER PACK. I knew there was a way out.



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Toast cubes in 300 degree oven for 15 minutes. Toss with melted butter. Add remaining items. Toss till well mixed. Enough for 12 lb. bird.

soak the ground. The bloom was heavy, due to a warm period in June that pushed the otherwise late bloom, and warmth continued into July. Berry set was heavy in the west coast areas. The Grayland area began dry harvest of tracts on Sept. 16 and full harvest began the 23rd.

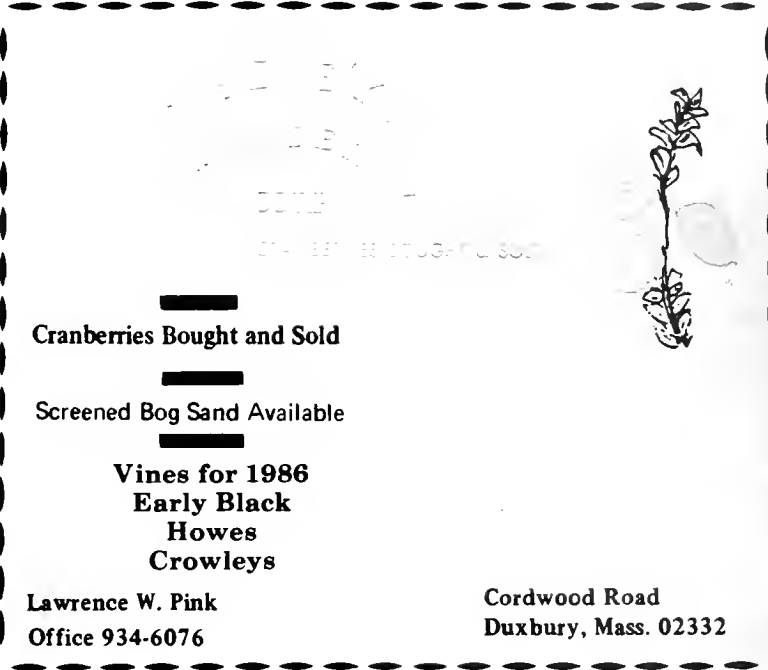
A.Y.S.

The early days of September showed 2.93 inches to date (9/13), which helped to

CRANBERRY RAISIN STUFFING

Here's a little something delicious for the holiday from Beatrice Ross Buszek's cranberry recipe book, The Cranberry Connection.

- About 14 slices (14 cups) soft bread cubes
 1 16 ounce can whole cranberry sauce
 4 tablespoons butter
 1/2 cup raisins
 1/4 cup sugar
 1 teaspoon salt
 1 teaspoon lemon juice
 1/2 teaspoon cinnamon



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23 STAFF . . .

(continued from page 12)

small fruits and recommending control measures; an Integrated Pest Management Program run by Sherri Roberts, responsible for monitoring and controlling insect, disease and weed pests on Massachusetts cranberry bogs.

Also, there is a full time crew for maintaining and harvesting the state experimental cranberry bogs, under the direction of foreman Cecil Foote Jr. The remainder of the staff includes lab assistants and clerical personnel.

INSECT PREDATORS INSTEAD OF PESTICIDES

According to *This Week in Farm Bureau*, the New Jersey Department of Agriculture has a \$3.3 million, 22 room "insect rearing laboratory" used to mass produce insect predators.

"The insect predators will be monitored for effectiveness over agricultural pests and then released into farm fields," says the publication.

"New Jersey is satisfied that the facility will save them \$5 million annually on the use of traditional insect control costs. We hope so."

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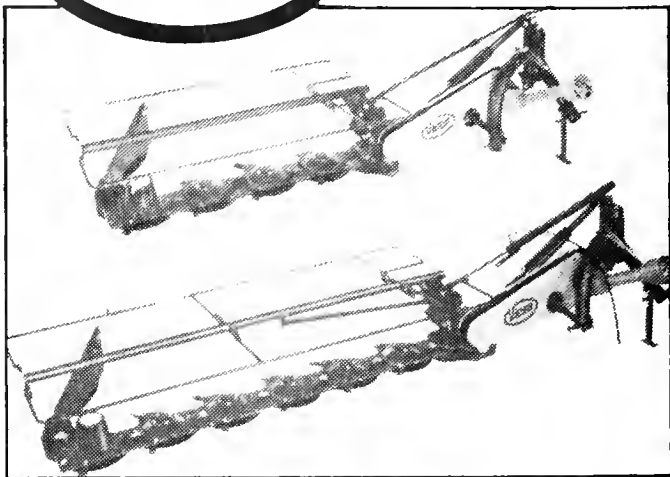
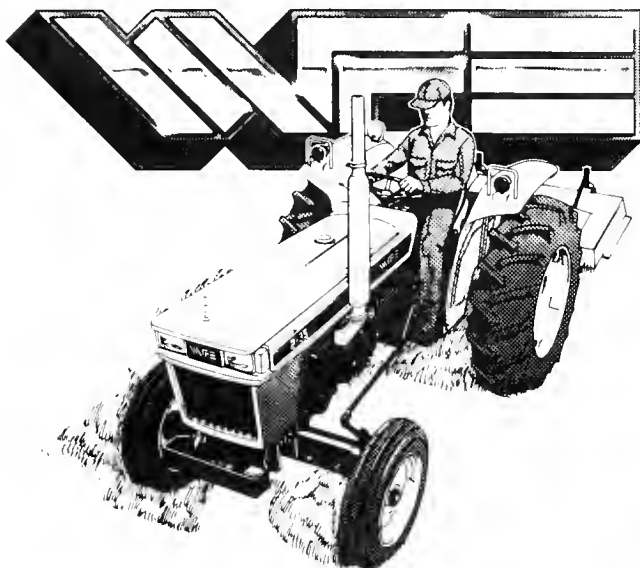
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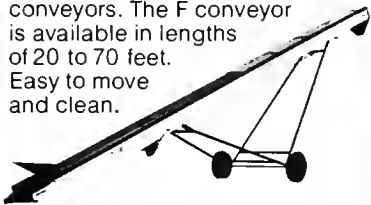
subject of research at the facility.

According to literature from the station, agricultural research in the region "began in Kentville in 1911, when the Experimental Farm was established to serve the apple industry of the Annapolis Valley. A plant pathology laboratory was added in 1924, and the chemistry and

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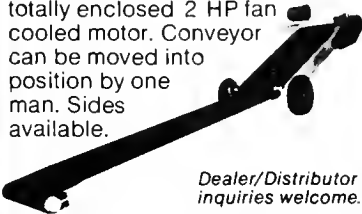
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entomology laboratories were moved to Kentville in 1938 and 1952. In 1959 the four units were amalgamated to form the Research Station.

"The station is located near the eastern limits of the town of Kentville, and a second property, the Sheffield Farm, is about 5 miles north. The combined area of the two properties is 665 acres. The facilities include a library, well-equipped laboratories, a computer terminal, green-houses, storages, a workshop, and about 400 acres of usable farm land."

Ivan and Carol, who have two sons and two daughters, live in a handsome wine-red house that is but a walk from the station. An

abundant garden of vegetables and flowers attests to Hall's agricultural expertise.

Matching the scientist's passion for growing things is his

zeal for golf. In the winter, he has an equivalent love: curling. For a number of years, he and Carol wrote a curling column, "Inturns and Outturns," for a



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Kentville newspaper.
 The couple also enjoys getting off to Bermuda in the late spring and both are active in their church.

**regional
 news
 notes**

Massachusetts
 By IRVING DEMORANVILLE

Dr. Frank Caruso, newly named pathologist at the Massachusetts Cranberry Experiment Station, attended the New Jersey Cranberry Growers Association annual meeting in Chatsworth, N.J., on Aug. 29.

The 98th annual meeting of the Cape Cod Cranberry Growers Association at the Cranberry Experiment Aug. 20 set an attendance record, with almost 700 present. Six hundred and fifty dinners were served.

**CCCGA Directors
 Back IPM Program**

The board of directors of the Cape Cod Cranberry Growers Association agreed unanimously at its Sept. 10 meeting that the industry should continue to involve itself with the Integrated Pest Management (IPM) program.

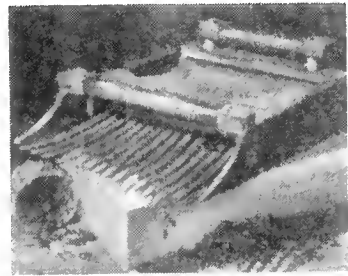
It was agreed that in the future the CCCGA may have to play a financial role in the program, which currently is being funded by the state and federal governments.

The board kept the crop assessment at \$.05/bbl. for 1985.

There was discussion of "The Right to Farm" bill, which would allow communities to establish agricultural incentive areas in which farms can be protected from excessive regulations. Chris Makepeace, CCCGA president, said growers will be encouraged to support the bill, which is being sponsored by the Farm Bureau.

Committees were established to plan CCCGA's 100th anniversary in August 1987 and to study changes in the structure of the annual meeting.

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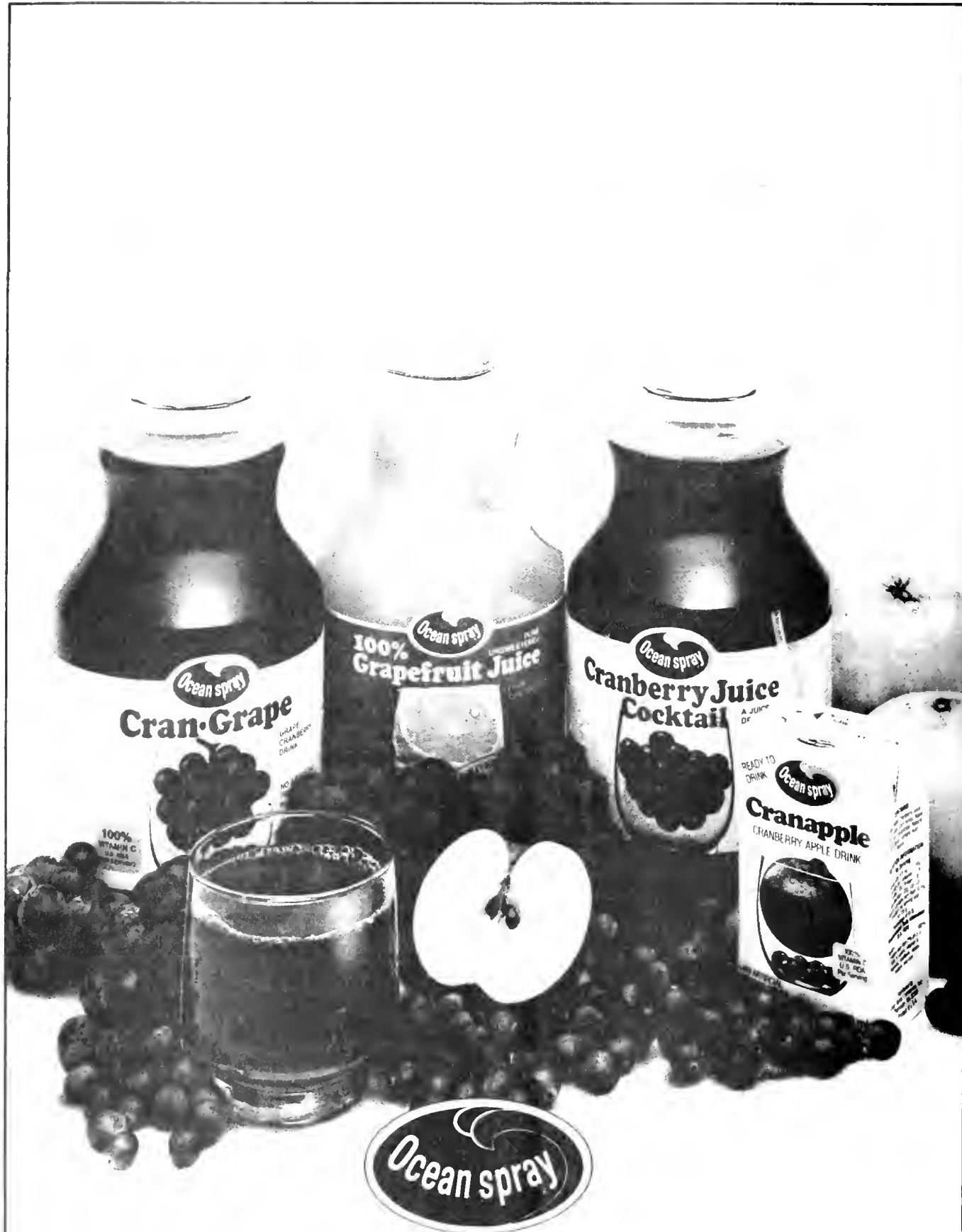
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Toward a Basic Understanding of the Integrated Pest Management Philosophy

CHARLES F. BRODEL

**Cranberry Experiment Station
East Wareham, Massachusetts**

The phrase, "integrated pest management," has been used frequently during the past 15 to 20 years by agricultural research and extension workers, federal and state legislators, and writers for agricultural trade journals. Not always have the ideas associated with the use of the phrase been correct. Actually, integrated pest management, better known as IPM, is an ideal which has not yet been realized, but toward which the entire agricultural community is heading steadily. The purpose of this short article is to provide information about its basic tenets, including references to the cranberry industry wherever possible.

Definition of IPM

One definition of IPM might be the following: A strategy wherein viable control methods of all kinds are employed in a unified way to achieve economically acceptable pest populations without causing undue harm to the environment, society or growers. This definition encompasses three major points: (1) the objective of successful management of pest species, (2) the requirement that many different types of control measures be used in an integrated, planned way, and (3)

the concern that pest control measures be implemented in ways that do not create conditions detrimental to other living things.

Regarding the first point, the goal of IPM becomes management of pest populations rather than their elimination or eradication. Researchers and extension workers have learned that pest populations can rarely be eliminated from an area. The measures needed to do so would have side effects harmful to many living things. In most cases, low pest population levels are beneficial because they enable other organisms, which consume or otherwise use the pests, to multiply and exert a marked degree of control. Examples of such organisms are spiders, ground beetles, parasitic wasps and flies, predatory mites, fungi which attack insects and other plant-damaging fungi, and insects which feed on weeds.

The second point, in part, stresses the multiplicity of control measures to be considered as possible components of any IPM strategy. Too often, the only measure that comes to the minds of professional as well as lay people is the use of pesticides. The following list is presented to indicate the diversity of measures available to prevent pests from gaining access to agricultural sites, to slow the increase of pests, and to decrease numbers once outbreaks have occurred.

Antagonistic plants
Barriers
Biological control agents
Burning crop residue
Crop rotation
Cultivation
Feeding deterrents
*Flooding**
High or low temperatures
Host plant eradication
Insect growth regulators

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WILD caribou and humans share cranberries in Canada's Northwest Territories. A story on cranberry picking around Yellowknife, the seat of the territorial government, starts on page 14.

EIL

ET

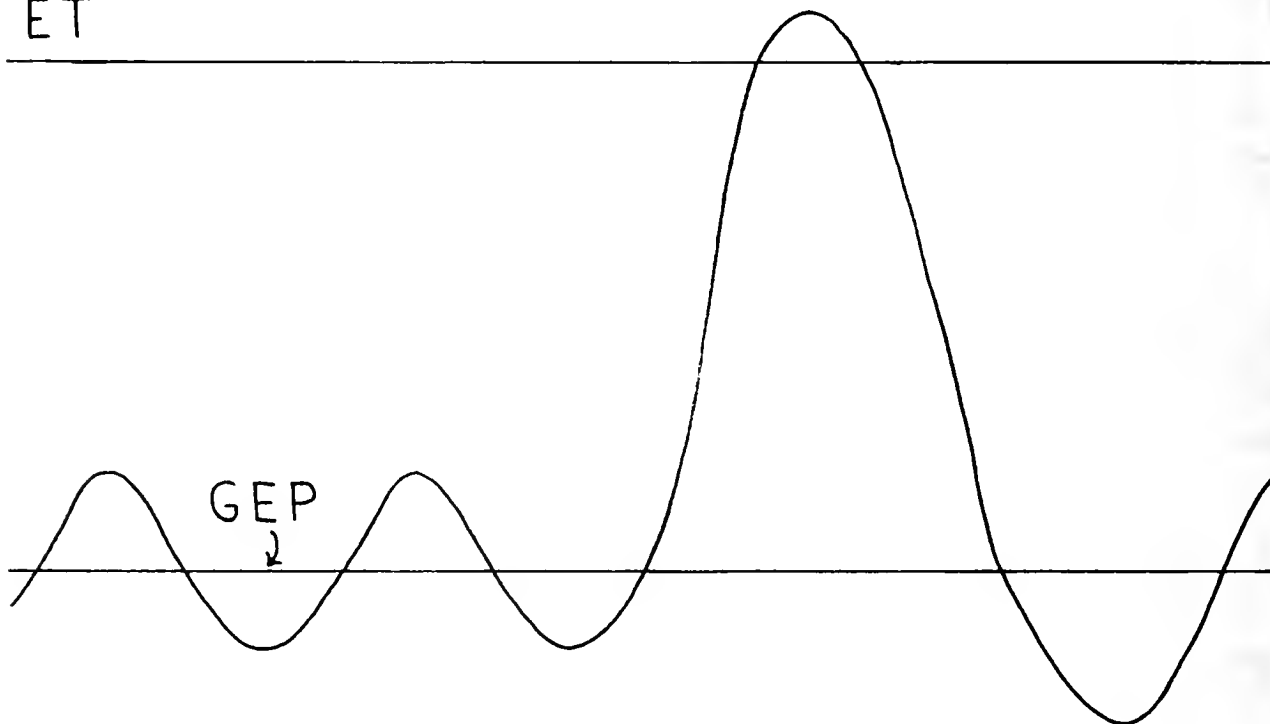


Fig. 1. Fluctuations in the population level of an insect species relative to the general equilibrium position (GEP), economic threshold (ET), and economic injury (EIL).

Irradiation

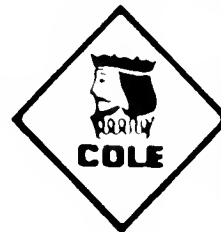
- Microbial insecticides*
- Pesticides*
- Pest-resistant crop varieties*
- Planting time*
- Quarantines*
- Repellents*
- Sanding**
- Sound*
- Tissue Culture Propagation*
- Traps*
- Trap crops*

Both the second and third points necessitate that professional people in many disciplines cooperate in developing a management strategy for all types of pests on each crop. Disciplines that should be involved in cooperative planning, research, and implementation include entomology, weed science, plant pathology, agronomy, horti-

culture, plant physiology, vertebrate zoology, agricultural economics, plant breeding, toxicology, chemistry, and biochemistry. In the past, workers in each discipline independently studied pest problems on specific crops. Generally, they issued reco-

mmendations for control without taking into account negative impacts on beneficial organisms and plant development. Neither did they consider how their recommendations might complement or conflict with recommendations made by workers in other disciplines.

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Pest management under the IPM concept is somewhat analogous to the orchestral performance of a symphony. If the symphony is meritorious of a rendition, the performers in each section of the orchestra do their best to make the outcome as pleasing to the ear as possible. The result is less than satisfactory if the brass section plays at a different tempo, if the strings cease playing in the middle of the piece, or if individuals in different sections start playing out of key. From this analogy, it might be stated that cooperative, purposive input becomes the cornerstone of the IPM concept.

At this point, it is appropriate to examine how the IPM concept is exercised on a daily basis in an actual agricultural setting. Emphasis is placed on situations where pests have gained access and multiplied to outbreak levels.

Detection and Monitoring of Pest Populations

Before management strate-

gies are formulated for various pests at particular agricultural sites, it is important to know which of an array of pests are present. With such knowledge, one can select from among the above mentioned management methods, choose pesticides based on toxicity level, hazard to applicator, cost, effects on beneficial organisms, or a combination of factors, improve the timing and effectiveness of pesticide applications, and, in most cases, reduce the amount of pesticide introduced into the environment.

The act of looking for pests, or the injury or symptoms they cause, is known as "scouting." Growers who are educated about the appearance and life cycle of pests on specific crop plants can usually do a good job of scouting their properties. Many growers prefer to use the services of professional consultants who are expert at identifying and monitoring pest populations. In the cranberry industry, scouts require familiarity with insects and mites, plant diseases, weeds, and several large animal species. As an example, the table below lists insect and mite pests which regularly or occasionally

occur on bogs in southeastern Massachusetts.

Cranberry Insect and Mite Pests

Moths

Cranberry fruitworm (L)
Sparganothis fruitworm (S,N,A)

Gypsy moth (N)

Fireworms (S,N)

Spanworms (S,N)

Cutworms (S,N)

Cranberry girdler (S,A)

Beetles

Cranberry weevil (N)

White grub (S,I)

Cranberry root grub (S,I)

Flies

Tipworm (S,I)

Mites

Southern red mite (S,I)

Scouts use a variety of sampling methods to detect and estimate pest population levels in an area. These include visual inspection of plants or plant parts, visual scanning of areas within a field or planting, sex attractant traps, sticky traps, spore traps, sweeping with a net, soil core sampling, shaking and beating the crop plant, and vacuum trapping. The most common sampling methods

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used in the cranberry industry are visual inspecting (I), visual scanning (S), sweeping with a long-handle, 11-inch-diameter net (N) and trapping with sex attractants (A). In the above table, appropriate sampling methods are given for each pest.

The Concepts of "Economic Injury Level" and "Economic Threshold"

After a pest species has been detected and its relative numbers determined, a decision has to be made whether to implement control measures. In this regard, the concepts of "economic injury level" and "economic threshold" can be quite helpful. These concepts have been applied mainly to situations involving insect pests, but they should be valid for other pests as well.

In agricultural settings, the population level of an insect species tends to fluctuate about a given level called the "general equilibrium position" (Fig. 1, GEP). The GEP for the same species changes depending on the crop plant, the variety of crop plant, population levels of natural enemies, and the climate. The greater the GEP, the more likely it is that the species will be noticed by growers and classified as a pest. Summarily, the GEP relates the average population level that can be expected to occur for a given insect species on a given variety of a crop plant in a given region.

Informed scouts know that the population level of a species, as it fluctuates about the GEP, must be considered in relation to two other levels. The first is the "economic injury level" (Fig. 1, EIL). It is defined as (1) the lowest pest population level that will cause economic damage, or as (2) the pest population level at which the economic loss caused by the pest equals the cost of available control measures. The second is the "economic threshold" (Fig. 1, ET). It is the

population level at which control measures should be implemented to prevent an increasing pest population from exceeding the economic injury level. Economic threshold values currently being used in the cranberry industry are presented below.

Economic Thresholds

Pest Species

Cutworms
Spanworms
Cranberry weevil
Gypsy moth
Leafhoppers
Cranberry fruitworm

No. of Pests*

9
 36
 9
 9
 3
 1**

When a pest population level equals or surpasses the ET, a decision should be made to implement control measures. With insect pests, the most frequently selected option is to apply an insecticide. Insecticides generally act quickly to drop pest numbers below the ET and possibly below the GEP. The timing of the application is not critical as long as no more than two or three days pass after the population level reaches the ET.

The situation differs somewhat for disease and weed pests. Many fungal pathogens have GEPs which exceed their EILs during a part of the growing season, which means that control measures must be contemplated and implemented on a regular basis. Fungicide applications often coincide with weather events that favor the reproduction, dispersal and reestablishment of a fungus.

*Per 50, 180-degree sweeps of 11-inch-diameter, long-handle net

**Viable egg per 100 randomly picked berries in late July and August

The objective is to protect susceptible living tissue from being infected, for once tissue has been colonized, there is little that can be done to reverse the process. Regarding weeds, not much research has been done on ETs for crops grown in temperate regions. Herbicide applications are usually timed to coincide with specific growth stages of weeds. Application methods are selected which afford the least chance of affecting crop plants along with targeted weed species.

Conclusion

In summary, this article has defined "integrated pest management" and explained several of its constitutive concepts. As a result, readers should have a better understanding of the theory on which current pest management programs are based. With this, hopefully, will come a greater appreciation of the complexity and challenge of pest management.

This article was presented by the author as a paper at the National Cranberry Conference in Hyannis, Mass., on May 31, 1985.



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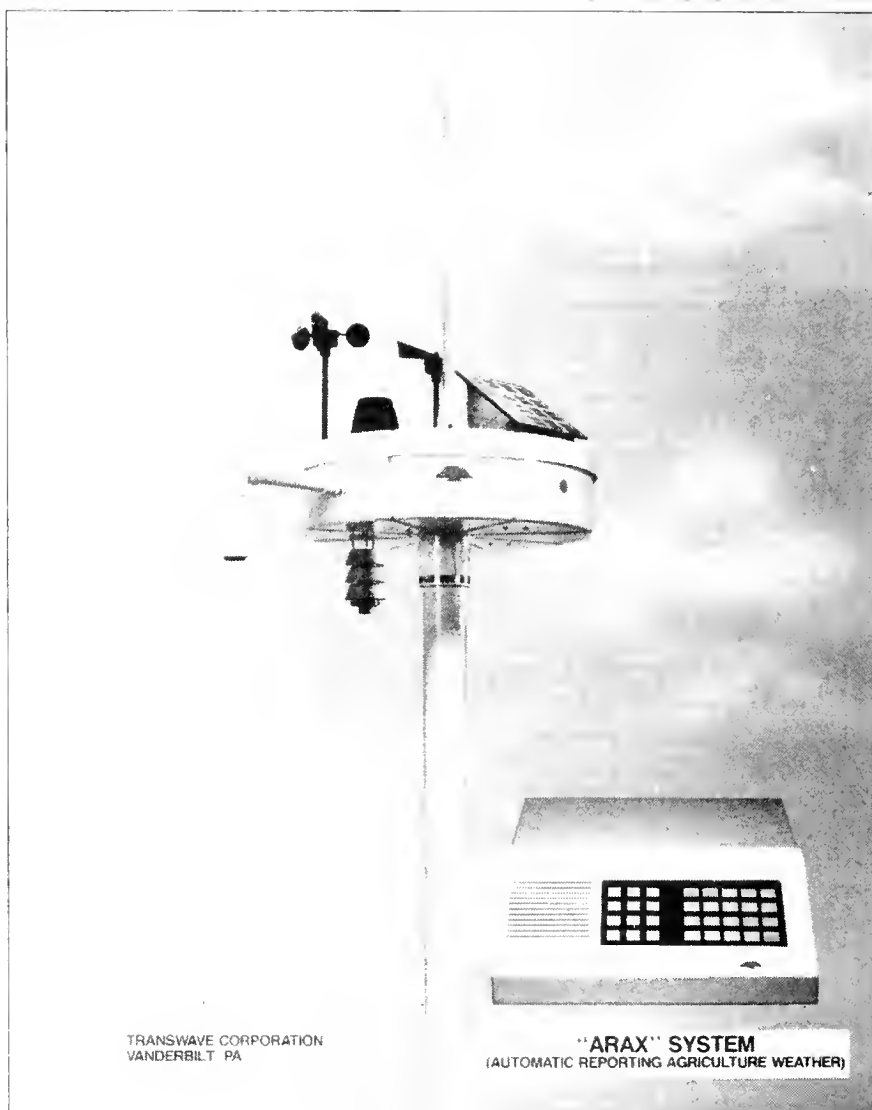
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SCENES from the recent Bandon, Ore., Cranberry Festival.
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But Shutterbug Pete Separates "Merry" and "Christmas"

Yuletide Writing in Cranberries

By STEVE HALL

"There's nothing more beautiful than a cranberry bog filled with snow," a photographer friend of mine declared, showing me the 1,099th photo of "Bog With Light Snow" or "Fifty Foot Drift in Bog" or "A Winter Bog That Looks More Like an Autumn Bog" or whatever the 1,099th picture was titled. After looking at so many, they all seemed the same to me.

"Want some more coffee, Pete?" I asked, rising to stretch behind by kitchen chair.

"Look at this one!" Pete exclaimed, pulling out "Bog in Moonlight with Canadian Geese Flying Upside Down."

"Had to wait a *long* time to snap that baby," Pete said, oblivious to my boredom.

"You don't see geese flying upside down in front of a full moon above a snowy cranberry bog every day," I agreed.

"See this goose, the one in front?" Pete asked, handing me photo 1,101-A, a blowup of a portion of the other.

"Yeah. So what?"

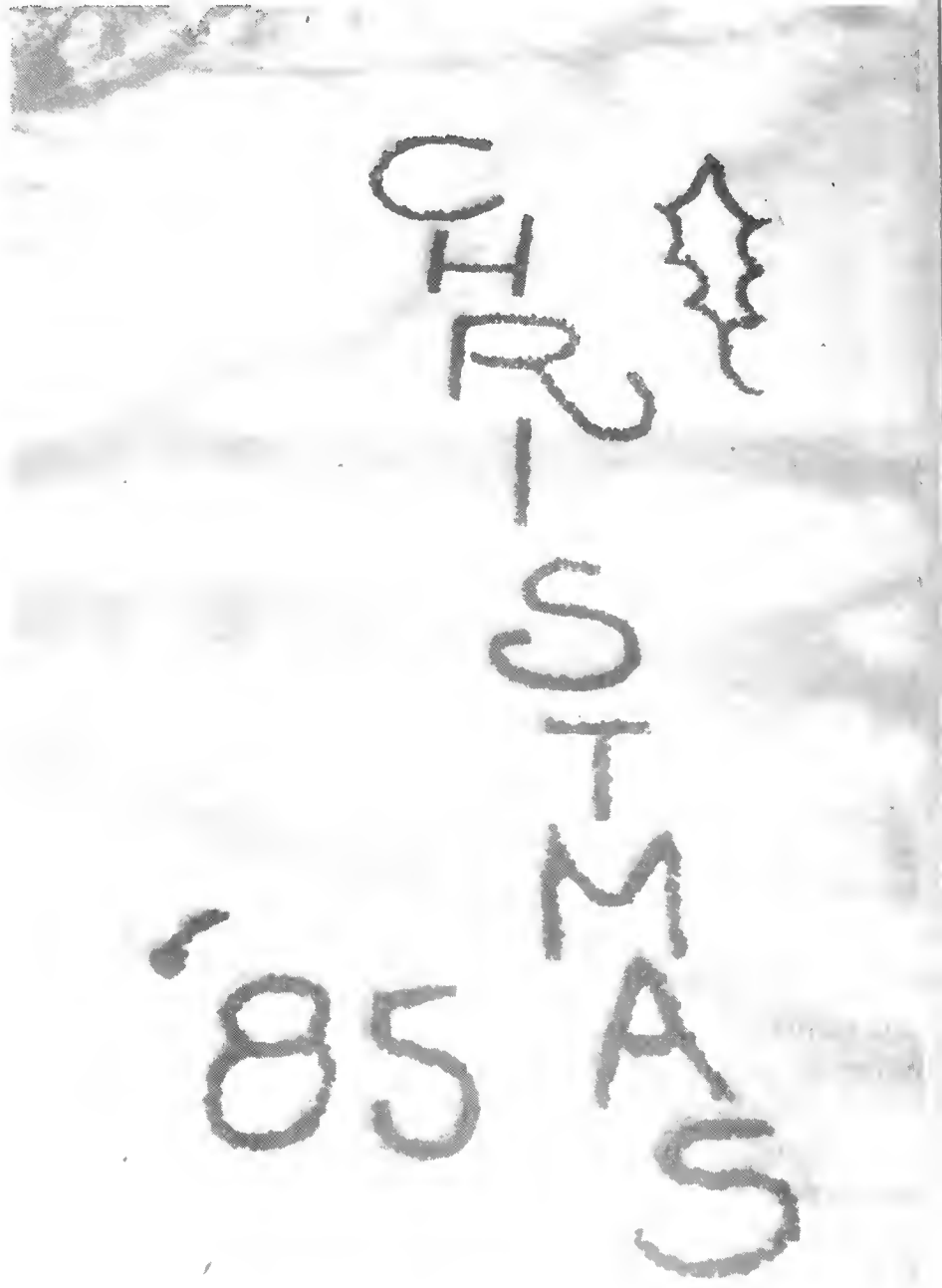
"He's flying upside down at the front of the V with his eyes closed. *Closed!*"

"Perhaps your camera caught him blinking," I suggested.

"Blinking? *BLINKING!?*" Pete roared, deeply offended.

"Sorry, Pete," I said, "I was just . . ."

"That beats all!" Pete huffed, preparing to leave. "No one appreciates great art, everybody's gotta knock it. Everybody's gotta find a flaw, a minor mistake, something wrong. Well, I've had it with your attitude, pal. Had it! Goodnight, sir!" Pete said, slamming the door in my face. I felt terrible, so guilty that I'd made my friend feel like that! With Christmas coming, I felt even worse, for Christmas is a time of friendship, not feuding. Right then and there, I decided that I



A CRANBERRY Christmas greeting, arrayed in the snow.

had to do something, something to show Pete exactly how I felt.

The next day, I bought three bags of whole cranberries and brought them home. Although the temperature hovered around 0 degrees, I smoothed out a section in the snow and began writing, one berry at a

time, the greeting, "Merry Christmas '85." I had a hard time placing them properly with my gloves on, so I did most of the work barehanded. My hands shuddered with pain, but I continued on, because this was for Pete, to pay Pete back. Once done, I called him up. He

was reluctant to come over, but finally agreed to visit.

"Pete!" I exclaimed, "look what I made! I made those words one berry at a time, but I need your skill to photograph it. Tomorrow there's gonna be a warm, spell, and ..." I wanted Pete to feel important. And I was trying to keep a friend.

"Don't worry," Pete said, "I'll shoot it for ya. Got a ladder? I'll need one to get above the words."

I set up a tall stepladder for Pete, which he climbed to the top. He started snapping photos like mad. He worked like a whirlwind.

"Great!" "Wow!" "Great!"

He kept repeating those words, snapping photo after photo as he twisted and turned.

I hated to interrupt Pete, but I had to.

"Pete," I whispered, "you're holding your camera backwards. You're looking through the lens!"

Pete stopped shooting. "Oh, yeah," he said. "Thanks for noticing that."

Click, click, click.

"Great, wow, great!" Pete exclaimed. "Super, great, super!"

"Pete," I whispered, "take the lens cap off."

"Oh, heh, what do you know?" he said, the volume of his voice down a notch. "Sorry about that."

All in all, Pete shot 47 rolls of film. I got to look at 970 photos the next night. It didn't matter though, because Pete was my best friend once again.

"Without dwelling on flaws or mistakes, Pete, I'd like to ask you something, if I could."

"Shoot, buddy," Pete said, his smile as big as a banana.

"Why, Pete, did you snap 470 pictures of the word, 'Merry,' 470 pictures of 'Christmas '85,' and none that say, 'Merry Christmas '85'?"

"Because I am an artist!" Pete asserted, "And my artist's eye and artist's ear tell me that those words do *not* belong together!"

"Merry Christmas!?! Those words don't belong together?"

"No," Pete assured me. "It simply wouldn't work."

"Merry Christmas," Pete said as he left.

"Merry Christmas to you too, Pete!" I chimed, not daring to mention that we'd just put those words together twice ourselves. That didn't matter. It was our friendship that did.



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Cranberry Picking Day At the 63rd Parallel

By MARIANNE
& DAVID MOLL

Editor's Note: Marianne and David Moll live in Yellowknife, Northwest Territories. Yellowknife, founded during the 1934 gold rush, is the seat of the government of the territories, a vast expanse that covers a third of Canada and is bordered on the north by the Arctic Circle. Temperatures in 12,000 population Yellowknife dip as low as the sixties; 60 below, that is.

David is a government official, in charge of approving mining permits. Marianne operates a 24 hour day care center, Comprehensive Childcare Services. David gives her an assist with the books.

Both love life in Yellowknife, Marianne saying that a resident of the territories must be someone who depends on her/his own inner resources. The Molls are heavily involved in the sport of speed skating.

Cranberries in the Far North are more succulent, have greater pucker power and are our chief source of the Vitamin C needed to stave off the multi-virused common cold.

Our favorite cranberry bog is also a favorite bog for the Kamanuriak Caribou herd which grazes its way from the Arctic Ocean in a kitty-cornered fashion, down along the tree line to the borders of northern Saskatchewan and Manitoba, in the fall, and then back up again in the spring. So, whatever we don't pick off in late August is

left for the caribou.

A typical cranberry picking day starts off with us preparing ourselves and our transportation for the outing. We dress in jeans, with our socks coming up over the jeans to keep the black flies from creeping up our legs. We wear turtleneck sweaters, kerchiefs, and down vests, and we also take along our winter parkas and mittens, for the boat trip can get mighty chilly. Then we "muskol" our exposed skin thoroughly, hoping it will deter the mosquitos and black flies for the day. We spray our clothing with Cutter too, to make sure, doubly sure, that we don't get eaten alive by the insects. Then we—our physical bodies—are ready for the adventure.

Into the car we have piled our camping kitchen: a rucksack filled with all the utensils and dry goods needed to enjoy eating outdoors. We don't need to carry around a barbecue because we have millions of acres of forests in which we know we will find dead trees and dried underbrush for our campfire.

Our canoe, a 19 foot freighter Grummon, is loaded on our car, the 6½ horsepower goes in the trunk. Our lifevests, oars, fishing gear and survival kit are packed, and we are off.

We drive to the end of the road, about 30 kilometers (18.63 miles). All roads end here and from this point you travel on foot and by canoe in summer, skidoo in winter. We launch our canoe and load it and head out over the waters of Reid Lake. Finally, we sight our cranberry bog, just before the waterfalls, and nose the canoe onto the shore. We get out and secure the canoe. (Once

we forgot the securing part and the canoe began floating out towards the falls, forcing us to rush into the water to retrieve it.)

Our first task is to set up our campsite for the day. We carefully select a bare rock with no brush or trees on it and lee side to the wind. This ensures that we will be relatively insect free because the wind will keep the pests on the move.

Next, we need to collect the wood and build ourselves two good campfires, leaving space in between the fires for us to spread our canvas for the table and to set up our camp kitchen. When the tasks are completed, we get out our sacks into which we will put our cranberries and begin the mouth-watering picking we have come for.

Far from civilization, we can be our primeval selves. The ducks, the loons, the falcons, the lapping water and the sighing wind: they are our observers and it is with them we share the day. The sun shines on in its friendly way through the 19 hour daylight while we pick and rest, eat and rest.

At 10 o'clock at night, we decide to call it a day. We dismantle the campsite, pack up our gear, load the canoe and begin our long ride across the open waters of the lake, back to the place where we have left the car. We sing on the water, listen to our echoes, watch the fish leap out of the water, imitate the loons' call and enjoy the privilege of being a part of this vast, untamed north.

Finally, we reach the car, unload the canoe, hoist it onto the car and begin the drive back home. We have the sun in our



A LONG WAY FROM YELLOWKNIFE: David and Marianne Moll were photographed earlier this year in Orlando, Fla., where they were attending a convention of the National Association for Child Care Management.

(Photo by DAY CARE CENTER)

eyes all the way home: we are driving into the sunset and it is quiet and elegant, vivacious in color, and nature's grandest spectacle of all.

By the time we reach home, well after midnight, the sun has set, too. We are tired, relaxed. We smell like muskeg, poplar tree fires and insect repellent. We shower and fall into bed.

The sun will be up around 4:30 a.m. and we'll have another glorious day to fill. This time it'll be cleaning cranberries, cooking our jams and jellies, freezing some berries for Thanksgiving and Christmas specials and giving some away to friends who can't go picking.

And as we eat our cranberries throughout our long, dark, cold winters, we remember the joyous times we had picking them. We can almost smell the stuff out of which they were made—almost.

*Come north someday,
and pick with us.
Our cranberries,
and such else-berries*

as you'd like.

Below are some of the favorite recipes of Marianne and David Moll.

Cranberry Jam

Fill the saucepan with cranberries. Add about 2 cups of sugar and just enough water so berries will not stick to pot. Put on to boil and boil until all the berries have burst. It will then be thick. Cool. Put into jars.

Cranberry Stuffing

1 cup cranberries
 ½ cup chopped celery
 ¼ cup chopped onion
 3 tablespoons sugar
 3 tablespoons butter or other fat
 1 cup soft bread crumbs
 1 teaspoon grated orange rind
 ½ teaspoon salt
 ¼ teaspoon pepper
 ½ teaspoon marjoram

1. Cook cranberries, celery, onion and sugar in fat until fruit is cooked (1 to 2 minutes).

2. Combine fruit mixture with bread crumbs.

3. Add orange rind and seasonings and toss lightly.

Wild Cranberry Pudding

Put 3 cups of cranberries into a saucepan and cover with water. Add ½ cup sugar and boil until the berries have all burst. Add enough custard to make it thick.

Cranberry and Carrot Jam

1 quart cranberry pulp
 1½ quarts diced carrots
 5 cups sugar

1. Combine ingredients in a preserving kettle and cook, stirring frequently, for 20 minutes or until the mixture reaches the thickness desired.

2. Remove from heat, pour into sterilized jars and seal.

High Bush Cranberry Jelly

2 cups berries
 3 cups water
 2/3 cup sugar for each cup of juice

1. Simmer berries and water for 10 minutes to start the juice extraction, then let boil rapidly from 3 to 5 minutes.

2. Strain through a jelly bag.

3. Measure strained juice.

4. Add 2/3 cup sugar for each cup of juice.

5. Bring juice and sugar to a boil, stirring constantly, then boil rapidly until liquid will sheet from the side of a spoon (not drip off in separate drops).

6. Pour into sterilized glasses and seal.

Cranberry Raw Relish

2 cups cranberries

1 cup sugar

1. Grind cranberries.

2. Add sugar.

3. Stir well.

4. Serve cold with meat.

Variations

1. Add 1 orange, 1/2 lemon and 1 apple to the above recipe. Wash and grind the orange peel and apple. Slice pulp of orange with sharp knife. Mix well.

2. Spiced—add 1 teaspoon

cinnamon, 1/2 teaspoon cloves and 2 teaspoons grated orange peel.

Cranberry Catsup

1 pound onions chopped fine

4 pounds cranberries

2 cups water

2 cups vinegar

4 cups sugar

1 tablespoon ground cloves

1 tablespoon cinnamon

1 tablespoon allspice

1 tablespoon salt

1 tablespoon celery seed

1 teaspoon pepper

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2. Rub through food sieve.
3. Add remainder of ingredients and boil until thick. Pour into sterilized jars and seal. (Makes about 3 pints.)

Serve with poultry, meat or on baked beans. Other berries may be substituted in the above recipe.

Cranberry Apple Butter

- 1 pound dried apples
- 2 quarts water
- 2 quarts cranberries
- 6 cups sugar
- 1 teaspoon cinnamon
- 1/2 teaspoon cloves
- 1/4 teaspoon salt
- Grated rind and Juice of 1 lemon

1. Soak 1 pound dried apples in 2 quarts water for 1 hour.
2. Add the 2 quarts cranberries and cook until soft.
3. Put the pulp through a sieve or food mill.
4. Reheat and add the sugar, salt and spices.

5. Cook until clear.
6. Remove from the heat and add the lemon juice and grated rind.
7. Spoon into jars and seal.



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editorial



Bandon Wants Some Attention

CRANBERRIES is on an exchange basis with a number of weekly newspapers from cranberry growing country. They are fine community journals. One of them is the Bandon, Ore., Western World.

In her recent Comment column, co-publisher Melody Gillard-Juarez took a verbal whack at Ocean Spray for what she perceived as limited participation in the Bandon Cranberry Festival. "Where's Ocean Spray?" hollered the headline.

Said Gillard-Juarez: "The Cranberry Festival is Bandon's oldest, and its sole purpose in the beginning was to publicize and promote the growing cranberry industry. Ocean Spray's missing a ripe opportunity to do so.

"Ocean Spray's PR firm supplied us with some cranberry recipes, for which we're grateful, and supplied juice here and there, but, hey, this is a \$5 million industry in Bandon alone. It seems like the company, a grower cooperative, would jump at the chance to be a major force.

"Who sponsored the Cranberry Food Fair? Ocean Spray? No—Celestial Seasonings came all the way from Colorado to do so. They flooded the Food Fair with recipes, information and free tins of Celestial Spice tea. Cases of cranberry tea arrived at the Visitors' Center for passing on to all who dropped in there.

"Beyond the giving of products, Ocean Spray could give out information—organize bog tours, ask some of the growers to give talks, have plants on display, illustrate the growing and harvest cycle, talk about new uses for the berries and the equipment invented right here. A lot of people still think cranberries grow on trees."

Well, we think Gillard-Juarez's points will be responded to. One thing the folks at Ocean Spray know about is the importance of good public relations.

regional news notes

Massachusetts

By IRVING DEMORANVILLE

Some dry harvesting about Sept. 15 but water harvest started the week of the 23rd. Color was a little slow to develop but came along nicely in the latter part of the month. Howes were light colored at first but giving every likelihood of being better by mid-October. Early Blacks were a little small but by month's end were average or better. Quality not bad but not outstanding either.

We were about 25 percent harvested by Oct. 1. Too early to assess the total crop yet, but at or a little under the August estimate. Only one frost warning in September.

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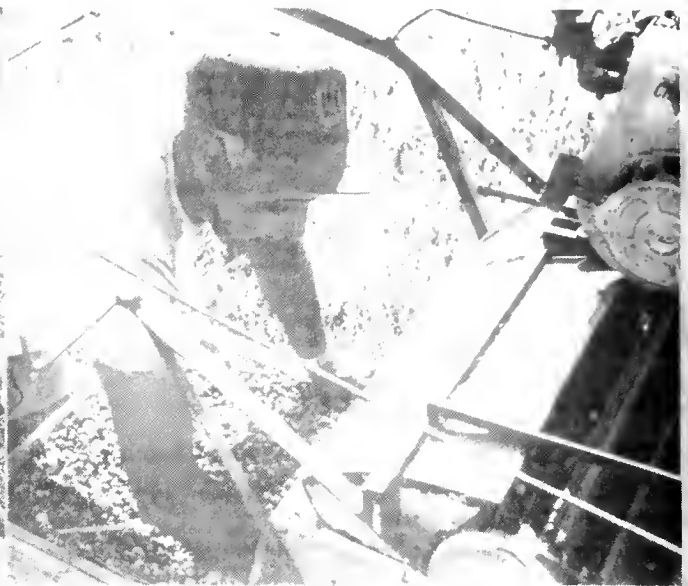
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IN AN ERA when the trend is in the direction of wet harvesting, Mr. and Mrs. Manuel Silva still employ the cranberry scoop and a dry harvesting machine on their bog off Plymouth Street in North Carver, Mass.

(CRANBERRIES photos by Robert B. Fitch)



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U.S. SALES TO CANADA COULD TOP \$2 BILLION

By DAVID P. McGUIRE
 and
 GEORGE C. MYLES
 Foreign Agriculture

With more than 80 percent of its 25 million inhabitants living within 200 miles of the U.S. border, Canada could not help but be one of the most important markets for U.S. food and agricultural commodities.

Last year, U.S. agricultural sales to Canada reached \$1.9 billion, 6 percent greater than in 1983. In 1985, exports are expected to top the \$2 billion mark for the first time.

U.S. exporters may have reason for continued optimism because Canada's recent economic performance has been encouraging, despite the fact that it has lagged behind the U.S. because of slackening world sales of its natural resources.

In 1984, gross national product (GNP)

rose 4 percent and is expected to be in the 3 percent range this year. Inflation is currently less than 4 percent annually.

U.S. and Canadian agriculture share a number of things in common, not all of them good. For instance, Canadian farmers, like those in the U.S., have had to contend with low commodity prices, high input costs and high real interest rates.

Despite the difficulties, both nations can boast of extremely efficient, highly productive agricultural infrastructures.

Canada's farm production, valued at \$15.1 billion in 1984, is roughly proportional to U.S. production in terms of per capita output and contribution to the GNP. As a percentage of GNP, Canadian and U.S. agricultural constitute 4.8 and 4.1 percent, respectively.

Canada's farm cash receipts in 1983 were roughly 13 percent of U.S. farm sales, while its population is about 10 percent of the size of the U.S. population.

Because of a short growing season that limits the year-round farming of perishable fruits and vegetables. Canada turns mainly to the United States to satisfy a per capita demand for fresh fruits and vegetables that is among the highest in the world.

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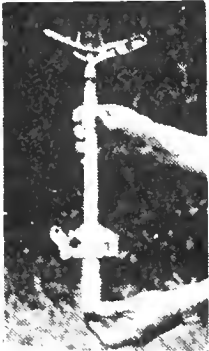
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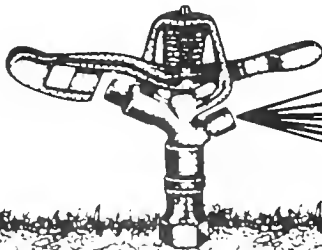
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KOREA: NEW CHALLENGES IN AN IMPORTANT MARKET

By DAN CONABLE

From *Foreign Agriculture*

Korea was a \$2 billion market for U.S. farm products in fiscal 1984 and ranked as our sixth largest customer in the world. Still, it is a country whose markets remain inaccessible to many U.S. agricultural exporters, as much through the workings of an elaborate system of permits, approvals and administrative supervision as through conventional tariff barriers.

The huge Korean agricultural market is primarily a bulk commodity market, with grains and cotton, fats and oils, oilseeds, hides and skins and logs accounting for most of the imports.

Despite some superficial similarities between approaches to doing business in Seoul and Tokyo, U.S. exporters should realize that the Korean marketplace presents very different challenges.

Korea's economy and national wealth are still no match for those of Japan.

Per capita incomes in Korea average about \$2,000 a year. Recognizing that domestic buying power is not enough to sustain an acceptable rate of economic growth, Korea's leaders have committed their country to a development strategy which emphasizes exports of manufactured products, although it does not directly subsidize these exports.

As a consequence, Korea is far more dependent on trade than is Japan. The total value of Korea's imports and exports equals three-quarters of the country's gross national product, compared to less than one-quarter of Japan's and about 15 percent of the U.S.'s.

The Koreans themselves present a very different face from their neighbors in the Orient. Often hospitable, frank, combative and quick to display emotion, they nevertheless are not an easy people for outsiders to understand. A casual American interpersonal style is not generally appropriate for most business dealings.

The U.S. Agricultural Trade Office in downtown Seoul serves as a starting point for many U.S. agricultural exporters in their exploration of the Korean market.

The trade office and the agricultural staff at the U.S. Embassy respond to over 700 written and telex inquiries from U.S. businesses and export promotion agencies each year, and a variety of written materials on topics of interest to potential exporters are available from those offices or Washington sources.

(The author is the U.S. Agricultural Counselor in Seoul.)

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weather watch

MASSACHUSETTS

September was slightly warmer than normal, averaging 0.4 degree a day on the plus side. Maximum temperature was 87 degrees on the 4th and minimum 40 degrees on the 12th and 15th. Warmer than average days were the 4th-6th, 8th, 20th and 21st. The only cooler than average period was the 10th through 14th.

Rainfall totaled only 1.29 inch or about 2½ inches below normal. This was the driest since 1980 but not an unusually dry September. There was measurable rain on eight days but with 0.86 on the 10th, there was precious little other rain the remainder of the month. However, after the deluge in August, we were in good condition for water. We are 1 inch above normal for the year and about 3-1/3 inch below 1984.

I.E.D.

NOVA SCOTIA

I am pleased to report that we had one of the best Septembers on record, which has helped greatly to overcome the problems created by a very cold and wet June. At this writing, cranberry harvest was well underway and plenty of locally produced cranberries were available for our Thanksgiving (Oct. 14). We had a good crop on our cultivar trial, which we harvested Sept. 24 and 25.

I.V.H.

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L. to r.: Virginia Weston, Joan Peltola, Joyce Mazalewski and Ann Kallio were staffing the cranberry exhibit at the Big "E" in Springfield, Mass., in September when CRANBERRIES happened by.

TRADING WITH EAST GERMANY

By WILLIAM P. HUTH
From *Foreign Agriculture*

U.S. agricultural exporters shouldn't overlook the German Democratic Republic (GDR) market just because it is state-controlled. But they should be prepared to work for long-term potential rather than quick sales and to take the time to develop contacts with key government buying officials.

The GDR is a centrally planned economy run by the state and is reluctant to spend hard currency for food

products. This significantly restricts the range of products bought and the likelihood of sales in the short run for U.S. firms.

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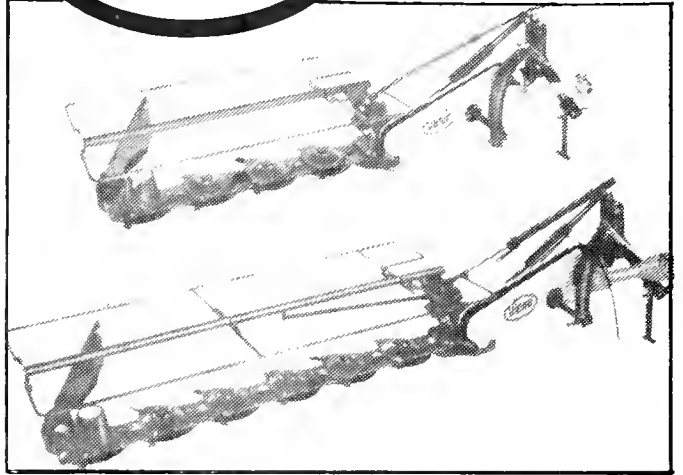
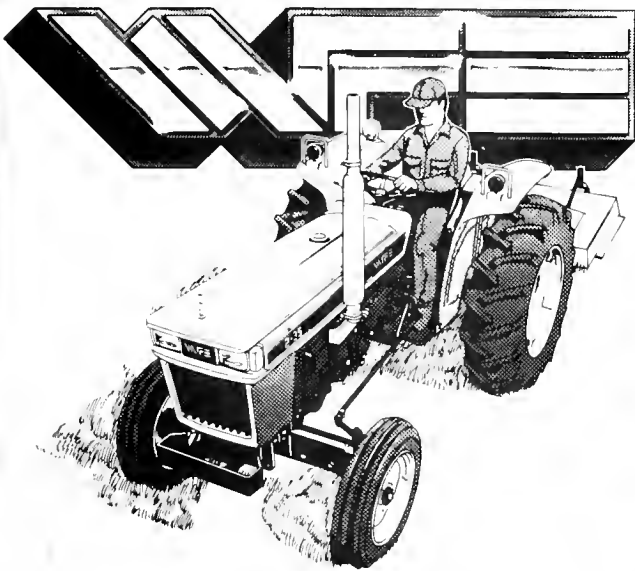
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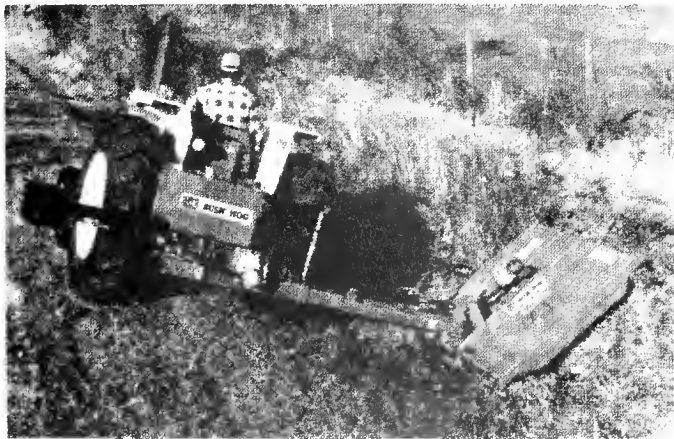
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Questions on Girdler Asked At Field Day

Dr. Carl H. Shanks Jr. answered the inquiries on insects that were stuffed into the Question Box at the 1985 Cranberry Field Day held recently in Long Beach, Wash. Below is one of the questions and the answer:

QUESTION: Have you found, in your experimenting with the black vine weevil and girdler, when is the best time for application of insecticides, morning or evening?

ANSWER: This probably is not so important in the control of cranberry girdler because chemicals are aimed mainly at the larvae. Also, this is true for application of Furadan granules for black vine weevil. However, if we are successful in finding an insecticide that can be applied to the foliage for control of the adult weevil, the evening sprays would be advisable because the weevil is most active then and, therefore, is more likely to receive a lethal dose of the chemical.

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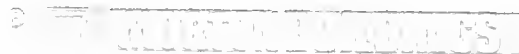
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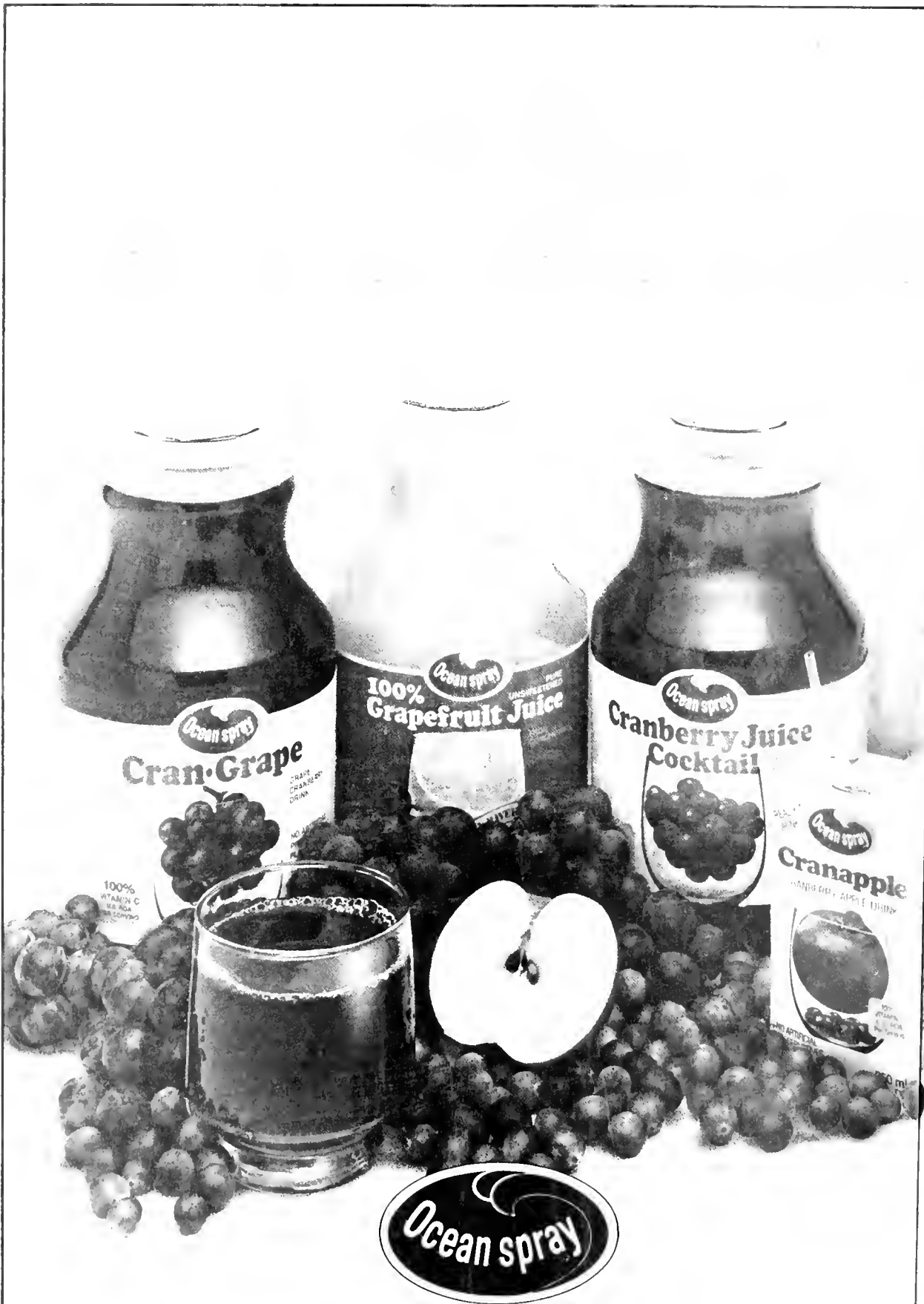
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